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MAINTENANCE SERVICES CONTRACT – FIRE PROTECTION SYSTEMS

between

TRANSPORT FOR LONDON or TfL (1)
as Company and

and

TELENT TECHNOLOGY SERVICES LIMITED (2)
as Supplier

For the supply of maintenance services for fire protection assets located at stations, depots and other buildings

Contract Reference Number - CW66476

Ref: LB15/BT01
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Classification: Confidential

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THIS CONTRACT is made on. 30 August 2024

BETWEEN:

(1) **TRANSPORT FOR LONDON or TfL** (the "**Company**" which expression shall include its successors, transferees and assignees), a statutory corporation established under the Greater London Authority Act 1999 of 5 Endeavour Square London E20 1JN; and

(2) **TELENT TECHNOLOGY SERVICES LIMITED** (the "**Supplier**"), a company registered in England and Wales under number 00703317 and having its registered office at Point 3 Haywood Road, Warwick CV34 5AH.

(each a "**Party**" and together the "**Parties**")

BACKGROUND

(A) Pursuant to a notice published in the Find a Tender Service on 18 August 2023 the Company invited expressions of interest from appropriately qualified organisations relating to the provision of the Services.

(B) The Supplier has submitted proposals to the Company setting out how it will perform the Services as required by this Contract.

(C) The Company has selected the Supplier as the most economically advantageous tenderer to perform the Services pursuant to this Contract.

(D) Therefore, the Company has agreed to buy and the Supplier has agreed to perform the Services on the terms and conditions set out in this Contract.

(E) This Contract may be utilised by the Company or any other member of the TfL Group.

THIS DEED WITNESSES as follows:

PART 1: INTERPRETATION

1 DEFINITIONS AND INTERPRETATION

1.1 In this Contract, the following definitions shall have the following meanings:

"**Abatement**" shall have the meaning given to that term in paragraph 1 (*Definitions*) of Schedule 18a (*Performance Measurement Mechanism*).

"**Additional Extended Term**" means any extension period agreed between the Parties in accordance with Clause 2.2(c)(i) or Clause 2.2(c)(ii).

"**Additional Works**" has the meaning given to that term in paragraph 1.1 of Part B (*Additional Works*) to Schedule 4 (*Contract Variation Procedure and Additional Works*).

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"**Additional Works Price**" means the price deemed to be the "Additional Works Price" pursuant to paragraph 3.3 of Part B (*Additional Works*) to Schedule 4 (*Contract Variation Procedure and Additional Works*).

"**Additional Works Rates**" has the meaning given to that term in paragraph 1.1 of Part B (*Additional Works*) to Schedule 4 (*Contract Variation Procedure and Additional Works*).

"**Additional Works Work Order**" has the meaning given to that term in paragraph 1.1 of Part B (*Additional Works*) to Schedule 4 (*Contract Variation Procedure and Additional Works*).

"**Adjudicator**" means an independent person appointed to act as an adjudicator in accordance with paragraph 4 of Schedule 5 (*Dispute Resolution Procedure*).

"**Affected Party**" means the Party affected by a Force Majeure Event.

"**Affiliate**" means in relation to any person, any holding company or subsidiary of that person or any subsidiary of such holding company, and "holding company" and "subsidiary" shall have the meaning given to them in section 1159 of the Companies Act 2006 save that for the purposes of determining whether one entity is an Affiliate of another any transfer of shares by way of security or to a nominee of the transferor shall be disregarded.

"**AMS Supplier Processes"** has the meaning given to that term in Section 5 of the Specification.

"**Annual Maintenance Plan**" has the meaning given to that term in Section 5 of the Specification and "**AMP**" shall be construed accordingly.

"**Applicable Laws**" means, depending on the context, all or any laws, statutes, proclamations, recommendations, codes of practice, by-laws, directives, Regulations, statutory instruments, rules, orders, rules of court, delegated or subordinate legislation, rules of common law or any European Union legislation (including any declarations of conformity) retained or modified by or under the EUWA, at any time or from time to time in force in the whole or any part of the United Kingdom and which are or may become applicable to this Contract, any agreement or document referred to in this Contract, or for the carrying out of the Services.

"**Asset Management System**" means the Company's system as more particularly described in Appendix K (*AMS Supplier Processes*) of the Specification and "**AMS**" shall be construed accordingly.

"**Assets**" has the meaning given to it in Section 5 of the Specification.

"**British Standards**" has the meaning given to that term in Section 5 of the Specification.

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"**Business Continuity Plan**" means the plan prepared by the Supplier and delivered to the Company's Representative in accordance with paragraph 3.4.10 of Schedule 10 (*Contract Management*).

"**Category N3 HGV**" has the meaning given to that term in Clause 76.7(a).

"**CCSL**" means the Centre for Civil Society Limited or any relevant replacement organisation.

"**CDM Regulations**" means the Construction (Design and Management) Regulations 2015.

"**Cessation Plan**" means a plan agreed between the Parties or determined by the Company in accordance with Clause 76.1 to give effect to a Declaration of Ineffectiveness or a Public Procurement Termination Event.

"**Change of Control**" when applied to any person, shall be treated as occurring if any other person, or any other persons who together at the date of this Contract, Control such person subsequently ceases or together cease to Control it or if after the date of this Contract any person, or persons together, which did not have Control of that person at the date of this Contract but at any time thereafter acquire(s) Control of that person.

"**Clearance Time**" has the meaning given to that term in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*).

"**Commencement Date**" means the date specified as such in Schedule 1 (*Contract Data*).

"**Commercial Off the Shelf Software**" means commercial off the shelf software which is standard, freely commercially available and not developed or modified by the Supplier.

"**Company Party**" means an officer, agent, contractor, employee or sub-contractor (of any tier) of the Company acting in the course of its office or employment or appointment (as appropriate), but excluding the Supplier and any Supplier Party.

"**Company Personnel**" means staff supplied (including the Company's Representative) by the Company or any member of the TfL Group.

"**Company's Representative**" means the person appointed by the Company and named as such in Schedule 1 (*Contract Data*) and such replacement notified in writing by the Company to the Supplier from time to time.

"**Company Standards**" has the meaning given to that term in paragraph 6.2.1 of the Specification.

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"**Competency Management and Training Plan**" means the plan to be provided by the Supplier to the Company's Representative in accordance with paragraph 3.4.8 of Schedule 10 (*Contract Management*).

"**Competent Authority**" means any legislative, judicial, regulatory or administrative body or agency (or any subdivision of any of them) of the United Kingdom or any supranational body which has rulemaking power or whose directives, decisions, instructions, rulings, laws or Regulations are directly enforceable against either of the Parties in connection with the performance of this Contract.

"**Components**" has the meaning given to it in Section 5 of the Specification.

"**Confidential Information**" means any information given orally or in writing which is a trade or business secret or method; technical know-how; Personal Data which relates to a living individual who can be identified from that information; information relating to any crime, breach of statutory duty or criminal investigations; information relating to the protection of prominent persons, national security, counter-terrorism or other information relating to the provision of police services for any national or international purpose; information relating to the Company's obligations in accordance with sections 118 to 121 of the Railways Act 1993; confidential financial information including but not limited to taxation information and returns to shareholders; and any other information that a Party would reasonably expect to be able to protect by virtue of business confidentiality provisions.

"**Consequential Loss**" means in relation to a breach of this Contract or other circumstances in which a Party is entitled to recover any costs, expenses or liabilities suffered or incurred, loss of profit, loss of revenue, loss of contract, loss of goodwill and/or other financial loss resulting from such breach and whether or not the Party committing the breach knew, or ought to have known, that such loss would be likely to be suffered as a result of such breach.

"**Contract**" means this contract made between the Company and the Supplier.

"**Contract Information**" means (i) this Contract in its entirety (including from time to time agreed changes to this Contract) and (ii) data extracted from the invoices submitted pursuant to Schedule 3 (*Payment*) which shall consist of the Supplier's name, the expenditure account code, the expenditure account code description, the document number, the clearing date and the invoice amount.

"**Contract Management Groups**" means the groups set out in Table 1 (*Contract Management Groups*) of Schedule 10 (*Contract Management*).

"**Contract Management Plan**" means the plan described in paragraph 4 of Schedule 14 (*Mobilisation Requirements*).

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"**Contract Reference Number**" means the number shown on the front page of this Contract.

"**Contract Variation Procedure**" means the procedure set out in Part A (*Contract Variation Procedure*) of Schedule 4 (*Contract Variation Procedure and Additional Works*).

"**Contractual Documentation**" means all documentation and information agreed to be delivered by the Supplier in accordance with this Contract including without limitation records, reports, documents, papers, unpatented designs, drawings, data specifications, manufacturing or work processes, testing procedures, relevant computer data and all other technical business and similar information originated by or on behalf of the Supplier in accordance with this Contract.

"**Control**" means, in relation to a body corporate, the ability of a person (or any persons acting together) to ensure that the activities and business of that body corporate are conducted in accordance with the wishes of that person (or those persons), and a person (or persons) shall be deemed to have Control of a body corporate (amongst other things) if, directly or indirectly, that person possesses or is entitled to acquire (or those persons possess or are entitled to acquire): (i) the majority of the issued share capital in that body corporate; or (ii) the majority of the voting rights in that body corporate; or (iii) the right to receive the majority of the income of that body corporate on any distribution by it of all of its income or the majority of its assets on a winding-up; or (iv) the right to appoint a majority of the directors to the board of that body corporate, and "Controlling", "Controlled" and "Controller" shall be construed accordingly.

"**Core Team Price**" has the meaning given to it in paragraph 1.1 of Schedule 3 (*Payment*).

"**Critical Spares**" has the meaning given to it in Section 5 of the Specification.

"**Cumulative Scorecard**" has the meaning given to that term in Schedule 18a (Performance Measurement Mechanism).

"**Data Protection Legislation**" means:

(a) any legislation in force from time to time in the United Kingdom relating to privacy and/or the Processing of Personal Data, including but not limited to the Data Protection Act 2018;

(b) any statutory codes of practice issued by the Information Commissioner's Office of the United Kingdom in relation to such legislation; and

(c) the Privacy and Electronic Communications (EC Directive) Regulations 2003.

"**Declaration of Ineffectiveness**" means a declaration of ineffectiveness in relation to this Contract made by a court of competent jurisdiction in accordance with Regulation

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98(2)(a) or Regulation 103(3) of the Public Contracts Regulations 2015 (as amended) or Regulation 113(2)(a) or Regulation 118(3) of the Utilities Contracts Regulations 2016 (as amended).

"**Demobilisation Plan**" means the demobilisation plan referred to in paragraph 3.1(a) of Schedule 15 (*Demobilisation*).

"**Direct Vision Standard**" or "**DVS**" has the meaning given to that term in Clause 76.7(a).

"**Disclosed Data**" means information relating to the provision of the Services disclosed to the Supplier and its shareholders and advisers before the date of this Contract including the Invitation to Tender.

"**Dispute**" has the meaning given to that term in Clause 65.

"**Documentation**" means all documents, items of information, data, reports, drawings, specifications, plans, software, designs, inventions and/or other material produced or supplied by or on behalf of the Supplier in the performance of this Contract and whether in paper form or stored electronically, excluding source code owned by the Supplier or a Sub-Contractor.

"**EDI Policy**" means a written policy provided by the Supplier setting how it will promote equality, diversity and inclusion.

"**Emergency**" means an event causing or, in the reasonable opinion of a Party, threatening to cause death or injury to any individual, or serious disruption to the lives of a number of people or extensive damage to property, or contamination of the environment in each case on a scale beyond the capacity of the emergency services, or preventing the Services operating under normal circumstances and requiring the mobilisation and organisation of the emergency services.

"**Environmental Claim**" means receipt by the Company in connection with any pollution or contamination of the environment of:

(a) any written claim, demand, suit or notice from a third party, including a Regulatory Authority ("Regulatory Authority" means any government entity or other public or quasi-public authority or privatised utility having responsibility for any matters concerning the environment, or Environmental Law) or any order of the court of competent jurisdiction in connection with an alleged breach of Environmental Law; or

(b) any charge or condition imposed by any Regulatory Authority or any notice served by any Regulatory Authority requiring Remediation (including any written indication from any Regulatory Authority that a requirement to carry out

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Remediation will be imposed on the Company unless the Company agrees to carry out Remediation voluntarily).

"**Environmental Law**" means all and any laws, including common law, legislation, codes of practice, notices, judgments, decrees, Regulations, applicable clean-up standards, circulars, guidance notes (statutory or otherwise), as may be enacted, adopted, amended or supplemented, concerning the protection of human health, or the environment or the conditions of the work place.

"**Equipment**" has the meaning given to it in Section 5 of the Specification.

"**Equipment Register**" has the meaning given to it in Section 5 of the Specification.

"**Equipment Register Data Capture**" has the meaning given to it in paragraph 8.1.7 of the Specification.

"**Escalation Procedure**" has the meaning given to it in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*).

"**ETI Base Code**" means the ethical trading initiative base code set out in Appendix 3 (*The ETI Base Code*) to Schedule 17 (*Responsible Procurement*) of the Contract.

"**EUWA**" means the European Union (Withdrawal) Act 2018.

"**Excepted Liabilities**" means the liability of the Supplier for:

(a) any Abatement levied in accordance with this Contract;

(b) any costs of the Supplier of performing its obligations under this Contract, including but not being limited to the costs of re-performing the Services as required by Clause 19;

(c) any compensation on termination amounts pursuant to Clause 44;

(d) any taxes, whether payable under any Applicable Laws or pursuant to this Contract;

(e) Losses against which the Supplier is entitled to an indemnity under any policy of insurance (or would have been entitled but for any breach of or failure to maintain such insurance);

(f) Losses caused by fraudulent acts, including fraudulent misrepresentation or acts of a criminal nature;

(g) Losses caused by the Supplier committing a Prohibited Act or Safety Breach;

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(h) loss of or damage to any property (including the TfL Network and Sites and any other property belonging to the Company for which the Supplier is responsible);

(i) [redacted]

(j) any Losses against which the Company is indemnified under Clause 29;

(k) any Losses against which the Company is indemnified under Clause 36.9;

(l) any Losses caused by the Supplier committing a breach of Clause 40 or in respect which the Company is indemnified under Clause 40;

(m) death or personal injury caused by the Supplier's negligence or that of Supplier Personnel; and

(n) any interest due as a result of any late payments of any of the Excepted Liabilities.

"**Existing Contracts**" means any and all contracts, whether current, expired or terminated, pursuant to which goods or services have been supplied or provided by the Supplier (in the capacity of contractor or sub-contractor) to the Company or any member of the TfL Group.

"**Expiry Date**" means the Initial Term Expiry Date as may be extended pursuant to the provisions of Clause 2.2.

"**Extended Term**" means the extension period determined by the Company in accordance with Clause 2.2(a) or agreed between the Parties in accordance with Clause 2.2(b).

"**Fee**" shall have the meaning given to that term in paragraph 1.1 (*Definitions*) of Schedule 3 (*Payment*).

"**Final Warning Notice**" has the meaning given to it in Clause 43.3.

"**Financial Year**" means 1st April to 31st March each year or any other 12 month period as defined by the Company.

"**Force Majeure Event**" means any of the following (or any circumstances arising as a consequence of any of the following) if and only to the extent that such event or circumstances is or are not caused by, and their effects are beyond the reasonable control of, a Party affected by such an event or circumstances and which have an adverse effect

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on the Party affected by such an event or circumstances and such Party's ability to perform its obligations under this Contract and is not an event or circumstances (i) whose effect the Party affected by such an event is otherwise required to avoid or provide against (other than by way of insurance) under this Contract or (ii) which the Party affected by such an event could reasonably have avoided or provided against:

(a) war, invasions, acts of foreign enemies, hostilities (whether war be declared or undeclared), civil war, civil unrest, rebellion, revolutions, insurrection, military or usurped power, confiscation, or requisition by or under the order of any government or public or local authority;

(b) nuclear, chemical or biological contamination including ionizing radiation or contamination by radioactivity from any nuclear fuel or nuclear waste from the combustion of nuclear fuel or radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof;

(c) flooding caused by rising water table or by weather conditions including extraordinary storm, bursting or overflow of water tanks, apparatus or pipes;

(d) an interruption in the supply of power or other utility services for which the Supplier is not responsible, if and only to the extent that such failure or interruption is not caused by, and its effects are beyond the reasonable control of, the Supplier and it could not reasonably have avoided or provided against the effects;

(e) any act of terrorism or a specific threat of terrorism which results in the partial or total, temporary or long term closure of the TfL Network and/or Site;

(f) lightning, earthquake or extraordinary storm;

(g) fire;

(h) tunnel collapse;

(i) compliance with the provision of Sections 118 to 121 of the Railways Act 1993; or

(j) the discovery of fossils, antiquities or other material which in each case is required to be exhumed or unexploded bombs.

"**GLA Act**" means the Greater London Authority Act 1999 relating to the formation of the Greater London Authority.

"**Good Industry Practice**" means the exercise of that degree of skill, diligence, prudence and foresight and operating practice which would reasonably and ordinarily be expected

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from time to time from a skilled, competent and experienced contractor seeking in good faith to comply with all its contractual obligations and all Applicable Laws (whether or not binding on the Company), and engaged in the same type of undertaking and under the same or similar circumstances as those envisaged by this Contract.

"**Greater London**" has the meaning ascribed to it in the GLA Act.

"**Guarantor**" means Telent Limited (company number 00067307).

"**Infrastructure Manager**" has the meaning ascribed to it in the Railways and Other Guided Transport Systems (Safety) Regulations 2006.

"**Initial Term Expiry Date**" means the date specified as such in Schedule 1 (*Contract Data)*.

"**Intellectual Property Rights**" means any intellectual property rights in any part of the world and includes but is not limited to all rights to, and interests in, any patents (including supplementary protection certificates), designs, utility models, trade-marks, service marks, trade and business names and get up, moral rights, domain names, copyright and neighbouring rights, databases, semi-conductors, know how, knowledge, trade secrets and any other proprietary rights or forms of intellectual property (protectable by registration or not) whether registered or not in respect of any technology, technique, concept, idea, style, scheme, formula, system, logo, mark or other matter or thing, existing or conceived, used, developed or produced by any person, together with all applications and rights to apply for registration or protection of such rights, Confidential Information relating to those rights, material embodying those rights and in each case rights of a similar or corresponding character.

"**Interest Rate**" means the percentage above the base rate from time to time of the Bank of England as specified in Schedule 1 (*Contract Data*).

"**Invitation to Tender**" or "**ITT**" means the invitation to tender issued on 20 October 2023 through the TfL e-tendering portal under ID: MSG192085003.

"**Isolation Services**" has the meaning given to it in paragraph 10.1 of Schedule 2 (*Specification*).

"**Key Performance Indicators**" or "**KPIs**" has the meaning given to it in paragraph 1 of Schedule 18 (*Performance Measurement*) and "**Key Performance Indicator**" or "**KPI**" means any one of them.

"**Key Personnel**" means Supplier Personnel identified as such in Schedule 1 (*Contract Data*) and any changes to the same that are made in accordance with Clause 30.

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"**Level 4 Non-Conformance**" has the meaning given to that term in Schedule 18a (*Performance Measurement Mechanism*).

"**London Living Wage**" means the London rate for the basic hourly wage as updated and published annually by the CCSL (or any relevant replacement organisation) on its website (www.livingwage.org.uk).

"**Losses**" means any expense, liability, loss, claims, fines, damages, costs (including reasonable legal and other professional fees and disbursements), penalties, settlements and judgments incurred by the Company, its employees or agents (which, for the avoidance of doubt, shall include a Replacement Employer).

"**LUL**" means London Underground Limited (company number 01900907).

"**Maintenance Services**" means the services detailed in the Specification and includes, without limitation, Planned Preventative Maintenance, Reactive Maintenance and Isolation Services.

"**MAM**" has the meaning given to that term in Clause 76.7(a).

"**Mayor**" means the person from time to time holding the office of Mayor of London as established by the GLA Act.

"**Mobilisation Period**" means the period from the Commencement Date to the Services Commencement Date.

"**Mobilisation Plan**" has the meaning given to that term in paragraph 1.1 of Schedule 14 (*Mobilisation Requirements*).

"**Mobilisation Works**" means the activities set out in Schedule 14 (*Mobilisation Requirements*) and more particularly in the Mobilisation Plan.

"**Necessary Consents**" means any permits, licences, permissions, consents, approvals, certificates and authorisations (whether statutory or otherwise) which are required for the performance of any of the Supplier's obligations under this Contract, including those required in order to comply with Applicable Laws, Standards or as a result of the rights of any third party.

"**Network Rail**" means Network Rail Infrastructure Limited (company number 02904587).

"**Non-Services to Site Attendance Price**" has the meaning given to it in paragraph 1.1 of Schedule 3 (*Payment*).

"**Notice to Proceed**" has the meaning given to that term in Clause 47.2(b).

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"**Occasion of Tax Non-Compliance**" means:

(a) any tax return of the Supplier submitted to a Relevant Tax Authority on or after 1 October 2012 is found to be incorrect as a result of:

(i) a Relevant Tax Authority successfully challenging the Supplier under the General Anti-Abuse Rule or the Halifax Abuse Principle or under any tax rules or legislation that have an effect equivalent or similar to the General Anti-Abuse Rule or the Halifax Abuse Principle; and/or

(ii) the failure of an avoidance scheme which the Supplier was involved in, and which was, or should have been, notified to a Relevant Tax Authority under the DOTAS or any equivalent of similar regime; and/or

(b) the Supplier's tax affairs give rise on or after 1 April 2013 to a criminal conviction in any jurisdiction for tax related offences which is not spent at the Commencement Date or to a penalty for civil fraud or evasion.

"**Operator**" means a person with statutory duties to provide or secure the provision for Greater London of public passenger services by railway or a person who secures the provision of such services through appropriate contractual arrangements.

"**Others**" means people or organisations who are not the Company, the Adjudicator, the Supplier, or any employee, Sub-Contractor or supplier of the Supplier.

"**Payment Application**" shall have the meaning given to that term in paragraph 2.9(b) (*Payment Process*) of Schedule 3 (*Payment*).

"**Period**" means the Company's accounting periods as notified from time to time by the Company to the Supplier, each such Period being of between 25 and 32 days and one of 13 periods during the Company's Financial Year and "Periods" shall be construed accordingly.

"**Period Progress Meeting**" has the meaning given to it in table 5 of Schedule 10 (Contract Management).

"**Permitted Delay Event**" has the meaning set out in Clause 28.1 of this Contract.

"**Persistent Breach**" means a breach for which a Final Warning Notice has been issued, which has continued for more than ten (10) Working Days or recurred in three (3) or more months within the six (6) month period after the date on which such Final Warning Notice is served on the Supplier.

"**Personal Data**" has the meaning given to it in Data Protection Legislation.

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"**Planned Preventative Maintenance**" has the meaning given to it in paragraph 8.1.1 of the Specification.

"**Planned Preventative Maintenance Price**" has the meaning given to it in paragraph 1.1 of Schedule 3 (*Payment*).

"**Planned Preventative Maintenance Schedule**" has the meaning given to it in Section 5 of the Specification.

"**PMM**" shall have the meaning given to it in paragraph 2.1 of Schedule 18 (*Performance Measurement*).

"Price" means the sum calculated in accordance with paragraph 2.2 (*the Price*) of Schedule 3 (*Payment*).

"**Processing**" or "processing" has the meaning given to it in the Data Protection Legislation.

"**Prohibited Act**" means:

(a) offering or agreeing to give to any servant, employee, officer or agent of the Company any gift or consideration of any kind as an inducement or reward:

(i) for doing or not doing (or having done or not having done) any act in relation to the obtaining or performance of this Contract or any other contract with the Company; or

(ii) for showing or not showing favour or disfavour to any person in relation to this Contract or any other contract with the Company; or

(b) entering into this Contract or any other contract with the Company with which commission has been paid or has been agreed to be paid by the Supplier or on its behalf or to its knowledge unless, before this Contract is entered into, particulars of any such commission and of the terms and conditions of any such contract for the payment thereof have been disclosed in writing to the Company; or

(c) committing an offence:

(i) under the Bribery Act 2010;

(ii) under the Criminal Finances Act 2017;

(iii) under legislation creating offences in respect of fraudulent acts; or

(iv) at common law in respect of fraudulent acts,

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in relation to this Contract or any other contract with the Company; or

(d) defrauding or attempting to defraud the Company.

"**Public Procurement Termination Event**" means:

(a) the Contract has been subject to any substantial modification which would require a new procurement procedure in accordance with Regulation 72(9) of the Public Contracts Regulations 2015 or Regulation 88(8) of the Utilities Contracts Regulations 2016; or

(b) if the Company determines that the Contract should not have been awarded to the Supplier in view of a serious infringement of the obligations contained under the EU Treaties as retained by the EUWA and applicable procurement Regulations.

"**Quality Management Plan**" means the Supplier's quality management plan provided by the Supplier in accordance with paragraph 6 of Part B (*Quality*) to Schedule 16 (*Health, Safety, Quality and Environmental Requirements*) and updated from time to time in accordance with paragraph 6.1.4 of Part B (*Quality*) to Schedule 16 (*Health, Safety, Quality and Environmental Requirements*).

"**Quarter**" means respectively each or all of Periods 1 to 4, 5 to 7, 8 to 10 and 11 to 13 in each Period, and "Quarterly" will be construed in line with this definition.

"**QUENSH**" has the meaning given to it in paragraph 2 of Part A (*Health and Safety*) of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*).

"**Reactive Maintenance**" has the meaning given to it in paragraph 9.1.1 of the Specification.

"**Reactive Maintenance Price**" has the meaning given to it in paragraph 1.1 of Schedule 3 (*Payment*).

"**Reactive Maintenance Work Orders**" has the meaning given to that term in paragraph 1 of Schedule 3 (Payment) and "**RMWO**" shall be construed accordingly.

"**Regulations**" includes any regulation, rule, official directive, request or guideline (whether or not having the force of law) of any governmental, intergovernmental or supranational body, agency, department or regulatory, self-regulatory or other authority or organisation.

"**Relevant Tax Authority**" means Her Majesty's Revenue and Customs, or, if applicable, the tax authority in the jurisdiction in which the Supplier is established.

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"**Remedial Works**" means maintenance works required from the Supplier to remedy any unsatisfactory maintenance work or provision of the Services, as judged by the Company.

"**Remediation**" means any or all investigation, sampling, analysing, removing, remedying, cleaning up, abating, containing, controlling or ameliorating the presence in or effects on the Environment of any contamination or pollution including, but without limitation, the removal, treatment and disposal of material and the treatment and monitoring of ground waters and gases and emissions and the obtaining of expert technical, legal and other professional advice (including all project management functions).

"**Replacement Employer**" has the meaning given to it in Clause 29.1.

"**Responsible Procurement Policy**" means the policy document entitled the "GLA Group Responsible Procurement Policy" dated June 2017 and as may be amended.

"**Safety Breach**" means a material breach of any obligation under this Contract caused by the gross incompetence of or wilful default by the Supplier (or anyone employed by or acting on behalf of the Supplier) or any of its agents which has materially affected the safe operation of the TfL Network and/or Sites or the safety of the Company's customers, staff or any other person.

"**Senior Representative**" means a representative of a Party at senior executive level, the initial such representatives for each Party being as set out in Schedule 1 (*Contract Data*) and "**Senior Representatives**" means such representatives of both Parties.

"**Services**" means all or any part of the services and/or works stated in the Specification or any other part of this Contract to be performed by the Supplier under this Contract and any works, services, functions or responsibilities which may reasonably be regarded as incidental to the supply of the Services and/or anything necessary to comply with them and which may reasonably be inferred from this Contract and includes, without limitation:

(a) any Additional Works;

(b) any Maintenance Services; and

(c) any services and/or works carried out under a Variation Order.

"**Services Commencement Date**" means the date specified as such in Schedule 1 (*Contract Data*).

"**Shift**" means a day or night shift and is fully inclusive of rest breaks and travel time between the Sites.

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"**Sites**" means the work areas set out in Appendix A (*Service Matrix*) to the Specification and such other work areas as the Company may allow the Supplier to access (subject to and in accordance with Clause 21) in order to perform the Services.

"**Spares**" has the meaning given to it in Section 5 of the Specification.

"**Specification**" means the description of the services to be provided by the Supplier in accordance with this Contract contained in Schedule 2 (*Specification*).

"Standards" means the requirements specified in any Company Standards (accessed via the Company's online e-library), British Standards and associated Codes of Practice required by the Company.

"**Strategic Labour Needs and Training Plan**" means the plan set out in Schedule 19 (*Strategic Labour Needs and Training*).

"**Sub-Contract**" means a contract between the Supplier and a Sub-Contractor.

"**Sub-Contractor**" means a sub-contractor to the Supplier, being the counterparty of a contract with the Supplier involved in the supply of goods, facilities, services and/or works necessary for or related to the provision of the Services (or any part of them).

"**Supplier Default**" has the meaning given to it in Clause 43.1.

"**Supplier Party**" means:

(a) an officer, servant or agent of the Supplier or any Affiliate of the Supplier and any officer, servant or agent of such a person;

(b) any Sub-Contractor of the Supplier, and any of their officers, servants or agents; and

(c) any person on or at any of the Sites at the express or implied invitation of the Supplier (other than a Company Party).

"**Supplier Personnel**" means all employees, workers, agents or consultants of the Supplier and the Supplier's Sub-Contractors from time to time.

"**Supplier Questionnaire**" or "**SQ**" means the pre-qualification questionnaire issued on 18 August 2023 through the TfL e-tendering portal under Find a Tender service (FTS) Contract Notice ID: 2023/S 000-024302.

"**Supplier's Representative**" means the person appointed by the Supplier and named as such in Schedule 1 (*Contract Data*) and such replacement notified in writing by the Supplier to the Company's Representative from time to time and accepted in writing by the Company's Representative.

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"**Termination Notice**" means a notice of termination issued in accordance with this Contract.

"**TfL Group**" means TfL and all of its subsidiaries and their subsidiaries (as defined in Section 1159 of the Companies Act 2006) from time to time, together with Crossrail Limited (company number 04212657) and reference to any "member of the TfL Group" refers to TfL or any such subsidiary.

"**TfL Network**" means the assets owned, or used by, and/or the services provided by or on behalf of, any member of the TfL Group.

"**TfL Supplied Resources**" means all resources including Company Personnel, Spares, Assets, Components, materials, the assessed value of the plant, materials, office accommodation, support services and other things or people supplied or procured and/or made available by the Company and/or any other member of the TfL Group to the Supplier.

"**Third Party Licence**" means any third party licences, consents and permissions required to permit the Supplier to use the Asset Management System.

"**Third Party Supplier**" means any supplier (excluding the Supplier) who is in contract with any member of the TfL Group.

"**Track**" means areas to which LUL Rule Book 17 applies, including track, tunnels, embankments and other line side infrastructure.

"**Transparency Commitment**" means the Company's commitment to publish its contracts, tender documents and data from invoices received in accordance with the Local Government Transparency Code 2015 and the Company's own transparency commitments.

"**Variation Order**" means the written authorisation from the Company's Representative to a Variation Proposal in accordance with the Contract Variation Procedure.

"**Variation Proposal**" means the written proposal put forward by the Company's Representative or the Supplier to vary this Contract in accordance with the Contract Variation Procedure in substantially the form set out in Appendix 1 (*Form of Variation Proposal/Variation Order*) to Schedule 4 (*Contract Variation Procedure and Additional Works*).

"**VAT**" means value added tax as provided for in the Value Added Tax Act 1994 and legislation (whether delegated or otherwise) supplemental thereto and tax replacing or adding to the same of a similar nature.

"Work Order" shall have the meaning given to that term in Section 5 of the Specification.

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"**Working Day**" means any day of the week (other than Saturday or Sunday) which is not an English bank holiday, or public holiday.

1.2 The headings in this Contract are only for convenience and shall not affect its interpretation.

1.3 Where appropriate, the singular includes the plural and the masculine includes the feminine and vice versa.

1.4 Any reference to "writing" means a communication consisting of words in any legible and visible form, including words produced by any form of electrical or mechanical means and in typed, electronic or printed format as well as in manuscript, and "written" shall be construed accordingly.

1.5 A reference to a Clause or a Schedule shall be to a Clause of or, as the case may be, a Schedule to this Contract and references to this Contract include its recitals and Schedules.

1.6 References to (or to any specified provision of) this Contract or any other document shall be construed as references to this Contract, that provision or that document as in force for the time being and as from time to time amended in accordance with the terms of this Contract or the document in question.

1.7 A reference to any Applicable Laws and Standards also includes a reference to the Applicable Laws and Standards as from time to time amended, extended or re- enacted.

1.8 References to a person, firm or company shall include any individual company, unincorporated association or body (including a partnership or joint venture) or other entity whether or not having a separate legal personality.

1.9 Any obligation on a Party to do or not do any act, matter or thing includes an obligation to procure that it is done or not done (as the case may be).

1.10 Words preceding the words "include", "includes", "including" and "included" shall be construed without limitation by the words which follow those words.

1.11 In the event that a conflict, ambiguity or inconsistency exists between the Clauses of this Contract and the Schedules or between any of the Schedules, then (save as expressly provided in this Contract) the order of precedence shall be as follows:

(a) the Clauses of this Contract;

(b) the Schedules to this Contract (equal priority, but subject to this Clause 1.11); and

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(c) any other document referred to in, or incorporated by reference into, this Contract.

1.12 If there is any inconsistency between any diagram and any text, the text shall take precedence.

1.13 In the event of any inconsistency between the Schedules and the Parts, Annexes or Appendices thereto, the Schedules shall prevail.

1.14 Neither the giving of any approval, consent, examination, acknowledgement, knowledge of the terms of any agreement or document nor the review of any document or course of action by or on behalf of the Company, nor the failure of the same shall, unless otherwise expressly stated in this Contract, relieve the Supplier of any of its obligations under this Contract or of any duty which it may have hereunder to ensure the correctness, accuracy or suitability of the matter or thing which is the subject of the approval, consent, examination, acknowledgement or knowledge.

1.15 Where this Contract contemplates that the Company may elect, determine, approve, reject, consent, nominate, appoint, decide, specify, permit or consider any matter or thing, the Company may make such election, determination, approval, rejection, consent, nomination, appointment, decision, specification, permission or consideration in its absolute discretion without being required to give reasons, unless this Contract expressly requires otherwise.

1.16 Where this Contract contemplates that the Company may elect, determine, approve, reject, consent, nominate, appoint, decide, specify, permit or consider any matter or thing, this means in advance and in writing in order for the Supplier to be able to place reliance on it.

1.17 This Contract was drafted with the joint participation of the Parties and no provision of this Contract will be construed adversely to a Party solely on the ground that such Party was responsible for the preparation of this Contract or that provision.

1.18 Where used in any part of this Contract the phrase "reasonable endeavours" shall be taken to mean an obligation to do whatever could reasonably be done in the circumstances to fulfil the obligation concerned by:

(a) a responsible and sufficiently funded contractor acting in accordance with Good Industry Practice (in the case of the Supplier); or

(b) a responsible customer receiving the Services (in the case of the Company).

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PART 2: CONTRACT MANAGEMENT AND COMMENCEMENT

2 DURATION AND OPTION TO EXTEND

2.1 This Contract and the rights and obligations of the Parties (excluding the obligations of the Supplier to provide the Services but including the Supplier's obligation to comply with Schedule 14 (*Mobilisation Requirements*)) shall take effect on the Commencement Date and (save in the event of earlier termination) shall continue until the Expiry Date. The obligation of the Supplier to provide the Services shall take effect on the Services Commencement Date and (save in the event of earlier termination) shall continue until the Expiry Date.

2.2 The Parties acknowledge and agree that:

(a) the Company shall at its sole option be entitled at any time prior to the date falling no later than six (6) months prior to the Initial Term Expiry Date to serve notice on the Supplier of its decision to extend this Contract for a period of up to two (2) years either in respect of all or part of the Services;

(b) where the Company fails to give six (6) months' notice in accordance with Clause 2.2(a), the Parties may agree in writing to extend this Contract for a period of up to two (2) years either in respect of all or part of the Services; and

(c) where:

(i) the Extended Term expires prior to the second anniversary of the Initial Term Expiry Date, the Parties may agree in writing that the Extended Term shall be extended for such further period as the Parties may agree in writing; and

(ii) any Additional Extended Term expires prior to the second anniversary of the Initial Term Expiry Date, the Parties may agree in writing that the Additional Extended Term shall be extended for such further period as the Parties may agree in writing,

provided that the duration of the Extended Term and any Additional Extended Term shall not exceed two (2) years in aggregate.

2.3 The provisions of this Contract shall continue to apply *mutatis mutandis* to any such extension of this Contract (other than Clause 2.2(a) and Clause 2.2(b) containing the option to extend and subject to any variations as may be agreed by both Parties).

2.4 On either:

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(a) receipt of written notice from the Company to the Supplier in accordance with Clause 2.2(a); or

(b) an extension being agreed between the Company and the Supplier in writing in accordance with Clause 2.2(b) or Clause 2.2(c),

this Contract shall be deemed to be extended accordingly.

3 DUE DILIGENCE

3.1 The Supplier acknowledges and agrees that the Company has delivered or made available the Disclosed Data and that the Supplier has:

(a) satisfied itself of all details relating to the Specification;

(b) satisfied itself as to the Equipment and Assets which are covered by this Contract and the nature and extent of the risks assumed by it under this Contract; and

(c) gathered all information necessary to perform its obligations under this Contract and other obligations assumed, including:

(i) information as to the nature location and condition of all relevant land (including hydrological, geological, geo-technical and sub-surface conditions);

(ii) information relating to all relevant archaeological finds and areas of archaeological, scientific or natural interest;

(iii) information relating to local conditions and facilities and the quality of existing structures;

(iv) obtaining all surveys, information and any and all data and any supporting documentation necessary for carrying out its obligations under this Contract; and

(v) raising all relevant due diligence questions with the Company before the date of this Contract.

3.2 The Company shall not be liable for any costs arising from the Supplier's failure to perform its obligations under this Clause 3 or from any actual or perceived lack by the Supplier of information or knowledge.

3.3 The Supplier shall not in any way be relieved from any obligation under this Contract nor shall it be entitled to make any claim against the Company on grounds that any information, whether obtained from the Company or otherwise (including information

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made available by the Company), is incorrect or insufficient and shall make its own enquiries as to the accuracy and adequacy of that information.

3.4 The Supplier acknowledges, represents and warrants that:

(a) the Company has relied upon the Supplier's expertise and professionalism in the carrying out of all due diligence activities in relation to this Contract including the requesting of and verification of all Disclosed Data; and

(b) the Disclosed Data, together with the Supplier's own expertise and knowledge of the Company's operations, are sufficient to enable the Supplier to satisfy itself:

(i) as to the scope and nature of the Services to be provided; and

(ii) that it is able to perform its obligations under this Contract.

3.5 The Supplier shall not be entitled to any additional payment nor be excused from any liability under this Contract and has no right to make a claim against the Company as a result of:

(a) the Supplier misinterpreting any matter or fact relating to the Specification or this Contract; or

(b) the Supplier having failed to review the Disclosed Data or any documents referred to in the Disclosed Data.

3.6 Subject to Clause 3.7, no warranty, representation or undertaking (whether express or implied) is given by the Company as to the relevance, accuracy, completeness, adequacy or fitness for purpose of any Disclosed Data or that such information constitutes all of the information relevant or material to the Specification and the Services. The Supplier represents and agrees that it has placed and will place no reliance on the Disclosed Data and that it has made its own enquiries to satisfy itself as to the accuracy, adequacy and completeness of the Disclosed Data supplied to it in connection with this Contract. Accordingly, the Supplier shall not be relieved from any obligation under this Contract in connection with:

(a) the supply and the content of any Disclosed Data; and

(b) any representations or statements made in respect of any Disclosed Data, and all liability on the part of the Company in connection with the matters set out at Clauses 3.5(a) and 3.5(b) is excluded to the extent permitted by Applicable Laws.

3.7 Nothing in this Clause 3 shall exclude any liability which the Company or any of its agents or employees would otherwise have to the Supplier in respect of any statements made

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fraudulently or fraudulent omissions to make statements prior to the Commencement Date.

4 SUPPLIER WARRANTIES

4.1 The Supplier warrants to the Company that:

(a) it is properly constituted and incorporated under the laws of England and Wales and has all necessary authority, power and capacity to enter into this Contract, and that this shall remain the case until the Expiry Date;

(b) it has entered into and executed this Contract by its duly authorised representatives in accordance with all procedures required by its governing laws and constitutional documents and all necessary corporate and other actions required to authorise the execution of, and the performance of its obligations under, this Contract have been taken by the Supplier and this Contract is executed on behalf of the Supplier by a duly authorised representative of the Supplier;

(c) it has the right to grant to the Company and any member of the TfL Group all licences (including without limitation all rights to sub-licence) of all and any Intellectual Property Rights as contemplated in this Contract and such Intellectual Property Rights are not infringing upon the Intellectual Property Rights or infringed by the Intellectual Property Rights of any third party;

(d) it has examined the Specification and all other documents forming this Contract and is not aware of any ambiguity or discrepancy within this Contract or between this Contract and any other documents which it is required to comply with which might adversely affect the carrying out of the Services and/or increase the costs incurred in carrying out such Services in accordance with the terms of this Contract;

(e) at the Commencement Date there are no actions, suits or proceedings or regulatory investigations pending or, to the Supplier's knowledge (having made all due enquiry), threatened against or affecting the Supplier or any of its assets before any court or administrative body or arbitration tribunal that might affect the ability of the Supplier to meet and carry out its obligations under this Contract;

(f) at the Commencement Date all information, representations and other matters of fact communicated in writing to the Company or its agents or employees in connection with the response of the Supplier to the Supplier Questionnaire and Invitation to Tender or in the course of negotiations in respect of this Contract are true, complete and accurate in all respects or were at the time they were made

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with any omissions or inaccuracies being notified to the Company by the Supplier prior to the Commencement Date by way of updating information;

(g) as at the Commencement Date, the execution, delivery and performance by the Supplier of its obligations under this Contract will comply with Applicable Laws and will not result in a default under any agreement by which the Supplier is bound or any order or decree of any court of competent jurisdiction or arbitrator which is binding on the Supplier, and which could prevent the Supplier from entering into and performing its obligations under this Contract;

(h) it has not (and none of its employees or contractors or agents or any employees of any contractors or agents has) committed any Prohibited Act in relation to this Contract prior to entering into or in entering into this Contract;

(i) it has and will throughout the duration of this Contract have in place adequate procedures (as referred to in Section 7(2) of the Bribery Act 2010) designed to prevent persons associated with the Supplier from bribing any person with the intention of obtaining or retaining business for the Supplier or with the intention of obtaining or retaining an advantage in the conduct of business for the Supplier;

(j) it has obtained or will obtain, at or before the time such Necessary Consents are required to be obtained, all Necessary Consents from time to time necessary to carry out its obligations under this Contract;

(k) as at the date of this Contract there are no material facts or circumstances in relation to the financial position or operational constitution of the Supplier which have not been fully and fairly disclosed to the Company and which if disclosed might reasonably have been expected to affect the decision of the Company to enter into this Contract;

(l) no proceedings or other steps have been taken and not discharged (nor, to the best of the knowledge of the Supplier, having made all due enquiry, threatened) for the winding-up or dissolution or for the appointment of a receiver, administrative receiver, administrator, liquidator, trustee or similar officer in relation to any of the assets or revenues of the Supplier;

(m) it has and until the Expiry Date will continue to have the expertise to supply the Services;

(n) it has and will continue to have in place at all times, both before and after the Expiry Date, sufficient contractual obligations with any Supplier Party who is directly involved in the provision of the Services and who needs to know the Confidential Information to ensure that such Supplier Party is aware of and complies with the obligations of confidence in Clause 37;

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(o) it is resident for tax purposes in (and only in) the UK, and undertakes that it will, at all times ensure that its affairs are conducted in a way which ensures they are and will remain resident for tax purposes in (and only in) the UK;

(p) as at the date of this Contract, it has notified the Company in writing of any Occasion of Tax Non-Compliance or any litigation that it is involved in that is in connection with any Occasion of Tax Non-Compliance;

(q) as at the date of this Contract, it has not been in any of the situations referred to in Regulation 57(1) – 57(5) of the Public Contracts Regulations 2015 and should therefore have been excluded from the procurement procedure in accordance with Regulation 80(2) of the Utilities Contracts Regulations 2016; and

(r) it shall, where applicable to the Supplier, comply with the Modern Slavery Act 2015 and any guidance issued by the Secretary of State under it.

PART 3: THE SERVICES

5 SUPPLIER'S PRIMARY OBLIGATIONS

5.1 The Supplier shall provide the Services to the Company and perform its obligations in accordance with the terms of this Contract.

5.2 The Supplier shall ensure that, and warrants to the Company that, it shall perform all of its obligations under this Contract and provide the Services:

(a) so as to satisfy the requirements of the Specification and any Additional Works Work Order;

(b) in accordance with the Annual Maintenance Plan;

(c) in a regular and diligent manner and in accordance with Good Industry Practice;

(d) so as to conform to all Applicable Laws (including but not limited to any law and Regulations applicable to the Company or the TfL Network);

(e) so as to comply with all Standards and any additional standards listed in the Specification and any Additional Works Work Order;

(f) so as to comply with this Contract and the requirements of the Company set out in this Contract and all lawful and reasonable directions of the Company provided that those directions are not inconsistent with this Contract;

(g) using goods and materials, that are new and of a satisfactory quality, sound and free from defects and facilities, vehicles, plant and equipment that are of good serviceable quality;

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(h) in accordance with the requirements of:

(i) ISO 9001:2015, ISO 45001:2018 and ISO 14001:2015 as applicable to the provision of the Services; and

(ii) ISO 10005:2018 as applicable to the Quality Management Plan,

or in each case, any equivalent standards as may be accepted as an alternative in the absolute discretion of the Company;

(i) in an economic, efficient, effective and resource and energy efficient manner;

(j) in a manner that is safe and not injurious to health and does not create safety hazards and that does not cause a nuisance or damage to property or harm to the environment and in accordance with the Health and Safety Policy that the Supplier is required to maintain pursuant to paragraph 1.1 of Part A (*Health and Safety*) of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*);

(k) so as not to detract from or damage the image and reputation of the Company;

(l) so as not to impede the Company in carrying out its functions or increase the cost to the Company of carrying out its functions including so as to accommodate the operations and activities of the Company; and

(m) using only personnel who are competent, appropriately qualified and properly trained and supervised, exercising the highest standard of diligence, care and skill and who hold appropriate qualifications or certifications in accordance with any Applicable Laws and Standards.

5.3 The Supplier shall train any of the Company's employees and any of their contractors or agents as required by the Specification or by a Variation Order issued by the Company pursuant to Schedule 4.

5.4 The Supplier shall ensure that, and warrants to the Company that, it shall provide the Planned Preventative Maintenance in accordance with the Planned Preventative Maintenance Schedule.

6 CONSENTS

6.1 Subject to Clause 6.2 the Supplier shall:

(a) (subject to Clause 6.1(b)), in its own name, apply for, obtain, maintain and renew all Necessary Consents which may be required for the performance of the Services;

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(b) use all reasonable endeavours to assist the Company to obtain all Necessary Consents that, as a matter of law, the Supplier is not eligible to obtain;

(c) be responsible for implementing each Necessary Consent (which it is required to obtain pursuant to Clause 6.1(a)) within the period of its validity in accordance with its terms;

(d) supply free of charge to the Company's Representative a copy of any application for a Necessary Consent (with a copy of all accompanying drawings and other documents) and a copy of any Necessary Consent obtained;

(e) comply with the conditions attached to any Necessary Consents and procure that no such Necessary Consent is breached by it or any person under its control and use all reasonable endeavours to procure that no Necessary Consent is revoked and that all Necessary Consents continue in full force and effect for such time as is necessary for the Supplier to carry out the Services; and

(f) not (and shall use all reasonable endeavours to procure that any other person over whom it has control shall not) without the prior consent of the Company's Representative under this Contract (which consent shall not be unreasonably withheld or delayed) apply for or agree to any change, relaxation or waiver of any Necessary Consent (whether obtained before or after the date of this Contract) or of any condition attached to it but, subject to the compliance by the Supplier with its obligations under this Clause 6.1(f), references in this Contract to Necessary Consents shall be construed as referring to the Necessary Consents as from time to time varied, relaxed or waived.

6.2 The Supplier shall immediately notify the Company's Representative if it becomes aware of any allegation of non-compliance with any Applicable Law or Necessary Consent from time to time by itself or any Sub-Contractor in relation to this Contract.

6.3 The Supplier shall promptly provide the Company with such information relating to any Necessary Consent applied for or obtained as the Company's Representative may require from time to time.

6.4 Where the period of a Necessary Consent would extend beyond the termination or expiry of this Contract, the Supplier shall, before applying for and throughout the process of obtaining such Necessary Consent, consult with the Company's Representative about the terms of such Necessary Consent and use reasonable endeavours to ensure that, to the extent the terms would apply after the termination or expiry of this Contract, they do not adversely affect any interest of the Company.

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7 COMMENCEMENT AND COMPLETION

7.1 Commencement and Completion

(a) The Supplier shall carry out and complete the Mobilisation Works within the Mobilisation Period in accordance with the requirements of this Contract.

(b) The Supplier shall commence delivery of the Mobilisation Works from the Commencement Date.

(c) The Supplier shall commence delivery of the Maintenance Services from the Services Commencement Date.

(d) The Supplier shall provide all information and evidence listed or identified in the Specification as being required and all other information and evidence which the Company's Representative may reasonably request to satisfy the Company's Representative that the Services (or any part of it) have been so completed.

8 WORK AT THE SITES

8.1 During the term of this Contract, the Supplier shall:

(a) ensure that each Supplier Party working at each of the Sites or any third parties' sites comply with:

(i) the applicable Site's or site's local safety arrangements and undergo any relevant induction or training necessary;

(ii) comply with all reasonable instructions of the Company or applicable third party; and

(iii) comply with any applicable requirements set out in the Specification;

(b) supply the Company's Representative with a list of all personnel working at each of the Sites together with any other related information that the Company's Representative may reasonably require and notify the Company's Representative in writing of any changes to the identity of such personnel within one (1) Working Day of such change taking place;

(c) be responsible for bringing to, erecting and maintaining on and dismantling and removing from the Sites its facilities, vehicles, plant and equipment whether of a temporary or permanent nature;

(d) ensure that no Supplier Party uses the Company's or a third party's site equipment without the prior written consent of the Company or the relevant third party;

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(e) carry out the Services in such a manner as not to endanger or interfere in any way with the TfL Network, the Company or any railway operator. The Supplier shall strictly observe all rules and regulations set out or referred to in this Contract and any further instructions, rules and regulations which it may from time to time receive from the Company's Representative for the working, protection and return of the railway or for the protection of persons on or adjacent to the railway;

(f) attend the Company or any third party in order to advise on the effects of the Supplier's actions or proposed actions in respect to the Services on the integrity and/or functionality of any other aspect of the railway;

(g) notify the Company's Representative of any circumstances or events of which the Supplier is aware which are likely in the Supplier's reasonable opinion to affect the operation of the TfL Network and/or Sites so as to impact on the services provided to the general public; and

(h) ensure that the Services are carried out without unreasonable, unnecessary or improper disturbance to the public or, insofar as compliance with the requirements of this Contract permits, without interference with access to and use or occupation of public and private roads and properties, whether in the possession of the Company or of any other person.

8.2 The Company's Representative may require the Supplier to remove or require a Sub-Contractor to remove from any Site any person employed by the Supplier or Supplier Party who in the opinion of the Company's Representative:

(a) misconducts himself or persists in any conduct which is prejudicial to health or safety;

(b) is incompetent or negligent in the performance of its duties; or

(c) has had its employment terminated in whatever capacity from any of the Sites, any part of the TfL Network or any other Company premises,

and the Supplier shall comply with the Company's Representative's requirements. Such removal shall not affect the Supplier's obligation to provide the Services in accordance with this Contract. Any such person shall not be employed again by the Supplier or Supplier Party to provide the Services without prior written permission of the Company's Representative.

8.3 Any person removed from any of the Sites under Clause 8.2 shall be replaced as soon as reasonably possible by the Supplier and the Supplier shall promptly notify the Company's Representative of such replacement and in any event by no later than two (2) Working Days of the replacement.

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9 CO-OPERATION

The Parties shall co-operate with one another and act reasonably and in good faith in and about the performance of their respective obligations and the exercise of their respective rights under this Contract.

10 NON-EXCLUSIVITY

10.1 As regards the Company, this Contract is not exclusive and the Company may:

(a) itself perform any services similar or analogous to any part of or all of the Services; or

(b) contract with any third party to perform any services and/or works similar or analogous to any part of or all of the Services.

10.2 In the event that the Company contracts with any third party to perform any services and/or works similar or analogous to any part or all of the Services, the Supplier shall provide such information and assistance and within such timescales as the Company may reasonably request in connection with such procurement.

PART 4: LIAISON AND GOVERNANCE

11 EARLY WARNING

11.1 The Supplier shall give an early warning by notifying the Company's Representative as soon as it becomes aware of any matter which could:

(a) increase the Price;

(b) prevent the Supplier from performing its obligations under this Contract or cause the Supplier to be in breach of this Contract or any Sub-Contract;

(c) cause the Annual Maintenance Plan to need to be amended;

(d) adversely affect the Company;

(e) lead to the Supplier terminating or suspending any Sub-Contract; or

(f) cause a breach of any Applicable Laws or Standards.

12 COMPANY'S AND SUPPLIER'S REPRESENTATIVES

12.1 Each Party shall appoint one (1) or more representatives to act on its behalf under this Contract. Each Party shall advise the other Party, in writing, of the names and contact details of its representatives and these shall be recorded in Schedule 1 (*Contract Data*). The Supplier shall not appoint such a representative without the prior written consent of

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the Company's Representative (which consent shall not be unreasonably withheld). Any Party may, on giving reasonable notice to the other Party, appoint an additional representative or replace an existing representative but the Supplier may only do so with the prior written consent of the Company's Representative. Each Party shall be responsible for the acts, omissions, neglects and defaults of its representatives as if such acts, omissions, neglects and defaults were its own. Each Party will be bound by any decision made or action taken by its representatives.

12.2 Subject to Clause 75, any notice, information, instructions or communication given:

(a) to the Supplier's Representative shall be deemed to have been given to the Supplier; and

(b) to the Company's Representative shall be deemed to have been given to the Company.

12.3 The Company shall not be responsible for any notice, communication or other purported instruction required to be given under this Contract given by a person alleging to act for and on behalf of the Company unless such person is one of the Company's Representatives. Accordingly, the Supplier shall not be entitled to rely on any such notice, communication or purported instruction and shall not do so or claim relief, additional time, losses, expenses, damages, costs or other liabilities should the Supplier act on or fail to act on it.

13 RECORDS AND AUDIT

13.1 The Supplier shall, and shall procure that its Sub-Contractors shall, maintain a true and correct set of records relating to all aspects of their performance of this Contract and all transactions related to this Contract. For the avoidance of doubt, such records shall include but are not limited to:

(a) all necessary information for the evaluation of claims or variations;

(b) management accounts, information from management information systems and any other management records;

(c) accounting records (in hard copy as well as computer readable data);

(d) sub-contract files (including proposals of successful and unsuccessful bidders, bids, rebids etc);

(e) original estimates;

(f) estimating worksheets;

(g) correspondence;

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(h) variation and claims files (including documentation covering negotiated settlements);

(i) general ledger entries detailing cash and trade discounts and rebates;

(j) commitments (agreements and leases) greater than £5,000;

(k) detailed inspection records;

(l) records and reports (as required in accordance with paragraph 2.6 of the Specification);

(m) such materials prepared in relation to the Supplier Questionnaire, the Invitation to Tender and subsequent tendering process which have not already been provided to the Company's Representative; and

(n) personnel records including all payroll information in respect of any personnel, including personnel of the Supplier, any Sub-Contractor and any agency staff of the Supplier involved in the performance of the Services.

13.2 The Supplier shall, and shall procure that its Sub-Contractors shall, retain all such records in such a manner as the Company's Representative may reasonably instruct for a period of not less than twelve (12) years after completion of performance under this Contract. In the absence of specific instructions as to the method of storage, the Supplier shall, and shall procure that its Sub-Contractors shall, retain its records in an orderly and logical fashion and in accordance with Good Industry Practice.

13.3 The Company, any party authorised by it and any party legally authorised to inspect any part of the TfL Network and/or the Sites shall have the right to inspect and audit any of the records required pursuant to Clause 13.1, at any time during the period referred to in Clause 13.2.

13.4 The Supplier shall promptly provide all reasonable co-operation and assistance (and shall procure such co-operation and assistance from any Supplier Parties) in relation to any audit or check including:

(a) granting or procuring the grant of access to any premises or Sites used in the performance of this Contract, whether the Supplier's own premises or otherwise;

(b) granting or procuring the grant of access to any Assets (including all computer hardware, software and databases) used (whether exclusively or non-exclusively) in the performance of the Supplier's obligations under this Contract, wherever situated and whether the Supplier's own equipment or otherwise (including whether leased or licensed and whether situated at the Supplier's premises or the Sites);

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(c) making any contracts and other documents and records required to be maintained under this Contract available for inspection;

(d) providing a reasonable number of copies of any contracts and other documents or records reasonably required by the Company's auditor and/or granting copying facilities to the Company's auditor for the purposes of making such copies;

(e) complying with the Company's reasonable requests for access to senior personnel engaged in the Supplier's performance of this Contract; and

(f) providing such oral or written information as required by the Company for the purposes of the audit.

14 PROVISION OF CONTRACTUAL DOCUMENTATION AND CONTRACT MANAGEMENT

14.1 The Supplier shall provide all Contractual Documentation within the times stated in this Contract or, if no such times are stated, by no later than ten (10) Working Days from the date on which the Company's Representative requests the same.

14.2 The Supplier shall be responsible for the accuracy of all Contractual Documentation and shall pay the Company any extra costs occasioned by any discrepancies, errors or omissions therein. The Supplier shall at its own expense carry out any alterations or remedial work necessitated by such errors, omissions or discrepancies and modify the relevant Contractual Documentation accordingly.

14.3 The Parties shall comply with the procedures their respective obligations as set out in Schedule 10 (*Contract Management*). The Supplier shall ensure that its representatives at all meetings have delegated power and authority to act on behalf of the Supplier.

PART 5: CHANGE

15 VARIATION AND ADDITIONAL WORKS

15.1 Variations

Unless the Parties agree otherwise in writing, any variation to this Contract shall be made under the Contract Variation Procedure. The Supplier shall not proceed to implement any variation unless there has been a Variation Order.

15.2 Additional Works

Notwithstanding the provisions of Part B (*Additional Works*) of Schedule 4 (*Contract Variation Procedure and Additional Works*) and the definition of Additional Works, in the event that any additional or varied services (whether or not defined as Additional Works) are carried out by the Supplier, the Company shall have a right to determine, in its sole

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discretion and in all circumstances, whether the provisions of the Contract Variation Procedure set out in Part A (*Contract Variation Procedure*) of Schedule 4 (*Contract Variation Procedure and Additional Works*) or the provisions of Part B (*Additional Works*) of Schedule 4 (*Contract Variation Procedure and Additional Works*) apply. In the event that Additional Works are deemed to be treated as a variation pursuant to Part A (*Contract Variation Procedure*) of Schedule 4 (*Contract Variation Procedure and Additional Works*) the provisions of Part B (*Additional Works*) of Schedule 4 (*Contract Variation Procedure and Additional Works*) shall not apply.

16 CONTRACT INNOVATION, CONTINUOUS IMPROVEMENT AND EFFICIENCY

The Supplier is required to identify and implement innovative measures, continuous improvement and efficiency savings throughout the duration of the Contract.

PART 6: PAYMENT AND FINANCIAL

17 COMPANY'S OBLIGATIONS

17.1 The Company shall pay the Supplier for the Services in accordance with the terms of Clause 18 of this Contract and the provisions of Schedule 3 (*Payment*).

17.2 Payment by the Company shall not affect any claims or rights which the Company may have against the Supplier and shall not be an admission by the Company that the Supplier has performed its obligations under this Contract properly.

18 PRICE AND PAYMENT

18.1 The Price payable by the Company to the Supplier to provide the Services shall be calculated in accordance with Schedule 3 (*Payment*) and shall be inclusive of all expenses and disbursements.

18.2 In addition to any other rights of the Company whether at law or equity under this Contract, whether under or arising out of this Contract or any other contract between the Company and the Supplier, if:

(a) any sum of money is recoverable from or payable by the Supplier; or

(b) any Losses are reasonably and properly owed to, or incurred by, the Company or any member of the TfL Group;

then the same may be set-off against and/or deducted and/or withheld from any sum then due or which at any time thereafter may become due to the Supplier under this Contract.

18.3 Each Payment Application shall clearly show the Contract Reference Number. Supporting documentary information shall be submitted to the Company's Representative for each Payment Application submitted by the Supplier. The Company's Representative shall

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from time to time agree with the Supplier the detailed information required in relation to each Payment Application and the Supplier shall provide such information as is reasonably required.

18.4 All sums payable to the Company by the Supplier under this Contract shall be paid in full, free of any present or future taxes, levies, duties, charges, fees or withholdings and without any deduction, restriction, conditions, withholding, set-off or counterclaim whatsoever; and if the Supplier is compelled by law to make any deduction or withholding, the Supplier shall gross up the payment so that the net sum received by the Company will be equal to the full amount which the Company would have received had no such deduction or withholding been made.

19 PERFORMANCE MEASUREMENT

19.1 The Company's Representative shall assess the Supplier's performance under this Contract in accordance with Schedule 18 (*Performance Measurement*) and the Supplier acknowledges that this may result in Abatements being deducted from the Fee and that the Escalation Procedure shall be applied where performance issues arise.

19.2 Without limiting any other remedy, if the Services are not performed in accordance with this Contract then:

(a) the Company shall be entitled to require the Supplier to re-perform the Services and/or provide Remedial Works in accordance with the Contract; and

(b) the Supplier shall re-perform such Services and/or provide Remedial Works in accordance with the Contract within five (5) Working Days at no extra cost to the Company.

20 INTEREST

Except where otherwise stated in this Contract, if either Party fails to pay to the other any amount payable in connection with this Contract on or before the final date for payment, interest shall accrue on the overdue amount from the final date for payment until the date of actual payment (whether before or after judgment) at the Interest Rate. Except where otherwise stated in this Contract to the contrary, if any interest accruing under this Clause 20 shall be immediately payable by the paying Party on demand.

PART 7: PROPERTY AND ASSETS

21 ACCESS

21.1 The Company shall give the Supplier access to the parts of the TfL Network and/or Sites required for the performance of the Services provided that the Supplier complies with the

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access requirements set out in Schedule 13 (*Access*) and otherwise subject to and in accordance with Schedule 13 (*Access*) to the extent applicable.

21.2 Where the Supplier or any Supplier Party has access to the TfL Network and/or Sites for the carrying out of any of the Services, the Supplier shall and shall ensure that any Supplier Party shall:

(a) not cause any damage to the TfL Network and/or Sites;

(b) not do or permit to be done on the TfL Network and/or Sites anything which is illegal or which may be or become a nuisance (whether actionable or not) or cause damage or disturbance to the Company or to any tenants or occupiers of the TfL Network and/or Sites or any owner or occupier of any neighbouring property;

(c) not knowingly do anything that will or might constitute a breach of any Necessary Consent affecting the TfL Network and/or Sites that have been disclosed to the Supplier or which will or might vitiate in whole or in part any insurance effected by the Company in respect of the TfL Network and/or Sites from time to time of which the Supplier has notice;

(d) observe any rules and regulations the Company acting reasonably makes in the interests of good estate management and notifies to the Supplier from time to time in writing governing the Supplier's use of the TfL Network and/or Sites and in particular:

(i) the lawful requirements and recommendations of the Company's local fire officer and the Company's health and safety representative in respect of the TfL Network and/or Sites or their use; and

(ii) any regulation, standing order or traffic regulation made by the Company; and

(e) make good any damage that is wilfully or negligently caused by the Supplier or any Supplier Party to any Assets in or on the TfL Network and/or Sites as soon as reasonably practicable.

22 TFL SUPPLIED RESOURCES

Any TfL Supplied Resources provided by the Company to the Supplier shall, to the extent that they do not relate to personnel, remain the property of the Company and the Supplier shall ensure that all such TfL Supplied Resources are properly labelled as the property of the Company and are kept separate from and not mixed with any plant or materials owned or in the possession of the Supplier or with any plant or materials supplied to it by third parties.

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23 OTHER MATERIALS, STAFF AND LABOUR

23.1 The Company shall supply the TfL Supplied Resources and the Supplier shall provide all other staff and labour, including management and supervision, and all materials, vehicles, plant and Equipment (whether of a temporary or permanent nature), support services and other facilities necessary for the performance of its obligations under this Contract.

23.2 The Supplier shall be fully responsible for the management of obsolescence in Spares, Critical Spares, Equipment and materials until the Expiry Date in accordance with the requirements stated in the Specification.

24 TITLE

24.1 Whatever title the Supplier has to materials, plant, Equipment, Spares and Critical Spares to be incorporated into or form part of the Services shall pass to the Company upon the earlier of (i) payment for such materials, plant, Equipment, Spares and Critical Spares or (ii) when such materials, plant, Equipment, Spares and Critical Spares are brought within any of the Sites, without prejudice to any rights of rejection the Company may have. Title to materials, plant, Equipment, Spares and Critical Spares referred to in (ii) passes back to the Supplier if it is removed from the Sites with the permission of the Company's Representative. Until such time as they are brought within the Sites, the Supplier shall be responsible for and insure against the loss, destruction and damage of materials, plant, Equipment, Spares and Critical Spares to be incorporated into or form part of the Services (including while in transit) for their full replacement value, whether or not the property of the Supplier or the Company.

24.2 The Supplier shall label the materials, plant, Equipment, Spares and Critical Spares "Property of TfL" where title has passed to the Company prior to bringing such items within the Sites and shall ensure that such items are identifiable as belonging to the Company. The Supplier shall not mortgage, pledge or create a security interest in the materials, plant, Equipment, Spares or Critical Spares in favour of any third party.

24.3 The Supplier has no title to an object of value or of historical or other interest within any of the Sites. The Supplier shall notify the Company's Representative when such an object is found and the Company's Representative shall instruct the Supplier how to deal with it. The Supplier shall not move the object without instructions.

25 ASSET MANAGEMENT SYSTEM

25.1 The Supplier shall use the Asset Management System in accordance with the terms set out in the Specification which include without limitation obligations to use the Asset Management System to record all Services undertaken by the Supplier at the Sites and all Asset information.

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25.2 The Supplier shall ensure that all Supplier Personnel attend any training by the Company in relation to the Asset Management System and follow the methods and processes required by the Company, as may be more particularly described in the Specification or notified to the Supplier from time to time.

25.3 The Supplier shall perform its obligations under this Clause 25 so as not to put the Company in breach of any of its obligations under any Third Party Licence and shall comply with the terms of any Third Party Licence as if it were a party to the Third Party Licence.

25.4 The Supplier acknowledges that the Company shall not have any liability to the Supplier in respect of any inaccuracy, error or omission contained in, or any unavailability of, the Asset Management System, and the Supplier shall not be relieved from its obligations under this Contract as a result of the Asset Management System being unavailable or containing any inaccuracies, errors or omissions.

PART 8: ENVIRONMENT, HEALTH AND SAFETY

26 SAFETY

26.1 The Supplier is required to comply with its obligations under Schedule 16 (*Health, Safety, Quality and Environmental Requirements*) of the Contract.

26.2 The Supplier shall not endanger in any manner the health and safety of, or unreasonably interfere with the proper performance of the duties of, the Company's employees or third parties or otherwise expose the Company to liability under any Applicable Laws and Standards, including (without limitation) the Health and Safety at Work etc. Act 1974, the Transport and Works Act 1992, or any statutory modifications or re-enactments thereof.

26.3 The Supplier shall act in accordance with the health and safety regulations and requirements stated in the Specification, including (but not limited to):

(a) QUENSH (as amended from time to time); and

(b) the Company's drug and alcohol principles (as amended from time to time).

26.4 Section 14.1.1 (*Alcohol and drugs*) of QUENSH (as set out in Appendix 2 to Part A (*Health and Safety*)) of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*) shall apply to this Contract as if the term "LUL Premises" means any of the Company's property or Sites where the Services are carried out and as if references to "LUL" are references to the Company.

26.5 The Company may at its discretion carry out on the Supplier's behalf any testing of the Supplier's employees, Sub-Contractors or agents for drugs or alcohol which this Contract

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requires the Supplier to carry out. The reasonable cost to the Company of carrying out the testing shall be paid by the Supplier.

27 CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

27.1 To the extent that the CDM Regulations apply to this Contract, the Company appoints the Supplier to act as Principal Designer and as Principal Contractor pursuant to Regulation 5(1) of the CDM Regulations but reserves the right to appoint alternative suppliers to fulfil those roles.

27.2 The Company shall act as Client pursuant to Regulation 5(1) of the CDM Regulations.

27.3 The Supplier shall accept any such appointment made under Clause 27.1 and agrees to carry out all associated obligations imposed by the CDM Regulations. The Supplier and the Company's Representative shall provide each other with all the necessary assistance which they may reasonably require in order to fulfil their respective obligations under the CDM Regulations.

27.4 The Supplier warrants to the Company that it:

(a) has the skills, knowledge, experience and organisational capability to fulfil the roles it has been appointed to undertake under Clause 27.1 in a manner that secures the health and safety of any person affected by the Services;

(b) is competent to perform such of the duties allocated to it under Clause 27.1;

(c) shall allocate adequate resources to enable it to comply with its obligations under the CDM Regulations; and

(d) shall co-operate with other parties appointed under the CDM Regulations.

(e) shall provide the Company with such information as the Company reasonably requires to enable the Company to satisfy itself that the Supplier is complying with the terms of this Clause 27.4.

PART 9: PERMITTED DELAY EVENTS

28 PERMITTED DELAY EVENTS

28.1 The following are events which may cause the Supplier delay or disruption and for which the Supplier may be relieved from termination due to a Supplier Default subject to the terms of this Clause 28 ("Permitted Delay Events"):

(a) subject to compliance by the Supplier with the requirements of Schedule 13 (*Access*) the frustration of any access booked by the Supplier in accordance with

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Schedule 13 (*Access*) or the Company does not allow access to and use of a part of the Sites in accordance with the provisions of this Contract; or

[redacted]

[redacted]

(d) a breach of this Contract by the Company (except to the extent caused by or contributed to by the Supplier or any Sub-Contractor or person for whom those parties are responsible) that is not one of the other Permitted Delay Events.

28.2 The Supplier shall notify the Company's Representative of the occurrence of an event which has happened or which it expects to happen if:

(a) it believes it to be a Permitted Delay Event that is delaying or disrupting (or is likely to delay or disrupt) the Services; and

(b) the Company's Representative has not notified the event to the Supplier,

in each case as soon as is reasonably practicable and in any event no later than five (5) Working Days after the Supplier becomes aware or ought reasonably to have become aware of the event or the likelihood of its occurrence.

28.3 The Supplier shall submit full and detailed particulars of any Permitted Delay Event to the Company's Representative as soon as reasonably practicable after receiving the Company's Representative's notification and in any event no longer than ten (10) Working Days after the occurrence. The particulars shall include full, detailed particulars of the cause and effect of the Permitted Delay Event and:

(a) the extent of the delay, if any;

(b) details of the measures adopted by the Supplier to mitigate the effects of the Permitted Delay Event;

(c) details of any other impact on the Supplier's performance under this Contract in accordance with Schedule 18 (*Performance Measurement*);

(d) the likely effects, if any, on access requirements; and

(e) such further information as may reasonably be required by the Company's Representative.

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The Company's Representative shall be entitled to:

(f) seek clarification in respect of the particulars provided by the Supplier; and/or

(g) request further particulars and related information in connection with the occurrence of the Permitted Delay Event.

28.4 If the Company's Representative decides that the occurrence is a Permitted Delay Event in accordance with this Contract and is delaying or disrupting (or is likely to delay or disrupt) the Services then:

(a) the Supplier shall not be deemed to be in breach of this Contract as a result of its failure to perform and the Company shall not be entitled to apply the provisions of Schedule 18 (*Performance Measurement*) in respect of any affected Services, to the extent that the same is attributable to the Permitted Delay Event; and

(b) the Supplier shall be entitled to an extension of time for the performance of its affected obligations.

28.5 The Supplier shall have no entitlements in accordance with Clause 28.4 to the extent that:

(a) the event or any of its effects arises from any error, unlawful act or omission, negligence, default, breach of contract, breach of statutory duty and/or failure to comply with this Contract of the Supplier or any of its employees or agents or of any Sub-Contractor or supplier or any of their employees or agents;

(b) the Supplier has failed to take all reasonable steps to mitigate the actual or potential effect of the event or has failed to use reasonable endeavours to adjust the order and sequence in which it proposes to provide the Services; and/or

(c) the Company's Representative decides that there was no such occurrence, that the occurrence was not one of the Permitted Delay Events, or that the occurrence has had no adverse effect on the provision of the Services.

28.6 In the event that information is provided after the date referred to in Clauses 28.2 and/or 28.3, then the Supplier shall not be entitled to any extension of time or relief from its obligations under this Contract in respect of the period for which the relevant information is delayed.

28.7 This Clause 28 shall not give the Supplier any entitlement to an extension of the period of the Supplier's employment under this Contract or any extension to the Expiry Date.

28.8 A Permitted Delay Event may not be notified after the Expiry Date (or termination if earlier).

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PART 10: PEOPLE

29 TUPE

29.1 For the purposes of this Clause 29:

"**Current Service Provider**" means any person, company or other legal entity which on or before the Commencement Date was the employer of any of the Transferring Employees;

"**Relevant Claims and Liabilities**" means all liabilities, obligations, proceedings, court or tribunal orders, losses, fines and penalties, damages, expenses, costs (including reasonable legal costs and disbursements) actions, claims and demands;

"**Replacement Employer**" means any person to whom a Subsequent Relevant Employee (or any liability associated with a Subsequent Relevant Employee) may or does transfer under the Transfer Regulations on termination of this Contract (or part of it);

"**Subsequent Relevant Employee**" means a person employed or engaged by the Supplier or relevant Sub-Contractor from time to time in respect of any part of the Services who would transfer to a Replacement Employer by virtue of the Transfer Regulations on termination of this Contract (or part of it);

"**Subsequent Transfer Date**" means the time and date on which a Subsequent Relevant Employee transfers to a Replacement Employer by virtue of the Transfer Regulations;

"**Transfer Regulations**" means all or any of the following: the Transfer of Undertakings (Protection of Employment) Regulations 2006; the Transfer of Employment (Pension Protection) Regulations 2005; any other or further Regulations, order or statutory instrument which apply or are capable of applying to a person to whom section 257 of the Pensions Act 2004 applies, all as amended, replaced or extended from time to time and including any Regulations or other legislation which (either with or without modification) re-enacts, adopts, consolidates or enacts in rewritten form any such Regulations; and

"**Transferring Employees**" means those employees or workers of or those engaged by the Current Service Provider who transfer or have the right to transfer to the Supplier under the Transfer Regulations.

29.2 The Supplier will comply and will procure that its Sub-Contractors comply with any obligations which may arise out of a transfer to the Supplier or its Sub-Contractors under the Transfer Regulations and shall co-operate in good faith with the Current Service Provider to facilitate a smooth transition.

29.3 The Supplier will comply and will procure that its Sub-Contractors comply with any obligations which may arise out of a transfer to the Company or another person under

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the Transfer Regulations upon the Expiry Date or earlier termination of this Contract and shall co-operate in good faith with the Company or such person to facilitate a smooth transition.

29.4 At any time during the last twelve (12) months of this Contract and/or during any period of notice terminating this Contract, the Company may require the Supplier to provide, within a specified period of being requested, to the Company (or to any other person or persons nominated by the Company) such information as is reasonably required by the Company or such other persons relevant to the potential liabilities of the Company or any other person arising under the Transfer Regulations including but not limited to information on the following:

(a) the names (where permitted under Data Protection Legislation) of employees (of the Supplier or its Sub-Contractors) engaged in providing the Services, their salaries and other conditions of employment, ages, length of service and any enhanced redundancy terms whether contractual or discretionary;

(b) the method of organisation of the employees (of the Supplier or its Sub-Contractors) engaged in providing Services and documentary evidence relating to such organisation;

(c) the proposals for informing and consulting with affected employees;

(d) details of collective agreements and union recognition agreements; and

(e) any other employee liability information within the meaning of the Transfer Regulations, and will in addition provide copies to the Company upon request of any communication with any potential or intended new consultant or the Supplier's employees or their representatives relating to the effect on such employees of the expiry or termination of this Contract.

29.5 The Supplier will provide the Company upon request with the name and address of a person within its organisation to whom all queries and requests for information under this Clause 29.5 may be addressed. The Supplier will if required by the Company's Representative warrant that any information provided under Clause 29 is accurate, complete and not misleading, including any information supplied in relation to its Sub-Contractors.

29.6 The Supplier will not and will procure that its Sub-Contractors will not in the eighteen (18) months prior to the Expiry Date (or, where notice of termination is given, during any such period of notice) without the Company's written consent:

(a) re-organise or substantially alter the number or method of organisation or identity of the employees engaged in providing the Services, except to the extent that

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any such change is the result of a bona fide business reorganisation of the Supplier or the relevant Sub-Contractor which is not related or confined to the employees engaged in providing the Services or related to the expected Expiry Date or termination of this Contract, or

(b) make any increase to the salaries or any significant change to the terms and conditions of employment of the employees engaged in providing the Services, except where such increases or changes would have arisen in the ordinary course of the Supplier's or the relevant Sub-Contractor's business and are not related to the Expiry Date or termination of this Contract (either because they are applied to all of the Supplier's or the relevant Sub-Contractor's employees, whether or not engaged in providing the Services or otherwise) or are the result of a bona fide business reorganisation of the Supplier or the relevant Sub-Contractor which is not related or confined to the employees engaged in providing the Services or related to the Expiry Date or termination of this Contract.

29.7 The Supplier shall indemnify the Company and all Replacement Employers against all Relevant Claims and Liabilities arising from or incurred by reason of any act or omission of the Supplier, its servants, agents or Sub-Contractors in connection with or arising from or incurred by reason of the employment of the Transferring Employees, including but not limited to any claim against the Company or any other person for damages for breach of contract, or for compensation for unfair or wrongful dismissal or redundancy, or failure to provide comparable pension rates, or failure to provide information, or failure to inform or consult Transferring Employees, or in respect of death or personal injury, breach of statutory duty or any other claim in tort by a Transferring Employee, or by a person who would be a Transferring Employee but for any act or omission (including dismissal or constructive dismissal) of the Supplier or its Sub-Contractors, arising from the operation (or alleged operation) of the Transfer Regulations in relation to the Services.

29.8 The Supplier shall indemnify the Company and all Replacement Employers against all Relevant Claims and Liabilities arising from or related to:

(a) any claim by a Subsequent Relevant Employee in respect of any default, failure or omission (or alleged default, failure or omission) by any person whatsoever concerning or arising from employment before a Subsequent Transfer Date in respect of which the Company or the Replacement Employer incurs liability cost or expense by reason of the operation (or alleged operation) of the Transfer Regulations; and

(b) any claim by any former or existing employee of the Supplier or relevant Sub-Contractor (other than a Subsequent Relevant Employee) in respect of which the

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Company or a Replacement Employer incurs liability cost or expense by reason of the operation (or alleged operation) of the Transfer Regulations.

In this Clause 29.8 "Relevant Claims and Liabilities" include (without limitation) those incurred by the Company by reason of any contract term between the Company and a Replacement Employer provided always that in relation to Relevant Claims and Liabilities which the Company may incur to a Replacement Employer, the Supplier shall not be required to indemnify the Company or the Replacement Employer for more than or with a greater scope than it would if such Relevant Claims and Liabilities were made against or incurred by the Company in providing an indemnity under this Clause 29.

29.9 The provisions of this Clause 29 are without prejudice to the Transfer Regulations. For the avoidance of doubt, any remedies available to the Company or any Replacement Employers for any breach by the Supplier of any provision of this Clause 29 shall be in addition to and not in substitution for any remedies available to the Company under any provision of the Transfer Regulations.

29.10 The Supplier acknowledges and agrees that the indemnities it provides under clauses 29.7 and 29.8 shall be directly enforceable by any Replacement Employer against the Supplier.

30 KEY PERSONNEL

30.1 The Supplier agrees to the appointment of the Key Personnel set out at Appendix 0 (*Key Personnel*) to Schedule 1 (*Contract Data*).

30.2 The Supplier shall ensure that each of the Key Personnel outlined in Part A of Appendix 0 (*Key Personnel*) to Schedule 1 (*Contract Data*) devotes substantially their whole time and effort to the performance of the Services. This provision shall not apply to those Key Personnel outlined in Part B of Appendix 1 (Key Personnel) to Schedule 1 (Contract Data).

30.3 The Supplier shall take all reasonable steps to ensure it retains the services of the Key Personnel and shall not without the Company's prior written consent, such consent not to be unreasonably withheld or delayed, terminate their employment, remove or change Key Personnel or do any such thing which would cause any of the Key Personnel to resign.

30.4 The Supplier agrees to inform the Company of any changes to the Key Personnel where any relevant member of Key Personnel dies, suffers long term sickness or disability, is incapacitated by reason of ill health or accident from performing their duties for a period of or periods aggregating twenty (20) Working Days in the preceding three (3) months, is guilty of gross or serious misconduct, goes on any period of statutory leave (other than holiday) or leaves the Supplier's employment.

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30.5 The Supplier shall be responsible for the costs of replacing any member of Key Personnel with an appropriately qualified and competent replacement (including but not limited to, the cost of training any replacement to ensure that they can take over the vacated position efficiently and without disrupting the Services). The Supplier shall use all reasonable endeavours to ensure that any replacement for any member of Key Personnel is engaged and available to perform their role as soon as reasonably practicable and at least within five (5) Working Days of the expiry of the notice period of the relevant member of Key Personnel. Where termination of the relevant member of Key Personnel is due to gross or serious misconduct, a replacement shall be engaged and available to perform his/her role as soon as reasonably practicable and in any event within twenty (20) Working Days. Further, save where the relevant member of Key Personnel being replaced has vacated the position immediately due to death, illness, gross misconduct or some other similar reason, the Supplier shall, at its own cost, use all reasonable endeavours to ensure that the member of Key Personnel being replaced works in parallel with their replacement to hand over to them for a period of five (5) Working Days or any shorter period agreed between the Parties.

30.6 A reasonable period before an offer of engagement is made to a replacement member of Key Personnel, the Supplier shall provide such information about and access to the relevant individual as the Company's Representative may reasonably require. The Company's Representative shall notify the Supplier as soon as reasonably practicable if it objects to the appointment of an individual as a member of Key Personnel, together with its reasons for such objection. The Supplier shall comply with any request by the Company's Representative that a particular person should not become a member of Key Personnel.

30.7 The Company may change the list of Key Personnel on reasonable notice and subject to the consent of the Supplier, such consent not to be unreasonably withheld or delayed.

30.8 At the sole cost of the Supplier, the Supplier:

(a) undertakes that all Supplier Personnel possess the appropriate skills, qualifications and experience to perform the tasks assigned to them, and that they shall be available at such times as are necessary to perform the Services in accordance with the Contract;

(b) shall ensure that all Supplier Personnel are in possession of valid work permits if they are non-European Community nationals; and

(c) shall (at its expense) provide or procure the provision of training for Supplier Personnel in respect of all aspects of its performance of the Contract and, as the Company's Representative may require, for any employees, agents and

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contractors of the Company in relation to the operation or use of any Asset supplied under the Contract, such training to include, as a minimum:

(i) the training activities specified in Schedule 20 (*Training*);

(ii) training as required by QUENSH and any Standards; and

(iii) such other training as required by TfL Group from time to time.

30.9 Without prejudice to the Supplier's other obligations under the Contract, where training of any or all Supplier Personnel is required for the purposes of performance of the Contract, the Supplier shall not assign any Supplier Personnel to the performance of the Contract unless and until such Supplier Personnel have satisfactorily completed such training.

30.10 The Company will arrange safety training for Supplier Personnel from time to time at the expense of the Supplier. To the extent that any refresher training of any kind (at any time) is required for any Supplier Personnel, this shall be at the expense of the Supplier. For the avoidance of doubt, the Company will not be responsible for the remuneration, travel, subsistence or other similar costs and expenses of any Supplier Personnel attending any training under this Clause 30.10.

31 LONDON LIVING WAGE

31.1 The Supplier acknowledges and agrees that the Mayor of London, pursuant to section 155 of the Greater London Authority Act 1999, has directed that members of the TfL Group ensure that the London Living Wage be paid to anyone engaged by any member of the TfL Group who is required to discharge contractual obligations (whether as a direct contractor or a sub-contractor (of any tier) of that direct contractor) on the Company's estate in the circumstances set out in Clause 31.2.

31.2 Without prejudice to any other provision of this Contract, the Supplier shall:

(a) ensure that its Supplier Personnel, and shall procure that the employees of its Sub-Contractors engaged in the provision of the Services:

(i) for two (2) or more hours of work in any given day in a week, for eight (8) or more consecutive weeks in a year; and

(ii) on the Company's estate including (without limitation) premises and land owned or occupied by the Company; and

be paid an hourly wage (or equivalent of an hourly wage) equivalent to or greater than the London Living Wage;

(b) ensure that none of:

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(i) its Supplier Personnel; nor

(ii) the employees of its Sub-Contractors,

engaged in the provision of the Services be paid less than the amount to which they are entitled in their respective contracts of employment;

(c) provide to the Company such information concerning the London Living Wage as the Company or its nominees may reasonably require from time to time, including (without limitation):

(i) all information necessary for the Company to confirm that the Supplier is complying with its obligations under this Clause 31; and

(ii) reasonable evidence that the requirements of this Clause 31 have been implemented;

(d) disseminate on behalf of the Company to:

(i) its Supplier Personnel; and

(ii) the employees of its Sub-Contractors,

engaged in the provision of the Services such perception questionnaires as the Company may reasonably require from time to time and promptly collate and return to the Company responses to such questionnaires; and

(e) cooperate and provide all reasonable assistance in monitoring the effect of the London Living Wage including (without limitation):

(i) allowing the CCSL to contact and meet with the Supplier Personnel and any trade unions representing the Supplier Personnel; and

(ii) procuring that the Supplier's Sub-Contractors allow the CCSL to contact and meet with the Sub-Contractors' employees and any trade unions representing the Sub-Contractors' employees,

in order to establish that the obligations in this Clause 31.2 have been complied with.

31.3 For the avoidance of doubt the Supplier shall:

(a) implement the annual increase in the rate of the London Living Wage; and

(b) procure that its Sub-Contractors implement the annual increase in the rate of the London Living Wage,

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on or before 1 April in the year following the publication of the increased rate of the London Living Wage.

31.4 The Company reserves the right to audit (acting by itself or its nominee(s)) the provision of the London Living Wage to the Supplier Personnel and the employees of its Sub-Contractors.

31.5 Without limiting the Company's rights under any other termination provision in this Contract, the Supplier shall remedy any breach of the provisions of this Clause 31 within four (4) weeks' notice of the same from the Company (the "**Notice Period**"). If the Supplier remains in breach of the provisions of this Clause 31 following the Notice Period, the Company may by written notice to the Supplier immediately terminate this Contract.

32 CRIMINAL RECORD DECLARATIONS AND RIGHT TO WORK IN THE UK

32.1 For the purposes of this Clause 31.1:

"**Relevant Individual**" means any servant, employee, officer, consultant or agent of either the Supplier or any Sub-Contractor or supplier carrying out, or intended to be involved in carrying out, any aspect of the Services; and

"**Relevant Conviction**" means any unspent criminal conviction relating to actual or potential acts of terrorism or acts which threaten national security.

32.2 The Supplier shall procure from each Relevant Individual (as the case may be) a declaration that he has no Relevant Convictions ("**Declaration**") or disclosure of any Relevant Convictions. A Declaration shall be procured prior to a Relevant Individual carrying out any of the Services. The Supplier shall confirm to the Company in writing on request and in any event not less than once in every year that each Relevant Individual has provided a Declaration. The Supplier shall procure that a Relevant Individual notifies the Supplier immediately if he has a Relevant Conviction and the Supplier shall notify the Company in writing immediately on becoming aware that a Relevant Individual has a Relevant Conviction.

32.3 The Supplier shall not engage or allow to act on behalf of the Supplier or any Sub-Contractor in the performance of any aspect of the Services any Relevant Individual who has disclosed a Relevant Conviction or who the Supplier is aware has a Relevant Conviction.

32.4 The Company shall have the right in accordance with the audit rights set out in Clause 13 to audit and inspect the records of the Supplier and its Sub-Contractors and its and their respective employees and agents in order to confirm and monitor compliance with this Clause 31.1 at any time during performance of this Contract.

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32.5 If the Supplier fails to comply with the requirements under Clauses 32.2 and/or 32.3 the Company may, without prejudice to its rights under Clause 43, serve notice on the Supplier requiring the Supplier to remove or procure the removal of (as the case may be) any Relevant Individual who has not provided a Declaration from this Contract and/or Company's Sites with immediate effect and take such steps as are necessary to ensure that such Relevant Individual has no further involvement with the carrying out of the Services unless (in the case of non-compliance with Clause 32.2) within five (5) Working Days of receipt of the notice the Supplier confirms to the Company that he has procured all of the relevant Declarations required under Clause 32.2.

32.6 A Persistent Breach of Clause 32.2 and/or Clause 32.3 by the Supplier shall entitle the Company to terminate this Contract in whole or in part with immediate effect in accordance with Clause 43, as if such Persistent Breach were a Supplier Default.

32.7 In the event the Company becomes aware that a Relevant Individual has a Relevant Conviction, the Supplier shall remove or procure the removal (as the case may be) of such Relevant Individual from this Contract and/or the Company's Sites with immediate effect and take such steps as are necessary to ensure that such Relevant Individual has no further involvement with the carrying out of the Services.

32.8 The Supplier shall ensure that each Relevant Individual has the right to work in the UK and shall comply with its obligations under the relevant immigration legislation including but not limited to the obligation to conduct document checks in respect of Relevant Individuals.

32.9 Nothing in this Clause 31.1 shall in any way waive, limit or amend any obligation of the Supplier to the Company arising under this Contract and the Supplier's responsibilities in respect of performance of the Services remain in full force and effect and the Supplier is not entitled to claim any extra costs or time or any relief from its obligations as a result of any actions under this Clause 31.1.

33 OFFERS OF EMPLOYMENT (NON-SOLICITATION)

For the duration of the Contract and for a period of six (6) months after expiry or termination of the Contract, the Supplier shall not employ or offer employment to any TfL Group employees who have been associated with the provision of the Services by the Supplier without the Company's prior written consent. Any breach of this Clause 33 shall render the Supplier liable to pay to the Company a sum equal to the basic salary payable to the employee by the Supplier during the first six (6) months of new employment.

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PART 11: RESPONSIBLE PROCUREMENT

34 RESPONSIBLE PROCUREMENT

34.1 The Supplier and the Company acknowledge and agree that the Mayor, in accordance with Section 155 of the GLA Act, has directed the Company and its subsidiaries to do all things reasonably necessary to comply with (inter alia) the Responsible Procurement Policy in its procurement activities.

34.2 The Supplier shall and shall procure that its Sub-Contractors shall comply with, and shall provide such co-operation and assistance as may be reasonably requested by the Company to enable the Company to comply with, the Responsible Procurement Policy.

34.3 The Supplier acknowledges and agrees that the Company is required to develop a policy relating to the promotion of the procurement of works, goods and services in an ethical manner (the "Ethical Sourcing Policy") which shall reflect and be consistent with the relevant principles of the Responsible Procurement Policy and the Supplier shall, and shall procure that all of its Sub-Contractors shall, comply with such Ethical Sourcing Policy to the extent it does not conflict with the Responsible Procurement Policy.

34.4 Where applicable to the Supplier, the Supplier shall comply with the Modern Slavery Act 2015 and any guidance issued by the Secretary of State under it. The Supplier shall implement the Ethical Sourcing and Modern Slavery Action Plan in accordance with Schedule 23 (*Ethical Sourcing and Modern Slavery Action Plan*) of this Contract.

34.5 The Supplier acknowledges and agrees that it (and its Sub-Contractors) shall be required to comply with any changes to the Responsible Procurement Policy (and any adjustment or amendment to the Ethical Sourcing Policy as a result of such amendment or adjustment to the Responsible Procurement Policy).

34.6 The Supplier shall not be entitled to amend the Price as a result of any change to the Responsible Procurement Policy (and any change to the Ethical Sourcing Policy as a result of such change to the Responsible Procurement Policy).

34.7 The Supplier shall procure that any Sub-Contractor is required to comply with the provisions of this Clause 34 and the provisions of this Clause 34 are included in any sub-contract (of any tier).

34.8 The Supplier shall not, and shall procure that any Sub-Contractor shall not, without the prior written consent of the Company, vary or purport to vary the provisions contained in any contract or Sub-Contract in accordance with the operation of this Clause 34.

34.9 The Supplier shall at all times comply with the ETI Base Code and shall at all times comply with the provisions of Schedule 17 (*Responsible Procurement*) and Schedule 19 (*Strategic Labour Needs and Training*).

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35 COMPETEFOR

35.1 Without prejudice to Clause 54, the Supplier will, on a non-exclusive basis, use the CompeteFor electronic brokerage service (or such alternative web-based tool as the Company may direct from time to time) ("**CompeteFor**") to make available to other suppliers all appropriate opportunities, arising in connection with this Contract, to supply goods, works and/or services to the Supplier.

35.2 The Supplier will use all reasonable endeavours to ensure that its Sub-Contractors use CompeteFor, on a non-exclusive basis, to make available to other parties all appropriate opportunities, arising in connection with this Contract, to supply goods, works and services to such Sub-Contractors.

35.3 The Supplier will monitor (and maintain a record of) the number, type and value of opportunities, arising in connection with this Contract, made available to other suppliers via CompeteFor, whether by the Supplier or its Sub-Contractors, as required by Clause 35.2, and will report this information on a Quarterly basis by way of email to the Company's Representative.

PART 12: INTELLECTUAL PROPERTY, DATA AND CONFIDENTIALITY

36 INTELLECTUAL PROPERTY RIGHTS

36.1 Existing Contracts

This Contract is entirely without prejudice to, and nothing in it is intended to, nor shall, in any way prejudice the rights of any member of the TfL Group in relation to intellectual property under or pursuant to Existing Contracts.

36.2 Vesting of Intellectual Property Rights created under this Contract

All Intellectual Property Rights created wholly or mainly in connection with the performance of this Contract shall vest in the Company. The Supplier shall procure that each of its Sub-Contractors and any other third party shall assign such Intellectual Property Rights to the Company.

36.3 Ownership of the Supplier's Intellectual Property Rights

Without prejudice to Clause 36.2, all Intellectual Property Rights owned by the Supplier or its Sub-Contractors or other third party and which are not assigned to, or vested in, the Company pursuant to Clause 36.2 shall remain or be vested in the Supplier, its Sub-Contractors or other third party (as the case may be).

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36.4 Company's Licence to use the Supplier's Intellectual Property Rights

The Company shall have and the Supplier hereby grants, and procures that its Sub-Contractors or other third party grant, to the Company a worldwide, royalty-free, perpetual, irrevocable, non-exclusive licence (with the right to sub-licence such rights to any third party) to use and copy the Intellectual Property Rights referred to in Clause 36.3 (with the exception of Commercial Off the Shelf Software), for the purposes of:

(a) understanding the Services;

(b) operating, maintaining, repairing, modifying, altering, enhancing, re-figuring, correcting, replacing, re-procuring and re-tendering the Services;

(c) extending, interfacing with, integrating with, connecting into and adjusting the Services;

(d) enabling the Company to carry out the operation, maintenance, repair, renewal and enhancement of the Assets, TfL Network and/or Sites;

(e) executing and completing the Services; and

(f) enabling the Company to make available the TfL Network to perform its function and duties as Infrastructure Manager and Operator of the TfL Network.

36.5 Provision of Supporting Documentation and Other Materials

The Supplier shall:

(a) promptly, and in any event by no later than such date as the Company's Representative may notify to the Supplier, provide at no charge to the Company, copies of any materials and items (including, without limitation, Documentation) in the Supplier's or Sub-Contractor's or other third party's possession or control (or which ought reasonably to be in the Supplier's or Sub-Contractor's or other third party's possession or control) which are referred to or relied upon in using and copying, or required in any way for the use and copying of, the Intellectual Property Rights referred to in Clauses 36.2, 36.3 and 36.4 above; and

(b) keep copies of such materials, items and Documentation in a secure place where they will not deteriorate and undertake regular (and in any event not less than every three (3) months) integrity testing of the same and provide written evidence of such testing to the Company's Representative at regular intervals and in any event upon the Company's Representative's request.

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36.6 Company's Rights of Retention

If the Supplier has not complied with its obligations under Clause 36.5(a), the Company shall be entitled to retain one quarter of the sums that would otherwise be due to the Supplier under this Contract until the Supplier has complied with its obligations under Clause 36.5(a).

36.7 Company's Rights to the Software

If the Supplier or any of its Sub-Contractors providing software for incorporation into or operation of the Services stops trading, is subject to an insolvency event equivalent to any of those events set out in the definition of Supplier Default (including their equivalent in any jurisdiction to which the Supplier or any of its Sub-Contractors is subject), makes known its intention to withdraw support of that software or fails to support that software in accordance with the terms of this Contract then the Supplier, at no charge to the Company, shall use its reasonable endeavours to transfer or procure the transfer to the Company of all Intellectual Property Rights in that software.

36.8 Company's Rights in relation to Other Procurement Activities

For the avoidance of doubt, the Company shall be entitled to use and copy the materials, items and Documentation referred to in Clause 36.5 and anything in which the Intellectual Property Rights referred to in Clauses 36.2, 36.3 and 36.4 subsist for the purposes of inviting tenders or of procuring services the same as or similar to the Services for the carrying out of any activities in connection with the licence under Clause 36.4 subject always to the Company's requirements for tenderers to treat the same in the strictest confidence.

36.9 Supplier's Indemnity against Third Party Intellectual Property Rights Infringement

(a) The Supplier shall indemnify and hold harmless the Company and any member of the TfL Group against any actions, claims, losses, demands, costs, charges or expenses that arise from, or are incurred by reason of, any infringement or alleged infringement of any Intellectual Property Rights belonging to any Sub-Contractor or sub-contractor (of any tier) or other third party and against all costs and damages of any kind which the Company may incur in connection with any actual or threatened proceedings before any court or arbitrator or any other dispute resolution forum. If required by the Company the Supplier shall conduct negotiations with any Sub-Contractor or other third party and/or a defence in relation to any action, claim or demand referred to herein on behalf of the Company.

(b) In the event of a claim of infringement of any Intellectual Property Rights the Supplier shall use all reasonable endeavours to make such alterations or

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adjustment to the method of providing the Services as may be necessary to ensure that the use and the provision of the Services continues in spite of such claim and for the avoidance of doubt shall not be entitled to any relief in respect of its obligations to perform the Services as required by this Contract.

36.10 Ownership of the Company's Intellectual Property Rights

Intellectual Property Rights in all documentation and in all other material and items supplied by the Company to the Supplier in connection with this Contract shall remain vested in the Company or the person owning such rights at the time the documentation, material or items were supplied. The Supplier shall, if so requested, at any time, execute such documents and perform such acts as may be required fully and effectively to assure to the Company the rights referred to in this Clause.

36.11 Supplier's Licence to the Company's Intellectual Property Rights

The Company hereby grants the Supplier a non-exclusive, non-transferable licence to use all the Intellectual Property Rights owned or capable of being so licensed by the Company (including for the avoidance of doubt the Corporate IPRs as such term is defined in Clause 36.12) which are required by the Supplier for the purposes of performing the Services. Such licence is granted for the duration of this Contract solely to enable the Supplier to comply with its obligations under this Contract and is conditional upon the Supplier using such Intellectual Property Rights in accordance with Applicable Laws and Standards and such other quality standards as the Company may from time to time notify. No Intellectual Property Rights owned or capable of being so licensed by the Company may be used in conjunction with any other trade-marks without the prior written consent of the Company.

36.12 Corporate IPRs

(a) The Supplier shall use and shall procure that its Sub-Contractors and suppliers shall use the trade-marks, trade names and other Intellectual Property Rights as amended by the Company from time to time (the "**Corporate IPRs**") in compliance with any relevant Standards from time to time in force.

(b) The Supplier shall not use and shall procure that its Sub-Contractors and suppliers shall not use the Corporate IPRs in combination with any other trade-marks, trade names and other Intellectual Property Rights without the Company's prior written consent.

(c) On written request from the Company, the Supplier shall supply copies or details of items on or in relation to which it uses the Corporate IPRs or details of the manner in which they are used. If the Company reasonably determines that any use of the Corporate IPRs falls below the quality standards notified to the

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Supplier in accordance with Clause 36.11, the Company shall give the Supplier written notice of that fact and the Supplier shall correct the use so as to comply with such quality standards taking into account the Company's instructions.

37 CONFIDENTIALITY

37.1 The Supplier undertakes to keep confidential and not to disclose to any third party (without the prior written consent of the Company) any Confidential Information supplied by the Company to the Supplier and to use such information only for the purpose of the performance of its obligations under this Contract.

37.2 At the Company's request, the Supplier shall, so far as is reasonably possible:

(a) transfer onto hard copies or other media in industry standard format and programming languages and deliver to the Company any Confidential Information in its possession or control supplied by the Company to the Supplier;

(b) return to the Company all copies (whether hard copy or other media) of such Confidential Information; and

(c) destroy, erase or otherwise expunge from its records, systems, databases or other forms of archive all such Confidential Information save to the extent that information needs to be retained for statutory purposes or tax purposes.

37.3 The Supplier shall ensure that all Supplier Parties perform the obligations in Clauses 37.1 and 37.2 as if they were the Supplier, and the Supplier shall be responsible to the Company for any act or omission by any Supplier Parties in this regard.

37.4 The Supplier shall notify the Company promptly if the Supplier becomes aware of any breach of confidence by a Supplier Party and shall give the Company all assistance the Company reasonably requires in connection with any proceedings the Company brings, or other steps the Company takes, against that Supplier Party for such breach of confidence.

37.5 The Supplier shall not, either alone or jointly with Others, publish any material relating to the Company, the Company's Representative, this Contract or the Services without the prior written consent of the Company.

37.6 The Supplier shall not, either alone or jointly with Others, make any press, television, radio or other media announcement in connection with this Contract or the Services, or any Dispute arising under or in connection with this Contract.

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37.7 The provisions of Clauses 37.1 to 37.6 shall not apply:

(a) to any information which is already in the public domain at the time of its disclosure other than by breach of this Contract; or

(b) to any information which is required to be disclosed to the extent required by any Applicable Laws, the regulations of any recognised stock exchange, any taxation authorities or by order of a court or other tribunal of competent jurisdiction or any relevant regulatory body.

37.8 The Supplier acknowledges that damages would not be an adequate remedy for any breach of this Clause 37 by the Supplier and that (without prejudice to all other remedies to which the Company may be entitled as a matter of law) the Company shall be entitled to any form of equitable relief to enforce the provisions of this Clause 37.

38 FREEDOM OF INFORMATION

38.1 For the purposes of this Clause 38:

"**FOI Legislation**" means the Freedom of Information Act 2000, all Regulations made under it and the Environmental Information Regulations 2004 and any amendment or re-enactment of any of them; and any guidance issued by the Information Commissioner, the Department for Constitutional Affairs, or the Department for Environment Food and Rural Affairs (including in each case its successors or assigns) in relation to such legislation;

"**Information**" means information recorded in any form held by the Company or by the Supplier on behalf of the Company; and

"**Information Request**" means a request for any Information under the FOI Legislation.

38.2 The Supplier acknowledges that the Company:

(a) is subject to the FOI Legislation and agrees to assist and co-operate with the Company to enable the Company to comply with its obligations under the FOI Legislation; and

(b) may be obliged under the FOI Legislation to disclose Information without consulting or obtaining consent from the Supplier.

38.3 Without prejudice to the generality of Clause 38.2 the Supplier shall and shall procure that its Sub-Contractors (if any) shall:

(a) transfer to the Company's Representative (or such other person as may be notified by the Company to the Supplier) each Information Request relevant to this Contract, the Services or any member of the TfL Group that it or they (as the

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case may be) receive as soon as practicable and in any event within two (2) Working Days of receiving such Information Request; and

(b) in relation to Information held by the Supplier on behalf of the Company, provide the Company with details about and/or copies of all such Information that the Company requests and such details and/or copies shall be provided within five (5) Working Days of a request from the Company (or such other period as the Company may reasonably specify), and in such forms as the Company may reasonably specify.

38.4 The Company shall be responsible for determining whether Information is exempt information under the FOI Legislation and for determining what Information will be disclosed in response to an Information Request in accordance with the FOI Legislation. The Supplier shall not itself respond to any person making an Information Request, save to acknowledge receipt, unless expressly authorised to do so by the Company.

39 DATA TRANSPARENCY

39.1 The Supplier acknowledges that the Company is subject to the Transparency Commitment. Accordingly, notwithstanding Clause 37 and Clause 38, the Supplier hereby gives its consent for the Company to publish the Contract Information to the general public.

39.2 The Company may in its absolute discretion redact all or part of the Contract Information prior to its publication. In so doing and in its absolute discretion the Company may take account of the exemptions/exceptions that would be available in relation to information requested under the FOI Legislation. The Company may in its absolute discretion consult with the Supplier regarding any redactions to the Contract Information to be published pursuant to Clause 39.1. The Company shall make the final decision regarding publication and/or redaction of the Contract Information.

40 CONTRACT PRIVACY, DATA PROTECTION AND CYBER SECURITY

40.1 The Supplier shall comply with:

(a) all of its obligations under the Data Protection Legislation; and

(b) the provisions of Schedule 24 (*Cyber Security*).

PART 13: COMPANY STEP IN, TERMINATION AND SUSPENSION

41 COMPANY STEP-IN

41.1 Without limiting any other remedy, if the Supplier fails to comply with its obligations to perform the Services as required by this Contract, the Company shall be entitled to

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perform or procure the performance of the Services or part thereof itself or from a third party. Without prejudice to any other right or remedy of the Company hereunder or under the general law, all expenditure properly incurred by the Company exercising its rights under this Clause 41 is recoverable by the Company from the Supplier and the Company shall be entitled to deduct such amounts from any amount due or to become due to the Supplier under the Contract.

41.2 Without prejudice to the provisions of Clause 41.1 if the Company reasonably believes that it needs to take action in connection with the Services:

(a) because a serious risk exists to the health or safety of persons or property or to the environment; and/or

(b) to discharge a statutory duty,

then the following provisions of this Clause 41 shall apply.

41.3 The Company shall provide notice to the Supplier in writing of the following:

(a) the action it wishes to take;

(b) the reason for such action;

(c) the date it wishes to commence such action;

(d) the time period which it believes will be necessary for such action; and

(e) to the extent practicable, the effect on the Supplier and its obligations to provide the Services during the period such action is being taken.

41.4 Following service of the notice required in Clause 41.3, the Company or a third party appointed by the Company for the purpose shall take such action as is notified under these provisions and any consequential additional action as the Company reasonably believes is necessary (the "Required Action").

41.5 For so long as and to the extent that the Required Action is taken, and this prevents the Supplier from providing any part of the Services, the Supplier shall be relieved from its obligations to provide such part of the Services and the Company shall not be liable to pay the Price for such part of the Services.

41.6 For the purposes of this Clause 41 the Supplier hereby grants to the Company and any third party the right to use any Intellectual Property Rights, Documentation, goods, materials and spares belonging to the Supplier or used by the Supplier in connection with the Contract as may be required by the Company to exercise its rights under this Clause 41 and the Supplier shall provide all such co-operation and assistance as may be required by the Company to enable the Company to exercise its rights under this Clause 41.

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42 VOLUNTARY TERMINATION BY THE COMPANY

42.1 The Company may terminate this Contract or any part or parts of the Services for convenience at any time on or before the Expiry Date by serving a Termination Notice on the Supplier stating:

(a) that the Company is terminating this Contract in whole or in part under this Clause 42; and

[redacted]

42.2 This Contract will terminate in whole or in part as the case may be on the date specified in the Termination Notice referred to in Clause 42.1.

43 TERMINATION ON SUPPLIER DEFAULT

43.1 A "Supplier Default" is any of the following events:

(a) the Supplier committing a material breach of this Contract which in the case of a breach capable of remedy has not been remedied within five (5) Working Days, or such other period as may be agreed between the Supplier and the Company, of the Company serving notice on the Supplier requiring such remedy;

(b) a Persistent Breach occurring;

(c) the Supplier or anyone employed by or acting on behalf of the Supplier (whether or not acting independently of the Supplier when committing any breach) commits a Safety Breach or Prohibited Act;

(d) the Supplier enters into compulsory or voluntary liquidation (other than for the purpose of effecting a solvent reconstruction or amalgamation provided that if the company resulting from such reconstruction or amalgamation is a different legal entity it shall agree to be bound by and assume the obligations of the Supplier under this Contract) or is deemed unable to pay its debts as they fall due in accordance with Section 123(1) of the Insolvency Act 1986, or a meeting of its shareholders or directors is convened to consider any resolution for (or petition or file documents with the courts for) its administration or an administrative receiver, manager, administrator, liquidator, trustee or other similar officer is appointed or notice is given to appoint the same or any similar or analogous procedure or step is taken in any jurisdiction, or the Supplier applies to court for, or obtains, a moratorium under Part A1 of the Insolvency Act 1986;

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(e) a Persistent Breach of the Supplier's obligations set out in either or both of Clause 32.2 and 32.3;

(f) a breach of the Supplier's obligations under Clauses 54 or 55;

(g) any parent company guarantee or bond required pursuant to Clause 53 becoming invalid and/or the Supplier being in breach of Clause 53.3;

(h) a breach by the Supplier of its obligations to take out and maintain any of the insurances required pursuant to Clause 50;

(i) the occurrence of a conflict of interests such that the circumstances set out in Clause 76.5(b) occur;

(j) the Company becomes entitled to terminate in accordance with the Escalation Procedure;

(k) the Supplier has, at the date of this Contract, been in one of the situations referred to in Regulation 57(1) – 57(5) of the Public Contracts Regulations 2015 and should therefore have been excluded from the procurement procedure in accordance with Regulation 80(2) of the Utilities Contracts Regulations 2016;

(l) a breach of the Supplier's obligations under Schedule 21 (*Direct Vision Standard*); or

(m) a Level 4 Non-Conformance arising pursuant to Schedule 18a (*Performance Measurement Mechanism*).

43.2 If a breach, that is not a Supplier Default, has continued for more than ten (10) Working Days or occurred more than three (3) times in any six (6) month period then the Company may serve a notice on the Supplier:

(a) specifying that it is a formal warning notice;

(b) giving reasonable details of the breach; and

(c) stating that the breach is a breach which, if it recurs frequently or continues, may result in a termination of this Contract.

43.3 If, following service of a warning notice the breach specified in a warning notice given further to Clause 43.2 has continued beyond twenty (20) Working Days or recurred in three (3) or more months within the six (6) month period after the date of service, then the Company may serve another notice (a "Final Warning Notice") on the Supplier:

(a) specifying that it is a Final Warning Notice;

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(b) stating that the breach specified has been the subject of a warning notice served within the six (6) month period prior to the date of service of the Final Warning Notice; and

(c) stating that if the breach continues for more than ten (10) Working Days or recurs in three (3) or more months within the six (6) month period after the date of service of the Final Warning Notice, such breach shall constitute a Persistent Breach and this Contract may be terminated further to Clause 43.5.

43.4 A warning notice may not be served in respect of any incident of breach which has previously been counted in the making of a separate warning notice.

43.5 If a Supplier Default has occurred and the Company wishes to terminate this Contract in whole or in part, the Company must serve a Termination Notice on the Supplier.

43.6 The Termination Notice must specify the type of Supplier Default which has occurred entitling the Company to terminate and whether the Company is terminating this Contract in whole or in part and if in part, the extent of the termination, and the date on which the termination shall become effective.

43.7 If anyone employed by the Supplier, acting independently of the Supplier, commits a Safety Breach or Prohibited Act, then, without prejudice to the Company's rights pursuant to this Clause 43, the Company may require the Supplier to exclude that individual from the Services with immediate effect and that individual may only resume the performance of the Services at the Company's absolute discretion.

44 COMPENSATION ON TERMINATION

44.1 Following a termination (in whole or in part) in accordance with Clause 42, the Supplier shall be entitled to be paid:

(a) the Price at the date of termination of this Contract or the relevant part of it (as applicable), such value to be ascertained in accordance with this Contract as if this Contract had not been terminated, together with any amounts due to the Supplier under this Contract not included in such total value; and

(b) the reasonable properly incurred cost of removal of the Supplier's property from the Sites in respect of which this Contract has been terminated;

[redacted]

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(ii) [redacted]

44.2 Following a termination (in whole or in part) in accordance with Clause 43:

(a) the Supplier shall indemnify the Company and keep the Company fully and effectively indemnified against all expense, Loss, damage and liabilities suffered or incurred by the Company associated with or arising from the termination including any additional expense incurred by the Company in continuing to provide the Services in respect of which this Contract has been terminated, from the date of termination to the Expiry Date (as may have been extended only where notice has been served pursuant to Clause 2.2) including for the avoidance of doubt the cost of finding an alternative contractor or contractors and any additional amounts charged by them for providing the Services; and

(b) the Supplier shall be entitled to be paid the Price at the date of termination, to the extent that the provision of such Services has been terminated, less the cost to

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the Company of having the Services that have not been carried out completed (whether the Company has those Services delivered or not).

44.3 In the event that the Company terminates this Contract for any reason under Clause 43, the Supplier shall, without prejudice to any other rights or remedies which the Company may have under this Contract or under general law, at the Company's option:

(a) permit the Company to enter the Supplier's premises and take possession of any Assets, goods or documentation which are the property of the Company;

(b) permit the Company to place an order for the remaining Services with any other person or persons or complete the provision of such Services by its own workmen;

(c) promptly return to the Company any Assets, goods or documentation which are the property of the Company and of which the Supplier or any of its Sub-Contractors have possession; and

(d) sell to the Company, at the purchase price any materials or goods properly ordered for the Services in respect of which this Contract has been terminated (and which have not at the date of termination become the property of the Company) and on such payment in full by the Company such materials or goods shall become the property of the Company.

In each such case, the Company shall be entitled to retain the benefit of any part of the Services already provided by the Supplier in accordance with this Contract.

44.4 Any amounts which the Company is liable to pay pursuant to this Clause 44 shall, in default of agreement, be determined pursuant to the provisions of Schedule 5 (*Dispute Resolution Procedure*).

45 ACCRUED RIGHTS AND SURVIVAL

45.1 In the event that this Contract is terminated, the liability of the Company to pay the Supplier in respect of the performance of the Services shall be limited to the Price at the date of termination of this Contract or the relevant part of it (as applicable) in accordance with this Contract.

45.2 Save as otherwise expressly set out in this Contract or as already taken into account in the calculation of any payment of compensation on termination pursuant to this Contract, termination of this Contract for whatever reason shall not affect the accrued rights of the Parties arising in any way out of this Contract as at the date of termination and in particular but without limitation the right to recover damages against the other Party.

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45.3 The provisions of Clauses 13, 18.3, 29, 34, 36, 37, 38, 39, 40, 42, 45, 49, 58, 59, 60, 61, 63, 65, 69, 70, 74 and 76.1 will survive the termination or expiry of this Contract and continue in full force and effect, along with any other Clauses or Schedules of this Contract necessary to give effect to them. In addition, any other provision of this Contract which by its nature or implication (including in respect of any accrued rights and liabilities) is required to survive the termination will survive such termination as aforesaid.

46 FORCE MAJEURE

46.1 No Party shall be entitled to bring a claim for a breach of obligations under this Contract by the other Party or incur any liability to the other Party for any losses or damages incurred by that other Party to the extent that a Force Majeure Event occurs and the Affected Party is prevented from carrying out obligations by that Force Majeure Event. For the avoidance of doubt, the Company shall not be entitled to terminate this Contract for a Supplier Default if such Supplier Default arises from a Force Majeure Event (but without prejudice to Clauses 46.5 or 46.6).

46.2 The Company shall be under no obligation to make any payments to the Supplier in respect of any Services affected by the Force Majeure Event and no Abatement shall apply in respect of any Services affected by the Force Majeure Event.

46.3 On the occurrence of a Force Majeure Event, the Affected Party shall notify the other Party as soon as practicable. The notification shall include details of the Force Majeure Event, including evidence of its effect on the obligations of the Affected Party and any action proposed to mitigate its effect.

46.4 As soon as practicable following such notification, the Parties shall consult with each other in good faith and use all reasonable endeavours to agree appropriate terms to mitigate the effects of the Force Majeure Event and facilitate the continued performance of this Contract.

46.5 If no such terms are agreed on or before the date falling eighty (80) Working Days after the date of the commencement of the Force Majeure Event and such Force Majeure Event is continuing or its consequence remains such that the Affected Party is unable to comply with its obligations under this Contract for a period of more than one hundred and twenty (120) Working Days, then, subject to Clause 46.6, either Party may terminate this Contract in respect of the affected Services by giving twenty (20) Working Days' written notice to the other Party.

46.6 If this Contract is terminated, in whole or in part, under Clause 46.5 no compensation shall be payable by either Party in relation to such termination.

46.7 The Parties shall at all times following the occurrence of a Force Majeure Event use all reasonable endeavours to prevent and mitigate the effects of any delay and the Supplier

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shall at all times during which a Force Majeure Event is subsisting take all steps in accordance with Good Industry Practice to overcome or minimise the consequences of the Force Majeure Event.

46.8 The Affected Party shall notify the other Party as soon as practicable after the Force Majeure Event ceases or no longer causes the Affected Party to be unable to comply with its obligations under this Contract. Following such notification this Contract shall continue to be performed on the terms existing immediately prior to the occurrence of the Force Majeure Event.

47 SUSPENSION

47.1 Without prejudice to Clause 42, the Company shall have the right at any time to require the Supplier to suspend the provision of the Services (or any part thereof) by giving notice in writing to the Supplier.

47.2 In the event that this Contract is suspended in accordance with Clause 47.1, the Supplier shall:

(a) issue to the Company an application for payment in respect of those Services provided to the Company in accordance with this Contract up until the date of such suspension; and

(b) not carry out any further work in connection with the provision of the Services which are the subject of the suspension until such time as the Company issues a notice lifting the suspension (a "Notice to Proceed").

47.3 In the event that this Contract is suspended in accordance with Clause 47.1, and such suspension continues for a period of twenty (20) Working Days, the Supplier shall be entitled to request that the Company serve a Notice to Proceed. In the event that no Notice to Proceed is issued by the Company within a further ten (10) Working Days from such request of the Supplier, the Supplier shall be entitled to approach the Company with a request for a variation, in accordance with the Contract Variation Procedure.

47.4 In the event that the Parties are unable to agree upon the variation requested under Clause 47.3, then a Dispute shall be deemed to have arisen and the matter shall be referred for resolution in accordance with Clause 65.

48 CO-OPERATION IN DEMOBILISATION

The Parties shall comply with their respective obligations as set out in Schedule 15 (*Demobilisation*).

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PART 14: INDEMNITIES, LIABILITIES AND INSURANCE

49 INDEMNITY

49.1 The Supplier shall be liable for, and shall at all times, indemnify the Company, including any of its employees, servants, agents, Sub-contractors, directors and officers and members of the TfL Group, and shall keep them indemnified on an after- tax basis against all Losses suffered or incurred by the Company, any of its employees, servants, agents, sub-contractors, directors and officers or any relevant member of the TfL Group:

(a) in respect of death or personal injury to any person;

(b) in respect of loss of or damage to any property (including the TfL Network and Sites and any other property belonging to the Company or for which it is responsible); and

(c) in respect of claims against the Company made by third parties (whether under contract, tort, breach of statutory duty or otherwise),

arising from or in connection with the performance or non-performance of the Supplier under this Contract, or in the course of or by reason of any act, omission, negligence or breach of contract or breach of statutory duty, wilful misconduct of the Supplier or any Supplier Party.

49.2 The Supplier shall not be liable under the indemnity in Clause 49.1 to the extent Losses are solely due to the negligence, breach of duty or breach of contract of the Company.

49.3 The Supplier's indemnity under Clause 49.1 and all other indemnities under this Contract shall remain in force for the duration of this Contract and for the period of twelve (12) years after the Expiry Date or earlier termination of this Contract.

49.4 The Company may withhold from any sum due or which may become due to the Supplier any sum due to the Company as a result of the operation of Clause 49.1.

49.5 Other than in respect of (i) the Losses described in Clause 49.1(c) above and (ii) Excepted Liabilities, neither Party shall have any liability to the other for any Consequential Loss arising out of the performance of its obligations under or in connection with this Contract. Each Party respectively undertakes not to sue the other Party or any member of the TfL Group in respect of Consequential Loss for which liability is excluded in this Clause 49.5.

49.6 The Supplier shall have no claim against the Company in respect of delay or disruption of the Services, except as expressly provided for in this Contract.

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49.7 Control of indemnity claims

(a) Subject to Clause 49.7(b), if a claim is made against a Party ("the Indemnified Party"), or the Indemnified Party becomes aware that a claim is likely to be made, by a third party which may give rise to a claim under an indemnity given by a Party ("the Indemnifying Party"):

(i) the Indemnified Party shall promptly notify the Indemnifying Party of the claim, giving full particulars of the claim, and consult with the Indemnifying Party in relation to the proposed actions to be taken prior to settlement or compromise of the claim;

(ii) each Party shall provide the other Party with such assistance and information as it reasonably requests in relation to the claim;

(iii) the Indemnified Party shall not admit liability in respect of or settle the matter without first obtaining the Indemnifying Party's written consent; and

(iv) subject to applicable security and confidentiality restrictions, the Indemnified Party shall provide the Indemnifying Party with reasonable access to its premises and personnel and all relevant assets, documents and records for the purpose of investigating the matter.

(b) The Company may elect at any time to have sole control of the defence of proceedings relating to any claim for which the Supplier has given an indemnity and all negotiations for its settlement (in which case the provisions in Clause 49.7(d) shall apply to the Company as if it were the Indemnifying Party and the Supplier were the Indemnified Party).

(c) If the Company elects to have sole control of the defence of proceedings pursuant to Clause 49.7(b) after the Supplier has already commenced the defence of such proceedings, the Supplier shall promptly take all steps necessary to transfer the conduct of such claim to the Company, and shall provide to the Company all reasonable co-operation, access and assistance for the purposes of considering and resisting such claim.

(d) The Indemnifying Party shall:

(i) assume and conduct the defence of any proceedings relating to the claim diligently using competent counsel and in such a way as not to bring the reputation of the Indemnified Party into disrepute in which case the Indemnified Party shall not, unless the Indemnifying Party has failed to

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resolve the claim within a reasonable period, take any action to settle or prosecute the claim;

(ii) consult with the Indemnified Party and keep the Indemnified Party informed of all material matters, including formulation of any defence and counter-claims and filing of evidence from employees of the Indemnified Party;

(iii) not compromise the claim in any way whatsoever by making statements or admissions (other than in accordance with the Indemnified Party's consent, not to be unreasonably withheld or delayed) and do nothing which could prejudice the defence of any such claim; and

(iv) obtain the Indemnified Party's prior written consent, which shall not be unreasonably withheld or delayed, before any settlement is made in respect of the claim.

49.8 **Limit on liability**

(a) Nothing in this Clause 49.8 shall limit the Supplier's liability in respect of Excepted Liabilities.

(b) Subject to Clause (a), the Supplier's total liability to the Company for any loss or damage arising out of the performance or non-performance by the Supplier of its obligations under this Contract (whether in contract or in tort) shall not exceed £10 million in each Financial Year.

50 INSURANCE

50.1 Without prejudice to the obligation to indemnify the Company set out in Clause 49.1, the Supplier undertakes to:

(a) maintain at its own cost insurance which complies with the Employers' Liability (Compulsory Insurance) Act 1969 and any statutory orders made under such Act or any amendment or re-enactment thereof at a level of not less than £5,000,000 (five million pounds) per occurrence;

(b) maintain at its own cost an adequate level of public liability insurance in respect of the Supplier's liability for death or injury to any person and loss of or damage to property and being not less than £10,000,000 (ten million pounds) per occurrence;

(c) maintain at its own cost an adequate level of professional indemnity liability insurance of not less than £2,000,000 (two million pounds) per occurrence and with an annual aggregate limit of not less than £10,000,000 (ten million pounds);

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(d) maintain at its own cost an adequate level of product liability insurance of not less than £10,000,000 (ten million pounds) per occurrence and in the annual aggregate;

(e) ensure that the foregoing insurance policy or policies shall be or are effected with a reputable insurer. Such insurance shall be on terms that are customary for the relevant type of insurance in the UK insurance market and shall be maintained in force for a period not less than twelve (12) years after the completion of the Services;

(f) ensure that any Sub-Contractors also maintain adequate insurance having regard to the obligations under this Contract which they are contracted to fulfil; and

(g) produce within five (5) Working Days of any reasonable request by the Company and in any event before the commencement of any of the Services under this Contract satisfactory evidence in the form of a broker's letter or similar confirming the existence of insurance in accordance with the terms of this Clause 50.

50.2 The Supplier's liabilities under this Contract shall not be deemed to be released or limited by the Supplier taking out the insurance policies referred to in Clause 50.1.

50.3 If the Supplier fails to maintain the insurance policies as provided in this Clause 50, the Company may effect and keep in force any such insurance and pay such premium or premiums at commercially competitive rates as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or which become due to the Supplier or recover the same as a debt due from the Supplier.

51 ENVIRONMENTAL CLAIMS

51.1 The Supplier shall indemnify the Company against Losses and costs of Remediation in respect of any Environmental Claims which may arise out of or by reason of the Supplier's performance, non-performance or part performance of this Contract to the extent that such Losses and Remediation costs are due to any act, negligence, breach of contract, breach of statutory duty, error, omission or default by the Supplier, its employees, Sub-Contractors or agents.

51.2 The Supplier shall notify the Company's Representative and the Company as soon as it becomes aware that any Remediation is or will become necessary on any part of the Company's Sites.

51.3 Where the Supplier discovers or suspects that any of the Sites have been contaminated or polluted by another party, the Supplier shall notify the Company's Representative and the Company of the identity of the other party, where known. The Supplier shall not

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without the prior written consent of the Company undertake any environmental investigations at the Site or commission or undertake any Remediation. The Supplier shall provide the Company with a separate record of the costs of any Remediation as soon as possible after such costs are incurred.

51.4 In the event that the Supplier commissions an environmental assessment, the Supplier shall procure that the environmental assessment includes an acknowledgement by its authors that the Company can rely on any reports, recommendations or summaries prepared in relation to the environmental assessment.

51.5 The Supplier shall provide to the Company's Representative:

(a) copies of all environment-related permissions, permits, consents, licenses, registrations and authorisations required for him to carry out the Services (for the purposes of this Clause 51, the "**authorisations**");

(b) copies of any amendments to the authorisations;

(c) notification of any revocations, suspensions, cancellations, withdrawals, adverse amendments or refusals to provide any of the authorisations; and

(d) notification of any event or circumstance that is likely to cause the revocation, suspension, cancellation, withdrawal, adverse amendment or refusal to provide any of the authorisations.

52 SOLE REMEDY

52.1 Without prejudice to any entitlement of the Supplier:

(a) to specific performance of any obligation under this Contract; or

(b) to injunctive relief;

the Supplier's sole remedy in relation to matters for which an express right or remedy is stated in this Contract shall be that right or remedy and the Supplier shall have no additional right or remedy arising by common law, in equity, by statute or otherwise.

52.2 The Supplier shall not be held to be failing to comply with its obligations under this Contract to the extent that such failure to comply is a result of the Company's breach of its obligations hereunder.

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53 BONDS, WARRANTIES AND GUARANTEES

53.1 Where stated in Schedule 1 (*Contract Data*), the Supplier shall at its own expense provide:

[redacted]

[redacted]

53.2 The Supplier shall ensure that any bond required under Clause 53.1:

(a) provides, in aggregate, credit protection for the Company in an amount of not less than the amount set out in Schedule 1 (*Contract Data*); and

(b) is renewed every twelve (12) months until the Expiry Date (or date of termination if earlier) for an identical amount to that stated in Clause 53.2(a) (notwithstanding any claim or claims under any bond previously provided to the Company).

53.3 If at any time the existing bond or parent company guarantee cease(s) to meet the requirements of Clauses 53.1 and 53.2 then the Supplier shall replace such bond or parent company guarantee with a bond and/or parent company guarantee (as the case may be) that meets the requirements within five (5) Working Days.

53.4 If requested by the Company, the Supplier shall provide an accompanying legal opinion to the bond or parent company guarantee supplied under Clause 53.1 completed and signed by a qualified lawyer from the country in which the Guarantor and/or parent company is resident in form and substance satisfactory to the Company.

53.5 The Company shall not be obliged to make any payment to the Supplier under the Contract unless and until the parent company guarantee and/or performance bond (as the case may be) and legal opinion (if applicable), each as required by this Clause 53, have been provided in a form satisfactory to the Company.

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53.6 If required by the Company, the Supplier shall procure that the terms of any Sub-Contract require the Sub-Contractor, within five (5) Working Days of a written request by the Company to the Sub-Contractor, to enter into:

(a) a collateral warranty in the form set out in Schedule 9 (*Form of Collateral Warranty*) in favour of the Company and if requested by the Company, the Supplier shall require the Sub-Contractor to provide an accompanying legal opinion completed and signed by a qualified lawyer from the country in which the Sub-Contractor is resident in form and substance satisfactory to the Company; and

(b) a parent company guarantee in the form provided by the Company from the ultimate holding company of the Sub-Contractor in respect of any of the Sub-Contractor's obligations under any collateral warranty (including any accompanying parent company guarantee) and if such parent company guarantee is not delivered to the Company in accordance with this Clause 53.6 then without prejudice to any other rights and remedies the Company may have, fifty per cent (50%) of the Price that relates to the Services supplied by the relevant Sub-Contractor shall be retained in assessment of the amount due and shall not be payable until such guarantee has been delivered.

53.7 The Supplier shall be regarded as being in material breach of the Contract which is incapable of remedy in the event that any parent company guarantee and/or performance bond (as the case may be) is or becomes invalid or otherwise unenforceable.

PART 15: GENERAL CONDITIONS

54 ASSIGNMENT AND SUB-CONTRACTING

54.1 The Supplier shall not assign, novate or sub-contract any of its rights or obligations under this Contract or any part thereof without the prior written consent of the Company.

54.2 The sub-contracting of all or any part of the Services to a Sub-Contractor shall not relieve the Supplier of its obligations to perform the Services under this Contract.

54.3 Subject to the provisions of this Contract, the Supplier shall be responsible as against the Company for the acts and omissions of any Supplier Party as if they were the acts and omissions of the Supplier. The Supplier shall, as between itself and the Company, be responsible for the selection of and pricing by any Supplier Party.

54.4 The Company may novate, assign, transfer or sub-contract this Contract or any part thereof to any person at any time without the consent of the Supplier, provided the Company has given prior written notice to the Supplier.

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54.5 Within five (5) Working Days of any written request by the Company to the Supplier, the Supplier shall execute a deed of novation in the form set out in Schedule 6 (*Deed of Novation*) in favour of any person to whom this Contract is being novated.

54.6 Subject to the Company's prior written consent pursuant to Clause 54.1, where the Supplier subcontracts any or all of the Services, the Supplier shall include in each Sub-Contract (and procure that its Sub-Contractors include in each of their sub-contracts) payment terms substantially similar to those set out in Clause 18 and Schedule 3 (*Payment*).

54.7 On or before the Commencement Date the Supplier shall notify the Company in writing of the name, contact details and details of the legal representatives of any Sub-Contractor, to the extent that such information has not already been provided by the Supplier to the Company. The Supplier shall also immediately provide to the Company in writing the name, contact details and details of the legal representatives of each new Sub-Contractor which the Supplier subsequently involves in the Services after the Commencement Date.

54.8 The Company reserves the right to verify whether there are any grounds for excluding any Sub-Contractor under Regulation 57 of the Public Contracts Regulations 2015. Where necessary for the purpose of the Company's exercise of its right under this Clause 54.8, the Company may request that the information provided by the Supplier under Clause 54.7 shall be accompanied by one or more Single Procurement Document(s) (within the meaning of Regulation 59 of the Public Contracts Regulations 2015) in respect of the relevant Sub-Contractor(s). Further, the Company:

(a) shall require that the Supplier replace any Sub-Contractor in respect of which the verification has shown that there are compulsory grounds for exclusion under Regulation 57 of the Public Contracts Regulations 2015; and

(b) may require that the Supplier replace any Sub-Contractor in respect of which the verification has shown that there are non-compulsory grounds for exclusion under Regulation 57 of the Public Contracts Regulations 2015.

54.9 The Supplier shall promptly notify the Company of any circumstances from time to time that might give rise to a right of the Company to require replacement of a Sub-Contractor pursuant to Clause 54.8(a) or 54.8(b).

54.10 The Company shall have no obligation to make any termination or compensation payment in respect of any termination arising following the Company exercising its rights pursuant to Clause 54.8(a) or 54.8(b).

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55 CHANGE OF CONTROL

The Supplier shall not without the prior written consent of the Company implement any Change of Control of the Supplier, such consent not to be unreasonably withheld or delayed.

56 SET-OFF

56.1 The Company may at any time or times without notice to the Supplier, set off any liability of the Supplier against any liability of the Company to the Supplier (howsoever arising and whether such liability is present or future, liquidated or unliquidated). Any exercise by the Company of its rights under this clause shall be without prejudice to any other rights or remedies available to the Company under this Contract or otherwise.

56.2 All amounts due by the Supplier to the Company under this Contract shall be paid in full without any deduction or withholding other than as required by law and the Supplier shall not be entitled to assert any credit, set-off or counterclaim against the Company in order to justify withholding payment of any such amount in whole or in part.

57 COSTS

Except as otherwise agreed each Party shall bear its own costs incurred in connection with the negotiation, preparation and execution of this Contract.

58 SEVERANCE

58.1 Each provision of this Contract (including each provision in each of the schedules) is severable and distinct from the others. The Parties intend that every such provision shall be and remain valid and enforceable to the fullest extent permitted by Applicable Laws. If any such provision is or at any time becomes to any extent invalid, illegal or unenforceable under any enactment or rule of law it shall to that extent be deemed not to form part of this Contract. The remaining provisions of this Contract shall continue in full force and effect and their validity, legality and enforceability shall not therefore be affected or impaired.

58.2 If a provision of this Contract is held to any extent to be invalid, the Parties shall as soon as reasonably practicable commence negotiations in good faith to remedy that invalidity.

59 PUBLICITY

The text of any press release or other communication to be published by or in the media concerning the subject matter of this Contract shall require the prior written approval of the Company. No interviews concerning the same shall be given by the Supplier with the media without prior written approval from the Company of the content of such an interview.

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60 CORRUPT GIFTS AND PAYMENTS OF COMMISSION

60.1 The Supplier undertakes that it shall not and shall procure that its Sub-Contractors and suppliers shall not enter into or offer to enter into any business arrangement with any servant, employee, officer or agent of the Company other than as a representative of the Company without the Company's prior written approval.

60.2 The Supplier undertakes that it shall not and shall use reasonable endeavours to procure that its Sub-Contractors and suppliers shall not commit any Prohibited Acts or cause the Company to commit any equivalent act.

60.3 The Company shall have the right to audit any and all records necessary to confirm compliance with this Clause 60 at any time during performance of this Contract and during the twelve (12) year period following completion of performance.

60.4 Without prejudice to Clause 60.1, the Supplier shall ensure that it and any other Sub-Contractors shall:

(a) comply with all Applicable Laws relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010 ("Relevant Requirements");

(b) not engage in any activity, practice or conduct which would constitute an offence under sections 1, 2 or 6 of the Bribery Act 2010 if such activity, practice or conduct were carried out in the UK;

(c) comply with the Company's policy on fraud, theft, bribery, corruption, irregularity and waste referred to as "TfL's Fraud and Bribery Policy" as the Company may update it from time to time ("Relevant Policy");

(d) have and shall maintain in place throughout the term of this Contract its own policies and procedures, including adequate procedures under the Bribery Act 2010, to ensure compliance with the Relevant Requirements and the Relevant Policy, and will enforce them where appropriate;

(e) promptly report to the Company any request or demand for any undue financial or other advantage of any kind received by the Supplier or any Sub-Contractor in connection with the performance of this Contract of which the Supplier is, or ought reasonably to be, aware;

(f) immediately notify the Company in writing if a foreign public official becomes an officer or employee of the Supplier, and the Supplier warrants that it has no foreign public officials as officers, employees or direct or indirect owners at the date of this Contract; and

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(g) on 31 March annually, certify to the Company in writing signed by an officer of the Supplier compliance with this Clause 60 by the Supplier and all Sub-Contractors. The Supplier shall provide such supporting evidence of compliance as the Company may reasonably request.

61 NO WAIVER

61.1 No failure or delay on the part of either Party to exercise any right or remedy under this Contract shall be construed or operate as a waiver thereof nor shall any single or partial exercise of any right or remedy as the case may be. The rights and remedies provided in this Contract are cumulative and are not exclusive of any rights or remedies provided by law.

61.2 No payment made by the Company shall indicate or be taken to indicate the Company's acceptance or approval of any part of the Services or any act or omission of the Supplier from any obligation or liability imposed upon the Supplier by any provision of this Contract or otherwise.

62 MITIGATION

Both Parties shall take all reasonable steps and in the case of the Supplier act in accordance with Good Industry Practice to minimise and mitigate any loss and/or compensation for which it may make a claim against or which it may otherwise be entitled to recover from the other Party, including in the case of the Supplier by procuring (where applicable) that each Supplier Party takes all reasonable steps to mitigate and minimise such Loss and/or compensation.

63 ENTIRE CONTRACT

This Contract embodies and sets forth the entire contract and understanding of the Parties and shall supersede all prior oral or written contracts understandings or arrangements relating to the subject matter of this Contract. Except in the case of fraud, neither Party shall be entitled to rely on any contract, understanding or arrangement which is not expressly set forth in this Contract.

64 OTHER CONTRACTS WITH THE COMPANY

Except as otherwise agreed in writing by the Parties, if the Supplier or any Supplier Party has entered or enters into any other contract with the Company relating in any way to the subject matter of this Contract, no breach by the Company of such other contract nor any other act or omission nor any written or oral statement nor any representation whatsoever

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of or by the Company, its servants or agents or other contractors relating to or connected with any other such contract shall, regardless of any negligence on its part or their part:

(a) give the Supplier any right under this Contract to a Permitted Delay Event or an extension of time or additional payment or damages or any other relief or remedy whatsoever against the Company;

(b) affect, modify, reduce or extinguish either the obligations of the Supplier or the rights or remedies of the Company under this Contract; or

(c) be taken to amend, add to, delete, or waive any term or condition of this Contract.

65 DISPUTE RESOLUTION

If any question, dispute, difference or claim (a "Dispute") should arise under or in connection with this Contract, either Party may refer it for resolution pursuant to Schedule 5 (*Dispute Resolution Procedure*).

66 COUNTERPARTS

This Contract may be executed in several counterparts each of which shall be deemed an original and all of which shall constitute one and the same document.

67 PARTNERSHIPS AND JOINT VENTURES

67.1 If the Supplier is a partnership, the rights, obligations and liabilities of the partners in the partnership under this Contract are joint and several. This Contract and the liabilities of the partners under this Contract shall not automatically terminate upon the death, retirement or resignation of any one or more members of such partnership or upon the admission of additional partner or partners. The partner or partners in the partnership shall use their reasonable endeavours to procure that any additional partner or partners enter into an agreement with the Company confirming his/her acceptance of the rights, obligations and liabilities of the Supplier under this Contract.

67.2 If the Supplier comprises two (2) or more parties in joint venture, the rights, obligations and liabilities of each such Party under this Contract are joint and several.

67.3 Nothing in this Contract shall constitute, or shall be deemed to constitute, a partnership between the Parties. Except as expressly provided in this Contract, neither Party is deemed to be the agent of the other, and neither Party holds itself out as the agent of the other.

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68 INDEPENDENT SUPPLIER

The Supplier is an independent supplier and is not and shall not hold itself out as, and shall procure that none of the Supplier's employees or Sub-Contractors or their employees hold themselves out as, an agent of the Company.

69 GOVERNING LAW AND JURISDICTION

69.1 This Contract and any Dispute or claim arising out of or in connection with it or its subject matter shall be governed by and construed in accordance with the law of England and Wales.

69.2 Without prejudice to Clause 65 (*Dispute Resolution*), the courts of England and Wales will have exclusive jurisdiction to settle any Dispute which may arise out of or in connection with the Contract.

69.3 Either Party may seek interim injunctive relief or any other interim measure of protection in any court of competent jurisdiction.

69.4 Subject to Clause 69.3, each Party waives any objection to, and submits to, the jurisdiction of the Courts of England and Wales. Each Party agrees that a judgment or order of any such court is binding upon it and may be enforced against it in the courts of England and Wales or any other jurisdiction.

70 CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999

70.1 Subject to the Replacement Employer's rights under Clause 29, no person except any member of the TfL Group may enforce this Contract by virtue of the Contracts (Rights of Third Parties) Act 1999, but this does not affect any other right or remedy of a third party arising at law.

70.2 Notwithstanding those rights referred to in Clause 70.1, the Company and the Supplier may agree to vary or rescind this Contract without the consent of any third party.

71 FURTHER ASSURANCE

Each Party agrees to do all further acts and things and execute and deliver all instruments as shall be necessary or expedient for the carrying out of the provisions of this Contract.

72 DUTY OF THE SUPPLIER TO NOTIFY OCCASION OF TAX NON-COMPLIANCE

72.1 The Supplier shall send written notification of any Occasion of Tax Non-Compliance to the Company within five (5) Working Days from the date it became aware that it has committed an Occasion of Tax Non-Compliance during the performance of this Contract. The notification shall include steps being taken, if applicable, to remedy the Occasion of Tax Non-Compliance.

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72.2 For the avoidance of doubt, the obligation in Clause 72.1 also applies to an Occasion of Tax Non-Compliance in non-UK jurisdictions. If the Occasion of Tax Non- Compliance occurred in non-UK jurisdictions, the notification must be accompanied by a full explanation of the Occasion of Tax Non-Compliance and any relevant tax laws and administrative provisions so the Company can understand the nature and seriousness of the Occasion of Tax Non-Compliance.

72.3 Promptly upon a request by the Company, the Supplier shall supply to the Company a certificate signed by two (2) of its directors or senior officers on its behalf certifying that no Occasion of Tax Non-Compliance is continuing, or if an Occasion of Tax Non-Compliance is continuing, specifying the Occasion of Tax Non-Compliance and the steps, if applicable, taken to remedy it. This should include any mitigating factors that the Supplier considers relevant.

72.4 In exercising its rights or remedies under this Clause 72 or Clause 43, the Company shall:

(a) act in a reasonable and proportionate manner taking into account, among other things:

(i) the gravity and duration of the Occasion of Tax Non-Compliance and any sanctions imposed by a court or tribunal; and

(ii) any remedial action taken by the Supplier to prevent reoccurrence of the Occasion of Tax Compliance;

(b) seriously consider, where appropriate, action other than termination of this Contract to deal with the failure of the Supplier to comply with this Clause 72.

73 CAPACITY

Save as otherwise expressly provided, the obligations of the Company under this Contract are obligations of the Company in its capacity as a contracting counterparty and nothing in this Contract shall operate as an obligation upon, or in any other way fetter or constrain the Company in any other capacity, nor shall the exercise by the Company of its duties and powers in any other capacity lead to any liability under this Contract (howsoever arising) on the part of the Company to the Supplier.

74 AMENDMENTS

Any amendments to this Contract, other than those made in accordance with Clause 15, shall be effective only if made by agreement in writing between the Company's Representative and the Supplier's Representative, or those persons duly appointed by either Party to act on behalf of the Company's Representative and the Supplier's Representative in accordance with Clause 12.

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75 NOTICES AND SERVICE OF PROCESS

75.1 Subject to Clause 75.2, any notice or other document given under, or in connection with, this Contract must be in English and in writing and sent by letter, electronic mail or delivered by hand to the other Party's representatives in each case to the address identified below. The notice or other document will be effective as follows:

(a) if the notice or other document is sent by letter, it will be effective when it is delivered;

(b) if the notice or other document is sent by electronic mail, it shall be deemed to be given five (5) working hours (where "working hours" are 09:00 to 17:00 in a Working Day) following the time when the sender's electronic mail system dispatches the electronic mail provided that the correct email addresses are used, and the onus shall be on the sender to prove the time that the electronic mail was dispatched and the address it was sent to. The place of delivery of electronic mail will be deemed to be the postal address of the recipient set out in Schedule 1 (*Contract Data*); and

(c) if the notice or other document is delivered by hand to the other Party's representative, it will be effective immediately upon delivery.

The address and electronic mail address of the Company and the Supplier are set out in Schedule 1 (*Contract Data*).

If a Party's details change, it must notify the other Party promptly in writing of any such changes.

75.2 The Parties agree that proceedings arising out of or in connection with this Contract may not be served by electronic mail provided that the Company may from time to time give notices to the Supplier that such proceedings may be served by electronic mail. If the Company gives such a notice then with effect from such notice such proceedings may be served by electronic mail in accordance with Clause 75.1. The Company may from time to time rescind such a notice by further notice and, with effect from the date of such notice of rescission, proceedings arising out of or in connection with this Contract may not be served by electronic mail.

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PART 16: TFL GROUP REQUIREMENTS

76 TFL GROUP

76.1 Declaration of Ineffectiveness and Public Procurement Termination Event

(a) Without prejudice to the Company's right to terminate this Contract under Clause 42.1, 43, or at common law, the Company may terminate this Contract at any time in accordance with the provisions of this Clause 76.1 in the event that:

(i) there is a Declaration of Ineffectiveness; or

(ii) there is a Public Procurement Termination Event (without prejudice to the Company's rights of termination implied into the Contract by Regulation 73(3) of the Public Contracts Regulations 2015 or by Regulation 89(3) of the Utilities Contracts Regulations 2016).

(b) In the event that any court makes a Declaration of Ineffectiveness or there is a Public Procurement Termination Event, the Company shall notify the Supplier. The Parties agree that the provisions of this Clause 76.1 shall apply as from the date of receipt by the Supplier of the notification of a Declaration of Ineffectiveness or a Public Procurement Termination Event. Where there is any conflict or discrepancy between the provisions of Clause 42.1 and this Clause 76.1 or the Cessation Plan, the provisions of this Clause 76.1 and the Cessation Plan shall prevail.

(c) The Declaration of Ineffectiveness or the Public Procurement Termination Event shall not prejudice or affect any right, liability or remedy which has accrued or which shall accrue to either Party prior to or after such Declaration of Ineffectiveness or Public Procurement Termination Event.

(d) As from the date of receipt by the Supplier of the notification of the Declaration of Ineffectiveness or the Public Procurement Termination Event, the Parties (acting reasonably and in good faith) shall agree or, in the absence of such agreement, the Company shall reasonably determine an appropriate Cessation Plan with the object of achieving:

(i) an orderly and efficient cessation of the Services or (at the Company's request) a transition of the Services to the Company or such other entity as the Company may specify; and

(ii) minimal disruption or inconvenience to the Company or to public passenger transport services or facilities, in accordance with the provisions of this Clause 76.1 and to give effect to the terms of the

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Declaration of Ineffectiveness or the Public Procurement Termination Event.

(e) Upon agreement, or determination by the Company of the Cessation Plan the Parties shall comply with their respective obligations under the Cessation Plan.

(f) The Company shall pay the Supplier's reasonable costs in assisting the Company in preparing, agreeing and complying with the Cessation Plan.

Such costs shall be based on any comparable costs or charges agreed as part of this Contract or as otherwise reasonably determined by the Company. Provided that the Company shall not be liable to the Supplier for any loss of profit, revenue goodwill or loss of opportunity as a result of the early termination of this Contract in accordance with this Clause 76.1.

76.2 Crime and Disorder Act 1998

The Supplier acknowledges that the Company is under a duty under Section 17 of the Crime and Disorder Act 1998 (as amended by the Police and Justice Act 2006 and the Policing and Crime Act 2009) to:

(a) have due regard to the impact of crime, disorder and community safety in the exercise of its duties;

(b) where appropriate, identify actions to reduce levels of crime and disorder; and

(c) without prejudice to any other obligation imposed on the Company, exercise its functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent, in its area:

(i) crime and disorder (including anti-social and other behaviour adversely affecting the local environment);

(ii) the misuse of drugs, alcohol and other substances; and

(iii) re-offending,

and in the performance of this Contract, the Supplier shall assist and co-operate with the Company and relevant members of the TfL Group and shall use reasonable endeavours to procure that its Sub-Contractors assist and co-operate, with the Company and relevant members of the TfL Group to enable the Company to satisfy its duty.

76.3 The Company's business

The Supplier acknowledges that it:

(a) has sufficient information about the Company and the Services;

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(b) is aware of the Company's processes and business;

(c) has made all appropriate and necessary enquiries to enable it to carry out the Services in accordance with this Contract;

(d) is aware of the purposes for which the Services are required; and

(e) shall neither be entitled to any additional payment nor excused from any obligation or liability under this Contract due to any misinterpretation or misunderstanding by it of any fact relating to the Services.

76.4 Best value

The Supplier acknowledges that the Company is a best value authority for the purposes of the Local Government Act 1999 and as such the Company is required to make arrangements to secure continuous improvement in the way it exercises its functions, having regard to a combination of economy, efficiency and effectiveness. The Supplier shall assist the Company to discharge its duty where possible, and in doing so, shall carry out any review of Services reasonably requested by the Company from time to time. The Supplier shall negotiate in good faith (acting reasonably) with the Company any changes to this Contract in order for the Company to achieve best value.

76.5 Conflict of Interest

(a) The Supplier acknowledges and agrees that it does not have any interest in any matter where there is or is reasonably likely to be a conflict of interest with the carrying out of the Services or with any member of the TfL Group, save to the extent fully disclosed to and approved in writing by the Company.

(b) The Supplier shall undertake ongoing and regular checks for any conflict of interest throughout the duration of this Contract and in any event not less than once in every six (6) months and shall notify the Company in writing immediately on becoming aware of any actual or potential conflict of interest with the carrying out of the Services under this Contract or with any member of the TfL Group and shall work with the Company to do whatever is necessary (including the separation of staff working on, and data relating to, the Services from the matter in question) to manage such conflict to the Company's satisfaction, provided that, where the Company is not so satisfied (in its absolute discretion) it shall be entitled to terminate this Contract.

76.6 Equality and Diversity

(a) Without limiting the generality of any other provision of this Contract, the Supplier:

(i) shall not unlawfully discriminate;

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(ii) shall procure that its employees and agents do not unlawfully discriminate; and

(iii) shall use reasonable endeavours to procure that its Sub-Contractors do not unlawfully discriminate when providing the Services,

within the meaning and scope of the Equality Act 2006, the Equality Act 2010 and any other relevant enactments in force from time to time in relation to discrimination in employment.

(b) The Supplier acknowledges that the Company is under a duty under section 149 of the Equality Act 2010 to have due regard to the need to:

(i) eliminate unlawful discrimination on the grounds of age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation (all "Protected Characteristics") and marriage and civil partnership;

(ii) advance equality of opportunity between persons who share a Protected Characteristic and persons who do not share it; and

(iii) foster good relations between persons who share a Protected Characteristic and persons who do not.

In performing this Contract the Supplier shall assist and cooperate with the Company where possible in satisfying this duty.

(c) The Supplier shall ensure that its staff, and those of its Sub-Contractors who are engaged in the performance of this Contract comply with the Company's policies in relation to equal opportunities and diversity, workplace harassment and drugs and alcohol as may be updated from time to time. Copies of these policies are available from the Company at any time on request.

(d) The Company's Harassment, Bullying and Discrimination Policy as up-dated from time to time (copies of which are available on request from the Company) requires the Company's own staff and those of its Sub-Contractors to comply fully with the Harassment, Bullying and Discrimination Policy to eradicate harassment in the workplace. The Supplier shall:

(i) ensure that its staff, and those of its Sub-Contractors who are engaged in the performance of the Contract are fully conversant with the requirements of the Harassment, Bullying and Discrimination Policy;

(ii) fully investigate allegations of workplace harassment in accordance with the Harassment, Bullying and Discrimination Policy; and

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(iii) ensure that appropriate, effective action is taken where harassment is found to have occurred.

(e) To the extent that the Company is required to assist or co-operate with TfL Group in compliance with its duties under the Equality Act 2010 (Specific Duties) Regulations 2011, the Supplier shall assist and co-operate with the Company where possible.

(f) Within three (3) Working Days after the Commencement Date, the Supplier shall provide to the Company a copy of its EDI Policy (in the form submitted to the Company before the Parties entered into the Contract). The Supplier shall keep its EDI Policy under review for the duration of the Contract and shall promptly provide the Company with any such revised EDI Policy.

(g) In addition to this Clause 76.6, the Supplier shall comply with its obligations under Schedule 17 (*Responsible Procurement*) in respect of equality and diversity.

76.7 Work Related Road Risk

(a) For the purposes of Clauses 76.7(b) to 76.7(j) (inclusive) and Schedule 21 (*Direct Vision Standard*) of this Contract, the following expressions shall have the following meanings:

"**Approved Progressive Driver Training**" means an ongoing programme of Drivers' training to ensure they have the appropriate knowledge, skills and attitude to operate safely on urban roads. This includes the training specific for the urban environment (including on-road experience from a cyclist's perspective), which is required to be completed at least once every 5 years;

"**Car-derived Van**" means a vehicle based on a car, but with an interior that has been altered for the purpose of carrying larger amounts of goods and/or equipment;

"**Category N2 HGV**" means a vehicle designed and constructed for the carriage of goods having a MAM exceeding 3,500 kilograms but not exceeding 12,000 kilograms;

"**Category N3 HGV**" means a vehicle designed and constructed for the carriage of goods and having a MAM exceeding 12,000 kilograms;

"**CLOCS Standard**" means the Construction Logistics and Community Safety standard, which aims to eliminate risk of a collision between heavy goods vehicles servicing the construction sector and vulnerable road users by ensuring effective practice in the management of operations, vehicles, drivers and construction sites; further information can be found at: www.clocs.org.uk;

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"**Collision Report**" means a report detailing all collisions during the previous twelve (12) months involving injuries to persons or fatalities;

"**Delivery and Servicing Vehicle**" means an HGV, a Van or a Car-derived Van;

"**Direct Vision Standard**" or "**DVS**" means Direct Vision Standard, a performance based assessment and rating tool, as updated from time to time that measures how much direct vision a Driver has from a Category N3 HGV cab in relation to other road users. Further information can be found at: www.tfl.gov.uk;

"**Driver**" means any employee of the Supplier (including an agency or contracted driver), who operates Delivery and Servicing Vehicles on behalf of the Supplier while providing the Services;

"**DVLA**" means Driver and Vehicle Licensing Agency;

"**Equivalent Scheme**" has the meaning given to it in Clause 76.7(b)(i);

"**FORS**" means the Fleet Operator Recognition Scheme, which is an accreditation scheme for businesses operating commercial vehicles including vans, HGV, coaches and P2W. It offers impartial, independent advice and guidance to motivate companies to improve their compliance with relevant laws and their environmental, social and economic performance;

"**FORS Standard**" means the standard setting out the accreditation requirements for the Fleet Operator Recognition Scheme, a copy of which can be found at: www.fors-online.org.uk;

"**Gold Accreditation**" means the highest level of accreditation within the FORS Standard, the requirements of which are more particularly described at: www.fors-online.org.uk;

"**HGV**" means a vehicle with an MAM exceeding 3,500 kilograms;

"**MAM**" means the maximum authorised mass of a vehicle or trailer including the maximum load that can be carried safely while used on the road;

"**Silver Accreditation**" means the minimum level of accreditation within the FORS Standard acceptable for the contract schedule, the requirements of which are more particularly described at: www.fors-online.org.uk; and

"**Van**" means a vehicle with a MAM not exceeding 3,500 kilograms.

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(b) Fleet Operator Recognition Scheme Accreditation

Where the Supplier operates Delivery and Servicing Vehicles to provide the Services, it shall within 90 days of the Commencement Date:

(i) (unless already registered) register for FORS or a scheme, which in the reasonable opinion of the Company, is an acceptable substitute to FORS (the "Equivalent Scheme"); and

(ii) (unless already accredited) have attained the standard of Silver Accreditation (or higher) or the equivalent within the Equivalent Scheme and shall maintain the standard of Silver Accreditation (or equivalent standard within the Equivalent Scheme) by way of an annual independent audit in accordance with the FORS Standard or take such steps as may be required to maintain the equivalent standard within the Equivalent Scheme. Alternatively, where the Supplier has attained Gold Accreditation, the maintenance requirements shall be undertaken in accordance with the periods set out in the FORS Standard.

(c) Safety Features on HGVs

The Supplier shall ensure that every HGV, which it uses to provide the Services, shall be fitted with safety features consistent with the FORS Silver Accreditation.

(d) Construction Logistics and Community Safety (CLOCS)

(i) Where applicable:

(A) the Supplier shall comply with the CLOCS Standard;

(B) the Supplier shall ensure that the conditions at all Sites where:

1) the Services are being delivered, or

2) in connection with the performance of the Services, any waste is being disposed of or supplies are being delivered to or from,

are appropriate for each Category N3 HGV being used in the provision of the Services.

(e) Direct Vision Standard

Where applicable:

(i) the Supplier shall comply with Schedule 21 (*Direct Vision Standard*); and

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(ii) the Supplier shall ensure that:

(A) from and including 26 October 2019, all Category N3 HGVs used in the provision of the Services achieve a minimum of a one (1) star Direct Vision Standard rating; and

(B) from and including 26 October 2023 all Category N3 HGVs used in the provision of the Services achieve a minimum of three (3) star Direct Vision Standard rating.

(f) Driver Training

Where the Supplier operates Delivery and Servicing Vehicles to provide the Services the Supplier shall ensure that each of its Drivers attend the Approved Progressive Driver Training throughout the term of this Contract.

(g) Collision Reporting

Where the Supplier operates Delivery and Servicing Vehicles to provide the Services, the Supplier shall within fifteen (15) days of the Commencement Date, provide to the Company a Collision Report. The Supplier shall provide to the Company an updated Collision Report within five (5) Working Days of a written request from the Company at any time.

(h) Self-Certification of Compliance

Where the Supplier operates Delivery and Servicing Vehicles to provide the Services the Supplier shall, within ninety (90) days of the Commencement Date, make a written report to the Company detailing its compliance with Clauses 76.7(b), 76.7(c) 76.7(d), 76.7(e), 76.7(f) and 76.7(g) of this Contract (the "WRRR Self-Certification Report"). The Supplier shall provide updates of the WRRR Self-Certification Report to the Company on each six (6) month anniversary of its submission of the initial WRRR Self-Certification Report.

(i) Obligations of the Supplier Regarding Sub-Contractors

(i) The Supplier shall ensure that those of its Sub-Contractors who operate Category N2 HGVs, Category N3 HGVs, Vans and/or Car- derived Vans to provide the Services shall comply with the corresponding provisions of this Contract:

(ii) Clauses 76.7(b), 76.7(f), 76.7(g) and 76.7(h);

(iii) for Category N2 HGVs – Clause 76.7(c);

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(iv) for Category N3 HGVs – Clauses 76.7(c) and, where applicable, 76.7(d) and 76.7(e);

as if those Sub-Contractors were a party to this Contract.

(j) Failure to Comply

Without limiting the effect of any other Clause of this Contract relating to termination, if the Supplier fails to comply with Clauses 76.7(b), 76.7(c) (where applicable), 76.7(d) (where applicable), 76.7(e) (where applicable), 76.7(f), 76.7(g), 76.7(h), 76.7(i) and/or Schedule 21 (*Direct Vision Standard*):

(i) the Supplier has committed a material breach of this Contract; and

(ii) the Company may refuse the Supplier, its employees, agents and Delivery and Servicing Vehicles entry onto any property that is owned, occupied or managed by the Company for any purpose (including but not limited to deliveries).

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SIGNATURES

IN WITNESS of which this document has been executed as a deed by the Parties and delivered as a deed on the date first written above.

Executed as a **deed** by)
Transport for London)

[redacted]

acting by its attorney)

[redacted]

in the presence of:

[redacted]

Address: Palestra 197 Blackfriars Road London SE1 8NJ

TfL reference no: TFL 7884

Executed as a **deed** by)
Telent Technology Services Limited

[redacted]

)
)
)

[redacted]

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Schedule 1

Contract Data

General

Contract Reference Number:	CW66476
Commencement Date:	The date of this Contract
Services Commencement Date:	15 September 2024
Expiry Date:	14 September 2029
Notices (to Company):	Address: Transport for London 5 Endeavour Square London E20 1JN [redacted]
Notices (to Supplier):	Address: The Company Secretary Telent Technology Services Limited Point 3, Haywood Road, Warwick, CV34 5AH [redacted]
Company's Representative:	[redacted] Address: Transport for London 5 Endeavour Square London E20 1JN [redacted]
Supplier's Representative:	[redacted] Address: Telent Technology Services Limited Unit A & B Pirin Court South Crescent Cody Road Canning Town London, E16 4TL [redacted]
Senior Representative (Company):	[redacted] Address: Transport for London 5 Endeavour Square

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	London E20 1JN [redacted] [redacted] [redacted] [redacted]
Senior Representative (Supplier):	[redacted] Address: Telent Technology Services Limited Unit A & B Pirin Court South Crescent Cody Road Canning Town London, E16 4TL [redacted] [redacted] [redacted] [redacted]
Key Personnel:	See Appendix 0 to this Schedule 1.
Interest Rate (Clause 20):	[redacted]
Performance Security (Clause 53):	Performance Bond: Required as described in Clause 53.1 Parent Company Guarantee: Required as described in Clause 53.1
The bond provides, in aggregate credit protection for the Company of an amount not less than: NB: Any performance bond provided is renewed every twelve (12) months until the Expiry Date (or date of termination of this Contract if earlier) for an amount equal to that stated in the box opposite (notwithstanding any claim or claims under any bond previously provided to the Company).	[redacted]

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Appendix 1



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Schedule 2

Specification

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TRANSPORT FOR LONDON

MAINTENANCE SERVICES CONTRACT – FIRE

Services Specification

COMMERCIAL IN CONFIDENCE

FOR TENDER

VERSION 1/

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1. SCOPE

1.1 General Scope of Services

The scope of services is for Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and associated detailed activities to Fire Equipment.

This Specification covers all aspects of Planned Preventative Maintenance, Reactive Maintenance, Isolation Services and associated activities for the business units incorporated within this Contract.

The Supplier shall comply with the individual business unit requirements set out in Appendix R (as applicable to the relevant Services).

Where individual business unit requirements are provided within Appendix R, these requirements will take precedence over the requirements as set out within the main body of this Specification to the extent there is any conflict between such terms. Where individual business unit requirements are not provided within Appendix R, the requirements as set out within the main body of this Specification will apply to all business units.

1.2 Nature of the Sites in Scope

The Sites include but are not limited to:

- Stations
- Depots
- Trackside buildings
- Operational accommodation
- Offices
- Service Control Centres
- Intervention points and shafts
- Workshops
- Training centres
- Stores
- British Transport Police
- Power Sub-Stations/Transformer Rooms/HV, Traction & LV Switch rooms and Generating Station.

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2. GENERAL REQUIREMENTS

2.1 Core Team

2.1.1 The Supplier shall provide a team of suitably qualified and experienced Supplier Personnel able to deliver a cost-effective service that meets the specified quality standards (the "Core Team"). The Core Team structure, including roles and responsibilities, is subject to agreement by the Company. As a minimum the Core Team shall include the following Key Personnel:

Key Personnel role	Responsibilities
Senior Management	Accountable, to oversee the Contact, act as point of escalation
Contract Management Team	Day to day management of the contract, responsible for meeting KPIs
Operational Team	Management of resources
H&S	H&S support
Planning	Access and programme
Asset Management Team	Data management

2.1.2 The Supplier shall at all times provide an adequate level of supervision of all office-based and site-based Supplier Personnel engaged in delivery of the Services.

2.1.3 The Supplier shall be available, contactable and able to respond appropriately twenty-four (24) hours per day, seven (7) days a week, three hundred and sixty-five (365) days per year.

2.1.4 The Company's contract management structure and reporting requirements are detailed in Schedule 10 (Contract Management).

2.2 Security Vetting

2.2.1 Supplier Personnel requiring access to certain parts of the Sites (as determined from time to time by the Company) shall be subject to security checks including but not limited to Metropolitan Police Service and British Transport Police clearance. Types of Sites where security checks are required are indicated in the security section of Schedule 20 (Training). Before working in these areas Supplier Personnel shall undergo a security clearance procedure. Supplier Personnel without security clearance shall be escorted at all times by a member of Supplier Personnel who is security cleared and then only if the individual under supervision has a security clearance application submitted and pending. Any such supervision required will be provided at the Supplier's cost.

2.2.2 Security vetting requirements specific to the London Overground business unit are set out at Appendix R.

2.2.3 The Supplier shall provide sufficient security cleared Supplier Personnel to deliver the Services without disruption.

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2.2.4 The Supplier shall:

a. provide details of security cleared Supplier Personnel to the Company at the Services Commencement Date;
b. keep full records of all clearances and rejected clearances; and
c. notify the Company of any additions, removals or changes in clearance statuses at the next Period Progress Meeting.

2.2.5 The Supplier shall be subject to BAA vetting and security clearance when requiring access to any premises or Equipment within airport jurisdiction.

2.2.6 The Supplier shall be subject to basic Disclosure and Barring Service checks and British Transport Police vetting process (as required) for all personnel requiring access in a sub-station environment, Long Acre, Greenwich Power Station and British Transport Police offices. The Supplier shall be responsible for making the application for any check or vetting process, together with any associated costs.

2.3 Security Passes

2.3.1 Supplier Personnel shall wear a relevant security pass and/or Supplier pass at all times when on all Sites. Where the Company does not provide such passes to Supplier Personnel, the Supplier shall implement its own security pass arrangements that shall be approved by the Company in advance. As a minimum the Supplier-provided security pass shall include the Supplier Personnel member's name, photograph and an expiry date. This requirement does not replace and is in addition to any specific Company entry permits issued as part of a training course which may be required for certain Company Sites. Company-specific training requirements are more particularly defined in Section 3 (Skills and Qualifications) of this Specification.

2.4 Keys and Access

2.4.1 When required, keys and access cards (including other methods of controlled access) shall be provided to the Supplier and the Supplier shall be responsible for the safe keeping of such keys and access cards. The Supplier shall not manufacture duplicate keys and/or access cards under any circumstances. The Supplier shall return to the Company all keys and access cards that have been issued on completion of any specific section of works for which keys and access cards have been issued.

2.4.2 Should the Supplier lose any key or access card provided by the Company then immediately on discovery of the loss, the Supplier shall:

a. notify the Company of the loss; and
b. pay to the Company the cost of replacement of the key(s) or access card(s) including any associated installation work.

2.4.3 Specific key and access requirements in respect of the London Overground, RFLI and Trams business units are set out at Appendix R.

2.5 Appearance, Dress Code and Behaviour

2.5.1 The Supplier shall ensure that all Supplier Personnel engaged in delivery of the Services shall:

a. be of good character, capability, appearance and behaviour;
b. undertake the Services with a high level of awareness of customer service;
c. maintain the highest standard of appearance and behaviour at all times;

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d. are professional and courteous when dealing with customers, any member of the TfL Group and visitors;
e. comply with S1552 Contract QUENSH Conditions where applicable; and
f. execute work activities on Site with minimal levels of noise and appropriate conduct, especially within or close to any residential buildings and shall note and comply with any noise abatement requirements.

2.5.2 Whilst on duty, Supplier Personnel shall wear an appropriate uniform and Personal Protective Equipment (PPE) for the tasks being performed, and for the location in which they are operating. The wearing of personal accessories including dangling neckwear or similar articles should be avoided where reasonably possible and the Supplier shall ensure that, where worn, there is no impact on the safety of performing the tasks. All uniforms and PPE shall be provided at the Supplier's cost and must be clearly distinguishable from Company branded clothing.

2.5.3 Uniforms and/or PPE shall be maintained in good repair and clean, presentable condition and be fit for purpose at all times.

2.6 Records and Reports Management

2.6.1 The Supplier shall be responsible for supplying, maintaining and updating Company specified records and reports held within the Company's Document Management System, including but not limited to:

- Planned Preventative Maintenance Schedules
- Maintenance Activity Record Submissions;
- Fire Asset Compliance Tracker;
- Reactive Maintenance works records;
- Enhanced Maintenance works records;
- Fire Equipment deficiency reports;
- Supplier safety audit schedule and completion records;
- Supplier quality audit schedule and completion records;
- Supplier quality assurance records;
- Spares management reporting;
- Station, Depot and Service Control Centre closure and evacuation reports;
- Temporary Smoke to Heat Detector change records;
- Message change pack records;
- Contractor isolation records;
- Fire Asset data;

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- Waste management records; and
- Risk documents, including a site-specific risk register relating to the delivery of the Services at the Sites.

2.6.2 Station, Depot and Service Control Centre closure and evacuation reports, are required to be submitted to the Company-specified recipients prior to 06:00 the following day.

2.6.3 The Supplier shall ensure that all records and reports are:
a. kept fully up to date at all times;
b. fully detailed;
c. legible;
d. dated and signed by the Supplier (where applicable); and
e. the property of the Company.

2.6.4 The Supplier shall ensure that all records and reports are uploaded to, maintained and available at all times in the Company's Document Management System in accordance with the Company's document format, naming and filing requirements.

2.6.5 The Company shall provide training for and access via portal to the Company's Document Management System to nominated Supplier Personnel.

2.6.6 Where records are updated in accordance with paragraph 2.6.1, the Supplier shall evidence all changes clearly and provide the Company with the updated records within ten working days of the completion of the applicable Services.

2.6.7 In the absence of records including, but not limited to, those listed at paragraph 2.6.1 above, the Supplier shall create, manage and maintain accurate records such that complete records are kept.

2.6.8 The Supplier shall transmit all data electronically to the Company as per the requirements in Appendix H (Asset Management System), unless otherwise requested or agreed by the Company.

2.6.9 Specific records and reports management requirements in respect of the London Overground business unit are set out at Appendix R.

2.7 Materials and Equipment

2.7.1 The Supplier shall be responsible for the supply, delivery, offloading, storage (where no storage can be provided by the Company) and testing of all materials, tools and Equipment including all safety equipment necessary to undertake the Services.

2.7.2 The Supplier shall determine the stock level of materials, tools and equipment including all safety equipment necessary to undertake the Services and meet the day-to-day requirements of the Sites.

2.7.3 The Supplier shall provide to the Company, on request, data and information on the safe use and storage of all Supplier Spares, materials, tools and equipment used at the Company's Sites.

2.7.4 The Supplier shall ensure the most energy efficient replacement materials, Consumables, tools and Equipment are selected wherever possible.

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2.7.5 Assets, Components and Consumables shall be replaced with a new product produced by the same manufacturer with the same product number. The Supplier may identify beneficial alternative products which may be used only by prior agreement of the Company. Proposed alternatives may be considered in order to help achieve superior whole life costs, enhanced performance and/or as part of the Supplier's obligations in accordance with clause 16 of the Contract.

2.7.6 The Supplier shall submit details of Spares, tools, mechanical equipment and technology-based equipment (including software requirements/licences) to be used in the delivery of the Services for review and acceptance by the Company no less than four (4) weeks prior to the Services Commencement Date. Subsequent proposed changes or additions shall be submitted by the Supplier and agreed by the Company at each Period Progress Meeting.

2.7.7 The Supplier shall confirm that the acquisition of Company agreed Spares, tools, mechanical equipment and technology-based equipment as referred to in paragraph 2.7.6 has been completed and are available for immediate use no less than one (1) week prior to the Services Commencement Date.

2.7.8 In accordance with the Company's commitment to reducing its environmental impact through responsible procurement, the Company requires the use of cleaning materials and Consumables utilised in the delivery of the Services, as far as reasonably practicable, that are accredited to the European Eco-label standard (or equivalent).

2.7.9 Any tools, Equipment, Assets or Spares which are provided by the Company for use by the Supplier are solely for use in the delivery of the Services. Title to the tools, Equipment or Spares shall remain with the Company.

2.7.10 The Supplier shall ensure that all tools, equipment or Spares supplied and used in the delivery of Services are in good working order and shall carry the correct and valid certification/licence and, where applicable, be used by the relevant trained operative. The Supplier shall ensure all materials, tools and equipment are uniquely identified, are (where applicable) marked as property of the Company and maintain adequate records to satisfy an audit trail.

2.7.11 Work tools and materials shall be inspected and maintained to ensure they remain safe and available for operational use at all times in accordance with the Provision and Use of Work Equipment Regulations 1998 (PUWER).

2.7.12 The Supplier shall maintain a record of any items of the Company's work tools or equipment issued to Supplier Personnel.

2.7.13 The Supplier shall:

a. only use materials and Equipment that are approved for use by the Company on the Company approved list of products and materials and which comply(where applicable) with Company Standards, as set out in Section 6 of this Specification; and

b. ensure that all supplied Spares meet or exceed the required Standards that are current throughout the life of the Contract, and any extension thereof.

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Equipment installed by the Supplier which, in the reasonable opinion of the Company, does not meet these requirements shall be removed and replaced with acceptable Equipment by the Supplier at no cost to the Company. If the Supplier is unable or unwilling to replace any unsuitable Equipment then the Company may arrange for its replacement at the Supplier's cost.

2.7.14 Materials used shall as far as reasonably practicable pose no hazard to health and shall not contravene any relevant regulations or statutory requirements. The labelling and handling of materials that may pose a health hazard shall be to the latest revision of the Control of Substances Hazardous to Health Regulations 2002 (COSHH Regulations).

2.8 On-Site Storage & Accommodation

2.8.1 No office accommodation, storage, canteen, mess or vehicle parking facilities are provided at the Sites for the Supplier's use. The Supplier shall make their own arrangements in this respect and shall pay all fees and charges in connection therewith.

2.8.2 Where such facilities are unavailable, the Supplier shall make its own arrangements in this respect and shall pay all fees and charges in connection therewith.

2.9 Temporary Hoardings

2.9.1 The Supplier shall provide temporary hoardings, should they be required, to deliver the Services. The Supplier shall construct temporary hoardings in accordance with the LUL – S1027 – Site Hoarding, Fencing and Barriers.

2.9.2 The Supplier shall protect existing structures from damage during the delivery of the Services by the use of any necessary props, screens, fans, waterproof sheets, dust sheets and the like, and any damage caused shall be made good at the discretion of the Company either by the Supplier, at the Supplier's cost, or by the Company as a cost recoverable from the Supplier.

2.9.3 Specific temporary hoarding requirements in respect of the London Overground business unit are set out at Appendix R.

2.10 Utilities

2.10.1 The Supplier may utilise water and electricity where available at each Site for the purposes of delivering the Services. This will include a single-phase 110 volt supply in public areas and some plant rooms. The Supplier shall provide all electrical leads from the local socket outlet to the place of work, including all necessary extension leads. All leads shall be appropriately tested and tagged in accordance with all current Engineering and British Standards. The Supplier shall use battery operated tools and materials where possible to prevent circuits being overloaded.

2.10.2 If power supplies are required for a period of time on a specific Service, the Company may determine that it is necessary to install a dedicated supply to perform the specific Service.

2.11 Removal and Management of Waste

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2.11.1 The Supplier shall be responsible for the prompt removal from the Sites of all waste or surplus material generated by the Supplier in the delivery of the Services and shall ensure its safe disposal.

2.11.2 The Supplier shall ensure that resources and materials, including water, are used efficiently and that waste is minimised.

2.11.3 Where waste is produced, the Supplier shall ensure it is:

- disposed of appropriately in separate bins (i.e. recyclable, confidential, electrical, general, hazardous);
- segregated. Hazardous Waste must be separated from non-Hazardous Waste, liquid waste must be separated from solid waste, and recyclable waste must be separated from non-recyclable waste;
- stored in an appropriately labelled container;
- stored in a secure, designated area away from any drains; and
- stored so it cannot escape into the local environment, attract pests or give off foul odour.

2.11.4 The Supplier shall report to the Company at the end of each Period all waste arising in the delivery of the Services. The report shall be submitted in accordance with the requirements set out in Schedule 16 (Health, Safety, Quality and Environmental Requirements), unless otherwise agreed by the Company.

2.12 Maintenance Reports

2.12.1 The Supplier shall generate reports for the following:

(a) Planned Preventative Maintenance activities;

(b) Planned Preventative Maintenance whereby concerns, faults or Enhanced Maintenance proposals are identified

(c) Reactive Maintenance activities;

(d) Reactive Maintenance whereby concerns, or Enhanced Maintenance proposals are identified; and

(e) Enhanced Maintenance activities,

each being a **"Maintenance Report**".

2.12.2 Maintenance Reports shall include:

(a) for any Maintenance Report relating to the activities referred to in paragraphs 2.12.1 (a) and (b);

- site name;

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- dates of attendance;
- name(s) of engineer(s) in attendance;
- equipment identifiers;
- related Work Order number/s;
- room/SID identifiers;
- work items undertaken;
- accidents, incidents, near misses;
- description of any site/asset concerns or faults raised; and
- Asset Condition Rating (ACR); and

(b) for any Maintenance Report relating to the activities referred to in paragraphs 2.12.1 (c), (d) and (e);

- site name;
- dates of attendance;
- name(s) of engineer(s) in attendance;
- equipment identifiers;
- related Work Order number/s;
- room/SID identifiers;
- general condition statement of the room and Equipment upon arrival and departure;
- work items undertaken and the results;
- any reactive/corrective work undertaken to resolve concerns or faults including unique identifier numbers and testing results where applicable;
- description of any concerns or faults and actions taken;
- details of any Enhanced Maintenance proposals;
- photographs clearly detailing any concerns, faults or supporting Enhanced Maintenance proposals;
- accidents, incidents, near misses; and
- Asset Condition Rating (ACR).

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2.12.3 Typical Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance activities requiring a Maintenance Report are:

- Fire Detection & Alarm Systems;
- Fire Suppression & Fixed Fire Fighting Systems;
- Portable Fire Extinguishers and Fire Blankets; and
- Compartmentation.

2.12.4 Maintenance Reports shall not cover more than one Site or System type or span over one period of work order activities unless approved by the Company.

2.12.5 Maintenance Reports shall be submitted as per the business process requirements defined in Section 2 of Appendix H (Asset Management System) and shall be attached to the Work Order before the Work Order is closed.

2.12.6 Specific reporting requirements in respect of the London Overground business unit are set out at Appendix R.

2.13 Fire Asset Compliance Reporting

2.13.1 Prior to the Services Commencement Date, the Supplier shall produce and maintain a real-time Fire Asset Compliance Tracker within the Company's Document Management System.

2.13.2 The Supplier shall submit the Fire Asset Compliance Tracker template to the Company for review and acceptance no less than four (4) weeks prior to the Services Commencement Date.

2.13.3 The Fire Asset Compliance Tracker will have the facility to provide real-time fire asset compliance data, filterable by any combination of Site and/or Asset type.

2.14 Additional Works

2.14.1 The Company will require the Supplier to provide Additional Works.

2.14.2 The process for the provision of Additional Works is set out in Schedule 4 (Contract Variation Procedure and Additional Works).

2.14.3 Additional Works may include but will not be limited to Asset / System replacement.

2.14.4 Where the Supplier has installed additional Equipment or replaced existing Equipment, the Supplier shall provide the Company with copies of warranty documents, O&M manuals and test and completion certificates (that meet Company specified requirements and industry guidance as detailed within current versions of BSRIA BG79 and CIBSE Guide M). Equipment data relevant to the installation shall be provided as per the requirements defined in Appendix H (Asset Management System). The Supplier shall provide training to all relevant members of the TfL Group on the use of the installation as applicable.

2.14.5 Additional Works shall be managed using the Company's AMS and the Supplier shall comply with the AMS Supplier Processes as defined in Appendix K (AMS Supplier Processes).

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2.14.6 Specific Additional Works requirements in respect of the London Overground business unit are set out at Appendix R.

2.15 General

2.15.1 The Supplier shall be required to temporarily remove and reinstate suspended ceilings, vitreous enamel panels, escalator machinery protection guards, floor trays, access covers, pits (and covers), ducting and other such items where necessary to facilitate access to all Equipment. The Supplier is responsible for the provision of all required tools, accessories, keys, arrangements and training to facilitate this requirement. Where access to the Equipment requires access to escalators involving the use of specialist access equipment, such as the temporary removal of escalator incline panels or similar, this specialist access service will be provided free issue by the Company.

2.15.2 Furniture, suspended ceilings, tiles, raised floor trays, vitreous enamel panels and other such items temporarily removed for access in occupied areas shall be reinstated by the Supplier at the end of the shift and any dust and dirt arising removed by vacuum cleaner (battery operated or 110 volt with a current PAT label) and the site left clean and tidy. Suspended ceiling tiles, raised access floor trays, vitreous enamel panels and other such items temporarily removed for access shall be referenced to ensure correct position and orientation upon reinstatement by the Supplier. Photographic evidence shall be provided by the Supplier to verify that the end of shift Company asset conditions and arrangements reflect in all aspects the start of shift asset conditions and arrangements.

2.15.3 Suspended ceiling tiles, raised access floor trays, vitreous enamel panels and other such items removed for access shall be cleaned by the Supplier to ensure no dirty marks, finger prints or other such blemishes are apparent upon reinstatement.

2.15.4 Any damage caused by the Supplier or its Sub-contractors whilst carrying out the Services shall be made good at the discretion of the Company either by the Supplier, at the Supplier's cost, or by the Company as a cost recoverable from the Supplier.

2.15.5 Where the Services necessitate the removal and reinstatement of suspended ceiling panels (other than lay-in), suspended ceiling grid and hangers, vitreous enamel panels, escalator incline panels, escalator machinery protection guards or other similar shall be carried out by a competent person employed by the Supplier or a specialist Sub-contractor employed by the Supplier. Minimum requirements for ceiling tiles are identified in paragraph 7.4.5.

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3 SKILLS & QUALIFICATIONS

3.1 Skills and Qualifications of Supplier Personnel

3.1.1 The Supplier shall provide suitably qualified and experienced Supplier Personnel to deliver the Services.

3.1.2 The Supplier shall ensure that there is a sufficient level of trained and competent Supplier Personnel to provide all the requirements of the Services at all times, to maintain a contractually and legally compliant Service.

3.1.3 The Supplier shall provide Supplier Personnel qualified and competent in the discipline they are performing.

3.1.4 The Supplier shall employ competent Supplier Personnel who will be responsible for planning, overseeing and signing off completed works / tasks.

3.1.5 The Supplier shall ensure that a sufficient number of Supplier Personnel have the following minimum skill levels and qualifications as required to provide the Services:

Skills Level / Qualification	**Required for**
Demonstratable competency for Fire Detection and Alarm Systems utilised on TfL property (As per PR0631)	*Fire Detection and Alarm Systems Design, Installation, Commissioning, Maintenance (Planned Preventative & Reactive) Management and Completion*
Demonstratable competency for Fire Suppression and Fixed Fire Fighting Systems utilised on TfL property	*Fire Suppression and Fixed Fire Fighting Systems Design, Installation, Commissioning, Maintenance (Planned Preventative & Reactive) Management and Completion*
Demonstratable competency for Fire Compartmentation measures utilised on TfL property	*Fire Compartmentation Design, Installation, Maintenance (Reactive) Management and Completion*
Demonstratable competency for Portable Fire Extinguishers and Fire Blankets utilised on TfL property	*Portable Fire Extinguishers and Fire Blankets Design, Installation, Commissioning, Maintenance (Planned Preventative & Reactive) Management and Completion*
Installation & Maintenance Electricians and Approved Electricians as defined by the JIB Grading Handbook	*Low Voltage commercial and industrial Electrical Installation, Inspection, Testing, Certification and Condition Reporting*

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Skills Level / Qualification	**Required for**
Demonstratable competency and valid certification for accessing Hard Access locations within TfL property	*Fire Protection Equipment Surveys, Installation, Commissioning and Maintenance (Planned Preventative, Enhanced & Reactive*
The Institute of Occupational Safety and Health (IOSH) - Managing Safely – Safety Management Level	*HSE Management by Managers, Senior Supervisors and Supervisors*
The National Examination Board in Occupational Safety and Health (NEBOSH) Certificate in Occupational Health (NVQ Level 3)	*HSE Management by Managers*

3.1.6 The Company requires that the Supplier, relevant Supplier Personnel and third-party suppliers shall hold by the Services Commencement Date and until the Expiry Date, UKAS (The United Kingdom Validation Service) validated third party accreditations for the following fire equipment, systems and work types:

- Fire Detection and Alarm Systems (e.g. LPS1014, BAFE SP203-1) Design, Commissioning, Maintenance (Planned and Reactive) and Installation;
- Fire Suppression and Fixed Fire Fighting Systems (e.g. LPS1048, FIRAS, IFC) Design, Commissioning, Maintenance (Planned and Reactive) and Installation;
- Fire Compartmentation (e.g. LPS1531, FIRAS, BM Trada, IFC) Design, Commissioning, Maintenance (Planned and Reactive) and Installation;
- Portable Fire Extinguishers and Fire Blankets (e.g. BAFE SP101) Design, Commissioning, Maintenance (Planned and Reactive) and Installation; and
- Low Voltage commercial and industrial Electrical installation, inspection, testing, certification and condition reporting (e.g. NICEIC, ECA, NAPIT, BSi)

Some examples of UKAS validated accreditations are provided for information above. These are not exhaustive, and it is the Supplier's responsibility to verify the accreditation (held or to be obtained) is UKAS validated and suitable for the relevant fire equipment, systems and work types.

3.1.7 The Supplier shall provide details of the number and types of Supplier Personnel to which training will be provided to meet the skills and qualification requirements detailed in this paragraph 3.1. The Supplier's proposals will be subject to agreement and approval by the Company.

3.2 Company Mandatory Training of Supplier Personnel

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3.2.1 In addition to the above skills and qualifications requirements, Supplier Personnel are required to undertake Company mandatory training courses as appropriate. The specific courses including the workplace areas and the Supplier Personnel types to which the training applies are more particularly described in Schedule 20 (Training).

3.3 Competency Management and Training Plan

3.3.1 The Supplier shall prepare a contract-specific training plan for each of its Supplier Personnel engaged in the delivery of the Services. This shall include for each Supplier Personnel:

- their particular skills, competence and qualifications;
- their particular skills, competence and qualifications mapped to the requirements as detailed in paragraph 3.1;
- their particular qualifications mapped to the Company mandatory training requirements as detailed in paragraph 3.2;
- where applicable, expiry dates of current qualifications, membership and training; and
- any other vocational, statutory or compliance training deemed necessary by either the Company or the Supplier, inclusive of new industry or statutory requirements.

3.3.2 The Supplier shall maintain the "Training Plan" as a live, up-to-date document in an electronic format which shall be tabled for review at each Period Progress Meeting.

3.3.3 The Supplier shall provide Supplier Personnel engaged in the delivery of the Services with adequate training in relation, but not limited, to:

a. the tasks they are to perform;
b. use of all necessary tools, materials and Equipment required to deliver the Services; and
c. all Applicable Laws, Standards and Good Industry Practice; and
d. the requirements of the Company as may be stipulated by the Company from time to time.

3.3.4 The Supplier shall evidence within the Training Plan that sufficient resources will be available with required skills, competence and qualifications to deliver all required Planned Preventative Maintenance, Reactive Maintenance and Additional Works to all Equipment, at all Sites, in accordance with the contract for every shift.

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4 SITE RESTRICTIONS & HOURS OF WORK, RESOURCE

4.1 Sites

4.1.1 A complete list of Sites subject to the scope of Sections 1 to 9 of this Specification is provided in Appendix A (Service Matrix). The Supplier shall deliver the Services at all Sites listed in the Service Matrix. The environment in many Sites may pose practical issues, including the possibility of a high element of oily/carbonaceous particles and possible ambient temperatures between -10 degrees celsius to +50 degrees celsius. The Supplier shall take all necessary steps required to enable the Supplier Personnel to work safely and effectively within the environment.

4.1.2 At Bond Street, Tottenham Court Road, Farringdon, Liverpool Street and Whitechapel stations the Systems and Equipment interfaces and boundaries with the Elizabeth Line shall be as described within Appendix N (Interface Boundaries with the Elizabeth Line Infrastructure).

4.2 Hours of work

4.2.1 The Supplier shall deliver the Services during all hours, 24 hours per day, 7 days per week, save for in circumstances where this would adversely impact the occupying personnel or the operation (and in particular the safe operation) of the Sites or where otherwise stated in this specification. The Supplier shall plan all works to ensure that Supplier Personnel deliver maximum productivity for their assigned tasks and shift pattern. The Supplier shall consider and implement (where beneficial and practicable) the Early Working Initiative provided in Appendix P (Early Working Initiative). The Supplier shall accommodate requests to change the scheduling of aspects of the Services to accommodate the Company's specific operational requirements.

4.2.2 Where access is either not possible or available during Traffic Hours (as defined in Schedule 13 (Access)), and to take the System or Asset out of service would unacceptably impact the operation or safety of the LUL Network (as defined in Schedule 13 (Access)), or Sites, the Supplier shall undertake Planned Preventative Maintenance in Engineering Hours (as defined in Schedule 13 (Access)). Typically, the following Systems or Assets would fall into this category:

- Equipment accessed via the Track (as defined in Schedule 13 (Access)); and
- Equipment, which as a result of the maintenance activity, may adversely impact the safety or operation of the Site, e.g:
    - Fire Detection and Alarm Systems;
    - Fire Suppression and Fixed Fire Fighting Systems;
    - Portable Fire Extinguishers and Fire Blankets; and
    - Compartmentation.

4.2.3 The Supplier shall arrange delivery of all Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance Services to ensure there is no consequential impact on the operational railway or Site operational service.

4.3 Restrictions to all Sites

4.3.1 The Supplier acknowledges that the Company does not guarantee uninterrupted or exclusive possession of the Sites and that its access to some of the Sites or parts

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thereof may be limited in accordance with the Contract and in particular clause 21 (Access) and Schedule 13 (Access).

4.3.2 Some Sites are not permanently open or manned and therefore the Supplier shall be required to check and agree access arrangements with Site specific Company Personnel prior to attendance at all Sites.

4.3.3 The Supplier shall provide the Services in such a manner so as to cause the minimum inconvenience to the public, Company personnel and operational staff. Non-station Sites shall be treated in a similar manner to station Sites, roads and the like regarding obstruction by plant, materials or rubbish, delivery vehicles and other such similar occurrences.

4.3.4 The Supplier shall provide the Services in accordance with the Company Noise Sensitivity Guidance G1374 A3 (Management of Site Noise from Construction and Maintenance Work Activities) and shall utilise the current R0007 noise sensitivity register during the planning of all site-based works.

4.3.5 The Supplier and all Supplier Personnel shall comply with the general conditions pertaining to the respective Site, for example “No Personal Audio Equipment”, "No Vaping or Smoking", “No Swearing”, “No Drugs”, “No Alcohol” etc. and comply with all alarm testing and evacuation procedures as directed by Company Personnel. All mobile phones and radios are to be switched off before entering all secure rooms.

4.3.6 Specific Site restriction information in respect of the London Overground business unit is set out in Appendix R.

4.4 Resource

4.4.1 The Supplier shall provide sufficient Supplier Personnel and resource to deliver the requirements of this Specification at all times and competent to undertake lone working Reactive Maintenance Services where appropriate.

4.4.2 The Supplier shall maintain the Organisational Chart, as defined in Schedule 10, and contained within Appendix Q (Organisational Chart) as an up-to-date live document, throughout the life of the contract and it shall be tabled at each Period Progress Meeting.

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5 DEFINITIONS

Term	Meaning
"447 Template"	A data capture template, included within Appendix J (Equipment Hierarchy Specification) used to capture all required details and data attributes, relating to a new or changed Equipment record. The 447 Template is a standardised Company-wide document, any reference to the term "Asset" in the 447 Template shall have the meaning of the defined term Equipment.
"Access"	A statement, as approved by the relevant party, which permits the Supplier to visit the site of an Asset to conduct maintenance activities on the Asset as outlined in paragraph 4.3.1.
"Action"	An activity and/or set of activities required to resolve an instance where a maintenance activity has been identified as non-compliant with the QUENSH requirements stipulated as part of the Contract as a result of a QUENSH Inspection. An Action may be assigned to the executor of the maintenance activity (e.g. the Supplier) or another party (e.g. a team within the Company) depending on the nature of the QUENSH non-compliance observed.
"AMS Champion"	Has the meaning given to it in paragraph 7.6.3.2.
"AMS Supplier Processes"	The business system processes provided in Appendix K which are to be implemented as part of the contract and detail: • which process activities the Supplier is expected to be responsible for; • which process activities the Company shall be responsible for; • where interfaces are expected to exist between the Information Technology (IT) systems used by the Company and the Supplier; and • at a high-level, what data is expected to be exchanged via the interfaces.
"Annual Maintenance Plan"	The annual maintenance plan to be prepared by the Supplier in accordance with paragraph 7.8.
"Asset Condition Report"	Has the meaning given to it in paragraph 7.2.1.
"Asset Control Centre (ACC)"	The asset control centre operated by the Company in accordance with paragraph 7.7.
"Asset Information Model"	For a given IT system, this defines the data attributes recorded against a given system record type (e.g. Equipment; Work Order etc.), the values that may be entered for each of the data attributes and whether each data attribute is mandatory or optional in terms of its population.

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"Assets"	An Asset is made up of multiple Consumables and Components enabling the Asset to perform a designated function and/or duty.
"Boundary"	Used to denote the ownership of a region of a station within the Company network which is jointly owned by the Company and one or more other organisations.
"Breached Fault"	A Reactive Maintenance Work Order that has not been closed by the Supplier within the Clearance Time applicable to such Reactive Maintenance Work Order.
"Breached Planned Preventative Maintenance Work Order"	A Planned Preventative Maintenance Work Order that is deemed to be a "2 Preventative Maintenance Work Order" in accordance with paragraph 8.1.14 of this Specification.
"British Standards"	Standards produced by the BSI Group and designated as the national standards body for the UK.
"Company's Document Management System (CDMS)"	Digital library for the ordered storage of reference documentation.
"Company Fire Detection Message"	Has the meaning given to it in TfL Procedure PR0632
"Components"	Components are the building blocks of an Asset or System. Typical Components include but are not restricted to: • System Infrastructure – containment, pipework, bracketry, supports, framing, fixings, associated enclosures, lids, covers, indicator lamps, switches, cabling; • Fire Detection and Alarm Systems – Panel chassis, panel batteries, printed circuit boards, internal power supply units, internal printers, ribbon cables, key switches, 'emergency do not enter' sign components; • Fire Suppression and Fixed Fire Fighting Systems – Valve spindle/wheel, joints, gauges, sprinkler heads, signage, retard chamber, flow restrictors, solenoids; • Fire Compartmentation – Superlux boarding, fire door furniture, signage, closers, rockwool, glazing, building materials; and • Portable Fire Extinguishers and Fire Blankets – Bracketry, signage, discharge hose, nozzle, horn, body. The above items are included for guidance and as a generic term will be applicable across many Systems and to various Assets, further items are listed within Appendix B (Equipment Descriptions) but the lists are not exhaustive.
"Consumables"	Consumables are the day-to-day items, typically cleaning products, printer rolls, valve straps & padlocks, gaskets, weather seals, screws, mastic, intumescent seals, pull pins, anti-tamper tags, maintenance labels, etc, that are used continuously to enable Planned Preventative Maintenance, Reactive

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	Maintenance and Enhanced Maintenance to be undertaken.
"Core Team"	Has the meaning given to it in paragraph 2.1.1.
"Critical Spares"	Assets, Components, Consumables and Supporting Infrastructure that significantly threaten ongoing operation when one fails due to the difficulty of replacement and are required to be held by the Supplier in order to meet the requirements of this Contract. Critical Spares requirements are driven by, but not limited to the following criteria: • obsolescence; • long lead time; • bespoke production; and • culled assets and components.
"Data Capture Period"	Has the meaning given to it in paragraph 8.1.6.
"Desktop Audit"	An inspection of the completed Work Order submitted by the Supplier with respect to the validity of the data entered as part of the Work Order captured in the Supplier System and subsequently passed to Metro-Maximo.
"Direct Labour Organisation"	A business unit of the Company which undertakes works and/or services using staff directly employed by the Company.
"Electrical Room"	Has the meaning given to it in paragraph 7.1.4.
"Enhanced Maintenance"	Work identified during Planned Preventative Maintenance or Reactive Maintenance which is over and above that identified within the obligations of this Specification but which would, in the opinion of the Supplier, give benefit by way of prolonged service life, reduced failures, maintaining required performance and ensuring safe operation (as set out in paragraph 7.10).
"Equipment"	A cover - all descriptor for all combinations of Fire Protection and Fire Compartmentation Systems, Assets, Components, Consumables and Supporting Infrastructure. A cover - all descriptor for all combinations of Portable Fire Extinguisher and Fire Blanket Assets, Components, Consumables and Supporting Infrastructure.
"Equipment Register"	A register which identifies the Equipment located at each Site and is maintained by the Supplier in accordance with paragraph 7.9.
"Fault"	A defect which causes the Equipment not to be able to perform its normal function correctly or to reduce its effective rating or capacity.

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"Fire Asset Compliance Tracker"	A tracker capturing all Sites and Asset types included within this Specification to demonstrate compliance to Company and statutory requirements. The Fire Asset Compliance Tracker will as a minimum include, but not be limited to: • Site name; • identification of Asset; and • percentage compliance status for all Assets and Sites.
"Fire Protection Drawings"	Has the meaning given to it in TfL Procedure PR0630.
"Flash Business Case"	A formal document which may be submitted by the Supplier as part of its proposal for an Additional Works Work Order to comply with the requirements set out in paragraph 7.12.3.
"Hazard"	A potential source of harm to persons and/or property as a result of Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance activities.
"Hazardous Waste"	Materials or any substances it contains, that are harmful to humans or the environment.
"Incident"	An unplanned event which has occurred that has resulted in harm to persons and/or property.
"Info Exchange (IE2)"	The IT system used at TfL by the Company ACC to capture Hazards, Incidents and Near Misses.
"Inspection Work Order"	A special type of Work Order generated in Metro-Maximo by the Company Team to manage the Physical Audit of Planned Preventative, Enhanced or Reactive Maintenance conducted by the Supplier. This Work Order shall be linked in Metro-Maximo to the original Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance Work Order.
"Interface"	A boundary between two Information Technology (IT) systems which enables data to be exchanged between said systems. The method through which the data is exchanged may be manual (e.g. extract-transform-load procedure using spreadsheets) or automated (e.g. Application Programming Interfaces; auto-generation and subsequent interpretation of emails etc.).
"Interim Measures"	Measures, temporary equipment or processes put in place to deliver performance at the levels required and set out in paragraph 6.5 (Equipment Performance).
"Interim Rectification"	A safe but non-permanent or non-compliant repair to Equipment. Where no repair is possible, Interim Measures shall be put in place to deliver performance at the required level as set out in paragraph 6.5 (Equipment Performance). A Permanent Rectification is still required.

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"Maintenance Activity Record Submission"	A Supplier-produced data package which the Supplier is required to submit to the Company in accordance with paragraph 7.4.7 of this Specification to evidence that the Planned Preventative Maintenance and Enhanced Maintenance completed by the Supplier meets requirements of this Specification.
"Maintenance Matrix"	Has the meaning given to it in paragraph 8.2.1.
"Maintenance Report"	Has the meaning given to it in paragraph 2.12.
"Maintenance Route"	An ordered list which outlines for Equipment, or a group of Equipment: • the types of maintenance activities which shall be carried out as part of Planned Preventative Maintenance; and • the location(s) at which the maintenance activities shall be carried out. A Maintenance Route may be associated with a Planned Preventative Maintenance Work Order to provide a logical structure against which the maintenance activities required may be planned and subsequently executed.
"Mobile Device"	A portable, hand-held piece of electronic equipment which can connect to the internet. Examples include smartphones and tablet computers.
"MxLoader"	A Microsoft Excel- based spreadsheet tool which may be used to load data from a spreadsheet directly into Metro-Maximo.
"Near Miss"	An Incident which has occurred that did not cause harm to persons and/or property but had the potential to do so.
"Network Rail"	Network Rail Infrastructure Limited (company number 02904587).
"Nightly Allocation Report"	A report identifying all scheduled Maintenance Services and Additional Works for the forthcoming engineering shift. The Nightly Allocation Report, shall as a minimum include: • Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance and Additional Works team titles • Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance team leaders/Site Person(s) in Charge • Team leaders/Site Person(s) in Charge Mobile Phone Contact Number • Sites to be visited • Planned works for each site to be visited - type of work • Planned works for each site to be visited - specific activities

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	The format of which is to be agreed by the Company
"Non-Services to Site Attendance"	Has the meaning given to it in paragraph 8.1.5.
"Obsolescence Management Plan"	Has the meaning given to it in paragraph 7.15.1.
"Permanent Rectification"	Permanent and compliant repair to Equipment such that it delivers performance at the levels required and set out in paragraph 6.5 (Equipment Performance). 'Permanently Rectify' shall be defined according to this definition.
"Physical Audit"	A physical inspection of maintenance activities completed by the Company or Maintenance Supplier.
"Planned Preventative Maintenance"	Has the meaning given to it in paragraph 8.1.1.
"Planned Preventative Maintenance Schedule"	The schedule for Planned Preventative Maintenance as developed and updated by the Supplier and approved by the Company in accordance with paragraphs 8.2.3 to 8.2.12 (inclusive).
"Planned Preventative Maintenance Technical Specification"	The planned preventative maintenance technical specification appended at Appendix D (Planned Preventative Maintenance Technical Specification).
"Possession"	A statement, as approved by the relevant party, which permits the Supplier to temporarily take ownership of the site of Equipment/section of track which the Equipment exists within to conduct maintenance activities on the Equipment.
"QUENSH (Quality, Environment, Safety and Health)"	A set of contractual requirements which the supplier must meet for any maintenance works, activities, or services supplied to the Company as planned to take place on Company property or other Company premises which may have an impact on the operation of the Company's railway network, as defined in TfL Standard S1552 Contract QUENSH Conditions. These requirements outline the behaviours, methods, and procedures the Supplier is expected to have in place to ensure a safe working environment in which the Supplier's staff adhere to health and safety regulations whilst delivering a quality service which meets the standards set by the Company.
"QUENSH Inspection"	An on-site review of an on-going maintenance activity as being conducted by the Supplier to check whether the Supplier is executing the maintenance activity in accordance with the QUENSH requirements specified in Schedule 16.
"QUENSH Work Order"	A type of Work Order sub-record in Metro-Maximo which is used to capture the details of a QUENSH Inspection as conducted by the Company on an on-going maintenance activity which is being executed by the Supplier. Actions may be recorded as part of the population of this Work Order and shared with the Supplier for resolution.

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"Rail for London Infrastructure (RfLI)"	A subsidiary company within TfL that acts as the infrastructure manager for the central operating section of the Elizabeth Line.
"Railsys"	An IT system used by the Company to manage Access and Possession requests for both the movement of materials to access Equipment; and operational buildings within the Company's stations or railway track section.
"Reactive Maintenance"	Has the meaning given to it in paragraph 9.1.1.
"Remedial Works"	Maintenance works required from the Supplier to remedy any unsatisfactory maintenance work, as determined by the Company.
"Remote Condition Monitoring (RCM)"	The tracking of the status of Equipment set (i.e. its assigned parameters; health; performance etc.) without needing to be physically on-site with the Equipment. This is typically achieved through the usage of remote monitoring IT software which extracts data from the Equipment and sends said data to a central database for interpretation as part of a live condition monitoring dashboard/report.
"Replace on Failure Assets"	Has the meaning given to it in 7.13.2
"Service Matrix"	The Service Matrix as set out in Appendix A (Service Matrix) identifies the list of Sites per delivery unit and the element of the Services required including: • the Planned Preventative Maintenance and Reactive Maintenance requirement applicable to each Site.
"SFG20"	An industry standard for building maintenance schedules as managed by the Building Engineering Services Association (BESA) which provides guidance information on Planned Preventative Maintenance.
"Site Person in Charge"	Has the meaning given to it in QUENSH.
"SLA Extension"	A request to increase the time available to the Supplier for completing an assigned Work Order, thereby extending the associated SLA. This request is only to be raised in situations permitted under clauses 28 (Permitted Delay Events) and 46 (Force Majeure). SLA Extensions may only be raised against the following types of Work Order: • Reactive Maintenance • Additional Works of priority A1 – Emergency
"Smoke to Heat Detector"	Has the meaning given to it in TfL Procedure PR0630
"Spares"	Assets, Components, Consumables and Supporting Infrastructure required to be held by the Supplier in order to meet the requirements of this Contract.
"Spares List Report"	Has the meaning given to it in paragraph 7.14.12.
"Supplier System"	The asset management system(s) used by the Supplier to manage the data associated with

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	Maintenance Services within the scope of the Contract.
"Supporting Infrastructure"	The miscellaneous items of Equipment which provide the linkages between Equipment to enable the Equipment to perform its designated function and/or duty. Typical examples of Supporting Infrastructure are trunking, conduit and cabling
"Systems"	A System is typically larger than an Asset but made up of a number of Assets working together to perform a designated function and/or duty.
"TfL"	Transport for London.
"Training Plan"	Has the meaning given to it in paragraph 3.3.
"Tunnel and Public Ventilation System"	Has the meaning given to it in TfL Procedure PR0164.
"Ventilation System Equipment"	Has the meaning given to it in TfL Procedure PR0164.
"Work Order(s)"	A Work Order, including for Reactive Maintenance or Planned Preventative Maintenance, shall have the meaning as defined in Appendix H (Asset Management System).

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6 STANDARDS, GUIDANCE, SPECIFICATIONS & EQUIPMENT PERFORMANCE

6.1 General

6.1.1 The Supplier shall provide the Services at all times and maintain compliance with all statutory requirements, legislation, regulations and the following Standards, guidance, procedures and specifications set out below in paragraphs 6.2, 6.3 and 6.4.

6.2 TfL Standards, Guidance & Procedures

6.2.1 The Supplier shall comply with all London Underground Standards ("Company Standards") with special regard to the following as they relate to the Equipment:

Standards

- 1-081 Design And Installation Of Fire Protection Systems And Compartmentation Measures
- 1-082 Active Fire Protection Systems And Portable Fire Equipment
- 1-083 Passive Fire Protection Systems
- 1-084 Maintenance Of Fire Protection Systems And Compartmentation Measures
- S1080 The application of fire safety engineering principles to TfL premises
- S1085 Fire Safety Performance of Materials - Stations and Tunnel Infrastructure
- S1087 Fire Prevention and Protection Emergency Do Not Enter Signs
- S1086 Fire safety classification of stations and shafts
- S1088 Managing changes to stations and shafts fire precautions
- S1069 Low Voltage Electrical Installations
- S1071 Electrical and Mechanical Services Control and Monitoring Systems
- S1085 Fire Safety Performance of Materials
- S1130Management of Asbestos and Hazardous Materials;
- S1114 Working on or near Electrical Equipment
- S2104 Maintenance of Fire Systems and Fire Compartmentation
- S2103 Fire Engineering- Fire Detection and Alarm Systems
- S2101 Fire Engineering - Fire Suppression and Fire Fighting Equipment
- S2102 Fire Engineering - Fire Compartmentation
- S2100 Fire Engineering – Fire Safety Design and Strategy
- S1538 Assurance
- S1042 Managing LU Asset Risk: Recording of Assets and Data for Condition Reporting

Guidance

- G085 Code Of Practice - Fire Safety Of Materials And Fire Safety Of Specific Items And Materials Used In The Underground
- G085 Code Of Practice - Fire Safety Of Materials And Fire Safety Of Specific Items And Materials Used In The Underground
- G1374 Management of site noise from construction and maintenance work activities

Procedures

- PR0164: Tunnel and Public Area Ventilation System Isolations and Fault Response
- PR0630: Fire Detection Isolations, Smoke to Heat Detector Substitutions
- PR0631: Licencing of Fire Detection Engineers (to work on LU Station Systems)

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- PR0632: Management of Drawings and Detection Message Changes
- PR0436: LU Procedure for the Management of Asbestos and other Hazardous Materials
- PR0099: Failure Reporting, Analysis and Corrective Action System (FRACAS)

6.3 British Standards & Legislative Regulations

6.3.1 The Supplier shall comply with all British Standards, Regulations and Approved Codes of Practice with special regard to the following as they relate to the delivery of the Services:

British Standards

- BS 5839-1:
- BS 5839-8:
- BS EN 54
- BS EN12845:
- BS 7273-1:
- BS 7273-2:
- BS 8489:
- BS 5306:1:
- BS 5306-3:
- BS 5306-4:
- BS 9990:

Regulations

- Regulatory Reform (Fire Safety) Order 2005
- The Fire Precautions (Sub-Surface Railway Stations) England Regulations 2009
- The Building Regulations: Approved Document B – Fire Safety

6.4 Planned Preventative Maintenance Technical Specifications

6.4.1 All Fire Equipment Planned Preventative Maintenance carried out by the Supplier shall in the first instance meet the individual business unit requirements of Appendix D (Planned Preventative Maintenance Technical Specification), any deviation from the Planned Preventative Maintenance Technical Specifications shall only be by prior agreement with the Company.

6.4.2 For Fire Equipment where the Supplier has identified that the Company's Planned Preventative Maintenance Technical Specification does not (i) meet statutory requirements; (ii) align with Company Standards; or (iii) specify best practice, the Supplier shall make recommendation to the Company to provide an acceptable level of maintenance and to ensure operational readiness.

6.4.3 For Fire Equipment where there is no appropriate Company technical specification, Company Standard or British Standard, the Supplier shall make recommendation to the Company to provide an acceptable level of maintenance and to ensure operational readiness.

6.5 Equipment Performance

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6.5.1 A System or Asset shall at all times be available when called upon to deliver the requirements identified:

- within statutory Regulations;
- within relevant Company Standards;
- where not specifically identified within relevant Company Standards (as set out at paragraph 6.2.1), the requirements identified within relevant British Standards; or
- where it is evidenced that the requirements within the aforementioned standards is not possible, meet the delivery requirements as originally installed.

Only by prior agreement with the Company may the above criteria not be met.

6.5.2 Equipment shall at all times perform its required duty without environmental impact by way of unnecessary or unintended, noise, smell, pollution or heat.

6.5.3 Irrespective of the performance requirements identified within paragraph 6.5.1, all faults on or impacting Fire Protection Systems, Fire Compartmentation, Portable Fire Extinguishers and Fire Blankets shall be addressed and rectified in accordance with Appendix O (Fault Allocation Matrix) and within the appliable Clearance Time identified in Appendix 1 (Reactive Maintenance and Isolation Services Clearance Times) to Schedule 18c (Key Performance Indicators (KPIs)).

6.5.4 Once a System or Asset falls below the performance requirements identified within paragraph 6.5.1, all faults relevant to that Asset or System shall be repaired within the timescales identified in Appendix 1 (Reactive Maintenance and Isolation Services Clearance Times) to Schedule 18c (Key Performance Indicators (KPIs)).

6.5.5 Irrespective of the performance requirements identified within paragraph 6.5.1, where the failure or sub-optimal performance of an Asset, Component or Consumable consequentially causes stress on other related or unrelated Systems, Assets, Components or Consumables, whether included within this Specification or not, the Supplier shall rectify the failed or sub-optimal performing Asset, Component or Consumable.

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7 SCOPE & GENERAL PROVISIONS

7.1 Scope of Maintenance

7.1.1 The Supplier shall deliver Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance in accordance with this Specification for Fire Detection and Alarm Systems, Fire Suppression and Fixed Fire Fighting Systems, Low Voltage Power and Portable Fire Extinguishers and Blankets (as described in paragraph 7.1.4 below). Including the necessary replacement of Assets, Components, Consumables and Supporting Infrastructure.

7.1.2 The Supplier shall deliver Reactive Maintenance in accordance with this Specification for Compartmentation (as described in paragraph 7.1.4 below). Including the necessary replacement of Assets, Components, Consumables and Supporting Infrastructure.

7.1.3 The Supplier shall deliver Isolation Services in accordance with this Specification for Fire Detection and Alarm Systems (as described in paragraph 7.1.4 below).

7.1.4 Equipment covered within this Specification includes but is not limited to:

Fire Detection and Alarm Systems

- Fire Control Panels
- RAVDU & AVI Systems
- PAVA Systems
- Fire Cryer Systems
- Emergency Do Not Enter Signs and Panel Systems (Data Display/Kentec /Burnham)
- Unmanned Ticketing System Interface Panels
- Escalator Water Suppression Systems (Patol/Sensa/Listec)
- Trace Heating Systems
- Aspirating Smoke Detection Systems
- Smoke Beam System (OSID/FIREbeam)
- Damper Control Panels (Kentec/Morley/Advanced)
- Motorised Smoke and Fire Dampers (Belimo/TROX)
- Magnetic Door Retainers
- Loop Driven Field Equipment (Apollo/Hochiki)

Fire Suppression and Fixed Fire Fighting Systems

- Wet Sprinkler Systems
- Escalator Water Suppression System (Metron/Deluge Valves)
- Sprinkler Pumps and Tanks
- Water Mist Systems (Hydramist/Marioff/Protec/Stand Alone)
- Gaseous Extinguishing Systems
- Fire Water Supplies
- Hose Reels
- Hydrant and (Wet/Dry) Fire Main Systems
- Hydrant Pumps
- Hydrant Suction Tanks
- Pressure Regulating Valves (Landing/In-Line)

Low Voltage Power

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- Isolators
- Change over Relays
- Power Supply Units
- Cable distribution systems inclusive of earthing
- Cable Management Systems

Portable Fire Extinguishers and Fire Blankets

- Fire Extinguishers
- Fire Blankets

Compartmentation

- Fire Rated Walls
- Fire Rated Doors
- Soffit / Fire Rated Ceilings
- Fire Cavity Barriers
- Fire Doors, Frames and Fixings
- Fire Doors Operation
- Fire Hatches and Access Panels
- Fire Shutters and Curtains
- Fire Rated Glazing
- Fire / Smoke Dampers and Ductwork
- Fire Resisting Structure Penetrations
- Structural Fire Resistance

7.1.5 Appendix B (Equipment Descriptions) includes a more detailed description of the various Systems covered by this Specification but is not exhaustive.

7.1.6 The Equipment's bracketry, supports, framing and fixings back to and into the building's structure are included within the scope of this Specification.

7.2 General Provisions

7.2.1 At each visit, the Supplier shall assess and record the Equipment's condition in the condition attribute to comply with the requirements defined in Company Standard S1042 – Asset Condition Reporting, and to meet the requirements defined in paragraph 2.4 (Asset Condition Recording and Reporting) of Appendix H (Asset Management System) and Appendix K (AMS Supplier Processes), of all the Equipment covered by this Contract which has been visited in the course of the works ("Asset Condition Report").

7.2.2 When delivering Planned Preventative Maintenance, Enhanced Maintenance or Reactive Maintenance works the Supplier shall Permanently Rectify anything related to the Equipment that is, but should not be:

- exposed;
- loose;
- unsecured;

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- blocked; or
- structurally unstable.

The Supplier shall ensure that appropriate Spares are readily available (all hours, 365 day per year) within the Suppliers stores to enable the efficient delivery of this requirement.

7.2.3 Only where a Permanent Rectification cannot be reasonably expected, an Interim Rectification shall be implemented and the Supplier shall report the outstanding work as a fault in accordance with the requirements of Appendix H (Asset Management System).

7.3 Listed Buildings and Buildings of Heritage Interest

7.3.1 The Supplier shall be aware that many of the Company's stations and buildings are statutorily listed, locally listed, within conservation areas or are of heritage interest as set out in Appendix G (Company Heritage Map).

7.3.2 Where possible, the Supplier shall repair, rather than replace, original finishes, Equipment and Equipment replicas on listed buildings and buildings of heritage interest. Equipment replacement shall be only by prior written agreement from the Company's Representative and the replacement Equipment shall maintain the original manufacturing and design principles.

7.4 Methods of Working

7.4.1 The Supplier shall maintain all Sites, Equipment, Materials and Spares in a clean, tidy and safe condition at all times, with due regard and adherence to statutory requirements and to the satisfaction of the Company. All Supplier Personnel shall be competent to assess that the site and all related equipment is safe prior to and whilst undertaking the work.

7.4.2 All Supplier Personnel shall be competent to undertake the required works and where applicable be suitably assessed by London Underground, as per Company Procedure PR0631: Licencing of Fire Engineers (to work on LU Stations Systems).

7.4.3 All low voltage (230v) Electrical works shall be undertaken or supervised by a level 3 safe isolation electrician at all times. The Company's Safe Isolation training course and prescribed process within attachment 11.1 of Company Standard S1069 are mandatory for all low voltage electrical systems. All low voltage electrical works shall be installed and certified in accordance with and as required by BS7671.

7.4.4 All works within a designated substation/transformer room environment shall be undertaken by personnel certified by the Company's LU Power Delivery Substation Competence course as being competent for all Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance works.

7.4.5 For all works that interface with an existing "clip-in" ceiling system the Supplier shall:

- use only suitably trained Supplier Personnel to undertake the work;

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- prior to work taking place, ensure the ceiling system is examined by an experienced person who can determine if it is in a condition that will allow for tile removal and reinstallation;
- other than for immediate replacement, provide alternative temporary ceiling coverings during the works to minimise the number of times that ceiling tiles are removed and reinstalled;
- make provision for ceiling tile storage to ensure the tiles remain undamaged;
- ensure all works are undertaken in accordance with the Association of Interior Specialists Publication: Best Practice Guide - maintenance and access into suspended ceilings;
- ensure that all ceiling systems and their components are only removed by experienced persons using the appropriate blade extraction tool for that ceiling tile make;
- not reinstall any deformed or damaged ceiling tile;
- pay particular attention to the tile return flanges, pips and stops;
- prior to reinstallation, examine the existing grid to ensure the jaws of the sprung T are touching. The tile shall not be reinstalled if they are not;
- ensure that any replacement ceiling tiles, fitted into an existing grid, are from the same manufacturer; and
- record the location of any removals / reinstatements as part of the provision of associated data as per the specification provided in Appendix H (Asset Management System).

7.4.6 The Supplier shall, unless agreed otherwise by the Company, dismantle portable access towers and scaffolding required to deliver the Services at the end of each shift or working day and remove them from the Site.

7.4.7 Upon completion of a Planned Preventative Maintenance or Enhanced Maintenance scheduled Site visit, the Supplier shall upload a Work Order-driven Maintenance Activity Record Submission to the Company's Document Management System no later than ten (10) Working Days after the associated maintenance activity Work Order has been closed. Maintenance Activity Record Submissions are to verify that all Planned Preventative Maintenance or Enhanced Maintenance activities prescribed within Appendix D (Planned Preventative Maintenance Technical Specification) have been completed or to provide detail to explicate incomplete activities. An example of the minimum requirements to evidence the completion of Planned Preventative Maintenance or Enhanced Maintenance activities is provided within Appendix E (Maintenance Activity Record Submission Example).

7.4.7.1 It is required that items to support the obligations for evidencing statutory compliance be included within the Maintenance Activity Record Submission.

7.4.7.2 An individual Maintenance Activity Record Submission shall not cover more than one Site.

7.4.7.3 An individual Maintenance Activity Record Submission may incorporate more than one Fire Equipment type or multiple Work Order activities.

7.4.8 The Maintenance Activity Record Submission may incorporate more than one source of data, as identified in Appendix E (Maintenance Activity Record Submission Example).

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7.4.9 There will be a need for temporary Smoke to Heat Detector substitutions, and subsequent re-instatement in order for the Company to undertake Services / project works or inspections within and outside of the scope of the Contract. The Supplier will be required to take responsibility for managing, and implementing all such substitutions and may, in the case of complex substitutions, request that the Company supports this process. The Supplier shall follow the Company Smoke to Heat Detector substitution procedure PR0630: Fire Detection Isolations, Smoke to Heat Detector Substitutions.

7.4.10 All such Company requested temporary Smoke to Heat Detector substitutions are outside of the scope of this specification. Such substitutions would fall under the Additional Works or Contract Variation Procedure.

7.4.11 Historic temporary Smoke to Heat Detector Data from the past 36 months has been supplied.

7.4.12 The Supplier is to ensure that adequate, competent resources are available to ensure that the implementation of temporary Smoke to Heat Detection substitutions does not have a detrimental impact on the Planned Preventative Maintenance Schedule or Reactive Maintenance delivery.

7.4.13 Fire control panel firmware, configuration files, front-end software and fast track folders shall be accessible via the Company's Document Management System twenty-four hours per day, three hundred and sixty-five days per year.

7.4.14 The Supplier shall carry out all fire control panel firmware, configuration files, front-end software and fast track folder upgrades or updates resulting from Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance activities. All such changes shall be in the scope of this specification and where applicable shall follow the Company Fire Detection Message change procedure PR0632: Management of Drawings and Detection Message Changes.

7.4.15 All changes to fire control panel firmware, configuration files, front-end software and fast track folders that are associated with Additional Works are deemed to be outside of the scope of this specification and where applicable shall follow the Company Fire Detection Message change procedure PR0632: Management of Drawings and Detection Message Changes.

7.4.16 Version controlled copies of all fire control panel software, configuration files, firmware and fast track folders shall be uploaded to the Company's Document Management System by the Supplier following any file updates. Uncontrolled copies of Fire control panel software, configuration files and firmware must not be retained by the Supplier.

7.4.17 The Company reserves the right to make changes to the fire control panel firmware, configuration files, front-end software and fast track folders.

7.4.18 The Supplier shall provide the Company with their own procedure which aligns with the Company Drawing and Detection Message Change procedure for fire control panel software, configuration files, firmware and fast track folder upgrades or updates a minimum of four (4) weeks prior to the Services Commencement Date, shall be agreed with and by the Company prior to the Contract Commencement Date.

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7.4.19 There will be a need for Fire Protection Drawing red-line updates to be carried out during and following Planned Preventative Maintenance, Enhanced Maintenance, Reactive Maintenance and Additional Works activities, these will include but not be limited to: As-Built, Loop Schematic, Network Schematic, Zone Charts, Damper Location, Hydrant Layouts, Fire Main Layouts and Sprinkler Layouts.

7.4.20 Fire Protection Drawings PDF copies shall be accessible via the Company's Document Management System twenty-four hours per day, three hundred and sixty-five days per year. Where Fire Protection Drawings are not available for download from the Company's Document Management System, the Supplier is to notify the Company.

7.4.21 Fire Protection Drawings PDF copies shall be downloaded by the Supplier from the Company's Document Management System prior to commencing on-site Planned Preventative Maintenance activities.

7.4.22 Fire Protection Drawings red-line updates resulting from Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance activities shall be in the scope of this specification and where applicable shall follow the Company Fire Protection Drawings change procedure (as set out in Management of Drawings and Detection Message Changes).

7.4.23 Fire Protection Drawings red-line updates resulting from Planned Preventative Maintenance and Enhanced Maintenance activities shall be uploaded to the Company's Document Management System simultaneously with the associated Maintenance Activity Report Submission as identified within paragraph 7.4.7.

7.4.24 All red-line updates to Fire Protection Drawings that are associated with Additional Works are deemed to be outside of the scope of this specification and where applicable shall follow the Company procedure PR0632: Management of Drawings and Detection Message Changes.

7.4.25 The Company reserves the right to make changes to the Fire Protection Drawings.

7.4.26 The Supplier shall provide the Company with their own procedure which aligns with the Company Drawing and Detection Message Change procedure for Fire Control Panel software, configuration files and firmware upgrades or updates a minimum of four (4) weeks prior to the Services Commencement Date. Such procedure shall be agreed with and by the Company prior to the Contract Commencement Date.

7.4.27 The Supplier is to notify the Company via the F1179 (Notification of Anomalies on Fire Plans) of any errors identified within the Station held fire compliance plans, fire precaution plans and available approval plans during Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance activities. All identified anomalies are to be reported via the F1179 reporting form and must be submitted within 5 working days of the anomaly being identified.

7.4.28 Some locations and Equipment are known to contain asbestos material. The Supplier shall expect to work in close proximity to, or on Equipment containing asbestos and shall undertake all work in accordance with London Underground Standard S1130 and procedure PR0436 and with reference to the TfL Hazardous Materials Register. The Supplier is not responsible for the removal or disposal of asbestos materials.

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7.4.28.1 Sample data from the TfL Hazardous Materials Register is included within Appendix L (TfL Hazardous Materials Register – Sample Data) for reference during tender stage only. All works post the Commencement Date shall reference the TfL Hazardous Materials Register directly.

7.4.29 The Supplier shall no later than 18:00 hours prior to a planned engineering shift, submit to the Company a Nightly Allocation Report

7.4.30 The Supplier shall, at the completion of each engineering shift, generate and submit a report, the format, content and timing of which is to be agreed by the Company, detailing Planned Preventative Maintenance works undertaken and any issues identified within the prior twenty-four (24) hours.

7.4.31 Technical and procedural audits and/or inspections shall be carried out by the Company, during which the Company's Representative may assess any or all of (but not limited to) the following:

- the Supplier's compliance with the Contract;
- Supplier operative competence;
- adherence to the Planned Preventative Maintenance Schedule;
- Planned Preventative Maintenance, Enhanced Maintenance, Reactive Maintenance and Isolation Services activity completion;
- the effectiveness of the delivery of the Services;
- the quality of Planned Preventative Maintenance, Enhanced Maintenance, Reactive Maintenance and Isolation Services evidence;
- compliance with relevant Standards and Procedures; and
- scope for improvement of service efficiency, quality and value.

The scope of planned audits shall be provided to the Supplier a minimum of one (1) week in advance of the audit date, the Company's Representative may carry out ad-hoc audits and/or inspections as deemed necessary. The audits and/or inspections carried out by the Company in accordance with this paragraph may comprise a Desktop Audit and/or Physical Audit. The Supplier shall afford access to documentation at its offices and on Site, and make available such Supplier Personnel as are deemed necessary by the Company's Representative.

The planned audits and/or inspections shall be carried out approximately fifty-two (52) times per year, or more or less often as considered necessary by the Company's Representative.

Methods of working information specific to the London Overground business unit are set out at Appendix R.

7.5 Hard Access

7.5.1 Certain Fire Equipment is located in difficult to access locations, reflecting the operating environment of the Company. As such, and where necessary, apparatus, materials and associated training and certification shall be supplied by the Supplier to relevant Supplier Personnel in order to access such Equipment.

7.5.2 The Supplier is to ensure that the required apparatus, materials and associated training and certification have been provided to ensure that access to Fire Equipment located in hard access locations does not have a detrimental impact on

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the Planned Preventative Maintenance Schedule, Enhanced Maintenance or Reactive Maintenance delivery.

The hard access locations include but are not limited to:

- London Underground Platform Inverts
- Substations
- Rail for London Infrastructure controlled locations
- Docklands Light Railway controlled locations
- Heathrow Airport Limited controlled areas
- Atrium / Platform ceiling voids

7.6 The Asset Management System (AMS)

7.6.1 General Use of AMS

7.6.1.1 The Company operates an Asset Management System (AMS) designed to support the management of the Equipment for which it is accountable. Both the Company and the Supplier shall use the Company's AMS as the primary source of Equipment information, the assessment of Equipment condition, defending of claims and recovering costs and unless otherwise required by the scope, the processing of Work Orders and their related payments as applicable. The Supplier shall meet the requirements for use of the Company's AMS and provision of associated data as per the specification provided in Appendix H (Asset Management System) and Appendix K (AMS Supplier Processes).

7.6.1.2 The Supplier shall use AMS in accordance with the latest version of the AMS Supplier Processes as defined in Appendix K (AMS Supplier Processes) and other guidance issued by the Company.

7.6.1.3 The Supplier shall use the latest versions of any applicable forms and templates provided by the Company.

7.6.2 System and Interface Requirements

7.6.2.1 The Supplier shall comply with any system requirements as may be issued by the Company from time to time.

7.6.2.2 The Supplier shall integrate their own system(s) to the AMS via two-way exchange of specified data between the systems. The high- level interface methodology is described at Appendix H (Asset Management System). An interface specification to include lower level details on how the two systems will connect will be provided following contract award. Data is mastered in the Company's AMS and it will be the Supplier's responsibility to ensure AMS data remains synchronised. Any changes to master data impacting on the exchange of information between the Company and the Supplier via interfaces as described in the AMS Supplier Processes in Appendix K (AMS Supplier Processes) must be updated and reflected in the Supplier's CAFM within five (5) Working Days of such change. Any changes to the AMS Information Model will be managed under the Asset Information Model Change Request process as described in the Appendix K, AMS Supplier Processes.

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7.6.2.3 The Supplier is responsible for any data mapping and translation required for the successful operation of the interface.

7.6.2.4 For some business processes (as shall be outlined in the latest version of the AMS Supplier Processes issued by the Company), the Company may require the Supplier to access the AMS directly.

7.6.3 Mobilisation and Ongoing Operational Requirements Named Users

7.6.3.1 The Supplier shall provide the Company with the names of individuals who will be AMS users and their role.

7.6.3.2 The Supplier shall provide, no later than one (1) week after the Commencement Date, details of suitable named individuals who will act as AMS Champion and their deputy for the Supplier. The responsibilities of the AMS Champion and deputy shall include but not be limited to:

7.6.3.2.1 ensuring that within their organisation AMS, CDMS and the associated interfaces are used in accordance with the relevant guidance issued by the Company;

7.6.3.2.2 promoting best practice in the use of AMS, CDMS and the associated interfaces within their organisation;

7.6.3.2.3 acting as a single point of contact between their organisation and the Company or the Company's AMS and CDMS service provider;

7.6.3.2.4 representing their colleagues at monthly AMS and CDMS user group meetings including raising any issues;

7.6.3.2.5 providing internal communication to colleagues on the effective use of AMS, CDMS and the associated interfaces and on any planned changes; and

7.6.3.2.6 resolving issues and providing ongoing training to colleagues in the use of AMS, CDMS and the associated interfaces.

7.6.3.3 Any changes to the roles of AMS Champion, or deputy, will be agreed in advance with the Company who will not unreasonably withhold agreement.

7.6.3.4 The Supplier shall provide details of suitable named individuals who will act as the AMS equipment register data manager and a deputy, no later than one (1) week after the Commencement Date.

7.6.3.5 The AMS Equipment Register Data Manager, and deputy, shall be responsible for the management of inventory data in AMS.

7.6.3.6 The Equipment Register Data Manager and the deputy shall be suitably experienced in data collection and management.

7.6.3.7 The Equipment Register Data Manager, and/or deputy, will attend meetings with the Company to review and discuss the results of data audits.

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7.6.3.8 Any changes to the roles of AMS Equipment Register Data Manager, or deputy, will be agreed in advance with the Company who will not unreasonably withhold agreement.

7.6.3.9 Mobilisation:

7.6.3.9.1.1 The Supplier must provide a fully resourced detailed plan for how it will configure its Supplier System(s) to meet the Company's requirements, including the development and testing of the required interfaces to ensure the interfaces are operational for the commencement of the services.

7.6.3.9.1.2 The Supplier must itemise the cost of these mobilisation activities and provide such information to the Company.

7.6.3.9.1.3 The Supplier must deliver the development work required to integrate its own Supplier System(s) to the AMS, as per the detailed plan provided in accordance with paragraph 7.6.3.9.1.1 and ensure the integrations function correctly and are defect free. the Company requires the following testing as a minimum:

7.6.3.9.1.4 a high standard of development and testing in the levels of testing that precede their own user acceptance testing;

7.6.3.9.1.5 transparency, verifiable recording and dialogue between the Supplier and the Company to establish, refine and prove that the requirements have been met;

7.6.3.9.1.6 test documentation;

7.6.3.9.1.7 witnessing of tests and test evidence (on request);

7.6.3.9.1.8 iterative demonstration of development completed;

7.6.3.9.1.9 release notes;

7.6.3.9.1.10 up to date usable technical environments which are configured to be like the production environment with regards to code, data and integrations;

7.6.3.9.1.11 movement between technical environments to be managed in a controlled way;

7.6.3.9.1.12 test completion reports at the end of each test phase (based on agreed criteria); and

7.6.3.9.1.13 resolution of any software defects related to the development work undertaken by the Supplier will not be chargeable to the Company.

7.6.4 System and Data Management Training

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7.6.4.1 The Company will provide training in the use of AMS and its interfaces. The Supplier shall ensure that Supplier Personnel nominated by the Company to do so complete this training.

7.6.4.2 Training in data collection and management tailored to the requirements of the scope will be provided as part of the mobilisation process. Where appropriate the Company will provide the Supplier with live exercises to demonstrate competency. The Company will audit the results and the Supplier shall ensure that any necessary improvements to their processes or procedures highlighted in the audit are fully implemented prior to the commencement of the works and/or Services.

7.6.4.3 It is the intention of the Company to provide additional training in the use of AMS to all AMS Champions, AMS Equipment Register Data Managers, and their respective deputies, in the form of a training event. The Supplier shall ensure that all nominated AMS users complete this training.

7.6.4.4 Where training is provided on TfL premises, the Supplier shall ensure that nominated Supplier Personnel are able to attend this training.

7.6.4.5 The Supplier shall be responsible for the ongoing delivery of any additional AMS related training to their organisation necessary for the delivery of the works and/or Services.

7.6.5 IT Support

7.6.5.1 The Supplier shall establish connectivity between AMS users, their own systems and the AMS application, and shall demonstrate to the Company that all necessary interfaces are fully operational at least six (6) weeks prior to the Services Commencement Date.

7.6.5.1A At the start of the Mobilisation Period the Company will provide the following information to the Supplier:

- Maximo interface API documents, end point URLs, expected format for requests and examples of system responses;
- Authentication details for accessing Maximo APIs, necessary credentials, keys, access tokens etc.;
- Access to Maximo development or Sandbox environment;
- Details of any API request limitations (rate limits) to ensure our integration does not inadvertently disrupt service availability;
- Error handling information, including how the errors are reported by TfL's APIs;
- All relevant security protocols or compliance standards (including under Data Protection Legislation) that the Supplier will need to adhere to; and
- Any available best practices or known limitations of integrations of TfL's system and environment.

7.6.5.1B The Supplier shall establish connectivity between AMS users, their own systems and the AMS application, and shall demonstrate to the Company that interfaces are fully operational three (3) Working Days prior to the Services Commencement Date to support the following requirements of the Contract:

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- the Supplier's performance of Planned Preventative Maintenance, Reactive Maintenance and Additional Works;
- the Supplier's management of the Equipment Register; and
- the Supplier's submission of any Payment Application.

The Supplier shall then demonstrate to the Company that interfaces to support the delivery of all other requirements of the Contract are fully operational within eight (8) weeks of the Services Commencement Date.

7.6.5.2 The Supplier shall provide appropriate IT support to support the successful implementation of AMS including a named single point of contact throughout the mobilisation process.

7.6.6 Data Management Processes

7.6.6.1 The Supplier shall provide detailed information about its data management processes to the Company for review and approval no later than eight (8) weeks prior to the Services Commencement Date.

7.6.6.2 Specific AMS and Supplier processes in respect of the London Overground business unit are set out at Appendix R.

7.7 The Asset Control Centre (ACC)

7.7.1 The Company operates an Asset Control Centre (ACC) for the tactical coordination of Equipment response and performance and handles the reporting of faults by any member of the TfL Group. Reactive Maintenance Work Orders to resolve faults reported shall be issued to the Supplier via the Company's AMS and for P1 and P2 Faults (as defined in Appendix 1 to Schedule 18c) (Key Performance Indicators (KPIs)), may also be notified by a telephone call to the Supplier's call centre, as per the AMS Supplier Processes - 001B Reactive Maintenance Business System Process contained in Appendix K (AMS Supplier Processes).

7.7.2 Specific Asset Control Centre requirements in respect of the RFLI and London Overground business units are set out at Appendix R.

7.7.3 The Supplier shall provide a call centre capability three hundred and sixty-five (365) days per year, twenty-four (24) hours per day to respond to all faults reported by the Company. The Supplier's call centre facility shall be the contact point for the Company and must be operated at all times by suitably trained Supplier Personnel, with technical competencies relevant to the delivery requirements of this Specification.

7.7.4 The call centre facility shall receive data from, and share data with, the Company as required.

7.8 Annual Maintenance Plan (AMP)

7.8.1 The Supplier shall, in conjunction with the Company, prepare the Annual Maintenance Plan (AMP), as per the specification provided in Appendix H (Asset Management System) and Appendix K (AMS Supplier Processes), and submit the first Annual Maintenance Plan to the Company by no later than eight (8) weeks after the Commencement Date.

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7.8.2 The Company's AMS shall be used to record the Annual Maintenance Plan.

7.8.3 The Company shall provide an Annual Maintenance Plan template and the Supplier shall submit its AMP using this template.

7.8.4 The Supplier shall include in the Annual Maintenance Plan the planned volumes for all the activities covered under the scope of the Contract including but not limited to:

a. forecasted Planned Preventative and Enhanced Maintenance requirements aligned to the Planned Preventative Maintenance Schedule;
b. forecast of Reactive Maintenance (based on known outstanding work, historical trends and knowledge of Equipment condition). Note, the volume will be based on number of Reactive Maintenance Work Orders, not on number of faults (it may take more than one Work Order to resolve a fault);
c. forecast of any Additional Works including known work and predicted work based on historical trends; and
d. commentary for each activity including any assumptions made.

7.8.5 The Supplier shall ensure that the AMP reflects the impact of any changes on planned volumes as a result of factors including but not limited to:

7.8.5.1 Equipment renewals;

7.8.5.2 Equipment condition; and

7.8.5.3 additional maintenance to mitigate risks.

7.8.6 The Supplier will continually review the AMP to reflect the latest forecast of work volumes. Any potential changes will be discussed with the Company periodically and submitted as a revised AMP on a quarterly basis, using the template provided.

7.8.7 The Company will review progress against the AMP periodically using work completion data recorded in the AMS.

7.8.8 The Supplier shall identify the reason for each item appearing on the Annual Maintenance Plan and prioritise each item in terms of:

a. impact on health and safety;
b. impact on statutory compliance;
c. impact on normal use of the Sites;
d. impact on on-going costs of maintenance;
e. the business resilience risks to the Company; and
f. any other relevant criteria, such as:
    i. outstanding Reactive Maintenance requirements;
    ii. proposed Equipment replacement; and/or
    iii. other required works which do not appear on the Planned Preventative Maintenance Schedule.

7.8.9 Reporting Timescales

7.8.9.1 The Company will review and finalise the AMP by week two of period 13 (P13), and will load the AMP into the AMS by week four of P13, as per the requirements of Appendix H (Asset Management System):

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- for the forthcoming year, this will form the baseline plan for that year; and
- for the remaining years of the contract, this will be a draft plan.

7.8.9.2 The Supplier shall close out all Work Orders within two (2) hours of leaving Site.

7.9 The Equipment Register

7.9.1 The Company's AMS is the primary source of information about the Equipment Register. Where there is change to Equipment in the scope of the Contract the Supplier shall update the AMS inventory with the latest information in accordance with the scope and Appendices H (Asset Management System), J (Equipment Hierarchy Specification) and K (AMS Supplier Processes).

7.9.2 The Equipment Register shall be maintained by the Supplier such that it contains catalogued details of all Systems, Assets and Components covered under this Contract with associated details in accordance with the requirements defined in Appendices H (Asset Management System), J (Equipment Hierarchy Specification) and K (AMS Supplier Processes).

7.9.3 The Supplier shall keep the Equipment Register up to date at all times throughout the Contract term.

7.9.4 The Supplier shall update the Equipment Register on completion of each Work Order, and where a Non-Services to Site Attendance arises. There are three types of update that can be made to the Equipment Register:

a. Additions – e.g. new Equipment created as a result of works, or to record physical Equipment that are missing from the Equipment Register.
b. Decommissioned – e.g. if an item of Equipment is removed from the network as a result of works.
c. Modifications – e.g. changes to existing Equipment as a result of works or correcting errors or omissions in the data.

7.9.5 The Supplier shall update the Equipment Register in accordance with the AMS Supplier Processes whenever they carry out works or services that affect Equipment or their attributes within forty-eight (48) hours of work completion.

7.9.6 The Supplier shall ensure any changes made to the Equipment Register are recorded accurately within the system. The Company will carry out routine audits of the quality of the Equipment Register within AMS to ensure that it meets the Contract KPI requirements.

7.10 Enhanced Maintenance Delivery

7.10.1 If during Planned Preventative Maintenance or Reactive Maintenance, the Supplier identifies the potential to undertake further tasks, outside of the scope of this Specification, to Assets, Components, Consumables or Supporting Infrastructure, which would, in the opinion of the Supplier, give benefit by way of prolonged service life, reduced failures, reduced maintenance requirements and/or improved performance and safe operation, then the Supplier shall:

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7.10.1.1 ensure the initial Planned Preventative Maintenance is completed in accordance with the Planned Preventative Maintenance Schedule and/or Reactive Maintenance is completed within the applicable Clearance Time set out in Appendix 1 (Reactive Maintenance and Isolation Services Clearance Times) to Schedule 18c (Key Performance Indicators (KPIs));

7.10.1.2 identify the relevant Enhanced Maintenance tasks within the Maintenance Report, including detail of the required tasks and clearance times for those tasks in accordance with the requirements defined in Appendix H (Asset Management System); and

7.10.1.3 in respect of the further tasks identified in accordance with paragraph 7.10.1.2, either:

7.10.1.3.1 submit a request for an Additional Works Work Order to be submitted by the Company in accordance with paragraph 2.1 of Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works); or

7.10.1.3.2 propose a variation in accordance with paragraph 3.1 of Part A (Contract Variation) to Schedule 4 (Contract Variation Procedure and Additional Works); and

7.10.1.4 enter the details of the approved tasks and clearance times into the Annual Maintenance Plan once either:

7.10.1.4.1 the Company approves the relevant Additional Works Work Order in accordance with paragraph 2.3 of Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works); or

7.10.1.4.2 the relevant Variation Order becomes effective in accordance with paragraph 3.3 of Part A (Contract Variation) to Schedule 4 (Contract Variation Procedure and Additional Works).

7.10.2 The Supplier shall use AMS to record the proposed Enhanced Maintenance (via an interface) as per the requirements defined in Appendices H (Asset Management System) and K (AMS Supplier Processes).

7.10.3 The Supplier shall identify any areas of damage or deficiencies to any Equipment that the Supplier discovers during the course of the delivery of the Services, and the Supplier shall report the same to the Company in accordance with the requirements defined in Appendices H (Asset Management System) and K (AMS Supplier Processes).

7.11 Equipment Changes

7.11.1 Where the installation of new Equipment is undertaken by the Supplier, the Supplier shall witness and document the testing and commissioning of new Equipment to the Company's satisfaction and shall add such new Equipment to the Equipment Register and Planned Preventative Maintenance Schedule as per the requirements defined in Appendices H (Asset Management System), J (Equipment Hierarchy Specification) and K (AMS Supplier Processes) within two (2) weeks of the Equipment being commissioned.

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7.11.2 Where the installation of new Equipment is not undertaken by the Supplier the Supplier shall add new Equipment to the Equipment Register and Planned Preventative Maintenance Schedule within two (2) weeks of receipt of the changes being notified.

7.11.3 Upon the discovery of additional Equipment not identified in the Equipment Register, the Supplier shall provide to the Company details of the Equipment as per the requirements in Appendices H (Asset Management System), J (Equipment Hierarchy Specification) and K (AMS Supplier Processes) within forty-eight (48) hours, and the Supplier shall table a summary of the changes at the next Period Progress Meeting.

7.11.4 If additional Equipment or a change to Equipment is identified as a result of Enhanced or Reactive Maintenance being undertaken, the Supplier shall provide the Company with details of the change as per the requirements in Appendices H (Asset Management System), J (Equipment Hierarchy Specification) and K (AMS Supplier Processes), within forty eight (48) hours of the Reactive Maintenance or Enhanced Maintenance attendance, and the Supplier shall table a summary of the changes at the next Period Progress Meeting.

7.11.5 The Supplier shall maintain all new and additional Equipment that is installed at the Sites after the Services Commencement Date, whether such installation was carried out by the Supplier or the Company and whether it occurred pursuant to an Additional Works Work Order or a Variation Order as per the requirements of Schedule 4 (Contract Variation Procedure and Additional Works) or otherwise.

7.12 System or Asset Replacement

7.12.1 Except for Replace on Failure Assets identified within paragraph 7.13, the comprehensive replacement of an entire System or Asset is excluded from the scope of this Specification and may be subject to a separate instruction as Additional Works as detailed in paragraph 2.14.

7.12.2 The necessary replacement of specific Components, Consumables and Supporting Infrastructure to repair or maintain Systems or Assets is included in the scope of this Specification.

7.12.3 Except for Replace on Failure Assets identified within paragraph 7.13, the Supplier shall identify opportunities for System and Asset replacement at any point throughout the Contract and supply appropriate information, photographs and data to the Company to evidence why it should be considered via a business case. An example of an acceptable business case template is contained in Appendix C (Flash Business Case Template).

7.12.4 System or Asset replacement may be considered by the Company where in the view of the Company a System or Asset:

- failure has increased in likelihood to a level deemed unacceptable to the Company;
- is close to being life expired and repair costs are both significant and unlikely to prove cost effective;

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- repair or replacement cost of the Components is greater than 70% of the System or Asset replacement cost;
- has significant costs associated with access and beneficial access is available from the replacement or maintenance of adjacent Equipment;
- is deemed critical, has failed and replacement will prove to be significantly quicker than repair; or
- is significantly unable to meet the required performance criteria.

7.12.5 Unless instructed by the Company, the Supplier shall continue to deliver Planned Preventative Maintenance and Reactive Maintenance to all Equipment in accordance with the Contract whilst the Equipment is in place.

7.12.6 A replacement Asset shall automatically take on the obligations of its original Asset under the terms of this Contract.

7.12.7 The Supplier shall hold any Asset deemed to have required replacement for a period of four (4) weeks in a designated quarantine location for inspection by the Company or the Company's appointed supplier. If this inspection identifies that the Asset is not life expired or beyond economical repair, then the Asset will be sent back to the Supplier for refurbishment under the contract cost and kept in stock as a replacement Asset.

7.12.8 Replacement of existing Assets, Consumables and Components shall be strictly on a "like for like" basis.

7.12.9 The Supplier shall not carry out replacement by parts of different manufacture, manufacturer, class, type, duty rating and/or materials, without prior approval of the Company. Should an Asset, Consumable or Component become no longer available, it shall be the Supplier's responsibility to advise the Company of this fact immediately and recommend an alternative for approval.

7.12.10 The Supplier shall, where whole Assets require replacement, make efforts to standardise the Equipment in use across the network with the aim of reducing the variety of Assets in use across all the Company maintained Sites.

7.12.11 Where materials installed by the Supplier do not meet these requirements, the Supplier shall, with the approval of the Company, immediately remove and replace such materials with acceptable materials by the Supplier at no cost to the Company. If the Supplier is unable or unwilling to immediately replace any unsuitable materials, the Company shall arrange for their replacement at the Supplier's cost.

7.12.12 The Supplier shall complete a TLF447 Template following the replacement of any Asset and/or Component identified on the Equipment Register. Such completed form shall be submitted to the Company within forty eight (48) hours of the installation and a summary tabled at the next Period Progress Meeting.

7.12.13 Specific Asset and system replacement requirements in respect of the RFLI business unit are set out at Appendix R.

7.13 Replace on Failure Assets

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7.13.1 Certain Assets are considered either not readily maintainable or of relatively low prime cost and therefore uneconomic to repair. These are considered to be 'Replace on Failure Assets' and shall be replaced by the Supplier as part of its obligations under the Specification at the Supplier's cost.

7.13.2 Replace on Failure Assets are as follows:

- Fire Control Panel Loop Detection and Alarm Devices
- Damper Motors
- Fire Door Magnetic Locks
- Flow Switches
- Pressure Switches

7.13.3 Further Assets may be added to the above list without any change to the contract price by written agreement between the Company and the Supplier.

7.13.4 The Supplier shall replace all Replace on Failure Assets with a new product sourced from the same manufacturer and with the same product number. Where this is not possible a suitable replacement product shall be identified and used only by prior agreement between the Company and the Supplier. The Supplier shall only repair individually identified Replace on Failure Assets by prior agreement between the Company and the Supplier.

7.14 Spares

7.14.1 The Supplier shall provide and hold an adequate stock supply of Spares to support the efficient operation of the Systems and Assets and delivery of the Services. Where Spares have been harvested or sourced from removed Equipment, these Spares shall be fully tested and evidenced to be fit for purpose prior to adding to the stock.

7.14.2 The Supplier shall submit a report detailing all required Spares to be used in the delivery of the of the Services the first 12 months for review and acceptance by the Company no less than four (4) weeks prior to the Services Commencement Date.

7.14.3 The Supplier shall ensure all held Spares are logged and uniquely identified as required and maintain comprehensive records to satisfy an audit trail, including when and where Spares have been used.

7.14.4 The Supplier's Spares stores shall be available to all Planned Preventative Maintenance, Enhanced Maintenance, Reactive Maintenance and Additional Works engineers, twenty-four (24) hours per day, seven (7) days per week, three hundred and sixty five (365) days per year.

7.14.5 The Supplier shall be responsible for determining and maintaining the stock levels of Spare Assets, Components and Consumables to cover all Planned Preventative Maintenance, Reactive Maintenance and Additional Works requirements. The Supplier determined stock levels shall be presented at each Period Progress Meeting for Company review and approval.

7.14.6 The Supplier shall be responsible for the supply, delivery, offloading, storage (where no storage can be provided by the Company) and, where required, testing of all Spares and Equipment including all safety equipment necessary to undertake the Services.

7.14.7 Spares shall be replaced with a new product produced by the same manufacturer with the same product number. The Supplier may identify beneficial alternative products which may be used only by prior agreement of the Company. Proposed

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alternatives may be considered in order to help achieve superior whole life costs, enhanced performance and/or as part of the Supplier's obligations in accordance with clause 16 of the Contract.

7.14.8 The Company shall reserve the right to instruct the Supplier to purchase certain quantities of Spares or Assets, or their alternatives, in support of the delivery of the Services.

7.14.9 The Supplier shall at all times be wholly responsible for any unavailability of Spares, Consumables, Components, tools or materials.

7.14.10 The Company shall reserve the right to issue certain Company owned Spares in support of the delivery of the Services. Company owned Spares form part of the TfL Supplied Resources.

7.14.11 The Supplier shall provide the Company with a copy of the Spares assessment, storage, stock level management and stock replenishment procedures to be followed for the duration of the contract a minimum of four (4) weeks prior to the Services Commencement Date.

7.14.12 The Supplier shall supply at each Period Progress Meeting, an updated Spares List Report, as per the requirements in Appendix H (Asset Management System), including but not limited to, the:

a. list of required Spares, including:

   - purpose of the Spare – linked to Asset type and/or envisaged service; and
   - forecasted and actual use of the Spare;

b. required minimum and current Supplier stock holding of Spares for:

   - central store;
   - geographical local stores; and
   - van stock;

c. Supplier's service level arrangements with sub-suppliers:

   - Supplier's contracted minimum stock holding; and
   - Supplier's contracted delivery times;

d. current lead times for non-stock Spares;

e. list and quantity of Company owned Spares;

f. early warning of potential Spares availability concerns; and

g. early warning of potential obsolescence of Spares likely to be of use within the Contract.

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7.14.13 The Supplier shall provide the primary Spares List Report, as per the requirements in Appendix H (Asset Management System), four (4) weeks prior to the Services Commencement Date for review and comment by the Company.

7.14.14 The Supplier's stock levels and locations of Spares shall be recorded on a live, up-to-date, Computer Aided Facilities Management (CAFM) system which shall be remotely accessible for viewing by the Company at all times. The CAFM system shall be updated by the Supplier on a continuous basis as Spares are issued and used.

7.14.15 The Supplier acknowledges and agrees that:

7.14.15.1 the Supplier shall replace the Company owned Spares, as listed within Appendix M (Company Spares, Materials and Equipment), where such Spares have been used, within a maximum of four (4) weeks of use;

7.14.15.2 where the Supplier has replaced such used Company owned Spares, the ownership of any such replacement Spares shall vest in the Company and such Spare shall be returned to the Company by the Supplier upon Contract expiry or termination;

7.14.15.3 where the Company agrees that replacement of a Company owned Spare cannot be sourced or is not required then, subject to the prior written agreement of the Company, the Supplier shall replace such Spare using appropriate alternatives of reasonably equivalent value and quality; and

7.14.15.4 where the Supplier fails to comply with this paragraph 7.14.15, the Company shall be entitled to deduct an amount equivalent to the cost of the Company procuring replacement Company owned Spares, from monies owed to the Supplier.

7.15 Bespoke, No Longer Manufactured (obsolete) and Long Lead Critical Spares

7.15.1 The Supplier shall supply at each Period Progress Meeting an "Obsolescence Management Plan", meeting the requirements of Company Standard S1043 (Obsolescence Management) and Appendix W (Obsolescence Management Plan), covering bespoke, obsolete and long lead Spares as per the requirements in Appendix H (Asset Management System), including but not limited to:

a. active engagement with supply chain;

b. identification of items at risk; and

c. bespoke, obsolete and long lead Spares management and strategy plan.

7.15.2 The Supplier shall proactively identify where any asset or group of assets is identified as being at risk of obsolescence.

7.15.3 The Supplier shall sustain at least the minimum quantity of bespoke, obsolete and long lead Spares to ensure the Equipment is available at any time. This obligation is subject to any obsolete Spares being commercially available for purchase provided that the Supplier has at all times complied with its obligations under

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paragraph 7.14 to provide and hold an adequate stock supply of Spares to support the efficient delivery of the Services.

7.15.4 The identification of bespoke, obsolete and long lead Critical Spares will be the responsibility of the Supplier. This will necessitate purchasing one or more of each identified bespoke, obsolete or long lead Spare in advance to ensure Equipment is returned to service in accordance with the Contract.

7.15.5 Subject to the Supplier's compliance with its obligations under paragraphs 7.15.3 and 7.15.4, where an Asset is obsolete and any relevant Spare is no longer commercially available for purchase, the Supplier may in respect of the replacement of the Relevant Asset:

7.15.5.1 submit a request for an Additional Works Work Order to be submitted by the Company in accordance with paragraph 2.1 of Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works); or

7.15.5.2 propose a variation in accordance with paragraph 3.1 of Part A (Contract Variation) to Schedule 4 (Contract Variation Procedure and Additional Works).

7.16 Fire Equipment, System and Asset Replacement

7.16.1 Within the duration of this Contract, the Company reserves the right to upgrade any fire Equipment, Systems or Assets as the Company deems necessary. These works may result in an impact to Planned Preventive Maintenance scheduling and associated costs, which will be managed via the Contract Variation Procedure.

7.17 Gas Cartridge Extinguisher Replacement Programme

7.17.1 Within the duration of this Contract, London Underground intends to carry out the replacement of all Gas Cartridge AFFF Extinguishers with stored pressure equivalents. These works will result in an impact to Planned Preventive Maintenance scheduling and associated costs, which will be managed via the Contract Variation Procedure.

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8 PLANNED PREVENTATIVE MAINTENANCE

8.1 Planned Preventative Maintenance

8.1.1 "Planned Preventative Maintenance" comprises activities and inspections to all Fire Equipment, inclusive of their related Supporting Infrastructure, which:

a. are identified at the Sites within the Service Matrix;

b. are designed to prolong service life, reduce failures, maintain required performance and ensure safe operation; and

c. shall:

(i) comprise preventative maintenance; and

(ii) include data capture of all equipment identified in accordance with the requirements in Appendix H (Asset Management System);

(iii) include the Equipment Register Data Capture in accordance with paragraphs 8.1.6 and 8.1.7.

8.1.2 The Supplier shall deliver Planned Preventative Maintenance to all Fire Equipment in accordance with this Specification.

8.1.3 All Fire Equipment shall have Planned Preventative Maintenance carried out in accordance with Appendix D (Planned Preventative Maintenance Technical Specifications).

8.1.4 During the Data Capture Period, the Supplier shall deliver Planned Preventative Maintenance to all Equipment covered by this Specification, at the Sites identified within the Service Matrix, including to ensure that:

a. Equipment is maintained in accordance with the Planned Preventative Maintenance Schedule approved by the Company under paragraph 8.2.10;

b. the appropriate level of Planned Preventative Maintenance is carried out on all Equipment at each Site, irrespective of the Supplier's derived volumes used in the Planned Preventative Maintenance Schedule for each Site; and

c. the Supplier shall interpolate volumes for all associated Assets, Components and Consumables requiring Planned Preventative Maintenance from the supplied data.

8.1.5 Where the Supplier attends a Site in accordance with the Planned Preventative Maintenance Schedule to undertake Planned Preventative Maintenance and the Supplier is unable to carry out that Planned Preventative Maintenance solely as a result of the relevant Equipment not being present at the Site, such occurrence shall be deemed to be a "**Non-Services to Site Attendance**". A Work Order resulting in a Non-Services to Site Attendance occurrence shall be closed in accordance with the requirements of Appendix K (AMS Supplier

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Processes) and Appendix H (Asset Management System) and the requirements of 8.2.12 shall be met.

8.1.6 During the eighteen (18) month period following the Services Commencement Date (the "**Data Capture Period**"), the Supplier shall, using suitably competent Supplier Personnel, visit each Site listed within Appendix A (Service Matrix) and shall, for each item of Fire Equipment at those Sites (to include all Fire Equipment types covered by this Contract):

a. record all mandatory and required data and attributes as detailed in the 447 Template; and

b. submit those details as per the requirements defined in Appendix H (Asset Management System) and K (AMS Supplier Processes).

8.1.7 Specific data capture requirements in respect of the RFLI and London Overground business units are set out at Appendix R.

8.1.8 Completion of the activities set out at paragraphs 8.1.6(a) and 8.1.6(b) shall constitute an "**Equipment Register Data Capture**" where such activities are carried out within the first eighteen (18) months following the Services Commencement Date and each item of Equipment:

a. was not previously included in the Equipment Register; or

b. was previously included in the Equipment Register but had mandatory data missing; or

c. had completed mandatory data fields within its existing data entry in the Equipment Register which were found to be incorrect.

In support of the delivery of 8.1.6, the Supplier shall produce and submit to the Company no later than four (4) weeks prior to the Services Commencement Date a programme to visit all areas of all Sites (the "**Programme**"). The Supplier shall submit a Programme planned vs actual period report to the Company for the duration of the Programme.

8.1.9 Following the expiry of the Data Capture Period, the Supplier shall deliver Planned Preventative Maintenance in accordance with a Planned Preventative Maintenance Schedule approved by the Company from time to time in accordance with paragraph 8.2.11.

Equipment subsequently identified and not included within the Equipment Register shall be notified to the Company as per the requirements of paragraph 7.11.

8.1.10 In relation to all Planned Preventative Maintenance all parts of the Equipment across the Sites indicated by the Service Matrix shall be included within the scope of the Services.

8.1.11 The Supplier shall provide any additional Planned Preventative Maintenance required as a result of changes to the Service Matrix and shall be entitled to

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request a Variation in accordance with the Contract Variation Procedure where an increase in Planned Preventative Maintenance volume is required.

8.1.12 The Supplier is required to report to the Company, as per the requirements in Appendix H (Asset Management System), any Equipment described typically within this Specification which it identifies and which is not listed within the Equipment Register.

8.1.13 The Supplier shall use the Company's AMS to record the Planned Preventative Maintenance in accordance with the requirements defined in Appendix H (Asset Management System).

8.1.14 The Supplier shall notify the Company, as per the requirements in Appendix H (Asset Management System), of any proposed changes to activities, inspections or intervals to either System or Asset groups or specific Systems or Assets. Changes to the identified activities, inspections and intervals shall only be permitted following prior agreement by the Company.

8.1.15 The Supplier shall complete each Planned Preventative Maintenance Work Order in accordance with timescales in the Planned Preventative Maintenance Schedule. If either:

a. the Supplier fails or considers that it is reasonably likely to fail to complete a Planned Preventative Maintenance Work Order in accordance with this paragraph; or

b. the Company considers that the Supplier has failed or is reasonably likely to fail to complete Planned Preventative Maintenance Work Order in accordance with this paragraph,

then that Party shall notify the other Party via the AMS and from the date of such notification, the Planned Preventative Maintenance Work Order shall be deemed to be a "**Breached Planned Preventative Maintenance Work Order**". Where a Planned Preventative Maintenance Work Order has been deemed to be a Breached Planned Preventative Maintenance Work Order in accordance in accordance with this paragraph, the Supplier shall complete such Work Order within seven (7) days.

8.1.16 The Supplier shall adapt the Planned Preventative Maintenance Schedule to allow for any Company imposed 'maintenance freeze' periods whereby the maintenance of specific Equipment, Equipment types and/or specific locations is not to be undertaken.

8.1.17 If during Planned Preventative Maintenance, the Supplier identifies faults where there is a risk of danger to persons and / or property, the Supplier shall make the fault safe immediately and:

a. report it as a fault in accordance with the requirements defined in Appendix H (Asset Management System);

b. close the fault in accordance with the requirements defined in Appendix H (Asset Management System);

c. use AMS to record the work (via an interface) as per the requirements defined in Appendix H (Asset Management System); and

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d. report the work and record the fault number in the Maintenance Report.

8.1.18 The Supplier shall, in addition, report all safety incidents and Near Misses via the Company's incident management system.

8.1.19 The Supplier shall identify any areas of damage or deficiencies to any Equipment that it discovers during the course of the delivery of the Services. The Supplier shall report such deficiencies or areas of damage as a fault in accordance with the requirements defined in Appendix H (Asset Management System). The Supplier shall ensure that at the completion of every Planned Preventative Maintenance visit, the associated System is left in its working state. If during Planned Preventative Maintenance, the Supplier identifies faults, where applicable the Supplier shall address these faults as specified within Appendix O (Fault Allocation Matrix).

8.1.20 The Supplier shall use AMS to record the work (via an interface) as per the requirements defined in Appendix H (Asset Management System).

8.1.21 An example of the minimum requirements for Planned Preventative and Enhanced Maintenance completion evidence to be submitted by the Supplier as per the requirements of 7.4.7 has been provided within Appendix E (Maintenance Activity Record Submission Example). It is required for items to evidence statutory compliance be included within the Maintenance Activity Record Submission.

8.1.22 As identified within Appendix D (Planned Preventative Maintenance Technical Specifications), some equipment requires long-frequency maintenance activities to be carried out (e.g., 25yr Sprinkler Pipework, 10yr Pressurised Vessel). The requirement for long-frequency maintenance activities is to be managed as follows:

a. where historic maintenance data is not available for the completion of long-frequency maintenance activities, the Supplier shall identify the requirement for scheduling long-frequency maintenance across all equipment and schedule those maintenance activities for completion within 18 months of the Contract Commencement Date; or

b. where historic maintenance data does exist for long-frequency maintenance of equipment, the Supplier shall establish for all equipment if there is a requirement to carry out long-frequency maintenance prior to the Expiry Date. Where this is established as being required, the Supplier shall schedule long-frequency maintenance activities as appropriate to maintain compliance with this Schedule 2.

8.1.23 The Company may (at its absolute discretion) instruct the Supplier to carry out such long-frequency maintenance activities via either the Variation or Additional Works process pursuant to Schedule 4 (*Contract Variation Procedure and Additional Works*) of this Contract.

8.1.24 Company agreed Planned Preventative Maintenance completion certification shall be supplied by the Supplier at the end of each contract year.

8.2 Planned Preventative Maintenance Schedule

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8.2.1 The Company will implement a Maintenance Matrix in accordance with Appendix I (Maintenance Matrix) in its AMS based on the detail contained in Appendix A (Service Matrix). The Maintenance Matrix provides details of how the Planned Preventative Maintenance Schedule will be applied to the Equipment Register in order to deliver the services required and to ensure compliance with Standards. The Company will share this Maintenance Matrix with the Supplier in the form of a report or extract from AMS as defined in Appendix K (AMS Supplier Processes) (the "Maintenance Matrix").

8.2.2 The Supplier shall notify the Company if it believes there are errors in, or omissions from, the Maintenance Matrix.

8.2.3 The Supplier shall, at least eight (8) weeks prior to the Services Commencement Date, prepare and submit for review and approval by the Company in accordance with the AMS Supplier Processes defined in Appendix K (AMS Supplier Processes) a proposed Planned Preventative Maintenance Schedule using the supplied Equipment quantities for each Site contained in Appendix N (Equipment Register). The proposed Planned Preventative Maintenance Schedule submitted by the Company pursuant to this paragraph shall:

a. be generated for each Site contained in Appendix A (Service Matrix), detailing the Planned Preventative Maintenance tasks and intervals for each System, Asset and Component inclusive of their related Supporting Infrastructure;

b. be derived from the Equipment locations and volumes identified within Appendix N (Equipment Register) and Appendix I (Maintenance Matrix); and

c. comply with the requirements set out in paragraphs 8.2.4 to 8.2.8 (inclusive).

8.2.4 The Planned Preventative Maintenance Schedule shall identify programmed dates of Planned Preventative Maintenance visits to each System, Asset or Component to prolong service life, reduce failures, maintain required performance and ensure safe operation. The Planned Preventative Maintenance Schedule for 'portable fire extinguishing' shall be ordered to maintain the previous incumbent's test dates. The Planned Preventative Maintenance Schedule for 'fire detection & alarm' and 'suppression & fixed fire fighting systems' shall be ordered and structured to achieve Planned Preventative Maintenance frequency compliance and delivery efficiency, the Supplier's schedule will not be required to follow on from the previous incumbent's delivery model or testing dates with the exception of 'control & indicating equipment'.

8.2.5 The Supplier shall ensure the Planned Preventative Maintenance Schedule is optimised (such as via Maintenance Routes based on location and/or grouping activities for specific competent resources) to ensure Planned Preventative Maintenance is packaged and delivered efficiently.

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8.2.6 The Supplier shall ensure that the Planned Preventative Maintenance Schedule is optimised to minimise common disruptive activities (such as live cause and effect testing, audible alerts and/or BMS interface).

8.2.7 The Supplier shall ensure that the Planned Preventative Maintenance Schedule complies with the requirements of the Maintenance Matrix to ensure the required maintenance has been associated with the appropriate Sites or Equipment.

8.2.8 The Company shall provide templates for all data required to support the development of the Planned Preventative Maintenance Schedule, including acceptable values for reference data (e.g. work type, sub type). The Supplier shall submit its Planned Preventative Maintenance Schedule using these templates.

8.2.9 The Company shall provide any comments or feedback on the proposed Planned Preventative Maintenance Schedule submitted in accordance with paragraph 8.2.3 to the Supplier within thirty (30) days of receipt.

8.2.10 Where the Company approves the proposed Planned Preventative Maintenance Schedule submitted by the Supplier, it shall notify the Supplier in writing and shall establish the Planned Preventative Maintenance Schedule in its AMS system. This will be used to automatically generate Work Orders for Planned Preventative Maintenance, which shall be issued to the Supplier via an interface.

8.2.11 The Supplier shall review the Planned Preventative Maintenance Schedule regularly and at least every Period and advise the Company of any changes required, using the templates provided by the Company in accordance with paragraph 8.2.8. The revised Planned Preventative Maintenance Schedule submitted by the Company pursuant to this paragraph shall comply with the requirements set out in paragraphs 8.2.4 to 8.2.8 (inclusive). Any changes identified to Equipment data, including any identified by the Equipment Register Data Capture, shall be reflected within the Planned Preventative Maintenance Schedule and submitted to the Company a minimum of four (4) weeks prior to the next scheduled visit to that Equipment. Where the Company approves the revised Planned Preventative Maintenance Schedule, it shall notify the Supplier in writing and update the Planned Preventative Maintenance Schedule in its AMS system.

8.2.12 The Supplier shall deliver the requirements for the management of the Maintenance Matrix and Planned Preventative Maintenance Schedule as per the requirements in Appendices H (Asset Management System) and K (AMS Supplier Processes).

8.3 Tunnel and Public area Ventilation System Isolations

8.3.1 Where in the course of the works, Supplier access is required to London Underground Tunnel and Public Ventilation System areas, isolations of the Ventilation System Equipment will be requested and carried out in accordance with Company Procedure PR0164: Tunnel and Public Area Ventilation System Isolations and Fault Response.

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8.3.2 Specific Tunnel and Ventilation System requirements in respect of the RFLI business unit are set out at Appendix R.

8.4 Fire Equipment Maintenance to be undertaken by the Suppliers Sub- Contractors

8.4.1 The Supplier shall retain full responsibility for all delivery and performance aspects of Planned Preventative Maintenance, Enhanced Maintenance and Reactive Maintenance carried out by its Sub-Contractors.

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9 REACTIVE MAINTENANCE

9.1 Reactive Maintenance

9.1.1 "Reactive Maintenance" is the repairs, Permanent Rectification or replacements required to Equipment identified by the Company as:

a. not working;

b. not being in an acceptable state; or

c. not meeting the requirements of paragraph 6.5 (Equipment Performance),

in order to return it to a safe, working and acceptable state, that meets the requirements identified within the Specification but in particular paragraph 6.5 (Equipment Performance) and the Services detailed in paragraph 9.2 (Attendance and interfaces with the Company's Direct Labour Organisations and Third Party Suppliers).

9.1.2 The Supplier shall deliver Reactive Maintenance at the Sites as indicated in the Service Matrix in accordance with this Specification and as defined in Appendix O (Fault Allocation Matrix), including the necessary replacement of Assets, Components, Consumables and Supporting Infrastructure.

9.1.3 The Supplier shall deliver any additional Reactive Maintenance required as a result of changes to the Service Matrix.

9.1.4 The Supplier shall deliver Reactive Maintenance within the scope of the Services as requested by the Company within the Clearance Times set out in Appendix 1 (Reactive Maintenance and Isolation Services Clearance Times) to Schedule 18c (Key Performance Indicators (KPIs)).

9.1.5 The Supplier shall also deliver the following at each Reactive Maintenance intervention and report on completion and condition in accordance with Appendix H (Asset Management System):

9.1.5.1 Ensure all fixings, retainers, restraints and associated bracketry are tight and have no apparent signs of deterioration by way of corrosion, cracks or being misshapen.

9.1.5.2 All Equipment, related enclosures, housings and associated ventilation shall be free of dirt, dust and excess grease both internally and externally.

9.1.5.3 The manufacturer's ingress protection rating of the Equipment is maintained.

9.1.6 The Company shall determine the priority level that each Reactive Maintenance item shall be treated as, as defined within Schedule 18c Appendix 1 (Key Performance Indicators (KPIs)).

9.1.7 The Supplier shall receive instructions to carry out Reactive Maintenance from the Company. Additionally, when a defect is identified from remote monitoring or from the Supplier's Personnel whilst on site, this must be reported to the Company's

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Asset Control Centre (ACC) immediately and logged as a Reactive Maintenance event, and this shall then become the instruction to attend and repair the defect.

9.1.8 The Supplier shall attend the Company's Sites and Permanently Rectify such defects. The Supplier shall endeavour to Permanently Rectify during a single attendance visit to maintain statutory compliance to the relevant Standards, but, if necessary, the Supplier shall make more than one attendance visit to make safe or Permanently Rectify. At the end of each and every attendance visit the System shall be left in a safe condition with either an Interim Rectification or Permanent Rectification.

9.1.9 To meet the Reactive Maintenance response requirements of 9.1.8 the Supplier shall submit details of Spares, tools, mechanical equipment and technology-based equipment (including software requirements/ licences) to be used in the delivery of the Reactive Maintenance for review and acceptance by the Company no less than four (4) weeks prior to the Services Commencement Date. Subsequent proposed changes or additions shall be submitted by the Supplier and agreed by the Company at each Period Progress Meeting.

9.1.10 The Supplier shall report Reactive Maintenance as per the requirements provided in Appendices H (Asset Management System) and K (AMS Supplier Processes).

9.1.11 The Supplier shall only close a Reactive Maintenance Work Order upon delivery of a Permanent Rectification or by agreement of the Company. Reactive Maintenance instructions shall be updated upon delivery of Interim Rectification or Equipment continuing to be out of service.

9.1.12 A Fault not closed within the applicable Clearance Time set out in Appendix 1 (Reactive Maintenance and Isolation Services Clearance Times) to Schedule 18c (Key Performance Indicators (KPIs)) will be deemed to be a Breached Fault.

9.1.13 The Supplier shall notify the Company, as per the requirements defined in Appendices H (Asset Management System) and K (AMS Supplier Processes), of the status of a Reactive Maintenance instruction following each attendance.

For P1 and P2 Faults (as defined in Schedule 18c Appendix 1) (Key Performance Indicators (KPIs)) notification of the status of a Reactive Maintenance instruction following each attendance shall also be notified by a telephone call to the Supplier's call centre, as per the AMS Supplier Processes - 001B Reactive Maintenance Business System Process contained in Appendix K (AMS Supplier Processes).

9.1.14 If the Supplier, on attending the Site, traces a reported Reactive Maintenance instruction to Equipment or cabling outside the scope of this Specification, then the Supplier shall immediately report this to the Company Asset Control Centre. This does not release the Supplier from the Site unless so authorised by the Company. The Supplier shall remain on Site if required to "hand over" and/or work with other contractors to rectify the fault and provide all necessary co-operation to clear or localise the Reactive Maintenance instruction.

9.1.15 The Supplier shall deliver Reactive Maintenance for all Asset Types three hundred and sixty-five (365) days per year, twenty four (24) hours per day as detailed in Schedule 18c Appendix 1 (Key Performance Indicators (KPIs)).

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9.1.16 The Supplier shall deliver and complete the Reactive Maintenance within the specified time as detailed in Schedule 18c Appendix 1 (Key Performance Indicators (KPIs)).

9.1.17 The Supplier shall participate in the Company's FRACAS (Failure Recording and Corrective Action System) process. The Company operates a FRACAS process defined in Company Procedure PR0099. The process provides a closed-loop continuous improvement system designed to help the Company to work together (including with its Suppliers) to collect failure data, prioritise failures according to criticality and risk and analyse the most critical failures to determine the root cause and implement corrective actions (CA) to prevent repetitive failures. The Supplier shall undertake the role of the "Maintenance Team" as defined in Section 4 - Responsible, Accountable, Consulted and Informed (RACI) of Procedure PR0099. The key responsibilities of the Supplier acting as the "Maintenance Team" include:

a. documenting all failures in the database (in this case the Companies AMS system);

b. verifying that failure data is accurate;

c. reviewing each failure following closure on AMS (the Companies AMS);

d. prioritising failures by risk, criticality, cost, service delay; and

e. the Supplier shall attend FRACAS meetings as required.

9.1.18 Specific Reactive Maintenance requirements in respect of the London Overground business unit are set out at Appendix R.

9.2 **Attendance and interfaces with the Company's Direct Labour Organisation or Third-Party Suppliers**

9.2.1 "Attendance" is the requirement to (i) provide Site assistance and/or undertake Services in respect of Equipment that is impacted by fault attendance that relates to other equipment which is not included in the scope of this Contract or (ii) attend a Site safety issue.

9.2.2 Each requirement to attend Site irrespective of the time spent at each Site, shall be deemed an Attendance.

9.2.3 The Supplier shall provide Attendance as required to deliver the Services in accordance with the Contract.

9.2.4 The Company shall take overall responsibility for management of interfaces between the Supplier and Company Direct Labour Organisation or 3rd party Suppliers.

9.2.5 The Supplier shall keep the Company's appropriate local managers informed of any maintenance work that they become aware of that is likely to have an impact on equipment not in the scope of this Specification.

9.2.6 The Supplier shall ensure that no Equipment failures, downtime or interruptions are caused by the Supplier or their sub-suppliers as a result of support activities.

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10 ISOLATION SERVICES

10.1 For the purposes of this paragraph 10:

10.1.1 "**Isolation Services**" means the provision of Company requested temporary isolations to Fire Detection and Alarm equipment necessary to facilitate services, works and inspections in accordance with TfL Procedure PR0630: Fire Detection Isolations, Smoke to Heat Detector Substitutions; and

10.1.2 "**Isolation Services Request**" has the meaning given to that term in paragraph 1.1 of Schedule 3 (*Payment*).

10.2 All such Company-requested temporary isolations of Fire Detection and Alarm equipment are included in the scope of this Specification.

10.3 The scope includes the temporary isolations of Fire Detection and Alarm equipment, and subsequent re-instatement, of equipment or apparatus in order for the Company to undertake services, project works or inspections within and outside of the scope of the Contract.

10.4 The Supplier will be required to take responsibility for managing, and implementing all such isolations and may, in the case of complex isolations, request that the Company supports this process.

10.5 The Supplier is to ensure that adequate, competent resources are available to ensure that the implementation of a fire systems isolations procedure does not have a detrimental impact on the Planned Preventative Maintenance Schedule or Reactive Maintenance delivery.

10.6 The Supplier may be requested to carry out emergency isolations of fire systems in order to allow the sites to remain open and operational.

10.7 The Supplier shall receive instructions to carry out Isolation Services from the Company's Asset Control Centre (ACC) by the Company issuing a Reactive Maintenance Work Order. Each Reactive Maintenance Work Order may contain one or more Isolation Services Request. The Supplier shall maintain and provide to the Company on request a written record of all individual Isolation Services undertaken by the Supplier (such record to include reference to the relevant Reactive Maintenance Work Order) to support the calculation of the Isolation Services Cost Reconciliation Amount in accordance with paragraph 4.4 (*Isolation Services Cost Reconciliation Amount*) of Schedule 3 (*Payment*).

10.8 The Supplier shall be obliged to undertake the Isolation Services set out in the relevant Isolation Services Request within the applicable Clearance Time as set out in Appendix 1 to Schedule 18C and in accordance with the relevant Company Standards.

10.9 The Supplier shall report on its performance of the Isolation Services as per the requirements for Reactive Maintenance Works Orders provided in Appendices H (Asset Management System) and K (AMS Supplier Processes).

10.10 The Supplier shall only close a Reactive Maintenance Work Order upon completion of all the individual Isolation Services Requests made pursuant to such Reactive Maintenance Work Order or by agreement of the Company.

10.11 An Isolation Services Request not completed within the applicable Clearance Time set out in Appendix 1 (*Reactive Maintenance and Isolation Services Clearance Times*) to Schedule 18c (*Key Performance Indicators (KPIs)*) will be deemed to be a Breached Fault.

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10.12 The Supplier shall notify the Company, as per the requirements defined in Appendices H (Asset Management System) and K (AMS Supplier Processes), of the status of a Reactive Maintenance Work Order instruction following each attendance.

10.13 Specific Isolation Services requirements in respect of the RFLI and London Overground business units are set out at Appendix R.

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APPENDIX A

BUSINESS UNIT SERVICE MATRIX

The document labelled "APPENDIX A SERVICE MATRIX" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX B

EQUIPMENT DESCRIPTIONS

The document labelled “APPENDIX B EQUIPMENT DESCRIPTIONS" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX C

FLASH BUSINESS CASE TEMPLATE

The document labelled “APPENDIX C FLASH BUSINESS CASE TEMPLATE" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX D

PLANNED PREVENTATIVE MAINTENANCE TECHNICAL SPECIFICATION

TfL CONFIDENTIAL

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Transport for London

RFLI

Document Number: RfLI-MTC-MP-SPE-0009

Revision: 1

Revision Date: 16th November 2023

Fire Asset Maintenance Specification

Fire and Smoke Protection Systems, Compartmentation and Portable Fire Extinguishing

Version	Modification	Section Modified	Date	Modified by
DRAFT v1	Fire PPM Technical Specification RFLI DRAFT_v1	All	16.11.2023	[redacted]

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1. Introduction

This document has been produced to support the Services Specification of the TfL Fire Maintenance Contract and has been produced to Company specific requirements for the completion of fire asset maintenance activities on all Rail for London Stations, Shafts and Portals and associated RFLI Non-Public Buildings.

The PPM activity designations used within Sections 4, 5, 6 & 7 (e.g., 4.3.2. RFLI_CAW_LHD_M6 (RFLI) Listec Addressable Linear Heat Fire detection system 6m Maintenance (6 Monthly)), correspond to the index of this document only.

RFLI Fire Maintenance tasks follow SFG20 schedules. Where maintenance tasks are set at facility level, or maintenance requirements are system specific (to meet manufacturers requirements, modified job plans have been built (identified within this document with an RFLI prefix).

Detailed maintenance tasks are listed out within the overarching 1FM contract documentation giving additional detail of the maintenance requirements of individual assets that make up the system.

This Technical Specification does not supersede the requirements of Site-specific O&Ms or associated Manufacturers O&Ms which should be referenced.

2. Definitions

AEL	Advanced Electronics Ltd

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ASD	Aspirating Smoke Detection
CFP	Compliance Fire Plan
CIE	Control & Indication Equipment
DCP	Damper Control Panel
(E)	Identifies that TfL Fire Engineering Specified PPM evidence is required
EDNE	Emergency Do Not Enter Sign
ELLE	Evacuation Link LED Enclosure
EWSS	Escalator Water Suppression System
FCP	Fire Control Panel
H123	London Underground Station for Heathrow Terminals 1, 2 & 3
HSSD	High Sensitivity Smoke Detection
LWA	Local Water Authority
LFA	Low Freeze Additive
MARS	Maintenance Activity Record Sheets
Maximo	Asset management software
MDR	Magnetic Door Retainer
MICC	Mineral Insulated Copper Cable
MJC	Multiple Jet Controller (forms part of the EWSS system)
MSFD	Motorised Smoke Fire Damper
PA/VA	Public Address with Voice Alarm
PHP	Passenger Help Point
PPM	Planned Preventative Maintenance
PPM packs	Replace with Maximo records
PRV	Pressure Regulating Valve
PRLV	Pressure Regulating Landing Valve
RCC	Route Control Centre
RTIM	Real Time Infrastructure Manager
RFLI	Rail for London Infrastructure
RX/TX	Data Receiving/Transmission Unit
SCADA	Supervisory Control and Data Acquisition
SVC	Sprinkler Valve Chamber
TfL	Transport For London
UTS	Unmanned Ticketing System

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3. TfL & London Underground Fire Engineering Standards, Procedures & Guidance

All relevant TfL & London Underground & RFLI Fire Engineering Standards, Procedures & Guidance have been identified within the Services Specification of the TfL Fire Maintenance Contract.

SFG20 requirements identify job tasks and RFLI custom job plans ensure compliance with Manufacturer/ supplier/ installer O&M requirements.

4. Maintenance Procedures - Electrical Systems

4.1. Fire Alarm and Detection Systems

Note - Fire Alarm and Detection Systems have maintenance tasks set at facility level. Various job plans are in place to reflect the assets requiring maintenance.

4.1.1. RFLI_22-01_M6 (RFLI) Fire Alarm System inc Dampers -16-03 - 50% Annual check (6 Monthly)

10. Part Annual check -

20. Logbook - The system logbook should be examined. It should be ensured that any faults recorded have received appropriate attention.

30. Visual inspection - A visual inspection should be made to check whether structural or occupancy changes have affected the compliance of the system with the recommendations of this standard for the siting of manual call points, automatic fire detectors and fire alarm devices.

Notes: Particular care should be taken to verify whether:

1 all manual call points remain unobstructed and conspicuous.

2 all manual call points are fitted with a protective cover which can be moved to gain access to the frangible element.

3 any new exits have been created without the provision of an adjacent manual call point.

4 any new or relocated partitions have been erected within 500mm horizontally of any automatic fire detector.

5 any storage encroaches within 300mm of ceilings.

6 a clear space of 500mm is maintained below each automatic fire detector and that the ability of the detector to receive the stimulus that it has been designed to detect has not been impeded by other means.

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7 any changes to the use or occupancy of an area makes the existing types of automatic fire detector unsuitable for detection of fire or prone to unwanted alarms.

8 any building alterations or extensions require additional fire detection and alarm equipment to be installed. The building occupier should inform the maintenance engineer of any structural or occupancy changes which might affect the siting or operation of the detector.

40. False alarms - The records of false alarms should be checked in accordance with current British Standards. The rate of false alarms during the previous 12 months should be recorded. Action taken in respect of false alarms recorded should comply with the recommendations in current BS Codes of Practice.

50. Stand-by battery - The stand-by battery should be disconnected, and full load alarm should be simulated. Check correct battery fuse rating and charge rate. Check battery, voltage and connections and test together with charging equipment. Check and record specific gravity of battery where applicable. Simulate mains and charger failure.

60. Batteries - Batteries and their connections should be examined and momentarily load tested with the mains disconnected (other than those within devices such as manual call points, detectors, and fire alarm sounders of a radio-linked system) to ensure that they are in good serviceable condition and not likely to fail before the next service visit. Check condition and life. Check correct battery fuse rating and charge rate. Check battery, voltage and connections and test together with charging equipment. Check and record specific gravity of battery where applicable. Simulate mains and charger failure. For more information refer to (SFG 43-04). Notes: Check according to the manufacturer's recommendations.

70. Fire alarm control and indicating equipment - The fire alarm functions of the control and indicating equipment should be checked by the operation of at least one detector or manual call point on each circuit. Notes: An entry should be made in the logbook indicating which initiating devices have been used for these tests

80. Fire alarm devices - The operation of the fire alarm devices should be checked.

90. Controls, firefighter switches and visual indicators - All controls, visual indicators at control and indicating equipment should be checked for correct operation. Test operation of fireman’s switch if fitted

100. Alarm signals - The operation of any facility for automatic transmission of alarm signals to an alarm receiving centre should be checked. Check operation interlinks with landlords’ systems if fitted. Check operation interlinks with plant, ensure shut down and reset at completion of test. Notes: Where more than one form of alarm signal can be transmitted (e.g., fire and fault signals) the correct transmission of each signal should be confirmed.

110. Ancillary functions - All ancillary functions of the control and indicating equipment should be tested.

120. Fault indicators - All fault indicators and their circuits should be checked where practicable, by simulation of fault conditions

130. Printers - All printers should be tested to ensure that they operate correctly and that characters are legible. Notes: It should be ensured that all printer consumables are sufficient in quantity or condition to ensure that the printer can be expected to operate until the time of the next service visit.

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140. Radio systems - All further checks and tests recommended by the manufacturer of the control and indicating equipment and other components of the system should be carried out.

150. Manufacturers checks and tests - All further checks and tests recommended by the manufacturer of the control and indicating equipment and other components of the system should be carried out.

160. Completion - On completion of the work any outstanding defects should be reported to the responsible person, the system logbook should be completed, and a servicing certificate should be issued.

4.1.2. RFLI_22-01_M12 (RFLI) Fire Alarm System inc Dampers -16-03 100% Annual Check (12 Monthly)

10. Full Annual Check -

20. Logbook -

30. Visual inspection -

40. False alarms - Check for damage to flexible conduits. Tighten all terminal connections. Isolate control panel and inspect for signs of overheating. Check integrity of electrical insulation. Notes: For more detailed maintenance information see Introductory Procedures -

50. Stand-by battery

60. Batteries

70. Fire alarm control and indicating equipment

80. Fire alarm devices

90. Controls, firefighter switches and visual indicators

100. Alarm signals

110. Ancillary functions

120. Fault indicators

130. Printers

140. Radio systems

150. Manufacturers checks and tests

160. Completion

170. Electrical

180. Manual call points

190. Automatic detectors

200. Heat detectors

210. Point smoke detectors

220. Optical beam smoke detectors

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230. Aspirating fire detection systems, VESDA System
240. Carbon monoxide fire detectors
250. Analogue values
260. Multi-sensor detectors
270. Visual devices
280. Filament lamps
290. Radio signal
300. Cables
310. Cause & effect
320. Stand-by power
330. Shutters
340. Drop fire curtains
350. Magnetic door latches
360. Smoke relief vents
370. Interlocks
380. Dampers - All fire dampers
390. Dampers - Door Transfer Fire Dampers
400. Dampers - Electro/Mechanical Fire Dampers
410. Dampers - Smoke dampers
420. Dampers - Linkages on motorised dampers
430. Dampers - Controls
440. Electrical - Dampers

4.1.3. RFLI_22-01_M6(V02) (RFLI) Fire Alarm System inc Dampers -16-03 and EDNE Signs - 50% Annual check (6 Monthly)

10. Part Annual Check -
20. Logbook -
30. Visual inspection -
40. False alarms -
50. Stand-by battery -
60. Batteries -
70. Fire alarm control and indicating equipment -
80. Controls, firefighter switches and visual indicators -

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90. Alarm signals -

100. Ancillary functions -

110. Fault indicators -

120. Printers -

130. Radio systems -

140. Manufacturers checks and tests -

150. Completion -

160. EDNE Signs 6 Month checks -

4.1.4. RFLI_22-01_M12(V02) (RFLI) Fire Alarm System inc Dampers -16-03 and EDNE Signs - 100% Annual Check (12 Monthly)

10. Full Annual Check - Perform Final 50% of annual maintenance in accordance with 45.4 of BS5839-1 to complete testing & inspection on 100% of the System. On the PPM Service Sheet identify the specific devices tested and items inspected that were included in that percentage.

20. Logbook -The system logbook should be examined. It should be ensured that any faults recorded have received appropriate attention.

30. Visual inspection - A visual inspection should be made to check whether structural or occupancy changes have affected the compliance of the system with the recommendations of this standard for the siting of manual call points, automatic fire detectors and fire alarm devices.

40. False alarms - The records of false alarms should be checked in accordance with current British Standards. The rate of false alarms during the previous 12 months should be recorded.

50. Stand-by battery - The stand-by battery should be disconnected, and full load alarm should be simulated. Check correct battery fuse rating and charge rate. Check battery, voltage and connections and test together with charging equipment. Check and record specific gravity of battery where applicable. Simulate mains and charger failure.

60. Batteries - Batteries and their connections should be examined and momentarily load tested with the mains disconnected (other than those within devices such as manual

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call points, detectors, and fire alarm sounders of a radio-linked system) to ensure that they are in good serviceable condition and not likely to fail before the next service visit.

Check condition and life. Check correct battery fuse rating and charge rate. Check battery, voltage and connections and test together with charging equipment. Check and record specific gravity of battery where applicable. Simulate mains and charger failure. For more information refer to (SFG 43-04).

70. Fire alarm control and indicating equipment - The fire alarm functions of the control and indicating equipment should be checked by the operation of at least one detector or manual call point on each circuit.

80. Fire alarm devices - The operation of the fire alarm devices should be checked.

90. Controls, firefighter switches and visual indicators - All controls, visual indicators at control and indicating equipment should be checked for correct operation. Test operation of fireman's switch if fitted.

100. Alarm signals - The operation of any facility for automatic transmission of alarm signals to an alarm receiving centre should be checked. Check operation interlinks with landlord's systems if fitted. Check operation interlinks with plant, ensure shut down and reset at completion of test.

110. Ancillary functions - All ancillary functions of the control and indicating equipment should be tested.

120. Fault indicators - All fault indicators and their circuits should be checked where practicable, by simulation of fault conditions.

130. Printers - All printers should be tested to ensure that they operate correctly and that characters are legible.

140. Radio systems - Radio systems of all types should be serviced in accordance with the recommendations of the manufacturer.

150. Manufacturers checks and tests - All further checks and tests recommended by the manufacturer of the control and indicating equipment and other components of the system should be carried out.

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160. Completion - On completion of the work any outstanding defects should be reported to the responsible person, the system logbook should be completed, and a servicing certificate should be issued.

170. Electrical - Check electrical terminations for security. Examine and report on condition of all associated wiring, ensure security of terminations. Carry out insulation resistance and protective conductor tests, record results. Check and ensure security of all wiring facility and cable gland terminations.

180. Manual call points - Check mounting of casing and replace if cracked. Ensure all manual call points are fitted with a protective cover which can be moved to gain access to the frangible element. The switch mechanism of every manual call point should be tested either by removal of a frangible element, insertion of a test key or operation of the device as it would be operated in the event of fire.

190. Automatic detectors - All automatic fire detectors should be examined as far as practicable, to ensure that they have not been damaged, painted or otherwise adversely affected. Thereafter, every detector should be functionally tested. The tests used need prove only that the detectors are connected to the system, are operational and can respond to the phenomena they are designed to detect.

200. Heat detectors - Every heat detector should be functionally tested by means of a suitable heat source unless operation of the detector in this manner would then necessitate replacement of part or all the sensing element (e.g.as in fusible link point detectors or non-integrating line detectors).

Special test arrangements will be required for fusible link heat detectors. The heat source should not have the potential to ignite a fire; live flame should not be used, and special equipment might be necessary in explosive atmospheres.

210. Point smoke detectors - Point smoke detectors should be functionally tested by a method that confirms that smoke can enter the detector chamber and produce a fire alarm signal (e.g., by use of apparatus that generates simulated smoke or suitable aerosols around the detector). It should be ensured that the material used does not cause damage to or affect the subsequent performance of the detector. The manufacturer’s guidance on suitable materials should be followed.

220. Optical beam smoke detectors - Optical beam smoke detectors should be functionally tested by introducing signal attenuation between the transmitter and receiver either by use of an optical filter, smoke, or simulated smoke.

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230. Aspirating fire detection systems, VESDA System - Aspirating fire detection and fire alarm systems should be functionally tested by a method that confirms that smoke can enter the detector chamber and produce a fire alarm signal. It should be ensured that the material used does not cause damage to or affect the subsequent performance of the detectors; the Uncontrolled Copy - Printed: 12/05/2020 | London Underground Engineering Library | RfLiMEP@tfl.gov.uk© 2020 BESA All rights reserved

All fault and alarm output functions of the ASD should be tested where practicable and any interfaces which may form part of the system. It is important to ensure that operation during testing does not result in an unwanted signal being sent from the ASD to another system.

ASD pipe work should be purged annually or more if use in a dirty environment using suitable air compressor to clean sampling pipes and where accessible clean sampling points and record before and after air flow level percentages for each pipe on each ASD.

Where ASD systems contain power supplies and battery back-ups these should be checked and tested in accordance with appropriate national standards). Any components fitted to the system with a defined operating life as defined by the manufacturer should be examined and replaced if necessary (e.g., filters, batteries). Filter install dates and percentage used should be recorded and replaced if nearing end of life to avoid faults occurring after PPM. It should be checked that there have been no unauthorised changes to the system configuration (e.g., Sensitivity).

If changes are required or have taken place, then these must be documented. Any systems reliant on additional additives should be topped up in accordance with the manufacturer's recommendations.

A visual inspection should be made to check whether structural, building or occupancy changes have affected the design requirements for the pipework and sampling points.

A visual inspection should be made of all sampling points, pipework, fittings, cables and equipment for secure fixing, appropriate labelling and for absence of damage and freedom from obstructions. Furthermore, appropriate testing should be performed to verify that smoke is able to enter each sampling point (or collection of sampling points that are recommended by the manufacturer to cover the same areas a point smoke detector). This can be achieved by introducing smoke into each sampling point in turn and verifying a response at the detector. However, where access is restricted or other site conditions prevent this, other verification techniques should be employed such as:

Verifying transport time from furthest hole or a dedicated test point and comparing with previously recorded results to identify deviations.

1) Confirming that the flow monitoring is capable of detecting loss of a single sampling point (or collection of sampling points that are deemed to be acceptable for the risks involved).

2) Inspection of flow readings and comparing with previously recorded results to identify deviations which would indicate a loss of detection performance.

3) Measurement of the pressure at each sampling point and comparing with previously recorded results to identify deviations which would indicate a loss of detection performance.

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4) The technique used is dependent on the particular features of the ASD technology, the risk, and details of the specific application. Such techniques may also be supported by visual inspection of sampling points where this is possible, but it is essential to verify that adequate detection performance is maintained. Details of the techniques used should be recorded and agreed with all parties.

240. Carbon monoxide fire detectors - Carbon monoxide fire detectors should be functionally tested by a method that confirms that carbon monoxide can enter the detector chamber and produce a fire alarm signal (e.g., by use of apparatus that generates carbon monoxide or a gas that has a similar effect on the electro-chemical cell as carbon monoxide).

250. Analogue values - In fire detection systems that enable analogue values to be determined at the control and indicating equipment, it should be confirmed that each analogue value is within the range specified by the manufacturer.

260. Multi-sensor detectors - multi-sensor detectors should be operated by a method that confirms that products of combustion in the vicinity of the detector can reach the sensors and that a fire signal can be produced as appropriate.

270. Visual devices - All fire alarm devices should be checked for correct operation. It should be confirmed that visual fire alarm devices are not obstructed from view and that their lenses are clean. This includes Emergency Do Not Enter (EDNE) signs.

280. Filament lamps - All unmonitored permanently illuminated filament lamp indicators at control and indicating equipment should be replaced.

290.Radio signal - Radio signal strengths in radio-linked systems should be checked for adequacy.

300.Cables - A visual inspection should be made to confirm that all readily accessible cable fixings are secure and undamaged.

310.Cause & effect - The cause-and-effect programme should be confirmed as being correct.

320.Stand-by power - The stand-by power supply capacity should be checked to establish it remains suitable for continued service.

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330.Shutters - Operation - Check and ensure action responds to appropriate signals. Indicator lights - Check operation and replace any faulty lamps.

340.Drop fire curtains - Condition – Check for mechanical damage. Operation - Check operation and control mechanisms.

350.Magnetic door latches - Condition – Check for mechanical damage. Operation - Check operation and control mechanisms.

360.Smoke relief vents - Condition – Check for mechanical damage. Operation - Check operation and control mechanisms

370.Interlocks - Condition – Check for mechanical damage. Operation - Check operation and control mechanisms.

380.Dampers - All fire dampers - All fire dampers should be tested annually. Warning: Fusible link dampers are on very strong springs. Take care to avoid the risk of personal injury.

Visually inspect the fire damper's internal components for signs of corrosion, dirt, or dust.

Clean and lubricate the damper and perform a drop test in accordance with the manufacturer's instructions. Where a drop test is not possible due to restricted access, this should be reported as a failed test and the customer advised of a proposed solution to facilitate testing. Arrangements should be made for periodic maintenance of any smoke detector system used to operate fire dampers and for such system(s) to be tested by a competent person after installation to determine whether detection occurs at the appropriate design smoke density. Any smoke detector system that is found to be faulty should be either repaired or replaced immediately.

390.Dampers - Door Transfer Fire Dampers - Test operation of each damper in conjunction with twelve monthly fire alarm tests. Reset on completion of test. Examine and report on condition of all wiring facilities and associated wiring, ensure security of all terminations. Report any defects.

400.Dampers - Electro/Mechanical Fire Dampers - Test units in conjunction with 12-monthly fire alarm tests and reset on completion. Inspect latching mechanism and ensure security. Inspect operating cable throughout its length and check for any damage or fouling and ensure correct adjustment. Lubricate cable inner as required. Inspect remote controller ensuring freedom of operation of all mechanisms and security of components. Check operation of remote controller indicator lamp. Ensure cleanliness of

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ceiling tiles/walls on completion. Check and ensure correct operation of shutter mechanism. Ensure free fall of damper(s).

Clean any dirt, dust, or debris from within damper guide channels, springs and around the units. Clean and lubricate mechanism as necessary but in line with manufacturers guidelines. Check and ensure security of all access doors and gaskets. Check for air leaks. (Report where access is restricted to carry out maintenance).

Examine and report on condition of all wiring facilities and associated wiring, ensure security of all terminations. Report any defects and record all actions undertaken. Arrangements should be made for inspections and tests of the smoke control system to be carried out by competent persons, for any defects to be logged and the necessary action taken, and for certificates of testing to be obtained.

410.Dampers - Smoke dampers - Test operation of each damper in conjunction with twelve monthly fire alarm test. Reset on completion of test. Examine and report on condition of all wiring facilities and associated wiring, ensure security of all terminations. Report any defects.

420.Dampers - Linkages on motorised dampers - Spring-operated fire dampers should be tested annually. Warning: Fusible link dampers are on very strong springs. To avoid the risk of personal injury, perform the maintenance tasks only if the damper is accessible and it is safe to do so. Visually inspect the fire damper's internal components for signs of corrosion, dirt, or dust.

430.Dampers – Controls - Test operation of each damper in conjunction with twelve monthly fire alarm test. Reset on completion of test. Examine and report on condition of all wiring facilities and associated wiring, ensure security of all terminations. Report any defects.

440.Electrical – Dampers - A visual inspection should be made to check whether structural, building or occupancy changes have affected the design requirements for the pipework and sampling points. A visual inspection should be made of all sampling points, pipework, fittings, cables and equipment for secure fixing, appropriate labelling and for absence of damage and freedom from obstructions. Furthermore, appropriate testing should be performed to verify that smoke is able to enter each sampling point (or collection of sampling points that are recommended by the manufacturer to cover the same areas a point smoke detector). This can be achieved by introducing smoke into each sampling point in turn and verifying a response at the detector. However, where access is restricted or other site conditions prevent this, other verification techniques should be employed such as: Verifying transport time from furthest hole or a dedicated test point and comparing with previously recorded results to identify deviations.

450.EDNE Signs 12 Month checks - All fire alarm devices should be checked for correct operation. It should be confirmed that visual fire alarm devices are not obstructed from

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view and that their lenses are clean. This includes Emergency Do Not Enter (EDNE) signs.

4.1.5. RFLI_22-01_M6(V03) (RFLI) Fire Alarm System 50% Annual check (6 Monthly)

10. Part Annual Check -
20. Logbook -
30. Visual inspection -
40. False alarms -
50. Stand-by battery -
60. Batteries -
70. Fire alarm control and indicating equipment -
80. Controls, firefighter switches and visual indicators -
90. Alarm signals
100. Ancillary functions
110. Fault indicators
120. Printers
130. Radio systems
140. Manufacturers checks and tests
150. Completion
160. EDNE Signs 6 Month checks

4.1.6. RFLI_22-01_M12(V03) (RFLI) Fire Alarm System 100% Annual Check (12 Monthly)

Control & Indicating Equipment

Real Time Infrastructure Manager (RTIM) notification requirements

Where SCADA/ BMS remote monitoring of fire detection systems is installed, the associated receiving centre is to be contacted prior to carrying out 6 Monthly CIE PPM activities, with a minimum of one fault and fire signal to be confirmed as received by the RCC/RTIM. Following completion of tests, monitoring should be confirmed as being back on-line and faults clear.

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4.2. Fire Control Panel (Gaseous Extinguishing Systems)

4.2.1. - 6 Monthly visits

a) Check condition and status of Control Panel and field equipment.

b) Confirm that the Panel power light is illuminated.

c) Check for panel faults, isolated devices, or disabled zones (report or record as required)

d) Record type of system (i.e., Inergen IG541) and cylinder next hydrostatic Pressure test due. Record cylinder size Record number of cylinders.

e) Carry out battery inspection and testing as per MARS requirements (E)

f) Record panel settings prior to testing

g) Isolate Gaseous Extinguishant via mechanical disconnect of solenoid from extinguishant containers.

h) Confirm all panel buttons, LEDs and internal buzzer work as required.

i) Confirm full panel functionality via zone device testing (one device per zone) and zone disconnect fault (E)

j) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order.

k) Confirm that the system has been returned to fully operational status and is ready for use following PPM activities.

4.2.2. - 12 Monthly visits (Complete the 6 Monthly activities plus the following)

l) Confirm a suitable Zonal Plan is provided, updated as required.

m) Carry out mains power supply tests as per MARS requirements (E)

n) The standby power supply capacity should be checked to establish it remains suitable for continued service.

o) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)

p) Confirm system functionality via verification testing of the cause & effect settings, extinguishant release timer settings, manual extinguishant activation function, emergency hold off function, emergency abort function and extinguishant output circuit and solenoid or Actuator function (E)

q) During the above testing activities (listed in ‘p’) Confirm that activity specific Audio vices activate as required

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4.3. EDNE Panel System (Kentec)

Note: Caution to be taken at all times when working within the EDNE Panel, as dual 230v supplies exist.

4.3.1. - 6 Monthly visits

a) Check condition of EDNE Panel & Signs.

b) Where applicable, carry out battery inspection and testing as per MARS requirements (E)

c) Instigate FCP EVAC and Confirm that EDNE signs are operated on this signal (E)

d) During operation Confirm that all EDNE Sign Lamps/LEDs are operational

e) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order.

f) Record Loop and Device detail

Note: Activities ‘c’ & ‘d’ can be combined with the FCP Six monthly activities

4.3.2. - 12 Monthly visits (Complete the 6 Monthly activities plus the following)

g) Confirm EDNE Sign Tone change at (approx.) 90 Seconds.

h) Carry out mains power supply tests as per MARS requirement (E)

i) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.

j) Remove any debris that may be inside the signs, clean signs with appropriate materials; Confirm all locks are in good working order.

k) Confirm EDNE Panels & Signs are in correct position as per LU asset drawing.

4.4. EWSS Electrical

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All zones on an Escalator must be Metron lamp tested within one visit to evidence system integrity.

Note - During EWSS system testing care must be taken to Confirm all required (Electrical and Mechanical) Test Modes & Isolations are in place prior to works commencing and de-isolated or reinstated on the completion of works as appropriate.

Prior to (post testing) Metron de-isolation, confirm all required cable terminations and system components are in place.

EWSS Listec (Encapsulated Addressable Heat Detector Cable) Metron System

4.4.1. RFLI_CAW_LHD_M12 (RFLI) Listec Addressable Linear Heat Fire detection system 12m Maintenance (12 Monthly)

10. Batteries - Note battery installation date should not be older than 4 years

20. Batteries - Record battery manufacturer

30. Batteries - Measure battery charger voltage with batteries connected

40. Batteries - Record battery capacity voltage for both batteries

50. Batteries - Record battery capacity Ah for both batteries

60. Batteries - State Battery pass or fail load test

70. Batteries - check Battery terminal fit for purpose and tight

80. Batteries - check fault comes in for disconnection of batteries

90. Record loop and Device detail - Record Loop & Device detail of interface to F/A

100. Clean - clean panel with appropriate materials; ensure all locks are in good working order

110. Record Panel fuse rating - Record panel fuse rating

120. Record main power source fuse rating and location - Record main power source fuse rating and location

130. Record external AC Supply reading - Record external ac supply reading

140. Isolator - Record type of local isolator

150. Isolator - Isolator locked with Padlock yes / no

160. Isolator - Check operation of local isolator and confirm disconnection of 230v from the panel

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170. Ensure all panel internal terminations from field wiring, internal wiring and ribbon cables are secure - Ensure all panel internal terminations from field wiring, internal wiring and ribbon cables are secure

180. Check all field devices for status and condition - check all field devices and state condition

190. Visual check - check cable condition in close proximity to moving parts

200. Visual check - note condition

210. Visual check - check all containment and fixing

220. Ensure SCU 800 unit generates a fault signal - Ensure SCU 800 unit generates a fault signal when the ribbon running between the SCU and the AEL panel is disconnected

230. Test Linear heat cable with heat gun - Using an approved heat gun and 'T' piece, apply heat to the Listec Cable at the first and last device for each zone boundary, this is to be completed for each zone on the escalator.

240. Confirm correct indication at the Zone lamp, EWSS Panel and MFCP - Confirm correct indication at the Zone Lamp, EWSS Panel and MFCP. Ensure that each zone has cooled for a minimum of 2 minutes and has been reset before the next zone is tested. Record results

250. Record serial number - Record serial number

4.4.2. RFLI_CAW_LHD_M6 (RFLI) Listec Addressable Linear Heat Fire detection system 6m Maintenance (6 Monthly)

10. Batteries Record Loop & Device detail

20. Batteries Check condition of EWSS Panel & System Status

30. Batteries Battery installation date

40. Batteries Record manufacture type

50. Batteries Measure battery charger voltage with batteries connected

60. Batteries Record battery capacity voltage

70. Batteries - Record battery capacity Ah

80. Batteries - Battery pass load test

90. Batteries - Battery connection terminal fit for purpose

100. Batteries - Test for disconnection of batteries (PO)

110. Batteries - Remove any debris that may be inside the panel, clean panel with appropriate materials; ensure all locks are in good working order

Under no circumstances are the alarm settings for the Listec cable to be reduced for testing purposes. All tests are to be carried out with the Listec cable alarm temperature set at a rate of rise of 2.8°c from ambient temperature. Under operational conditions, the Listec cable is to

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operate when the cable temperature exceeds 50°c.- Temperatures to be confirmed as correct for Canary Wharf.

4.5. Trace Heating Panel

Note - Fire Main maintenance is carried out as a system, Trace heating maintenance has been included within Job plan - SFG20_23-04_M12 (SFG20) Rising Fire Mains & Hydrants (12 Monthly) and PPM packs returned are required to include evidence of the completion of these works.

4.5.1. - 12 Monthly Visits detailed elements of maintenance

a) Check the condition and status of the Trace heating panel including supply healthy indicator (if present)

b) Visually inspect all visible field wiring & cladding for damage or degradation

c) Check all panel terminations from field wiring, internal wiring, PCBs, and ribbon cables are secure.

d) Confirm the thermostat is set so that the trace heating panel operates when temperatures drop below 5°C.

e) Operate the test button and confirm that the trace heating panel operates heating the cable element via confirming adequate amperage draw (via test meter)

f) Carry out mains power supply tests as per MARS requirement (E)

g) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order.

h) Record Loop and Device detail

4.6. Aspirating Smoke Detection (ASD)

Note – Aspirating Smoke system maintenance is carried out within Fire Alarm and Detection job plans (RFLI 22-01 suite). Fire Alarms and associated equipment are tested on a system basis.

4.6.1. 6 Monthly Visits

Check condition of Panel & System Status

Carry out battery inspection and testing as per MARS requirements (E)

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Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order. If applicable, dismantle and clean component internal parts of the ASD panel.

Inspect and clean/replace panel filters as applicable and record filter install & next due dates.

4.6.2. 12 Monthly Visits (Complete the 6 Monthly activities plus the following)

Carry out mains power supply tests as per MARS requirement (E)

Test LEDs and internal sounders and confirm all buttons work as required and in the correct sequence.

Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.

Check all pipework for obstruction or damage; check pipe supports and fixings.

Check all detection holes and clear as appropriate. Check isolation ball valves for correct operation.

Annual purging of the sampling pipework is required (Compressed air is to be used for the purging process, purged particles are to be collected in suitable receptacles)

Record travel time for all detection pipes

Confirm ASD Panel and ancillary components are in the correct position as per the LU asset drawing.

Record Loop and Device detail

4.7. Smoke Beam System (OSID)

4.7.1. - 6 Monthly visits

a) Check condition of Panel & System Status

b) Carry out battery inspection and testing as per MARS requirements (E)

c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order.

4.7.2. - 12 Monthly visits (Complete the 6 Monthly activities plus the following)

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d) Check condition of Panel & System Status

e) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.

f) Carry out mains power supply tests as per MARS requirement (E)

g) Clean both the imager lenses and emitter/reflectors using a damp lint-free cloth, making sure that alignment remains unchanged.

h) Carry out a detection test by placing a manufacturer approved smoke or optical filter (preferred method) into the beam path (E)

i) In a multi-emitter system, apply the optical filter in front of each emitter to Confirm that all emitters are aligned with the correct imager.

j) Emitters that do not pass the tests should be re-cleaned or replaced as required.

Note: The OSID system will not respond to test smoke from aerosol cans nor to filters supplied with traditional third-party beam detectors, as it recognizes that these are not real smoke

4.8. Damper Control Panels and associated Field Equipment

4.8.1. Conventional DCP (Kentec)

12 Monthly visits

a) Check condition of Panel & System Status

b) Carry out mains power supply tests as per MARS requirement (E)

c) Confirm via internal DCP indication that all Dampers ‘Fail Safe’ Close upon loss of AC supply (E)

d) Generate fault condition via removal of MSFD status cable (E)

e) Carry out single Cause & Effect test via Loop Detection activation. Confirm full and correct individual MSFD action via DCP indication LEDs (E)

f) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.

g) Confirm DCP Panel is in the correct position as per the LU asset drawing.

h) Record Loop and Device detail

4.8.2. AEL Damper Control Panel

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4.8.2.1. 6 Monthly Visits

a) Check condition of Panel & System status

b) Carry out Battery inspection and testing as per MARS requirements.

c) Remove any debris that may be inside the panel and signs, clean panel, and signs with appropriate materials; Confirm all locks are in good working order.

4.8.2.2. 12 Monthly visits (Complete the 6 Monthly activities plus the following)

a) Carry out mains power supply tests as per MARS requirement (E)

b) Carry out Cause & Effect test via loop device testing (one device per MSFD loop). Confirm full and correct MSFD action via DCP indication.

c) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.

d) Confirm DCP is in the correct position as per the LU asset drawing.

e) Record Loop and Device detail

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5. Maintenance Procedures - Mechanical Systems

Water Mist – Complex Systems (Hydramist, Marioff, Protec etc)

NOTE - This section is broken out into separate systems to reflect the systems installed across the RFLI Elizabeth line portfolio and the different manufacturer requirements of these systems. These systems were installed to various standards, however the maintenance requirements are extracted and built up from requirements within the manufacturer's O&Ms

All Water Mist Control Panel maintenance activities are to conform to the requirements of BS5839 -1.

5.1. Canary Wharf – Marioff High Pressure Watermist System

PPM tasks derived from Manufacturers/approved installers Operation and Maintenance manual. These tasks must be adhered to.

Note - Canary Wharf system specific – The escalators are protected with a hybrid mist system with a deluge pump set and closed nozzles with bulb activation.

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5.1.1. RFLI_CAW_HPWM_M6 (RFLI) Fire Suppression high pressure Watermist (3 Monthly)

The effect of any changes of structure, occupancy, storage configuration, heating, lighting or equipment etc. of a building on hazard classification or installation design shall be identified in order that the appropriate modifications may be carried out.
Note: Following significant modifications, the correct hazard classification should be agreed with the authorities or an approved installer.

Nozzles (L7172) - affected by deposits shall be carefully cleaned. Painted or distorted nozzles shall be replaced by an approved installer

Pipework and hangers (L71162) - shall be checked for corrosion.
ID tape wrapping on pipes shall be repaired as necessary.

Any secondary electrical supplies shall be checked for correct functions.

All stop valves (L7172) controlling the flow of water to sprinklers (L7172) shall be operated to ensure that they are in working order, and securely refastened in the correct mode. This shall include the stop valves on all water supplies, at the alarm valves and all zone or other subsidiary stop valves

Water flow alarm switches shall be controlled for correct function and allocation to the area of protection.

Function control of the monitoring system (at least 1 transmitter per monitoring line); including transmission to permanently manned location

5.1.2. RFLI_CAW_HPWM_M6 (RFLI) Fire Suppression high pressure Watermist (6 Monthly)

10. Site – Contact system operator

20. Site – Inform site contact of work being carried out

30. Site – Inspect the site and note any modifications

40. Site – Check and note any fault alarms

50. Site - Check the functionality of the systems fault and fire information connections (Fire Alarm/BMS)

60. Site condition - Inspect pipe for damage or modification

70. Site condition - Check both the spare sprinkler and sprinkler keys number and condition

80. Site condition - Inspect pipe for damage or modification

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90. Site condition - Check Sprinklers/Spray heads are not obstructed or blocked since installation

100. Water supply - Check the Strainer

110. Water supply - Test feed water's low-pressure alarm

120. Water supply - Check pump units water filter and by-pass valve

130. Water supply - Inspect the external water tanks condition

140. Water supply - Check the breather cap filter and change if needed

150. Water supply - Check the water supply system

160. Water supply - Test the operation of feed water valve and pump

170. Pump unit - Check oil quality and level, fill if needed

180. Pump unit - Check the pump drive chains

190. Pump unit - Lubricate pump drive chains (if chains are not self-lubricating)

200. Pump unit - Check the condition of the flexible coupling

210. Pump unit - Lubricate the unloader valves

220. Pump unit – Service the air regulator unit

230. Pump unit - Check the compressor’s feeding pressure

240. Pump unit - Check the compressor’s oils, breather and empty the condensing water reservoir

250. Pump unit – Check the stand-by pump

260. Pump unit - Check the stand-by pressure

270. Pump unit - Check the flow switch settings

280. Pump unit - Check the pressure switches’ settings

290. Pump unit - Check the condition of the control cabinet

300. Pump unit - Start the pump unit manually, one motor at a time (check the correct pressure and the motors current intake)

310. Pump unit - Check the stabilization phase

320. Pump unit - Check that the pump unit starts from water flow

330. Pump unit - Check that the pump unit starts from low

pressure (if there are two different pressure switches, test the starting from both at the same time and separately)

340. Pump unit – Test the batteries condition and note date

350. Pump unit - Check the voltage of the battery charger and adjust if needed, write down the voltage

360. Pump unit - Test the pump unit’s alarms

370. Pump unit - Test the starter cabinets lamps

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380. Pump unit - Perform the flow test for each pump unit using 20 bars counter pressure (1 motor at a time and write down the number of the litres)

390. Pump unit - Write down the reading of the hour counter

400. Valves, indications, sprinklers - Check the voltage of the release/indication panel

410. Valves, indications, sprinklers - Perform tests in the wet pipe area

420. Valves, indications, sprinklers - Perform tests in the dry pipe area

430. Valves, indications, sprinklers - Special valve tests (air monitoring)

440. Valves, indications, sprinklers - Check the pressure gauges reading on the section valves

450. Valves, indications, sprinklers - Test the lamps and buzzer in the release/indication panel

460. Valves, indications, sprinklers - Test the alarms in the release/indication panel

470. Valves, indications, sprinklers - Check the ball valves indication (open/close)

480. Valves, indications, sprinklers - Check sprinklers in the wet pipe area

490. Valves, indications, sprinklers - Check sprinklers in the dry pipe area

500. Records - Completed checklists should be retained after each inspection or test to allow test results to be compared with the original acceptance test results and with the previous test results, this will provide an ongoing written record of the system's condition.

5.1.3. RFLI_CAW_HPWM_M12 (RFLI) Fire Suppression high pressure Watermist (12 Monthly)

10. As per Water mist system job plan 6 monthly plus

20. PLC Cabinet - Change the feed

30. PLC Cabinet - Battery charger fault alarm

40. PLC Cabinet - Earth fault alarm

50. PLC Cabinet - Test the batteries, 30 minutes

60. Machinery control cabinet - Change the feed

70. Machinery control cabinet - Battery charger fault alarm

80. Machinery control cabinet - Earth fault alarm

90. Machinery control cabinet - Test the water quality, write down the figures

100. Testing the system Action - Test release the system

110. Testing the system Action - Test the water quality, write down the figures

120. Testing the system Action - If the figures are not between the limitation, take a water sample

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130. Testing the system Action - CHECK THAT THE SYSTEM IS LEFT IN STAND-BY MODE (the valves are in the positions indicated by the plates and sealed, when necessary, release cabinets are in stand-by mode, no alarms in the pump unit etc.)

140. Testing the system Action - Write the service date to the service sticker and attach it near the pump unit to a visible place.

150. Testing the system Action - Update the service manual and write down the next annual service

5.2. Paddington – Protec Low Pressure Watermist System

PPM tasks derived from Manufacturers/approved installers Operation and Maintenance manual. These tasks must be adhered to.

5.2.1. RFLI_FSL-PW_M3 (RFLI) Fire Suppression Low Pressure Watermist (3 Monthly)

10. Control of fire hazard classification - The effect of any changes of structure, occupancy, storage configuration, heating, lighting, or equipment etc. of a building on hazard classification or installation design shall be identified in order that the appropriate modifications may be carried out.

Note: Following significant modifications, the correct hazard classification should be agreed with

the authorities or an approved installer.

20. Watermist Nozzles - Nozzles affected by deposits shall be carefully cleaned. Painted or distorted nozzles shall be replaced by an approved installer.

30. Pipework and pipe hanger - Pipework and hangers shall be random-checked for corrosion.

ID tape wrapping on pipes shall be repaired, as necessary.

40. Trace heating and localised heating systems - Heating systems to prevent freezing in the water mist system shall be checked for correct function.

50. Electrical supplies - Any secondary electrical supplier shall be checked for correct functions.

60. Stop valves - All stop valves controlling the flow of water to sprinklers shall be operated to ensure that they are in working order, and securely refastened in the correct mode. This shall include the stop valves on all water supplies, at the alarm valves and all zone or other subsidiary stop valves.

70. Water flow alarm switches shall be controlled for correct function and allocation to the area of

protection.

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All zone flow switches monitoring the flow of water to the sprinklers shall be operated to ensure that they are in working order. To test the zone flow switch (ref 21) the zone test valve (ref. 22) will be fully opened simulating the flow of water via a single water mist nozzle.

As the water runs through the flow switch to the network of pipework serving the nozzles / test valve (ref 22), the flow switch internal paddle will register the water flow and send a signal to the main fire alarm panel within 1-minute following operation.

Confirm signal received at fire alarm panel advising the allocation to the area of protection. The duration to transmit the signal following valve operation is to be timed and recorded. Signal received at fire panel.

Following test, the zone test valve (ref 22) is to be closed and padlocked (in normal operating position).

Review fire alarm panel to confirm fire signal has cleared / panel reset.

80. Monitoring system - Function control of the monitoring system (at least 1 transmitter per monitoring line); including transmission to permanently manned location.

5.2.2. RFLI_FSL-PW_M6 (RFLI) Fire Suppression Low Pressure Watermist (6 Monthly)

10. Control of Pump start - If in the event of a power failure an electric motor is supplied by an emergency power supply, the automatic changeover shall be tested.

20. Control of fire hazard classification - The effect of any changes of structure, occupancy, storage configuration, heating, lighting, or equipment etc. of a building on hazard classification or installation design shall be identified in order that the appropriate modifications may be carried out.

Note: Following significant modifications, the correct hazard classification should be agreed with

the authorities or an approved installer.

30. Watermist Nozzles - Nozzles affected by deposits shall be carefully cleaned. Painted or distorted nozzles shall be replaced by an approved installer.

40. Pipework and pipe hanger - Pipework and hangers shall be random-checked for corrosion.

ID tape wrapping on pipes shall be repaired, as necessary.

50. Trace heating and localised heating systems - Heating systems to prevent freezing in the water mist system shall be checked for correct function.

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60. Electrical Supplies - Any secondary electrical supplier shall be checked for correct functions.

70. Stop valves - All stop valves controlling the flow of water to sprinklers shall be operated to ensure that they are in working order, and securely refastened in the correct mode. This shall include the stop valves on all water supplies, at the alarm valves and all zone or other subsidiary stop valves.

80. Water flow alarm switches - Water flow alarm switches shall be controlled for correct function and allocation to the area of protection.

All zone flow switches monitoring the flow of water to the sprinklers shall be operated to ensure that they are in working order. To test the zone flow switch (ref 21) the zone test valve (ref. 22) will be fully opened simulating the flow of water via a single water mist nozzle.

As the water runs through the flow switch to the network of pipework serving the nozzles / test valve (ref 22), the flow switch internal paddle will register the water flow and send a signal to the main fire alarm panel within 1-minute following operation. Confirm signal received at Fire Alarm panel advising the allocation to the area of protection. The duration to transmit the signal following valve operation is to be timed and recorded. Signal received at fire panel.

Following test, the zone test valve (ref 22) is to be closed and padlocked (in normal operating position).

Review fire alarm panel to confirm fire signal has cleared / panel reset.

90. Monitoring System - Function control of the monitoring system (at least 1 transmitter per monitoring line); including transmission to permanently manned location.

5.2.3. RFLI_FSL-PW_M12 (RFLI) Fire Suppression Low Pressure Watermist (12 Monthly)

10. Wet alarm valve stations - The alarm valves shall be opened, subjected to an inspection of their inside, and the mechanically moveable components shall be checked for smooth movement. If required, valve station shall be repaired.

20. Automatic pump flow test - Each water supply pump in the installation shall be tested at the full load condition. The entire operational area of the pump (pump curve) shall be checked. The required pressure/flow values shall be reached.

Note: Appropriate allowances shall be made for pressure losses in the supply pipe and valves

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between the source and the gauge at the measuring point.

30. Duty - Undertake duty pump flow test by moderating the flow through the test return valves (ref 15 & 17) until required flow requirements are achieved on the test return flow meter (ref 16).

Once the desired flow is achieved on the flow meter, review the pressure registering on the duty pump pressure gauge (11).

Close test return valves (ref 15 & 17) and run duty pump for 5 minutes at closed valve pressure.

Stop duty pump by pressing the “stop button” located on the front of the pump control panel.

40. Standby - Undertake standby pump flow test by moderating the flow through the test return valves (ref 15 & 17) until required flow requirements are achieved on the test return flow meter (ref 16).

Once the desired flow is achieved on the flow meter, review the pressure registering on the standby pump pressure gauge (12).

Close test return valves (ref 15 & 17) and run standby pump for 5 minutes at closed valve pressure.

Stop standby pump by pressing the “stop button” located on the front of the pump control panel.

50. Water storage tank infill - Feed valves for tanks shall be checked for correct function.

60. Strainers and screens - Strainers and screens in the water supply shall be inspected at least annually and cleaned, as necessary.

5.2.4. RFLI_FSL-PW_M36 (RFLI) Fire Suppression Low Pressure Watermist (36 Monthly)

10 Water supply stop valves, alarm, and non-return valves – All water stop valves shall be operated and replaced or repaired, as necessary.

5.2.5. RFLI_FSL-PW_M60 (RFLI) Fire Suppression Low Pressure Watermist (60 Monthly)

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10. Visual Inspection of tank – All tanks featuring a coating inside or a lining shall be examined externally and internally for corrosion and the condition of the coating/lining.

20. Tank to be cleaned/repaired where necessary - The tanks shall be cleaned and repaired, as necessary

5.3. Woolwich Station – FireWorks High Pressure Watermist System

PPM tasks derived from Manufacturers/approved installers Operation and Maintenance manual. These tasks must be adhered to.

5.3.1. RFLI_FS-HPW-01_M6 (RFLI) Fire Suppression High Pressure Watermist (6 Monthly)

Water mist system job plan 6 monthly

Must be in line with HydraMist Service document no. F512, APU LUL system service check sheet.

Watermist document F435 provides a template to assist with service checks.

10. APU checks – APU exterior is clean and free of obvious signs of damage

20. APU checks – The protected area is clean and free of combustible materials

30. APU checks – APU Power lamp is illuminated green

40. APU checks – Water supply isolation valve secured in the open position

50. APU checks – Test and drain isolation valve secured in the closed position

60. APU checks – Distribution pipework isolation valve secured in the open position

70. APU checks – No fluid leaks (oil or water) from any accessible part of the system

80. APU checks – No obvious signs of damage to the electrical cables, pipework, or tube clamps

90. Visual inspection (nozzles) - Exterior cleanliness of the nozzle

100. Visual inspection (nozzles) - Frangible bulbs are intact and full of blue fluid, apart from a small air bubble at the top

110. Visual inspection (nozzles) - Leaks, corrosion, or damage

120. Visual inspection (nozzles) - Blockages in any of the discharge ports

130. Visual inspection (nozzles) - Check that the nozzle is pointing down, and not obstructed

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140. APU Checks - Operation pump check
150. APU Checks - Inlet filter change
160. APU Checks - Pump oil level
170. APU Checks - Pressure test
180. APU Checks - Motor current
190. APU Checks - Automatic start test
200. APU Checks - Interfacing signal function
210. APU Checks - Check for unauthorised modification
220. APU Checks - Hose inspection
230. Pipework/clamp checks - Tight and secure, no leaks
240. Pipework/clamp checks - All valved locked in operating positions
250. Nozzles - Visual condition inspection
260. Nozzles - Replace

5.3.2. RFLI_FS-HPW-02_M60 (RFLI) Fire Suppression High Pressure Watermist (60 Monthly)

Water mist system job plan 5 yearly

Must be in line with HydraMist Service document no. F512, APU LUL system service check sheet.

Watermist document F435 provides a template to assist with service checks.

10. As per Water mist system job plan 6 monthly plus the following
20. APU checks - Pump oil change
30. Pipework/ clamp checks - Pressure test
40. Nozzles – Replace

5.4. Gaseous Extinguishing Systems

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5.4.1. SFG20_23-05_M6 (SFG20) Gas Extinguishing Systems (6 Monthly)

6 Monthly visits

a) Inspect all pipework for condition and status.

b) Check discharge heads have 500mm clearance all round and free of debris.

c) Check that no object encroaches within 300mm vertically of discharge heads.

d) Check service label is in place and completed.

e) Check all control valves for correct manual function and automatic valves additionally for correct automatic function.

f) Externally examine containers and system hoses for signs of damage

g) Check pressure gauges of extinguishing containers; liquefied gas should be within 10% and

h) non-liquefied gases within 5% of correct charge pressure; replace or refill any showing greater loss.

i) For liquefied gases, check weight or use a liquid level indicator to Confirm correct content of

j) containers; replace or refill any showing a loss of more than 5%

5.4.2. SFG20_23-05_M12 (SFG20) Gas Extinguishing Systems (12 Monthly)

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

k) Record cylinder date of manufacture

l) Record cylinder size

m) Record number of cylinders

n) Determine whether boundary penetration or other changes to the protected enclosure have occurred that could affect leakage and extinguishant performance. If this cannot be visually determined, it shall be positively established by the following test for enclosure integrity.

o) Carry out a check of enclosure integrity, if the measured aggregate area of leakage has increased from that measured during installation which would adversely affect system performance, carry out work to reduce the leakage.

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p) As required by statutory regulations, remove the containers and pressure test when necessary

5.5. Fire Hydrant and Fire Main Systems

For the duration of the contract, the Supplier will hold full responsibility for the provision, management, and operation of an adequate number of portable 'fire pump & bowser' type systems, which can provide adequate static test pressures and running flow rates to meet the needs of all Fire Main, Pressure Regulating Landing Valve tests in accordance with the system testing requirements of Table 1 (Appendix 'A')

Note: Initially [First Year] test all hydrant outlets for flow and pressure.

5.5.1. External Mains Fed Hydrants RFLI_23-04_PDMFH_M12 (RFLI) Mains Fed Hydrants Maintenance (12 Monthly)

10. Conditional check – Check for damage and physical signs of corrosion.
20. Conditional check – Pits frames and covers condition.
30. Conditional check – method of identification/ signage by hydrant, indicator plate or sticker.
40. Test – Flush out the outlet and check the outlet connection.
50. Test – Flow and pressure should be measured and noted.
60. Close out – Following the test the pit must be left empty and clean.

5.5.2. Tunnel Hydrants – Elizabeth Line

Additional to items listed within overarching 1FM contract

5.5.2.1. SFG20_23-04_M12 (SFG20) Rising Fire Mains & Hydrants (12 Monthly)

10 Breeching Inlets and Landing Boxes - Check all valves open and close (leave closed and strap and lock). Replace all outlet instantaneous washers. Replace all damaged or missing blank caps and chains. Check all handwheels and nuts are undamaged and in place. Check landing instantaneous out

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20 Wet test - a) Check earthing arrangement and ensure continuity between joints b) Carry out physical check of the system c) Static pressure test – flush riser by turning on water and allow to flow out of topmost outlet d) Charge system to 10 bar measured

30 Controls and Electrics - Check electrical supplies and equipment to prevent freezing. Check operation of system monitoring and alarms. Where pressure regulating valves are installed, the manufacturer's maintenance recommendations should be followed. Check lagging and trace heating

40 Condition - Check for visible damage or signs of corrosion. Check lagging and trace heating (if fitted).

50 Caps and valves – Check for ease of movement

60 Tests on private fire hydrants - Where the local fire and rescue service provides a private hydrant inspection and test service, inspection of and, where practicable, a wet test of private underground fire hydrants should be made in conjunction with the owner or occupier of the premises.

Where fire main flow testing is carried out, it will likely not be possible to discharge test water directly into the existing Station drainage sumps. In these instances, it is the supplier's responsibility to provide suitable temporary receptacles and drainage facilities to enable test water to be captured and drained away at a rate that the existing Station drainage sumps can accept. These temporary facilities shall be suitable to enable the testing of the System to be carried out during one complete shift during Engineering Hours.

Flow and pressure testing requirements as per table in Appendix A of this document

5.5.2.2. SFG20_23-04_M6 (SFG20) Rising Fire Mains & Hydrants (6 Monthly)

10 Inlet and Landing Boxes – Check a) inlets breeching inlets b) landing valves c) drain valves d) door hinges e) locking arrangements f) condition of riser pipework Report any defects.

20 Storage cistern and tanks – Check cleanliness and condition

30 Booster pumps - Thoroughly check pumps and associated mechanical and electrical equipment.

6. Maintenance Procedures – Compartmentation

6.1. RFLI_88-43_M12 (RFLI) Fire Stopping Checks (Compartmentation) (12 monthly)

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RFLI compartmentation checks are to be carried out with reference to the firestopping penetration registers generated during the project phase. Compartmentation is deemed compliant if as installed during this project phase and no signs of damage or deterioration.

Reporting is expected to be by exception only.

Future compartmentation works or repairs will be in line with S1204 and G0102

6.1.1. Fire Doors Operation

NOTE - This is an RFLI premises discipline asset however, door closure settings are calibrated to allow correct functionality of the staircase pressurisation systems.

6.1.2. Fire Shutters and Curtains – Coopers inspection requirements CAW

12 Monthly

a) Confirm that all fire rated shutters and curtains comply with the manufacturer's certification details.

b) Confirm that fire rated shutters and curtains close correctly on activation of the test switch/key.

c) Fire rated shutters and curtains are inspected for damage and corrosion.

NOTE - Statement to confirm limitation of Fire maintenance requirements when some items are mechanical tasks.

7. Maintenance Procedures – Portable Fire Extinguishers & Fire Blankets

7.1. SFG20_23-09_M12 SFG20) Fire Extinguishers - Carbon Dioxide (12 Monthly)

10 Safety clip and indicating devices. - Check the safety clip and indicating devices to determine whether the extinguisher might have been operated.

20 External examination - Examine the exterior for corrosion, dents, gouges, or damage that could impair the safe operation of the extinguisher paying particular attention to any plastics headcap for signs of degradation.

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30 Weight check - Weigh the extinguisher after removal of the discharge horn/hose assembly. Check the mass against that recorded when first put into service or when last recharged and record this on the maintenance label. In the event of a loss of content of more than 10%, replace

40 Operating instructions - Check the operating instructions for correctness and legibility ensuring that the text is in English.

50 Safety pin - Remove the safety pin and check that the operating lever is undamaged, and its movement is unobstructed. Safety precautions should be taken to avoid inadvertent operation. Return the safety pin or, where necessary, a replacement pin to the extinguisher.

60 Seals - Ensure that all seals for the discharge horn, the hose, the nozzle, and the valve body are in place, as prescribed in the extinguisher manufacturer's instructions.

70 Label - Complete the details on the maintenance label.

80 Mounting bracket/stand - Check any mounting bracket or stand if accessible and rectify any problems.

90 Report - Write an inspection report advising the responsible person of the state of maintenance of the extinguisher.

7.2. SFG20_23-09_M120 (SFG20) Fire Extinguishers - Carbon Dioxide (120 Monthly)

10 Overhaul procedure every 10 years - a) Discharge the extinguisher. Remove the swivel horn/hose assembly, the valve, and the valve assembly, and remove the dip tube from the valve assembly. Destroy the valve.

b) Pressure-test the body shell in accordance with the test pressure indicated on the body.

7.3. SFG20_23-10_M12 (SFG20) Fire Extinguishers - Foam - Stored Pressure- (12 Monthly)

10 Safety clip and indicating devices. - Check the safety clip and indicating devices to determine whether the extinguisher might have been operated.

20 Pressure–indicating devices. - Check the pressure-indicating device where fitted. If it is not operating freely or if the indicated pressure is outside the specified limits, refer to the extinguisher manufacturer's instructions to ascertain the appropriate action to be taken.

30 External examination - Examine the exterior for corrosion, dents, gouges, or damage that could impair the safe operation of the extinguisher paying particular attention to any plastics headcap for signs of degradation.

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40 Weight check - Weigh the extinguisher after removal of the discharge horn/hose assembly. Check the mass against that recorded when first put into service or when last recharged and record this on the maintenance label. In the event of a loss of content of more than 10%, replace.

50 Operating instructions - Check the operating instructions for correctness and legibility, ensuring that the text is in English.

60 Removable operating mechanism - Where the extinguisher is designed to have the operating mechanism removed without the discharge of contents or loss of pressure, remove, and check the operating mechanism and discharge control (where fitted) for free movement.

70 Safety pin - Remove the safety pin and check that the operating lever is undamaged, and its movement is unobstructed. Safety precautions should be taken to avoid inadvertent operation. Return the safety pin, or where necessary a replacement pin, to the extinguisher.

80 Seals - The seals for the discharge horn, the hose, the nozzle, and the valve body should be replaced with new seals when these components are removed from the extinguisher. If the hose is fitted with a diaphragm, this should always be replaced with a new diaphragm.

90 Reassembly - Reassemble the extinguisher in accordance with the instructions of the extinguisher manufacturer. Replace with new any safety clip and indicating device designed to show whether the extinguisher might have been operated.

100 Label - Complete the details on the maintenance label.

110 Mounting bracket/stand - Check any mounting bracket or stand if accessible and rectify any problems.

120 Report - Write an inspection report advising the responsible person of the state of maintenance of the extinguisher.

7.4. SFG20_23-10_M60 (SFG20) Fire Extinguishers - Foam - Stored Pressure- (60 Monthly)

SFG20_23-20_M60 (RFLI) Fire Extinguishers - Foam (Stored Pressure) - Extended Service Procedure (60 Monthly)

10. Action 1 - Prior to performing the test discharge, the extinguisher should be examined externally for any obvious signs of damage to the body or operating mechanism. If a plastics headcap is coated in such a way as to disguise degradation (e.g., by painting) replace.

20. Action 2 - Perform the test discharge on the extinguisher.

30. Action 3 - Examine the body internally and in detail for corrosion, dents, cuts, gouges, or lining damage. Pay special attention to the welds. Follow the extinguisher manufacturer's instructions where there are any doubts about the welds.

40 Action 4 - Examine and check all closures for thread wear, damage, and corrosion as applicable.

50.Action 5 - Return the extinguisher to operational condition. If the extinguisher was fitted with a plastics headcap it should be fitted with a new headcap if this has not already been

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fitted in action1 (above). Reassemble and recharge the extinguisher in accordance with manufacturer's instructions.

Low Freeze Additive (LFA)

LFA is to be added, if not already present, to any water-based extinguisher that will be exposed to low external temperatures. Only use compatible LFA to the model being maintained. If LFA is added to an extinguisher, the ‘competent person’ must do the correct calculations, as per British Standard recommendations, to Confirm the correct A class cover is obtained by way of the installation of additional equipment in the area effected. TFL will then assess whether the additional equipment is required. Low Freeze additive effects the A class rating of the extinguisher once installed into the extinguisher. Whilst installing LFA the correct PPE must be always worn. LFA installation must be recorded on the extinguisher via the service label and another label on the face of the extinguisher notifying the user that LFA is present.

Service Labels

Fully completed service labels must always be found on the side of the extinguisher whilst it is in service. This label is usually a paper or vinyl label. In some areas of the TFL estate it is required that metal service labels are fitted as a backup to the paper/ vinyl labels as some areas are damp and this can affect the legibility of the paper/ vinyl service label. The metal service label is to be fully punched in the appropriate date space and attached to the extinguisher using a cable tie. This label is usually fitted around the top of the hose assembly close to the head assembly.

8. Powered Pressurisation System Fans

8.1. (RFLI) Powered Pressurisation Fan Systems inc Dampers & Speed Controllers -16-03, 14-15 (12 Monthly)

10 Initiate the pressure differential system operation. - A failure of the primary power supply should be simulated, and a check made that the system has switched automatically to the secondary power supply via the Auto Transfer Switch ATS. A zero-airflow condition should be simulated, and a check made

20 Pressure test 1 - Test the functionality of Firefighter override switch

30 Pressure test 2 - Inspect the outside of the transfer switch for any indication of wear, excessive vibration, leakage, high temperature, contamination, or other deterioration. Verify all external components are in place, firm, tightened and not excessively worn

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40 Measure the net pressure differential - Upon completion of the test ensure the system is re-instated, inspect the Shaft Pressurisation System MCC panel for faults and record. Clear all faults introduced by the monthly test. Report any additional/remaining faults to the RCC

50 Measure the air velocity.

60 Take Measurement flow velocity - Measure the pressure differential between the pressurised space and the relevant accommodation.

70 Measure the opening door force - Measure pressure differential between the staircase that is to be pressurised and the relevant accommodation, on at least two storeys.

80 Operate the automatic fire detection system (smoke detector) - A second test should be made to measure the net pressure differential across each door separating a pressurised and an unpressurised space to the relevant accommodation on all floor levels with the pressure differential system running.

90 Compliance Check

100 Construction and fixing - The measurement of flow velocity through the relevant doors - take at least 8 measurements, uniformly distributed over the doorway, to establish an accurate air velocity.

110 General – Mechanical - The fourth test should be to measure the opening door force on the doors between the pressurised and unpressurised spaces.

120 General – Electrical - The last test should be to operate the automatic fire detection system (smoke detector) by injecting smoke/test puffer into the detector head. This should in turn operate the central fire alarm panel, thus activating the pressure differential system.

130 Electro/Mechanical Fire Dampers - All results obtained should be compared with the initial “acceptance/commissioning” test results. Any major discrepancies should be reported immediately.

140 Smoke dampers - Visually check the external condition of all units. Visually check the supports, mountings, and upstand fastenings. Visually check the glazing fixings where appropriate and weathering. Carry out visual inspection of pressurised area

150 Linkages on motorised dampers - Clean, lubricate all hinged lids, non-return flaps as fitted. Inspect all mechanical moving parts for wear, damage and tightness. Check all moving parts for free operation. Adjust as necessary and lubricate. Check the impeller for ease of rotation

160 Controls - Check and record on load/off load readings for all three phases. Visually check the condition of cables and connections. Tighten as necessary.

170 Electrical

180 Speed Controllers - Inverter Type - Controller

190 Speed Controllers - Inverter Type – Signal -

200 Speed Controllers - Inverter Type – Settings - Speed Controllers - Inverter Type - Settings

9. Smoke Control Systems

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9.1. (SFG20) Smoke Control Systems - Annual Testing (12 Monthly) SFG20_87-22_M12

10 Arrangements should be made for annual inspections and tests of the following to be carried out by competent persons, for any defects to be logged and necessary actions taken, and for certificates of testing to be obtained for the smoke ventilators and smoke control systems. The system should be tested to ensure that it operates correctly and that, in particular:

a) the agreed “cause and effect” requirements function correctly, and the system responds to any planned method of initiation.

b) when the primary power is removed, the secondary power supply operates within the interruption time specified in BS EN 12101.

c) when the duty equipment fails, stand-by equipment operates, e.g., duty stand-by fan sets and UPS equipment.

d) labels, visible when secondary power supplies (e.g., batteries) are in their normal position, are fixed to batteries, indicating the date of installation or date of last replacement and that those dates are within the manufacturer’s recommended life cycle.

e) all fault monitoring functions operate correctly e.g., by simulation of fault conditions.

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Appendices

Appendix A - RFLI Fire Main (Flow & Pressure) Testing Requirements

In accordance with TfL Category 1 Standard S1084 A3, 'Table 1' identifies the testing requirements for the differing Fire Main systems found within the RFLI Elizabeth Line portfolio including Stations, Shafts and Portals and trace. These figures are as per design and recorded in relevant O&Ms

Table 1		
Fire Main Type/ Construction (pipework)	**Pressure Testing requirements**	**Flow Testing requirements**
Tunnel Fire Main Victaulic	1 bar at filling points Inlet pressure at breeching inlets must be from 7 to 9 bar.	2,000 l/m
Station Fire Main Victaulic	outlet pressure of 8bar	1500 litres/min

*** All configurations with PRV**

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Transport for London

Fire Planned Preventative Maintenance Technical Specification - Fire Protection Systems, Compartmentation and Portable Fire Extinguishing

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1. Introduction

This document is to support the Services Specification of the TfL Rail Fire Maintenance Contract and has been produced to Company specific requirements for the completion of fire equipment planned preventative maintenance on all London Underground Stations and London Underground Non-Public Buildings.

The PPM activity designations used within Sections 4, 5, 6 & 7 (e.g., 4.2.2. Fire Cryer), correspond to the content index of this document only.

2. Definitions

AEL	Advanced Electronics Ltd
ARC	Alarm Receiving Centre
ASD	Aspirating Smoke Detection
AVI	Audio Visual Indicator
CFP	Compliance Fire Plan
CIE	Control & Indication Equipment
DCP	Damper Control Panel
(E)	Identifies that enhanced PPM evidence is required (i.e. printouts)
EDNE	Emergency Do Not Enter Sign
ELLE	Evacuation Link LED Enclosure
EWSS	Escalator Water Suppression System
FCP	Fire Control Panel
Fire Main	Encompasses all Dry, Wet, Mains Fed and Pumped Tunnel, Vent Shaft and Platform Fixed Fire Fighting Equipment
H123	London Underground Station for Heathrow Terminals 1, 2 & 3
HSSD	High Sensitivity Smoke Detection
JLE	Jubilee Line Extension
LWA	Local Water Authority
LFA	Low Freeze Additive
MARS	Maintenance Activity Record Submission
MDR	Magnetic Door Retainer
MICC	Mineral Insulated Copper Cable
MJC	Multiple Jet Controller (forms part of the EWSS system)
MSFD	Motorised Smoke Fire Damper
NLE	Northern Line Extension
PA/VA	Public Address with Voice Alarm
PHP	Passenger Help Point
PPM	Planned Preventative Maintenance
PRV	Pressure Regulating (In-Line) Valve
PRLV	Pressure Regulating Landing Valve
RAVDU	Remote Audio-Visual Driver Unit
RX/TX	Data Receiving/Transmission Unit
SCADA	Supervisory Control and Data Acquisition

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SVC	Sprinkler Valve Chamber
TfL	Transport For London
UTS	Unmanned Ticketing System

3. TfL & London Underground Fire Engineering Standards, Procedures & Guidance

All relevant TfL & London Underground Fire Engineering Standards, Procedures & Guidance have been identified within the Services Specification of the TfL Fire Maintenance Contract.

4. Maintenance Procedures – Fire Detection and Alarm Systems

4.1 Control & Indicating Equipment

Where ARC remote monitoring of fire detection systems is installed (Red-Care, SCADA etc), the associated receiving centre is to be contacted prior to carrying out 6 Monthly CIE PPM activities, with a minimum of one fault and fire signal to be confirmed as received by the ARC. Following completion of tests, monitoring should be confirmed as being back on-line via contact with the ARC

4.1.1 Fire Control Panel (Standalone and Networked Nodes)

6 Monthly visits

a) Check panel condition & status, confirm that the Power & Delay LEDs are illuminated
b) Check for panel faults and/or isolations (report or record as required)
c) Confirm all panel buttons, LEDs and internal buzzer operate correctly
d) Print a list of all loop devices (where print outs are not available, complete the activity visually via the panel display), highlight devices that are out of tolerance and replace as required. Any replaced devices should be tested (E)
e) Carry out momentary Battery integrity inspection and system requirements tests (E)
f) Confirm panel functionality via loop device testing (one device per loop) and manual evacuation (E)
g) During test 'f' Confirm that sounders (i.e. RAVDU) continue to operate when either the acknowledge or silence button is pressed to silence the inspector sands message
h) Confirm panel delay timers are set at 120 seconds first stage alert and 300 second stage evacuation (E)
i) Simulate loop disconnection and earth monitoring fault reporting (E)
j) Simulate loss of network and confirm correct fault indication at the affected Nodes (E)
k) Where applicable, confirm correct individual LED indication at ELLE Interface
l) Confirm all auxiliary interface equipment connected to the Fire Control Panel operate correctly and as per design (See 4.2 Auxiliary section)
m) Confirm printer paper is sufficient after all testing is complete, change if required
n) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

o) Confirm FCP programme C&E programming via a single test for each element of C&E programming present (Dampers, Extract Fans, Stairwell Pressurisation, Gas Isolation, Fire Shutters, Smoke Curtains etc) (E)
p) Confirm the Station held Fast Track documents are the current revision and provide updated Fast Track if required
q) Carry out Mains Power supply failure test (E)
r) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)
s) Record current firmware of panel and cross-reference against all other networked panels

4.1.2 Fire Control Panel (Conventional/Zonal)

6 Monthly visits

a) Check panel condition & status. Confirm that the Power light is illuminated

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b) Check for panel faults and/or isolations
c) Confirm all panel buttons, LEDs and internal buzzer work as required
d) Carry out momentary Battery integrity inspection and system requirements tests (E)
e) Confirm full panel functionality via zone device testing (one device per zone), manual evacuation and zone disconnect fault (E)
f) During test 'e' all alarm devices should be checked for correct operation, it should be confirmed that visual alarm devices are not obstructed from view and that their lenses are cleaned
g) Confirm all auxiliary interface equipment connected to the Main Fire Control Panel operate correctly and as per design (See 4.2 Auxiliary section)
h) Confirm printer paper is sufficient after all testing is complete, change if required
i) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

j) Confirm a suitable Zonal Plan is provided, updated if required
k) Carry out Mains Power supply failure test (E)
l) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)

4.1.3 Fire Control Panel (Radio)

6 Monthly visits

a) Check panel condition & status. Confirm that the Power light is illuminated
b) Check for panel faults and/or isolations
c) Confirm all panel buttons, LEDs and internal buzzer work as required
d) Carry out momentary Battery integrity inspection and system requirements tests (E)
e) Confirm full panel functionality via zone device testing (one device per zone) and manual evacuation (E)
f) During 'e' all alarm devices should be checked for correct operation, it should be confirmed that visual alarm devices are not obstructed from view and that their lenses are cleaned
g) Confirm all auxiliary interface equipment connected to the Main Fire Control Panel operate correctly (See 4.2 Auxiliary section)
h) Check remote aerials for condition as per manufacturers recommendations
i) Confirm printer paper is sufficient after all testing is complete, change if required
j) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

k) Confirm a suitable Zonal Plan is provided, updated if required
l) Carry out Mains Power supply failure test (E)
m) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)

Note: Replace system batteries as per manufacturers recommendations

4.1.4 Fire Control Panel (Gaseous / Foam / Watermist Extinguishing Systems)

6 Monthly visits

a) Check condition and status of Control Panel and field equipment
b) Confirm that the Panel power light is illuminated
c) Confirm all panel buttons, LEDs and internal buzzer work as required
d) Check for panel faults, isolated devices or disabled zones (report or record as required)
e) Record type of system (i.e. Inergen, Argonite, FM-200, CO2)
f) Carry out Momentary Battery integrity inspection and system requirements tests (E)
g) Record panel settings prior to testing
h) Isolate Gaseous Extinguishant via mechanical disconnect of solenoid from extinguishant containers
i) Confirm full panel functionality via zone device testing (one device per zone) and zone disconnect fault (E)

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j) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order
k) Confirm that the system has been returned to fully operational status and is ready for use following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

l) Confirm a suitable Zonal Plan is provided, updated as required
m) Carry out Mains Power supply failure test (E)
n) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)
o) Confirm system functionality via verification testing of the cause & effect settings, extinguishant release timer settings, manual extinguishant activation function, emergency hold function, emergency abort function and extinguishant output circuit and solenoid function (E)
p) During the above testing activities (listed in 'p') Confirm that activity specific Audio & Visual devices activate as required

4.2 Auxiliary Systems

4.2.1 RAVDU & AVI System

6 Monthly visits

a) Check condition of RAVDU Panel
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Instigate FCP ALERT (Inspector Sands) and Confirm that RAVDU is operated on this signal (E)
d) Instigate FCP EVAC and Confirm that RAVDU is operated on this signal (E)
e) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

Note: Activities c & d can be combined with the FCP Six monthly activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

f) Carry out Mains Power supply failure test (E)
g) Confirm all Panel internal field wiring terminations, internal wiring and ribbon cables are secure (as per manufacturers recommendations)
h) Check remote sounder for audibility as per British Standard requirements
i) Check Strobes/VIDS/VADS for operation and visibility
j) Check condition of all sounder and beacon units. Ensuring they are securely fixed and not impaired in any way, clean as required with appropriate materials
k) Confirm all strobe/sounder units are in correct position on LU Asset Drawing

4.2.2. Fire Cryer

6 Monthly visits

a) Check condition of Fire Cryer Panel
b) Carry out Momentary Battery integrity inspection and system requirements tests (E)
c) Instigate FCP ALERT (Inspector Sands) and Confirm that Fire Cryer is operated on this signal (E)
d) Instigate FCP EVAC and Confirm that Fire Cryer is operated on this signal (E)
e) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

Note: Activities 'c' & 'd' can be combined with the FCP Six monthly activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

f) Test each sounder circuit for open circuit (E)
g) Carry out Mains Power supply failure test (E)
h) Confirm all Panel internal field wiring terminations, internal wiring and ribbon cables are secure

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i) Check all sounders for audibility
j) Check condition of all sounder units. Ensuring they are securely fixed and not impaired in any way, clean as required with appropriate materials
k) Confirm all sounder units are in correct position on LU Asset Drawing
l) Record Loop and Device detail

4.2.3 EDNE Panel System (Kentec/Burnham)

Note: Caution to be taken at all times when working within the EDNE Panel, as dual 230v supplies exist.

6 Monthly visits

a) Check condition of EDNE Panel & Signs.
b) Where applicable, Carry out Momentary Battery integrity inspection and system requirements tests (E)
c) Instigate FCP EVAC and Confirm that EDNE signs are operated on this signal (E)
d) During operation Confirm that all EDNE Sign Lamps/LEDs are operational
e) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order
f) Record Loop and Device detail

Note: Activities ‘c’ & ‘d’ can be combined with the FCP Six monthly activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

g) Confirm EDNE Sign Tone change at (approx.) 90 Seconds
h) Carry out Mains Power supply failure test (E)
i) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
j) Remove any debris that may be inside the signs, clean signs with appropriate materials; Confirm all locks are in good working order
k) Confirm EDNE Panels & Signs are in correct position as per LU asset drawing

4.2.4 EDNE Signs - Hard Wired (Data Display Mk1)

12 Monthly visits

a) Check condition of EDNE Signs
b) Instigate FCP EVAC or Operate Plunger and Confirm that EDNE signs are operated on this action (E)
c) During operation Confirm that all EDNE Sign Lamps/LEDs are operational
d) Confirm EDNE Sign Tone change at (approx.) 90 Seconds
e) Remove any debris that may be inside the signs, clean signs with appropriate materials; Confirm all locks are in good working order
f) Confirm all EDNE units are in correct position as per LU asset drawing
g) Record Loop and Device detail

Note: When applicable, activity ‘b’ can be combined with the FCP activities

4.2.5 EDNE Signs – Loop Driven (Data Display Mk3)

6 Monthly visits

a) Check condition of EDNE Signs
b) Carry out Momentary Battery integrity inspection and system requirements tests (E)
c) Instigate FCP EVAC or Operate Plunger and Confirm that EDNE signs are operated on this action (E)
d) During operation Confirm that all EDNE Sign Lamps/LEDs are operational
e) Confirm EDNE Sign Tone change at (approx.) 90 Seconds
f) Remove any debris that may be inside the signs, clean signs with appropriate materials; Confirm all locks are in good working order
g) Confirm all EDNE units are in correct position as per LU asset drawing

Note: When applicable, activity ‘b’ can be combined with the FCP activities

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4.2.6 UTS interface panel

6 Monthly visits

a) Check condition of UTS Panel
b) Carry out Momentary Battery integrity inspection and system requirements tests (E)
c) Instigate FCP EVAC and Confirm that UTS gates open (E)
d) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

Note: Activity 'c' can be combined with the FCP Six monthly activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

e) Carry out Mains Power supply failure test (E)
f) Confirm the UTS gates remain Closed during single loss of AC & DC Supply (E)
g) Confirm UTS gates 'Fail Safe' Open upon simultaneous loss of AC & DC supplies (E)
h) Confirm UTS gates 'Fail Safe' Open upon loss of Loop (E)
i) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
j) Confirm UTS Panel is in the correct position as per the LU asset drawing
k) Record Loop and Device detail

4.2.6.1 UTS loop interface (JLE)

12 Monthly visits

a) Check condition of all UTS units
b) Instigate FCP EVAC and Confirm that UTS Gates open (E)
c) Simulate loss of Loop and confirm that UTS gates failsafe open (E)
d) Confirm UTS I/F is in the correct position as per the LU asset drawing
e) Record Loop and Device detail

4.2.7 EWSS Electrical

All Zones on an Escalator must be Metron lamp tested within one visit to evidence system integrity.

During EWSS system testing care must be taken to Confirm all required (Electrical and Mechanical) Test Modes & Isolations are in place prior to works commencing and de-isolated or reinstated on the completion of works as appropriate.

Prior to (post testing) Metron de-isolation, confirm all required cable terminations and system components are in place.

4.2.7.1 EWSS Patol Linear Heat Cable

3 Monthly visits

a) Check condition of EWSS Panel & System Status
b) Record Loop and Device detail
c) Isolate outputs (via PCB dil switch)
d) Check each FDS module and record all settings, adjust to the following as required –
   - Stage 1 Analogue 50mV +/- 20mV
   - Stage 1 Trip -3V +/- 20mV
   - Stage 2 Analogue 50mV +/- 20mV
   - Stage 2 Trip -3V +/- 20mV
e) De-isolate outputs (via PCB dil switch)

6 Monthly visits (Complete the 3 Monthly activities plus the following)

f) Carry out momentary Battery integrity inspection and system requirements tests (E)
g) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

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12 Monthly visits (Complete the 6 Monthly activities plus the following)

h) Carry out Mains Power supply failure test (E)
i) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
j) Check all field devices for status and condition
k) Check all field cabling and heat sense cable for damage and close proximity to the Escalator Tension Carriage and Steps
l) Check all cable containment for correct/adequate support and fixings
m) Check all MJC Metrons for condition and record Metron actuator expiry dates within both the site-specific MARS and an all-sites Metron spreadsheet
n) Isolate the escalator EWSS Valve
o) Isolate outputs (via PCB dil switch)
p) Replace Metron with appropriate test lamp (unless fitted with MJC test Switches)
q) De-isolate outputs (via PCB dil switch)
r) Carry out “test button” function and check for correct operation
s) Using an approved heat gun, apply heat to the linear cable for each Stage 1 & Stage 2 zone on the Escalator
t) Confirm correct indication at the Zone Lamp, EWSS Panel and FCP; Confirm that each zone has reset before next zone is tested (E)
u) Check remote sounder/strobes for audibility and visibility
v) Check condition of all sounder and beacon units. Ensuring they are securely fixed and not impaired in any way, clean as required with appropriate materials
w) Confirm all EWSS panel test results and FCP printouts have the correct messages and are inserted into the mars document
x) Once testing is complete, Confirm that the system has been returned to operational condition and de-isolate the escalator EWSS Valve
y) Confirm EWSS Panel is in the correct position as per the LU asset drawing

4.2.7.2 EWSS Sensa Fibre Optic System

6 Monthly visits

a) Check condition of EWSS Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Carry out Mains Power supply failure test (E)
e) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
f) Check all field devices for status and condition
g) Check all field cabling and Fibre Optic cable for damage and close proximity to the Escalator Tension Carriage and Steps
h) Check all cable containment for correct & adequate support and fixings
i) Check all MJC Metrons for condition and record Metron actuator expiry dates within both the site-specific MARS and an all-sites Metron spreadsheet
j) Isolate the escalator EWSS Valve
k) Isolate outputs (via key-switch) on the EWSS panel and confirm fault indication, and check for correct message “Escalator Metrons Are Isolated”, on both EWSS panel and FCP
l) With outputs still isolated power down the DTS unit and confirm fault indication, and check for correct message (system fault) on the FCP. Allow 5 minutes for the DTS unit to re-calibrate before continuing with tests (E)
m) Restore power to the DTS unit. Disconnect orange fibre-optic pigtails from DTS unit and confirm fault indication, and check for correct message “sensor fault”, on the EWSS panel, reconnect the fibre-optic pigtails
n) Disable the outputs (via key-switch)
o) Replace Metrons with appropriate test lamps (unless fitted with MJC test Switches)
p) Enable the outputs (via key-switch)
q) Using an approved heat gun, apply heat to the fibre 500mm from the zone boundary for each zone on the escalator. Confirm fire activation of the zone being tested and the nearest adjacent zone

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r) Confirm correct indication at the Zone Lamp, EWSS Panel and FCP; Confirm that each zone has reset before next zone is tested (E)
s) Remove heat source after each test and allow a cooling down period of 2 minutes before resetting the panel and moving on to the next zone
t) Confirm all EWSS panel test results and FCP printouts have the correct messages (E)
u) Disable the outputs (via key-switch) and repeat aforementioned test on any Zone. In this case the test lamp should not illuminate
v) On completion of testing, remove all test lamps and reconnect Metrons
w) Enable outputs (via key-switch)
x) Once testing is complete, Confirm that the system has been returned to operational condition and de-isolate the escalator EWSS Valve
y) Confirm EWSS Panel is in the correct position as per the LU asset drawing
z) Record Loop and Device detail

4.2.7.3 EWSS Listec (Encapsulated Addressable Heat Detector Cable) Metron System

Under no circumstances are the alarm settings for the Listec cable to be reduced for testing purposes. All tests are to be carried out with the Listec cable alarm temperature set at a rate of rise of 2.8°c from ambient temperature. Under operational conditions, the Listec cable is to operate when the cable temperature exceeds 50°c.

6 Monthly visits

a) Check condition of EWSS Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Carry out Mains Power supply failure test (E)
e) Confirm all panel internal connections from field wiring, internal wiring and ribbon cables are secure
f) Check all field devices for status and condition
g) Check all field cabling and Listec cable for damage and close proximity to the Escalator Tension Carriage and Steps
h) Check all cable containment for correct/adequate support and fixings
i) Check all MJC Metrons (where applicable) for condition and record Metron actuator expiry dates within both the site-specific MARS and an all-sites Metron spreadsheet
j) Isolate the escalator EWSS Valve
k) Disable the outputs (via key-switch) on the EWSS panel and confirm fault indication, and check for correct ‘Isolated’ message on both EWSS panel and FCP (E)
l) Confirm SCU 800 unit generates a fault signal when the ribbon running between the SCU and the Listec Control Panel is disconnected (E)
m) Replace Metron with appropriate test lamp (unless fitted with MJC test switches)
n) Enable the outputs (via key-switch)
o) Using an approved heat gun apply heat to the Listec Cable at the first and last device for each zone boundary, this is to be completed for each zone on the escalator
p) Confirm correct indication at the Zone Lamp, EWSS Panel and FCP; Confirm that each zone has reset before next zone is tested (E)
q) Remove heat source after each test and allow a cooling down period of 2 minutes before resetting the panel and moving on to the next zone
r) Disable outputs (via key-switch) and repeat aforementioned test once on any Zone. In this instance the test lamp should not illuminate
s) Enable outputs (via key-switch)
t) Once testing is complete, Confirm that the system has been returned to operational condition and de-isolate the escalator EWSS Valve
u) Confirm EWSS Panel is in the correct position as per the LU asset drawing
v) Record Loop and Device detail

4.2.7.4 EWSS Listec (Encapsulated Addressable Heat Detector Cable) Deluge Valve System

Under no circumstances are the Alarm settings for the Listec cable to be reduced for testing purposes. All tests are to be carried out with the Listec cable alarm temperature set at a rate of rise of

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2.8°c from ambient temperature. Listec cable is to operate when the cable temperature reaches + 50°c.

6 Monthly visits

a) Check condition of EWSS Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Carry out Mains Power supply failure test (E)
e) Confirm all panel internal connections from field wiring, internal wiring and ribbon cables are secure
f) Check all field devices for status and condition
g) Check all field cabling and Listec cable for damage and close proximity to the Escalator Tension Carriage and Steps
h) Check all cable containment for correct/adequate support and fixings
i) Isolate the individual escalator main EWSS valve
j) Disable the outputs (via key-switch) on the EWSS panel and confirm fault indication, check for correct 'Isolation' message on both EWSS panel and FCP (E)
k) Confirm SCU 800 unit generates a fault signal when the ribbon running between the SCU and the Listec Control Panel is disconnected (E)
l) Isolate the bottom (incoming) and top (down-stream) valves of the deluge valve-set and open the test-line valve
m) Enable the outputs (via key-switch)
n) Using an approved heat gun apply heat to the Listec Cable at the first and last device for each zone boundary, this is to be completed for each zone on the escalator
o) Confirm correct zonal activation via solenoid valve release and test-line discharge
p) Confirm correct zonal activation at the EWSS Panel and FCP, Confirm that each zone has reset before next zone is tested (E)
q) Remove heat source after each test and allow a cooling down period of 2 minutes before resetting the panel and moving on to the next test/zone
r) Disable outputs (via key-switch) and repeat aforementioned test once on any Zone - In this instance the associated zone solenoid valve should not release
s) Enable outputs (via key-switch)
t) Once testing is complete, Confirm that the system has been returned to operational condition and de-isolate the escalator main EWSS Valve
u) Confirm EWSS Panel is in the correct position as per the LU asset drawing
v) Record Loop and Device detail

4.2.8 Trace Heating Panel

12 Monthly Visits

a) Check the condition and status of the Trace heating panel including supply healthy indicator (if present)
b) Visually inspect all visible field wiring & cladding for damage or degradation
c) Check all panel terminations from field wiring, internal wiring, PCBs and ribbon cables are secure
d) Confirm the thermostat is set so that the trace heating panel operates when temperatures drop below 4°C
e) Operate the test button and Confirm that the trace heating panel operates heating the cable element via confirming adequate amperage draw (via test meter)
f) Carry out Mains Power supply failure test (E)
g) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order
h) Record Loop and Device detail

4.2.9 Detection Systems

4.2.9.1 Aspirating Smoke Detection (ASD)

To complete the annual purging process, exclusive Machine Chamber booking must be acquired.

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6 Monthly Visits

a) Check condition of Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order.
d) If applicable, dismantle and clean component internal parts of the ASD panel
e) Inspect and clean/replace panel filters as required and in-line with the Manufacturer's recommendations

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

f) Carry out Mains Power supply failure test (E)
g) Test LEDs and internal sounders and Confirm all buttons work as required and in the correct sequence
h) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
i) Check all pipework for obstructions or damage; check pipe supports and fixings
j) Check all detection holes and clear as appropriate
k) Annual purging of the sampling pipework is required (Compressed air is to be used for the purging process, purged particles are to be collected in suitable receptacles)
l) Carry out system normalisation as required, but only following completion of the above maintenance activities and verification that the system is operating as per design
m) Carry out system smoke testing to manufacturers recommendations, ensuring that all sampling pipework is tested annually on multi-pipe network configurations
n) Record travel time for all detection pipes
o) Confirm ASD Panel and ancillary components are in the correct position as per the LU asset drawing
p) Record Loop and Device detail

4.2.9.2 Smoke Beam System (Rx - Tx unit type)

Caution to be taken at all times as the Rx & Tx units may be knocked out of alignment when testing.

Any Station signage that has been installed which may compromise the system needs to be noted within the MARS.

6 Monthly visits

a) Check condition of Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; confirm all locks are in good working order

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

d) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
e) Carry out Mains Power supply failure test (E)
f) Check condition & location of RX and TX beam units and all associated cabling
g) Check beam units are secured and there is no obstruction which would impair the operation of the system
h) To test for Rx fault condition, obscure the beam by 75%, report should indicate at Beam Panel and FCP (E)
i) To test for Fire, obscure the beam by 25% or until fire activation is achieved. Report should be received at Beam Panel and FCP (E)
j) Check for beam unit disconnection fault reporting (E)
k) Check Smoke beam Panel and ancillary components are in the correct position as per the LU asset drawing
l) Record Loop and Device detail

4.2.9.3 Smoke Beam System (OSID)

6 Monthly visits

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a) Check condition of Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
e) Carry out Mains Power supply failure test (E)
f) Clean both the imager lenses and emitter/reflectors using a damp lint-free cloth, making sure that alignment remains unchanged
g) Carry out a detection test by placing a manufacturer approved smoke or optical filter (preferred method) into the beam path (E)
h) In a multi-emitter system, apply the optical filter in front of each emitter to confirm that all emitters are aligned with the correct imager
i) Emitters that do not pass the tests should be re-cleaned or replaced as required

Note: The OSID system will not respond to test smoke from aerosol cans nor to filters supplied with traditional third-party beam detectors, as it recognizes that these are not real smoke

4.2.9.4 Smoke Beam System (FIREbeam)

12 Monthly Visits

a) View the 'Dirt Comp' value via the low-level controller, if the contamination level is above 50% clean both the lens face and the reflectors using approved cleaning materials
b) If the lens and reflectors required cleaning, perform an auto alignment to re-calibrate the beam and carry out a self-test to perform a fire test
c) Carry out a fault test via fully obscuring the reflector (within 1 second) for >10 seconds (E)
d) Carry out a detection test via obscuring 50% of the reflector for >10 seconds (E)

4.3 Damper/Door Control Panels and associated Field Equipment

4.3.1 Conventional DCP (Kentec)

12 Monthly visits

a) Check condition of Panel & System Status
b) Carry out Mains Power supply failure test (E)
c) Confirm via internal DCP indication that all Dampers 'Fail Safe' Close upon loss of AC supply (E)
d) Generate fault condition via removal of MSFD status cable (E)
e) Carry out single Cause & Effect test via Loop Detection activation. Confirm full and correct individual MSFD action via DCP indication LEDs (E)
f) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
g) Confirm DCP Panel is in the correct position as per the LU asset drawing
h) Record Loop and Device detail

4.3.2 Addressable DCP (Morley)

6 Monthly Visits

a) Check condition of Panel & System Status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Carry out Mains Power supply failure test (E)
e) Check timer settings, open 150 seconds & close 25 seconds
f) Activate test function for all MSFDs, confirming acceptable open and close times

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g) Confirm all Panel buttons work as required and in the correct order & full panel functionality including LEDs
h) Carry out a single cause and effects test; where applicable this must include the testing of a supply and/or extract duct smoke detector. Confirm full and correct MSFD action via DCP indication (E)
i) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure.
j) Confirm DCP Panel is in the correct position as per the LU asset drawing
k) Record Loop and Device detail

4.3.3 AEL Damper Control Panel

6 Monthly Visits

a) Check condition of Panel & System status
b) Carry out momentary Battery integrity inspection and system requirements tests (E)
c) Remove any debris that may be inside the panel and signs, clean panel and signs with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

d) Carry out Mains Power supply failure test (E)
e) Carry out Cause & Effect test via loop device testing (one device per MSFD loop). Confirm full and correct MSFD action via DCP indication (E)
f) Confirm all panel internal terminations from field wiring, internal wiring and ribbon cables are secure
g) Confirm DCP is in the correct position as per the LU asset drawing
h) Record Loop and Device detail

4.3.4 Motorised Smoke & Fire Dampers

12 Monthly visits

Where available, LU MSFD drawings shall be updated during the 12 monthly visit. Where MSFD drawings are not available, new drawings are to be created using the locations layout drawings as a template.

a) All MSFD should be identified on a MSFD Location Drawing as follows:
   - Low-level dampers should be hand annotated coloured blue
   - Mid-level dampers should be hand annotated coloured green
   - All dampers which require working at hight equipment or are difficult to access should be hand annotated coloured red with accompanying annotations as necessary
b) Check all MSFDs for correct operational status
c) Check that all MSFD blades and spindles are mechanically intact
d) Clear any debris that would impair the MSFD function
e) Any MSFD to be found inoperable or cannot be repaired immediately should be secured closed and reported to the Fire Maintence Manager as soon as possible
f) Where applicable, visually check all mechanical MSFD connections to the ductwork
g) Check that all MSFD associated compartmentation measures are intact, report all defects
h) Carry out local power isolation of MSFD, visually confirm correct MSFD operation and indication at the DCP/FCP for MSFD closure
i) Visually check all electrical connections to MSFD motors/actuators for loose terminations and cable deterioration

4.3.5 Electromagnetic Door Retainers and Door Closers

12 Monthly visits

a) Visually check all devices for correct operational status
b) Carry out Cause & Effect and manual release testing to visually confirm correct device operation
c) Confirm correct Fire Door closure action upon device release
d) Where applicable, visually check all electrical connections to devices for loose terminations and cable deterioration

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4.4 Field Equipment

During field device testing, all loop devices must be checked against the FCP Messages, Compliance Fire Plans or Fire Precaution Plans, Loop As-builts and Loop Schematics for correct Location and SID Number. Any discrepancies or required red-line drawing updates are to be reported via the MARS pack and appropriate action taken as per the Service Specification requirements.

Loop device changes are to be tested separately, the new device is to be function tested once installed and the evidence to be recorded on a dedicated device change sheet within the MARS.

The 6 monthly activities as specified in BS5839-1 (45.3 'b' 1-7) are excluded from this specification for London Underground Stations and Depots, as these 6 monthly activity requirements are satisfied by the TfL S1088 process and LU Rule Book 12 (monthly) fire safety inspections and actions. All other premises are to receive the full 6 monthly activities as specified in BS5839-1 (45.3).

4.4.1 Loop Driven Field Equipment

General Activity List

a) During field activities use radio communication to cross check FCP Messages with actual device location
b) During field activities use radio communication to cross check FCP Messages against Station held Compliance Fire Plans. Note all inaccuracies within the MARS
c) During field activities confirm accuracy of the LU provided Fire Schematics and Asset Drawings; red line any differences on drawings and submit to the Company as per PR0632
d) During field activities check all field devices, cabling & containment for obstructions, secure fixing and accurate labelling, note any discrepancies within the MARS

4.4.2 Automatic Fire Detectors (Point Detection, including Flame Detection)

12 Monthly visits

a) Using approved test equipment, carry out testing operation as per manufacturers guidelines
b) Wait for the red LED to latch permanently and the message to register at the FCP (E)
c) When changing out of tolerance devices, provide a Fire for each device exchange (E)

4.4.2.1 Automatic Fire Detectors (Conventional)

12 Monthly visits

a) Using approved test equipment, carry out testing operation as per manufacturers guidelines
b) Wait for the red LED to latch permanently and the associated zone to register at the FCP (E)

4.4.3 Manual Call Points

12 Monthly visits

a) Carry out device testing operation as per manufacturers guidelines (E)
b) Any overly stiff or inoperable units must be rectified or replaced and re-tested
c) All call points will be annually cleaned internally and externally (Cleaning will be done on a whole station basis and the cleaning activity identified within the MARS)
d) Where applicable, check that the MCP protective cover is in place and in good condition, replace as required
e) Where applicable for PHP mounted devices, confirm correct HCI operation (Control Room Touch Screen System)

4.4.4 Loop Driven Sounders/Beacon

12 Monthly visits

a) Check condition of all sounder and beacon units. Ensuring they are securely fixed and not impaired (Audibly/Visually) in any way
b) Instigate ALERT (Inspector Sands) and confirm that the unit is operated on this signal (E)
c) Instigate EVAC and confirm that the unit is operated on this signal (E)

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d) Confirm all strobe/sounder units are in correct position as per LU supplied asset drawing

4.4.5 Loop Interface units (PA Monitoring, Inverters, Lifts, Grey Links, Shutters, Dampers, Extract Fans, Stairwell Pressurisation, Gas Isolation, Fire Shutters, Smoke Curtains etc)

12 Monthly visits

a) Check condition of all interface units and record loop address
b) Test interface units (via appropriate method) and confirm correct FCP message (E)
c) Where applicable, carry out interface cause & effect testing (via Company approved method) and confirm correct action (E)

4.4.6 H123/Picc-Ex/T5C Network

The three FCPs that make up this network are situated at Heathrow 123 Station (at platform level), Picc-Ex Intervention Shaft & T5C Intervention Shaft.

6 Monthly visits

a) Check panel condition & status, confirm that the Power & Delay LEDs are illuminated
b) Check for panel faults and/or isolations (report or record as required)
c) Print a list of all loop devices (where print outs are not available, complete the activity visually via the panel display), highlight devices that are out of tolerance and replace as required. Any replaced devices should be tested (E)
d) Carry out momentary Battery integrity inspection and system requirements tests (E)
e) Confirm all panel buttons, LEDs and internal buzzer operate correctly
f) Confirm panel functionality via loop device testing (one device per loop) and manual evacuation (E)
g) Simulate loop disconnection and earth monitoring fault reporting (E)
h) Simulate loss of network and confirm correct fault indication at the affected Nodes (E)
i) During test 'f' confirm that sounders (i.e. RAVDU) continue to operate when either the acknowledge button or the zero button is pressed to silence the inspector sands message
j) Confirm all auxiliary interface equipment connected to the Main Fire Control Panel operate correctly (See 4.2 Auxiliary section)
k) Confirm printer paper is sufficient after all testing is complete, change if required
l) Remove any debris that may be inside the panel, clean panel with appropriate materials; Confirm all locks are in good working order

12 Monthly visits (Complete the 6 Monthly activities plus the following)

m) Confirm the Station held Fast Track documents are the current revision and provide updated Fast Track if required
n) Carry out Mains Power supply failure test (E)
o) Confirm all internal connections from field wiring, internal wiring and ribbon cables are secure (as per manufacturers recommendations)
p) Record current firmware of panel and cross-reference against all other networked panels

In addition to the above FCP activities, the network between the PiccEx FCP and the T5C FCP utilises PyroSafe enhanced Fibre Optic cable and Westermo Fibre Optic Modems, these assets will be maintained as follows.

4.4.6.1 PiccEx & T5C Fibre Optic Network

12 Monthly Visits

a) Visually inspect all fibre optic cabling for condition & support
b) Check the condition of the Modem/Splice enclosures
c) Check that all modem terminations from field wiring & internal wiring are secure
d) Check the condition and status of the Modem PSU enclosure
e) Check that all PSU terminations from field wiring & internal wiring are secure
f) Remove any debris that may be inside the enclosures, clean enclosures with appropriate materials; confirm all locks are in good working order

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5. Maintenance Procedures – Fire Suppression and Fixed Fire Fighting Equipment

5.1 Sprinklers

25 Yearly

At no more than 25-year intervals, all suppression system pipework shall be cleaned and examined internally, and the fabric attended to as necessary.

5.1.1 Sprinkler Valve Chamber

3 Monthly Visits

a) Record the water pressures indicated on all gauges within the SVC
b) Clean all SVC items with appropriate materials
c) Inspect all SVC valves and local pipework for supports, fixings, leaks & damage
d) Check all SVC valve straps, padlocks and labels are present and correct
e) Check that all drains & tanks are in good order
f) Check spares box is intact, holds the required items (24 Spare sprinklers) and in a prominent and easily accessible position where the ambient temperature does not exceed 27 °C.
g) Check pipework schematic is present, legible & accurate
h) Heating systems to prevent freezing in the sprinkler system shall be checked for correct function
i) Confirm that the SVC heater thermostat is set at 4º C or slightly above
j) Carry out an alarm valve test ensuring all valves operate
k) Drain down system
l) Remove the alarm valve face plate and carry out the following actions:
   - Check the face plate gasket for damage
   - Ensure that the clack moves freely
   - Lubricate the clack mechanism with a bio-degradable grease (i.e. Molyslip)
   - Check the clack rubber for damage and deep indentations
   - Replace the clack rubber if badly worn
   - With a wire brush remove any corrosion within the alarm valve
   - Check the annular groove and clear any debris from the groove
   - Check all outlet ports and remove any blockages that can restrict flow
   - Dismantle the drip union and check the orifice washer is completely clear of debris
   - Clean the face plate alarm valve seating
m) Replace the face plate and grease up the securing bolts
n) Refill the system and make sure the clack has seated properly and there are no leaks
o) Confirm all valves are strapped and padlocked in the correct position following PPM activities

5.1.2 Wet Sprinkler Systems

Weekly

Each part of the weekly routine shall be carried out at intervals of no more than 7 days.

The following shall be checked and recorded:

a) Where installed, each water motor alarm shall be sounded for no less than 30 s

3 Monthly Visits

b) Inspect all sprinkler system pipework for condition, leaks and damage
c) Inspect all sprinkler system pipework support and fixings
d) Check that all sprinkler heads are not contaminated by paint or any other foreign bodies that would impair function, clean/clear/replace as appropriate
e) Check that operational clearance requirements have been maintained for all sprinkler system heads
f) Within Lower Machine Chambers check for sprinkler system head close-proximity to the Escalator Tension Carriage and Steps
g) Check all sprinkler system pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)

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h) All stop valves controlling the flow of water to sprinklers shall be operated to ensure that they are in working order, and securely refastened in the correct mode. This shall include the stop valves on all water supplies and all zone or other subsidiary stop valves
i) Exercise monitoring on isolation valves for 25% movement from normal status, to register a fault at the FCP (E)
j) Flow switches to be checked for correct mechanical function (E)
k) Pressure switches to be checked for correct function (E)
l) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly Visits (Complete the 3 Monthly visit activities plus the following)

m) Where no pump is installed, (where possible) each water supply in the installation shall be tested at the full load condition by means of the test line connection coupled to the water supply upstream of the control valve set and shall meet the required flow/pressure values. Appropriate allowances shall be made for pressure losses in the supply pipe and valves between the water supply and each control valve set

3 Yearly Visits

n) All water supply stop valves, alarm and non-return valves shall be examined and replaced or overhauled if necessary

5.1.3 Escalator Water Suppression System (Metron System)

All tests will be carried out on an individual Escalator basis, with all valves being tested.

3 Monthly Visits

a) Check condition and status of system
b) Check all valves for status and condition
c) Check Main Isolation valve is Open
d) Check individual escalator isolator valve are Open
e) Check Individual escalator air vent valves are Closed
f) Check drain valves are Closed
g) Check water availability testing isolation valves are Closed
h) Exercise all valves checking for operability and full function
i) For monitored valves, check correct functionality of monitored valve by opening or closing the valve 25% from its normal position. Check for fault indication and correct message at the FCP (E)
j) Operate flow switches mechanically (via water flowing) & confirm isolation valves operate, check indication at FCP (E)
k) All flow alarms and valve status monitoring are to be recorded for each escalator as appropriate within the MARS
l) Inspect all system pipework for condition, leaks and damage
m) Inspect all system pipework for correct support and fixings
n) Check all pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)
o) Check all MJCs (where installed) are in good condition
p) Check that all nozzles are not contaminated by paint or any other foreign matter that would impair its function, clean/clear/replace as appropriate
q) Check correct mounting position and angle of operation for all nozzles
r) Clean any items which could impair the operation of the system
s) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly Visits (Complete the 3 Monthly visit activities plus the following)

t) Where no pump is installed, (where possible) each water supply in the installation shall be tested at the full load condition by means of the test line connection coupled to the water supply upstream of the control valve set and shall meet the required flow/pressure values. Appropriate allowances shall be made for pressure losses in the supply pipe and valves between the water supply and each control valve set

3 Yearly Visits

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u) All water supply stop valves, alarm and non-return valves shall be examined and replaced or overhauled if necessary

5.1.4 Escalator Water Suppression System (Deluge Valve System)

All tests will be carried out on an individual Escalator basis.

3 Monthly Visits

a) Check condition and status of EWSS sprinkler/deluge system
b) Check Main Isolation valve is Open
c) Check individual escalator isolator valve are Open
d) Check Individual escalator air vent valves are Closed
e) Check drain valves are Closed
f) Check that the zone valves are Open
g) Check that the deluge valves are Holding
h) Check and record the system pressure gauges local to the deluge valve-set to confirm sufficient water pressure for the system requirements (E)
i) Check that the mechanical pilot line test valves are Shut
j) Check that the solenoid valves are Open to allow operation and water to pass through
k) Exercise all valves checking for, condition, operability and full function
l) For monitored valves, check correct functionality of monitored valve by opening or closing the valve 25% from its normal position. Check for fault indication and correct message at the FCP (E)
m) Where a test facility exists, operate the deluge valve-set flow switches mechanically (via water flowing) & confirm isolation valves operate, check indication at FCP (E)
n) All flow alarms and valve status monitoring are to be recorded for each escalator as appropriate within the MARS
o) Inspect all system pipework for condition, leaks and damage
p) Inspect all system pipework for correct support and fixings
q) Check all pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)
r) Check that all pilot-line sprinkler heads are not contaminated by paint or any other foreign matter that would impair its function, clean/clear/replace as appropriate
s) Check that all deluge nozzles are not contaminated by paint or any other foreign matter that would impair its function, clean/clear/replace as appropriate
t) Check correct mounting position and angle of operation for all deluge nozzles
u) Clean any items which could impair the operation of the system
v) Confirm that all deluge valve-sets have reset and are ready for operational use
w) Confirm that all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly Visits (Complete the 3 Monthly visit activities plus the following)

x) Drain down system
y) Remove the alarm valve face plate and carry out the following actions:
    - Check the face plate gasket for damage
    - Ensure that the clack moves freely
    - Lubricate the clack mechanism with a bio-degradable grease (i.e. Molyslip)
    - Check the clack rubber for damage and deep indentations
    - Replace the clack rubber if badly worn
    - With a wire brush remove any corrosion within the alarm valve
    - Check the annular groove and clear any debris from the groove
    - Check all outlet ports and remove any blockages that can restrict flow
    - Dismantle the drip union and check the orifice washer is completely clear of debris
    - Clean the face plate alarm valve seating
    - Replace the face plate and grease up the securing bolts
z) Refill the system and make sure the clack has seated properly and there are no leaks
aa) Where no pump is installed, (where possible) each water supply in the installation shall be tested at the full load condition by means of the test line connection coupled to the water supply upstream of the control valve set and shall meet the required flow/pressure values.

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Appropriate allowances shall be made for pressure losses in the supply pipe and valves between the water supply and each control valve set

3 Yearly Visits

bb) All water supply stop valves, alarm valve, deluge valve and non-return valves shall be examined and replaced or overhauled if necessary

5.1.5 Suppression Pumps and Tanks

3 Yearly

With the exception of tanks designed not to need maintenance within 10 years, all tanks shall be internally inspected and if necessary drained and cleaned. They shall be examined for corrosion based on the manufacturer's recommendations and all tanks shall be repainted and/or have the corrosion protection refurbished, as necessary

10 Yearly

At no more than 10-year intervals, all storage tanks shall be cleaned and examined internally and the fabric attended to as necessary.

Note: All electrical pumps with a positive head require weekly, quarterly and annual inspections.

Note: In addition to the below activities, all Pumps are to be serviced annually and in accordance with the Manufacturer's recommendations.

Weekly Visits

a) Check that the means of access is secure and fit for purpose
b) Confirm all notices and signage are correct and visible
c) Check that all equipment is in good working order and is fit for use
d) Check pump suction tank is full, adjust as required
e) Check and record all water and air pressure gauge readings on installations, trunk mains and pressure tanks. Note; The pressure in the pipework in dry, alternate and pre-action installations should not fall at a rate of more than 1,0 bar per week.
f) Check all stop valve operation and position, including underground valves
g) Check monitoring devices on valves operate correctly
h) Start each pump set by reducing the water pressure
i) Each starting device must be exercised
j) Five minutes should elapse between successive tests, on any individual pumps
k) Check pump suction and delivery valves are fully open
l) Check pump starts at a nominated starting pressure. (For star delta starter record the delay between star and delta)
m) Check pump relief line operates
n) Check pump glands and drains operate correctly. Check for excessive vibration or noise
o) Check remote alarms operate
p) Run each pump for five minutes and then check manual start facility
q) Check phase failure alarm operates
r) Check all power supply healthy lamps are operational
s) Check jockey pump starts/stops at correct pressures. Record
t) Check rapid oscillation does not occur at pressure switch
u) Restore all pump sets to automatic operating condition

3 Monthly Visits (Complete the weekly activities plus the following)

v) Confirm all items are cleaned that could impair correct operation
w) Confirm all pumps are fed via the standby power supply
x) Pumps are to be run on full load conditions
y) Check and record inflow into the tank (where possible)

12 Monthly Visits (Complete the 3 Monthly visit activities plus the following)

z) Check tank ball/float valves and water level indicators operate correctly
aa) Check remote-monitoring function is operational

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bb) Check tank and confirm that any foreign matter is removed
cc) The vortex inhibitor is to be examined, cleaned or replaced
dd) Examine the water storage tank externally for corrosion, leaks and damage. Report condition
ee) When drained, the tank should be examined internally for corrosion. Report condition
ff) Identify if the tank is lined or un-lined
gg) Check all localised pipework for condition, leaks and damage
hh) Check all localised pipework for correct support and fixings
ii) Check all localised pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)
jj) Carry out electrical safety tests to all equipment and pumps, record test results
kk) Test the duty of each of the pumps and record results

5.1.6 Suction Tanks

Weekly Visits

a) Check that the means of access is secure and fit for purpose
b) Confirm all notices and signage are correct and visible
c) Confirm all items are cleaned that could impair correct operation
d) Check that all equipment is in good working order and is fit for use
e) Check pump suction tank is full, adjust as required
f) Check all stop valves operation and position

12 Monthly Visits (Complete the weekly activities plus the following)

g) Check tank ball valves and water level indicators operate correctly
h) Check tank and confirm that any foreign matter is removed
i) The vortex inhibitor is to be examined, cleaned or replaced
j) Examine the water storage tank externally for corrosion, leaks and damage. Report condition
k) When drained, the tank should be examined internally for corrosion. Report condition
l) Confirm if the tank is lined or un-lined
m) Check all localised pipework for condition, leaks and damage
n) Check all localised pipework for correct support and fixings
o) Check all localised pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)

5.1.7 Water Mist Systems

3 Yearly

With the exception of tanks designed not to need maintenance within 10 years, all tanks shall be internally inspected and if necessary drained and cleaned. They shall be examined for corrosion based on the manufacturer's recommendations and all tanks shall be repainted and/or have the corrosion protection refurbished, as necessary.

All water supply shut-off valves, control and check valves shall be examined and replaced or overhauled as necessary.

5 Yearly

Two nozzles per section shall be removed from various parts of the system. The removed nozzles shall be tested to EN 12259-1 for correct function, K-factor, operating temperature and thermal response.

10 Yearly

All pressure vessels should be hydrostatically tested in accordance with BS EN 13445-5 or BS EN 1968 or replaced as appropriate.

At intervals of not more than 10 years, all storage tanks should be cleaned and examined internally, and the fabric attended to as necessary.

All system pipework shall be flushed and inspected for integrity.

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Note: Water Mist nozzles situated in harsh environments require more frequent cleaning and/or protective measures.

Note: Water Mist service labels must be suitably positioned and fully legible. Service labels must be populated at each service visit to identify (as a minimum) the attending service engineer, visit date and visit type (6 Monthly, 12 Monthly, 3 Yearly etc).

5.1.7.1 Water/Nitrogen Mist - Standalone Systems (Pressurised Vessels/Cylinders)

6 Monthly visits

a) Clean all items where appropriate
b) Inspect all pipe work, valves & nozzles for corrosion, leaks and damage
c) Record the pressures indicated on all gauges
d) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

e) Replace the nozzles and filters within the discharge head

5.1.7.2 Water Mist – Complex Systems (Hydramist, Marioff, Protec, SEM-SAFE etc)

The below (BS EN 14972-1) procedures are to be carried out as required and in conjunction with all supplementary activities as detailed within O&M and/or Manufactures site specific documentation.

All Water Mist Control Panel maintenance activities are to conform to the requirements of BS5839 -1 and section 4.1.4 of this Specification.

Note: In addition to the below activities, all Pumps are to be serviced annually and in accordance with the Manufacturer's recommendations.

Weekly Visit

a) The following shall be checked and recorded:
   - All water and air pressure gauge readings on systems, trunk mains and pressure cylinder. The pressure in the pipework in dry and pre-action installations shall not fall at a rate of more than 1,0 bar per week
   - All water levels in water storage tanks (including pump priming water tanks and pressure cylinder)
   - The correct position of all main shut-off valves unless fitted with remote monitoring
   - Check if the alarm of each control valve is working

b) Tests on pumps shall be initiated locally and shall be stopped by external means. The tests shall include the following:
   - When the pump starts, the starting pressure shall be checked and recorded. To do this, the pressure switch from the main shall be isolated and a drain valve opened at the pressure switch to simulate a drop in mains pressure

Monthly Visit (Complete the Weekly activities plus the following)

c) Check trace or localised heating systems (to prevent freezing affects in the system) for correct function
d) Carry out Momentary Battery integrity inspection and system requirements tests (E)

3 Monthly visit (Complete the Monthly activities plus the following)

e) Carry out a water supply test via each control valve-set in the system
f) Confirm that (if fitted) pumps in the supply shall start automatically and the supply pressure shall be not less than the appropriate value. During testing, the sequential starting of multiple pumps, and pumps using multiple drivers, shall be undertaken as necessary

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g) Operate shut-off valves controlling the flow of water to the system to confirm that they are in working order, and securely refastened in the correct mode. This shall include the shut-off valves on all water supplies, at the alarm valve(s) and all zone or other subsidiary shut-off valves (E)
h) Confirm fire alarm flow and/or pressure switches for correct function by operating the alarm test connection to simulate flow to a single nozzle and checking that the pump starts automatically, water flows and that the flow alarm functions as designed (E)
i) Check number and condition of replacement parts held as spare, replenish as necessary

6 Monthly visit (Complete the 3 Monthly activities plus the following)

j) The moving parts of dry and deluge valves shall be exercised and the function checked in accordance with the system requirements
k) Confirm that all Water Mist auxiliary interface equipment connected to the site CIE operate correctly (E)

12 Monthly visit (Complete the 6 Monthly activities plus the following)

l) Carry out a visual inspection of the nozzles to check that the heat sensing and spray pattern are not impeded
m) Each water supply pump set in the installation shall be tested at the full load condition (by means of a permanent test line connection coupled to the pump delivery branch downstream of the pump outlet check valve) and shall give the pressure/flow values stated on the nameplate or system demand requirements if multiple pump sets are to run simultaneously.
n) Functionally test Infill valves on water storage tanks to determine whether they operate correctly
o) Carry out a water flowing test through the pumps and system strainers
p) Inspect system strainers and cleaned as necessary. Where strainers are clogged by corrosion products, the source and cause of the corrosion shall be identified and mitigated
q) Inspect all system pipework for condition, leaks and damage. If a leak is suspected the system shall be pressure tested to the design maximum operating pressure
r) Inspect all system pipework for correct support and fixings
s) Check all pipework electrical earthing for condition and suitability (the system pipework must not be used as an earthing conductor for electrical equipment)
t) Cylinders and water storage tanks shall be examined externally for signs of damage or unauthorized modification, and for damage to system hoses
u) Cylinders and water storage tank contents shall be checked and confirmed that they are within 5 % of correct filling or charge pressure. Any showing a greater loss shall be replaced or refilled.
v) Remote alarm transmission and receipt shall be checked (E)

5.1.8 Gaseous Extinguishing Systems

10 Yearly

All pressure vessels should be hydrostatically tested in accordance with BS EN 13445-5 or BS EN 1968 or replaced as appropriate.

All system pipework shall be flushed and inspected for integrity

Note: Gaseous nozzles in harsh environment require more frequent cleaning and/or protective measures.

6 Monthly visits

a) Inspect all pipework for condition and status
b) Check discharge heads have 500mm clearance all round and free of debris
c) Check that no object encroaches within 300mm vertically of discharge heads
d) Check service label is in place and completed

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e) Check all control valves for correct manual function and automatic valves additionally for correct automatic function
f) Externally examine containers and system hoses for signs of damage
g) Check pressure gauge readings of extinguishing containers and record indicated levels
h) Record cylinder date of manufacture
i) Record cylinder size
j) Record number of cylinders

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

k) Determine whether boundary penetration or other changes to the protected enclosure have occurred that could affect leakage and extinguishant performance. If this cannot be visually determined, it shall be positively established by the following test for enclosure integrity
l) Carry out a check of enclosure integrity, if the measured aggregate area of leakage has increased from that measured during installation which would adversely affect system performance, carry out work to reduce the leakage

5.1.9 Greenwich Power Station - Generator Transformer Foam/Argon/Nitrogen Discharge Systems

10 Yearly

All pressure vessels should be hydrostatically tested in accordance with BS EN 13445-5 or BS EN 1968 or replaced as appropriate.

All system pipework shall be flushed and inspected for integrity

Note: Gaseous nozzles in harsh environment require more frequent cleaning and/or protective measures.

6 Monthly visits

a) Inspect all pipework for condition and status
b) Externally examine containers and system hoses for signs of damage
c) Check discharge heads have 500mm clearance all round and free of debris
d) Check that no object encroaches within 300mm vertically of discharge heads
e) Check all control valves for correct manual function and automatic valves additionally for correct automatic function (where applicable)
f) Inspect and check all strainers (note: essential after use or after any flow or operational tests etc)
g) Functionally test the foam concentrate proportioner using water without the use of foam concentrate (where specified by the manufacturer)
h) Inspect/check all fusible links to ensure free movement of the release mechanisms.
i) Check pressure gauges readings of extinguishing containers and record indicated levels
j) Check service label is in place and completed
k) Record cylinder date of manufacture
l) Record cylinder size
m) Record number of cylinders

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

n) A check of the foam concentrate properties shall be carried out by specialist foam laboratory

5.1.10 Greenwich Power Station – CO2 Discharge Equipment

10 Yearly

All pressure vessels should be hydrostatically tested in accordance with BS EN 13445-5 or BS EN 1968 or replaced as appropriate.

All system pipework shall be flushed and inspected for integrity.

Note: Nozzles in harsh environment require more frequent cleaning and/or protective measures.

6 Monthly Visits

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a) Inspect the external condition of the CO2 bottles for any corrosion and damage and report any defects. Inspection shall include all connections and couplings, interconnecting pipework, (flexible and rigid), gauges and pressure transducers and the solenoid release mechanism
b) Check discharge heads have 500mm clearance all round and free of debris
c) Check that no object encroaches within 300mm vertically of discharge heads
d) Check all control valves for correct manual function (where applicable)
e) Check the safety pins, or equivalent device, and security tags are in place on both CO2 bottles
f) Weigh both CO2 bottles and compare results with initial charge weight. If the loss exceeds 10%, select the spare unit and arrange for the depleted bottle to be recharged/replaced
g) Remove and check the operating mechanism and discharge valve, and inspect and clean or replace as deemed necessary
h) Replace the safety clip and insert a new wire seal or equivalent
i) Check service label is in place and completed
j) Record the date of inspection and the current weight
k) Record cylinder date of manufacture
l) Record cylinder size
m) Record number of cylinders

5.2 Fire Water Supplies

All towns' mains water supplies to the Station Fire Systems are either Superior or Duplicate supplies, as classified by BS 5306-2 1990 or BS 12845.

All Flow and Pressure tests for Sprinkler and EWSS Systems shall be verified via the test facilities in the SVC. These works will be carried out at night, any system test results found to achieve a marginal pass must be reported to the shift LU Fire Engineer or LU Fire Manager at the earliest opportunity and re-testing (during times of local peak demand) is to be scheduled as soon as is practicable.

Any fire water supply that fails the specified requirements under test conditions is to be reported to the Station CSS/CSM and APCD LU Fire Manager at the earliest opportunity. The appropriate mitigating LU Rule Book actions are to be implemented by the supplier immediately.

Frequency

The fire water supplies shall be availability tested quarterly; an additional annual test shall be carried out with a Local Water Authority (LWA) Engineer present, subject to LWA availability.

3 Monthly visits

a) Enable printer on FCP and put into Test Mode
b) Exercise monitoring on all Station Water Supply Isolation Valves for 25% movement from normal. Check Fault Status has registered on FCP (E)
c) With all main valves open check the Static Pressure at the underside of the Sprinkler Control Valve Assembly (Bottom Gauge).
d) With all Towns Main Valves open, test the Flow and Running Pressure Characteristics of the Towns Mains, and record the values achieved.
e) The test must provide sufficient information to confirm whether the Sprinkler and EWSS design and performance requirements have been met
f) Record Static Pressure after test is completed
g) Confirm that all valves are left strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 3 Monthly activities plus the following)

h) Check with LWA Engineer that all Towns Main Valves are open and that there are no local anomalies that may affect the test
i) Record or confirm correct location of all relevant external town's mains and valves, detailing pipe sizes, and Road/Street locations in relation to the mains and the Station
j) Close the appropriate Towns Main Valves individually (not Station Isolation Valves) to Confirm that water flowing through the Town's Main is from one direction only. Test the Flow and Running Pressure Characteristics of the individual Towns Mains supplies, and record the values achieved for all tests

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k) Carry out a full LWA Town Mains Valves isolation test, to confirm the LWA ability to fully isolate incoming Town Mains supplies to the Station
l) Upon completion confirm that all valves are open and the fire water supply is ready for use, as confirmed by the LWA Engineer

5.3 Hose Reels

5 Yearly

All hoses should be integrity inspected and tested in accordance with the relevant British Standard or replaced as appropriate.

6 Monthly visits

a) Clean all items and signage with appropriate materials
b) Check all local pipework, valves, for leak and damage
c) Check Trace Heating System for integrity (Lagging condition etc) & visually confirm correct operation at the Trace Heating panel
d) Check pipework electrical earthing for condition (where provided)
e) Check hose for damage or kinks
f) Check nozzle is undamaged and operational
g) Check housing for defects, condition and operation

12 Monthly visits (Complete the 6 monthly activities plus the following)

h) Enable printer on FCP put into test mode. (If applicable)
i) Run out hose reel and subject to operational pressure
j) Activate the nozzle valve and discharge in a safe manner; record the flow rate
k) Confirm correct messages on FCP where flow switches and or monitored valves are connected to system (JLE only) (E)
l) Where pumps are used to supply water tests must be carried out as above on the duty and standby pumps

5.4 Fire Hydrants and Fire Main Systems

For the duration of the contract, the Supplier will hold full responsibility for the provision, management and operation of an adequate number of portable ‘fire pump & bowser’ type systems, which can provide adequate static test pressures and running flow rates to meet the needs of all Fire Main, In-Line Pressure regulating Valve and Pressure Regulating Landing Valve tests in accordance with the system testing requirements of Table 1 (Appendix ‘A’).

For all Fire Main systems with more than 1 standard landing valve, an annual test will be carried out via simultaneous full flow of two hydrant landing valves, one of which must be the furthest from the incoming supply.

In addition to the above simultaneous flow test, for all Fire Main systems with 3 or more standard landing valves, a minimum of one intermediate landing valve and all landing valves that are separated by intermediate isolation valves will also be flow tested annually to evidence system availability.

A log of the tested intermediate landing valves is to be maintained by the Supplier and (where possible) alternative intermediate landing valves are to be tested during the successive years testing.

With the exception of tanks designed not to need maintenance within 10 years, all tanks shall be internally inspected and if necessary drained and cleaned 3 yearly. They shall be examined for corrosion based on the manufacturer’s recommendations and all tanks shall be repainted and/or have the fabric attended to as necessary.

At no more than 10-year intervals, all storage tanks shall be cleaned and examined internally and the fabric attended to as necessary.

5.4.1 External Hydrants

5.4.1.1 Hydrants above Ground

12 Monthly visits

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a) If located in cabinet or enclosure checks this is in good order
b) Check hydrant is not obstructed and fit for use
c) Check that indicator plates are present and show correct information
d) Check that all valves are strapped and padlocked. Blank cap and chain are fitted and retaining rubber washer in good order
e) Check that all valve spindles; glands and washers are fit for use
f) Check hydrant is not leaking or letting by
g) Visually inspect localised pipework for condition and adequate support
h) Clean all items as required specifically those that could impair use

5.4.1.2 Hydrants in Underground Pits

12 Monthly visits

a) Check hydrant is not obstructed and fit for use
b) Check that indicator plates are present and show correct information
c) Check that the surface box cover is in good order
d) Check pit for water and debris, clean as required.
e) Check that all valves are strapped and padlocked. Blank cap and chain are fitted and the retaining rubber washer is in good order
f) Check that all valve spindles; glands and washers are fit for use
g) Check that hydrant spindle is suitable for operation and length
h) Clean all items as required specifically those that could impair use
i) Check that hydrant is not leaking or letting by
j) Visually inspect localised pipework for condition and adequate support
k) Clean all items as required specifically those that could impair use

5.4.1.3 External Mains Fed Hydrants

12 Monthly visits

a) If located in cabinet or enclosure checks this is in good order
b) Check hydrant is not obstructed and fit for use
c) Check that indicator plates are present and show correct information
d) Check that all valves are strapped and padlocked. Blank cap and chain are fitted and retaining rubber washer in good order
e) Check that all valve spindles; glands and washers are fit for use
f) Check hydrant is not leaking or letting by
g) Clean all items as required specifically those that could impair use
h) Visually inspect local pipework for condition and adequate support
i) Record Static Pressure readings
j) With the three hydraulically remote (from supply) hydrants running simultaneously, record the running pressure & flow rate achieved from all three hydrants (Locations of tested hydrants must be recorded)

5.4.1.4 Hydrant Pumps

In addition to the below activities, all Pumps are to be serviced annually and in accordance with the Manufacturer's recommendations.

Weekly Visits

a) Check that the means of access is secure and fit for purpose
b) Confirm all notices and signage are correct and visible
c) Check that all equipment is in good working order and is fit for use
d) Check pump suction tank is full, adjust as required
e) Check all stop valve operation and position, including underground valves
f) Check monitoring devices on valves operate correctly
g) Start each pump set by reducing the water pressure
h) Each starting device must be exercised
i) Five minutes should elapse between successive tests, on any individual pumps
j) Check pump suction and delivery valves are fully open
k) Check pump starts at a nominated starting pressure. (For star delta starter record the delay between star and delta)

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l) Check pump relief line operates
m) Check pump glands and drains operate correctly. Check for excessive vibration or noise
n) Check remote alarms operate
o) Run each pump for five minutes and then check manual start facility
p) Check phase failure alarm operates
q) Check all power supply healthy lamps are operational
r) Check jockey pump starts/stops at correct pressures. Record
s) Check rapid oscillation does not occur at pressure switch
t) Restore all pump sets to automatic operating condition

3 Monthly Visits (Complete the weekly activities plus the following)

u) Confirm all items are cleaned that could impair correct operation
v) Confirm all pumps are fed via the standby power supply
w) Pumps are to be run on full load conditions
x) Check and record inflow into the tank (where possible)

12 Monthly visits (Complete the 3 Monthly activities plus the following)

a) Check the performance of the duty pump by opening the 3No hydraulically remote hydrants.
b) Record the pressure from EACH hydrant
c) Repeat the above operation for the standby pump
d) Check all control panels and remote indicators are in good condition and fit for use

5.4.1.5 Suction Tank - Pump Fed Hydrants

3 Monthly visits

a) Check that the means of access is secure and fit for purpose
b) Check that all equipment is in good working order and is fit for use
c) Confirm the area is clean and tidy and all items that could impair correct operation are cleaned
d) Check condition of tank and that any foreign matter is removed
e) Confirm all notices and signage are correct and visible
f) Check tank water levels and adjust as required
g) Check tank ball valves and water level indicators operate correctly
h) Exercise all stop valves for correct operation
i) The vortex inhibitor is to be examined, cleaned or replaced
j) Confirm if the tank is lined or un-lined
k) When drained, the tank should be examined internally and externally for corrosion

Note: If tanks are unlined steel, they are to be drained and inspected every three years, where tanks are lined, they are to be drained and inspected every ten years.

5.4.2 Tunnel Hydrants

5.4.2.1 Tunnel Hydrants (JLE/NLE)

Note: the following activities are to be carried out in conjunction with 5.4.2.5 In-Line Pressure Reducing Valve Sets.

Note: All Fire Main system sections and outlets shall be flushed through annually to remove any debris that may prevent the efficient operation of the system during operational conditions.

6 Monthly Visits

a) Check locking arrangements and condition of breeching inlet box
b) Check the spring-loaded non- return valve and drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check condition of valve localised pipework, associated supports and joints for condition, leakage and damage
f) Check signage is present & correct
g) Clean all items with appropriate materials

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h) Confirm that all valves are left strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

i) Check air release valves are operating correctly
j) Check top-up tank is clean, free from debris and no leakage
k) Check tank in-fill connection is operating, adjust ball valve if required
l) Check low level alarm is indicating to the correct interface (E)
m) Check all intermediate isolation valves for correct operation
n) Inspect all fire main system pipework for condition, leaks and damage
o) Inspect all fire main system pipework for correct support and fixings
p) Inspect all fire main system pipework electrical earthing for condition (where provided)
q) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')

5.4.2.2 Tunnel Hydrants (Heathrow Loop)

Note: The Heathrow Tunnel Hydrant System sections and outlets shall be flushed through annually to remove any debris that may prevent the efficient operation of the system during operational conditions.

Note: Additional care must be taken when pressurising the Heathrow Tunnel Hydrant System pipework to avoid potential damage.

6 Monthly Visits

a) Check locking arrangements and conditions of breeching inlet locations
b) Check the spring-loaded non-return valve and drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check condition of valve localised pipework, associated supports and joints for condition, leakage and damage
f) Check signage is present & correct
g) Clean all items with appropriate materials
h) Confirm all valves are left strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

i) Inspect all fire main system pipework for condition, leaks and damage
j) Inspect all fire main system pipework for correct support and fixings
k) Check all fire main system pipework electrical earthing for condition (where provided)
l) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
m) Confirm that the Tunnel Hydrant pipework is left with a static head of water present

5.4.2.3 Tunnel Hydrants (PiccEx to T5)

6 Monthly Visits

a) Check locking arrangements and condition of Breeching Inlet Box
b) Check the spring-loaded non-return valve and drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check condition of valve localised pipework, associated supports and joints for condition, leakage and damage
f) Check signage is present & correct
g) Clean all items with appropriate materials
h) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

i) Visually inspect all fire main system pipework for condition, leaks and damage
j) Visually inspect all fire main system pipework for correct support and fixings

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k) Check all Tunnel Hydrant system pipework electrical earthing for condition (where provided)
l) Via the FMSV isolate the Hydrant system from the BAA main incoming supply
m) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
n) The system Pressure Regulating Hydrant Landing Valves shall be flow tested to the specified requirements of Table 1 (Appendix 'A')
o) Utilising the BAA Fire Main supply, record the flow rate achieved from the furthest Pressure Reducing Hydrant Landing Valve from the incoming supply
p) Confirm that the Hydrant pipework is left fully charged via the BAA fire main

Note: Test water discharge is only permitted into the local Track Sumps

5.4.2.4 Pressure Regulating Hydrant Landing Valve (Not pre-reduced by an in-line PRV)

6 Monthly Visits

a) Check locking arrangements and conditions of Breeching Inlet Box
b) Check the spring-loaded non-return valve and drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check signage is present & correct
f) Clean all items with appropriate materials
g) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

h) Inspect all fire main system pipework for condition, leaks and damage
i) Inspect all fire main system pipework for correct support and fixings
j) Check all fire main system pipework electrical earthing for condition (where provided)
k) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
l) The system Pressure Regulating Hydrant Landing Valves shall be flow tested to the specified requirements in Table 1 (Appendix 'A')

Note: Test water discharge is only permitted into track sumps (with Company approval); this may involve long runs of hose from hydrant to mid-tunnel.

5.4.2.5 In-Line Pressure Regulating Valve Sets

12 Monthly visits

a) Inspect all PRV associated system pipework for condition, leaks and damage
b) Inspect all PRV associated system pipework for correct support and fixings
c) Check all PRV associated system pipework electrical earthing for condition (where provided)
d) Connect hoses of the same specification to the standard landing valve and run these hoses to the nearest suitable drain sump
e) The system in-line PRV shall be flow tested to the specified requirements of Table 1 (Appendix 'A')
f) Record the system pressure shown on the pressure gauge upstream of the pressure reducing valve
g) Open the closest hydrant landing valve (NLE), or remove the closest PRHLV and replace with a standard hydrant landing valve (JLE) to provide a constant flow of water for a minimum period of 1 minute and record the running pressure on the pressure gauge downstream of the PRV
h) End test if test results accord with the performance requirements indicated on the PRV
i) Should any variance be noted between the test results and the performance requirements, then adjust the PRV as required in accordance with the manufacturers maintenance requirements
j) Prior to the end of the test, confirm that the hydrant pipework is fully charged with water over the whole length of the section of the system tested
k) Confirm all valves are strapped and padlocked in the correct position following PPM activities

5.4.3 Dry & Wet Fire Mains

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Note: These Systems shall be flushed through annually to remove any debris that may prevent the efficient operation.

5.4.3.1 Dry & Wet Falling Mains

6 Monthly Visits

a) Check locking arrangements and conditions of Breeching Inlet locations
b) Check the spring-loaded non-return valve & drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check signage is present & correct
f) Clean all items with appropriate materials
g) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

h) Inspect all fire main system pipework for condition, leaks and damage
i) Inspect all fire main system pipework for correct support and fixings
j) Check all fire main system pipework electrical earthing for condition (where provided)
k) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
l) Where top-up water tanks are connected to the fire main, confirm that the ball float valve and low-level alarm switch operate correctly (if present) record the operation of the alarm switch.
m) Confirm the integrity of the top-up tank

5.4.3.2 Dry & Wet Falling Mains (With Pressure Regulating Hydrant Landing Valves)

6 Monthly Visits

a) Check locking arrangements and conditions of breeching inlet locations
b) Check the spring-loaded non-return valve & drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure, and drain valves operate freely
e) Check signage is present & correct
f) Clean all items with appropriate materials
g) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

h) Inspect all fire main system pipework for condition, leaks and damage
i) Inspect all fire main system pipework for correct support and fixings
j) Check all fire main system pipework electrical earthing for condition (where provided)
k) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
l) The system Pressure Regulating Hydrant Landing Valves shall be flow tested to the specified requirements of Table 1 (Appendix 'A')
m) Where top-up water tanks are connected to the fire main, confirm that the ball float valve and low-level alarm switch operate correctly (if present) record the operation of the alarm switch.
n) Confirm the integrity of the top-up tank
o) Record all pressure readings, locations of individual hydrant valves and breeching inlets used

5.4.3.3 Dry & Wet Falling Mains (Hybrid Cast/Steel with In-Line Pressure Regulating Valve)

Note: the following activities are to be carried out in conjunction with 5.4.2.5 In-Line Pressure Regulating Valve Sets

6 Monthly Visits

a) Check locking arrangements and conditions of breeching inlet locations
b) Check the spring-loaded non-return valve & drain cock
c) Confirm blank caps are fitted
d) Confirm that all valve spindles move freely, have full operation, hand wheel is secure and drain valves operate freely
e) Check signage is present & correct

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f) Clean all items with appropriate materials
g) Confirm all valves are strapped and padlocked in the correct position following PPM activities

12 Monthly visits (Complete the 6 Monthly activities plus the following)

h) Inspect all fire main system pipework for condition, leaks and damage
i) Inspect all fire main system pipework for correct support and fixings
j) Check all fire main system pipework electrical earthing for condition (where provided)
k) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
l) The system In-Line Pressure Regulating Valve shall be flow tested to the specified requirements of Table 1 (Appendix 'A')
m) Where top-up water tanks are connected to the fire main, confirm that the ball float valve and low-level alarm switch operate correctly (if present) record the operation of the alarm switch.
n) Confirm the integrity of the top-up tank
o) Record all pressure readings, locations of individual hydrant valves and breeching inlets used

5.4.4 Platform Hydrants

5.4.4.1 Mains Feed Platform Hydrants

6 Monthly Visits

a) Check condition of outlet cabinet or enclosure and confirm it is free from obstruction or debris
b) Check condition of hydrant outlets
c) Confirm blank caps are fitted; remove to inspect coupling washer
d) Confirm that all valve spindles move freely, have full operation, the valve wheel is secure and drain valves operate freely
e) Exercise monitoring on isolation valves for 25% movement from normal status to register fault at FCP (where applicable) (E)
f) Inspect hydrant outlet localised pipework for condition, leaks and damage
g) Inspect hydrant outlet localised system pipework for correct support and fixings
h) Check all flange nuts are in place and tight
i) Check flange gaskets for leaks
j) Check signage is present & correct
k) Clean all items with appropriate materials
l) Confirm all valves are strapped and padlocked in the correct position following PPM activities

5.4.4.2 Platform Hydrant Main Isolation Valve Test

12 Monthly Visits

a) Un-strap Platform Hydrant Main Isolation Valve and fully close the valve
b) Remove hydrant bung from a suitable hydrant landing valve at platform level and insert pressure test equipment fitted with a male hydrant coupling
c) Open hydrant landing valve
d) Using the air release valve on the pressure test equipment, discharge water from the hydrant pipework into a suitable receptacle
e) Continue drawing water from the hydrant pipework until the pressure shown on the pressure gauge is equal to, or less than, the equivalent static pressure drop between the street and platform level
f) Confirm the pressure remains constant for a minimum period of 15 minutes
g) If the Platform Hydrant Main Isolation Valve is thought to be passing, carry out cross over valve & MISV test to confirm results
h) On completing test, close the hydrant landing valve, remove pressure test equipment and replace hydrant bung
i) Slowly open the Platform Hydrant Main Isolation Valve until the valve is fully open
j) Confirm all valves are strapped and padlocked in the correct position following PPM activities

5.4.4.3 Hydraulic Integrity Test of System Pipework

Note: This test shall only be carried out after the successful conclusion of the test described in Section 5.4.4.2 (Platform Hydrant Main Isolation Valve Test).

12 Monthly Visits

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a) Inspect all fire main system pipework for condition, leaks and damage
b) Inspect all fire main system pipework for correct support and fixings
c) Check all fire main system pipework electrical earthing for condition (where provided)
d) Un-strap Platform Hydrant Main Isolation Valve and fully close valve
e) Remove hydrant bung from a suitable hydrant landing valve and connect a hand or suitable electric pump to landing valve outlet
f) Open landing valve
g) The system shall be pressure tested to the specified requirements of Table 1 (Appendix 'A')
h) On completion of test, release excess pressure from the pipework
i) Close hydrant landing valve, remove pump connections and replace hydrant bung
j) Slowly open the Platform Hydrant Main Isolation Valve until the valve is fully open
k) Confirm all valves are strapped and padlocked in the correct position following PPM activities

5.4.4.4 Platform Hydrant Flow Test (All Stations)

The following flow test shall only be carried out after the successful conclusion of the test described above in Sections 5.4.4.2 & 5.4.4.3, or, if a LWA Engineer is present and has the verified ability to isolate the incoming supply.

Where flow testing is carried out, it will likely not be possible to discharge test water directly into the existing Station drainage sumps. In these instances, it is the Supplier's responsibility to provide suitable temporary receptacles and drainage facilities to enable test water to be captured and drained away at a rate that the existing Station drainage sumps can accept. These temporary facilities shall be sufficient to enable the full testing of a system to be carried out during a single Engineering Hours shift.

To comply with safe working regulations, the running hose pressure must not exceed 8 bar during flow testing.

12 Monthly Visits (Complete the 6 Monthly activities plus the following)

a) Each platform hydrant system shall be flow tested to the specified requirements of Table 1 (Appendix 'A')
b) Record all flow readings and locations of the hydrant landing valves used
c) Confirm flow switches operate during flow testing, check indication at FCP (E) (where applicable)

6. Maintenance Procedures – Compartmentation

6.1 Fire Rated Walls

12 Monthly

a) Confirm that the method of wall construction provides the required fire resistance
b) Where a wall has been installed, confirm that it is in accordance with the manufacturers certification details where a proprietary system is used
c) Confirm that the junction between walls and structure is properly fire stopped
d) Confirm that the masonry walls have head support where required for stability
e) Confirm that all movement joints in masonry walls are of fire-resistant construction.
f) Confirm that all penetrations are fire stopped using the correct materials and for full depth to approved details
g) Confirm that all Doors, Hatches and Access Panels have been installed and function correctly
h) Confirm that all Glazing has been installed correctly
i) Confirm that all Dampers fire rated /clad ductwork has been installed correctly
j) Confirm that all wall cavities have cavity barriers installed where they are over 20m in length

6.2 Fire Rated Floors

12 Monthly

a) Confirm that the method of construction provides the required fire resistance
b) Confirm that all the floor provides separation from other levels not just the floor in the compartmented room

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c) Confirm that the floor has been installed to give adequate separation
d) Confirm that all penetrations are fire stopped using the correct materials and for full depth to approved details
e) Confirm manholes for fire resistance. (Covers are fire rated or penetrations internally fire stopped)
f) Confirm that all Doors, Hatches and Access Panels have been installed and function correctly: - see separate notes
g) Confirm that dampers and fire rated/clad ductwork has been installed correctly
h) Check below raised floors for firestopping below perimeter compartment walls and for firestopping of compartment floor penetrations
i) Confirm that floor cavities have cavity barriers installed where they are over 20m in length

6.3 Soffit / Fire Rated Ceilings

12 Monthly

a) Confirm that the method of soffit construction provides the required fire resistance
b) Confirm that all soffit provides separation from other levels premises of separate use not just floor in compartmented room
c) Confirm that the soffit has been installed to give adequate separation
d) Confirm that all fire rated ceilings have been installed in accordance with the manufacturer's certification details
e) Confirm that the ceiling grid is adequately supported from the structure
f) Confirm that fire rated boarding fitted correctly with staggered joints
g) Confirm that all tiles are in place, intact and fully fixed
h) Confirm that all joints are adequately fire-stopped
i) Confirm that the perimeter of the ceiling is fire sealed to compartment elements
j) Confirm that all penetrations are fire stopped using correct materials and for correct depth to approved details
k) Confirm that false ceilings have cavity barriers installed where they are over 20m in length

6.4 Fire Cavity Barriers

12 Monthly

a) Confirm that all cavity barriers are installed to the manufacturer's requirements
b) Confirm that the cavity barriers are fixed to the structure and draped down onto ceilings with correct lap
c) Confirm that all cavity barriers are sealed to raised floors and structural floors and compressed into place
d) Confirm that all cavity barriers are fixed to the structure and to wall linings
e) Confirm that all cavity barriers are continuous with correct overlap of sections fixed in accordance with manufacturers certification
f) Confirm that all penetrations are sealed through the barriers in accordance with the manufacturer's certification
g) Confirm that all ductwork is imperforate through the void and is dampered as it enters through fire separating elements or has dampers on the line of the cavity barrier if it vents into other parts of the area

6.5 Fire Doors, Frames and Fixings

12 Monthly

a) Confirm that doors and door frames are constructed to manufacturers certification requirements
b) Confirm that the door frame is fixed with hardwood packers for timber door sets, metal shims for metal door sets
c) Confirm that frame fixings are suitable, of the correct type, length number and spacing
d) Confirm that intumescent strips and smoke seals are fitted as required [timber doors mainly] and are fully continuous on three faces of frame (top and both sides) meeting edges of double doors or are fitted to three edges of the door leaf (top and both sides).
e) Confirm the extent and sizes of intumescent against manufacturers certification

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f) Confirm that all fitted ironmongery conforms to manufacturers certification
g) Confirm that a minimum of 3no steel hinges are fitted and that the hinges are the correct size, type and length of fixings
h) Confirm that the steel lock and handles are fitted correctly, with lock and latch boxes (Double Doors) on steel doors and intumescent card on timber doors
i) Confirm that all door closers are securely fitted and that the operating arms are securely connected
j) Confirm that all door closers are fitted to the risk (non-public) side of the door, or is of a type suitable for the non-risk side of the door
k) Confirm that the door closer is not leaking oil
l) Confirm that all electromagnetic door release units are securely fitted and that when released manually, the door closes fully
m) Confirm that door selectors are fitted (applies only to double doors with rebated meeting stiles or astragals)
n) Confirm that a doorstop is fitted to avoid structural / closer damage where appropriate
o) Confirm that bolts are face fixed (where fitted) with floor and head sockets installed
p) Confirm that the glazing to vision panels is of correct type and orientation
q) Confirm that vision panel beading is correctly fitted and provided with intumescent strip
r) Confirm that the door and frame are not twisted or warped
s) Confirm that the door and frame are not damaged
t) Confirm that all surfaces are correctly stained and lacquered (timber) or correctly painted/protected (Metal)
u) Confirm that frame fixing positions are plugged, stained and lacquered correctly (timber) or that proprietary metal caps have been used (Metal)
v) Confirm that the gaps between door and frame and double door meeting stiles are correct
w) Confirm that the threshold gap is as certification, with steel threshold plate as required to make up levels
x) Confirm that the gap between frame and structure is correctly fire stopped
y) Confirm that any gap between the bottom of the frame and the floor has been correctly infilled
z) Confirm that statutory notices have been fitted as applicable (i.e. ‘Fire door - keep shut’, ‘Automatic fire door - keep clear’ or ‘Fire door - keep locked shut’)
aa) Confirm that the correct room identification number is fitted to door with tamper proof screws
bb) Confirm that the fire and manufacturers identification plug/plate, is/are in place

Note: - Noncompliant fire doors that require replacing are to be passed to premises to action

6.6 Fire Doors Operation

12 Monthly

a) Confirm that when released from between 45 and 90 degrees, the door closes, and latch engages
b) Confirm that the door closer operates in a two-stage action - fast to 10 degrees then slow to latch
c) Confirm that the leaf closes onto the rebate / stop with full face contact
d) Confirm that with the latch engaged, the available movement of door is maximum 2mm, minimum 1mm
e) Confirm that emergency escape route doors have adequate signage to describe their use and confirm that they are ‘kept clear’
f) Confirm that the panic self-latching function is appropriate for the use and operates correctly

6.7 Hatches and Access Panels

12 Monthly

a) Confirm that proprietary hatches and/or access panels in walls or ceilings comply with manufacturers certification standards for the required fire rating
b) Confirm that the installation of hatches and/or access panels is in accordance with the Manufacturers details and certification
c) Confirm that ironmongery fitted conforms to manufacturers certification
d) Confirm that the installation is as required for fire doors when of door construction

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e) Confirm that a 'Fire Door - keep locked shut' sign is fitted

Note: - Closer not required

6.8 Fire Shutters and Curtains

12 Monthly

a) Confirm that all fire rated shutters and curtains comply with the manufacturer's certification details
b) Confirm that fire rated shutters and curtains close correctly on activation of the test switch/key
c) Fire rated shutters and curtains are inspected for damage and corrosion

6.9 Glazing

12 Monthly

a) Confirm that the glazing installation is justified by test evidence
b) Confirm that the installed glass is of the correct type
c) Confirm that the glass has been installed in the correct orientation
d) Confirm that the setting blocks have been provided to allow adequate glass movement in the aperture
e) Confirm that intumescent / ceramic gasket / neoprene gasket detail to glazing is correct
f) Confirm that the timber glazing beads are pinned or screwed at correct centres to suit certification
g) Confirm that all fixings correct type size and length and angled correctly to suit certification
h) Confirm that all metal glazing beads are correct size and are fitted to Manufacturer's certification standards
i) Confirm that the frame system is compatible with glass (could be metal or timber)
j) Confirm that the dimensions of framing conform to test evidence
k) Confirm that the timber frame has been stained and lacquered
l) Confirm that the metal frame has been painted or protected
m) Confirm that frame fixings are of the correct number, type, length and at correct spacing
n) Confirm that all firestopping between frame and structure is correctly completed

6.10 Fire / Smoke Dampers and Ductwork

12 Monthly

a) Confirm that dampers have been installed in ductwork passing through compartment elements or that ductwork has been clad or is fire rated through risk areas
b) Confirm that dampers have been installed in air transfer ducts through compartment elements
c) Confirm that the type of damper is correct in relation to means of escape (fire/smoke – fire insulated – Back of House areas)
d) Confirm that the location of damper is correct to maintain compartmentation boundaries
e) confirm that the damper has been installed in or outside the compartment element in accordance with the approved details
f) Confirm that the damper is the correct orientation to the risk area
g) Confirm that a damper installed outside of the compartment element has ductwork clad or fire rated ductwork between damper blade and compartment (incorporating blade housing where required)
h) Confirm that the damper body is independently and adequately supported from the structure, if not within depth of compartment element (to approved detail)
i) Confirm that additional support has been fitted to clad sections of ductwork in accordance with cladding certification details
j) Confirm that all ductwork is supported independently from the compartment element, with support adjacent to each side of that element (within 500mm)
k) Confirm that fire cladding of ductwork from the damper to compartmentation line is securely fixed and all joints sealed to manufacturers certification
l) Confirm that all supports to damper and ductwork are clad if on the 'risk side'
m) Confirm that the cladding of ductwork passing through a risk area is securely fixed and all joints are sealed to manufacturers certification

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n) Confirm that the joint between the cladding and wall is fire sealed correctly
o) Confirm that the fire rated ductwork complies with the manufacturer's certification details
p) Confirm that the fire damper shuts correctly on release of the shutter [Mechanical Dampers only]

Note: Operation of motorised smoke and fire dampers is to be evidenced by annual detection systems testing activities.

6.11 Penetrations

12 Monthly

a) Confirm that all penetrations of compartment elements (walls, floors structural soffits and fire rated false ceilings) are fire stopped in accordance with approved details using the correct firestopping materials installed with due consideration to the manufacturers certification requirements
b) Confirm that services are supported independently from the compartment element, with support adjacent to that element (within 500mm)
c) Confirm that trunking covers are cut either side of the compartment element with fixed section through compartment. Fixed section extends either side of the element to approved detail
d) Confirm that trunking is fire stopped externally and internally through full depth of compartment element in accordance with the approved details using specified firestopping materials (To allow access to perform future cable works)
e) Confirm that cable tray has a cover fitted through the compartment element. The fixed cover extending either side of the element to approved detail
f) Confirm that cable tray is fire stopped externally and internally through the full depth of the compartment element in accordance with the approved details using specified firestopping materials. (To allow access to perform future cable works)
g) Confirm that an intumescent collar has been fitted to plastic service pipes over 50mm (where plastic is allowed)
h) Confirm that sprinkler and water supply pipes have a movement sleeve fitted extending either side of the compartment element to approved detail
i) Confirm that CC Unit pipework if insulated with Optima insulation can be Compound fire stopped without pipe sleeves
j) Confirm that all sleeves have been fire stopped externally and internally through full depth of compartment element in accordance with the approved details using specified firestopping materials. (To allow movement of pipe in sleeve)
k) Confirm that drainage pipes are solidly built-in to compartment element or fire stopped through the depth of element to approved detail
l) Confirm that individual cables are fire stopped both side of the compartment element and through its' depth if clearance hole allows

6.12 Structural Fire Resistance

12 Monthly

a) Confirm that cladding or fire-resistant coatings are in good condition and properly fixed to manufacturers requirements
b) Confirm that intumescent coatings to structural steelwork are intact and undamaged and show no evidence of failure
c) Confirm that structural floors are imperforate between building levels with all penetrations either fire stopped built in or in purpose made service shafts
d) Confirm that timber floors between areas of the building of different use are under boarded with fire rated boarding

6.13 Means of Escape and Public Areas

12 Monthly

a) Confirm that all surfaces appear to be of class 'O' finish which is in good condition
b) Confirm that all fire signage is adequate to identify the escape routes and emergency exit provisions (premises asset)

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c) Confirm that all fire signage is in good condition and is positioned and fixed correctly (premises asset)
d) Confirm that emergency escape route doors have adequate signage to describe their use and confirm that they are 'kept clear'

6.14 Fire Door Signage and Room Identification (SID) Plates

12 Monthly

a) Confirm that 'fire door keep shut' signs have been installed on all fire doors with closers, they must be installed on both sides of doors and on each leaf
b) Confirm that 'fire door keep locked shut' signs have been installed on all fire doors without closers, they must be installed on both sides of doors and on each leaf
c) Confirm that 'automatic fire door keep clear' signs have been be installed on all smoke/fire doors on magnetic door retainers to both leaf's visible when door are in the open position and a 'fire door keep shut' sign is visible on the other side when door is in the shut position on both leaf's
d) Confirm that door identification (SID) plates have been installed on all doors including none-fire rated doors. SID plates are to be installed to top left-hand corner of each door as you enter the room. SID plates are only installed on the inside of the door if entry to a room or location is by multiple means
e) Confirm that fire signage is in good condition and is positioned and fixed correctly, signage to be replaced if it is faded or damaged
f) Confirm that all front of house public areas signage is LU approved vitreous enamel

Note: Back of house non-public area signage can be sticker type

Note: If signage is incorrect this can be over stickered with correct wording

7. Maintenance Procedures – Portable Fire Extinguishers & Fire Blankets

As per the below Specifications, Portable Fire Extinguisher Planned Preventative Maintenance frequencies shall be in-line with the requirements of BS5306:3, with exception to Section 6, Table 1, Clause B, as the basic and extended service tolerance of +1 month is not permitted for London Underground Portable Fire Extinguishers.

7.1 Water/AFFF (Cartridge Operated only)

12 Monthly Visits/Reactive Call Outs

a) Inspect area extinguisher is present in to confirm it is the right extinguisher for the area and covers the risks present in the area
b) Confirm the extinguisher complies to manufacturing standards such as BSEN3, BS 7863 has the correct CE mark (if applicable) or valid alternative
c) Check Pin and Tamper Tag are in place and for signs of possible operation as the extinguisher maybe under pressure. If any of these are missing proceed with caution
d) Check Extinguisher for any signs of corrosion or damage, condition of hose/nozzle, head assembly & legibility of operating instructions and manufactures servicing instructions
e) Check any mounting bracket/ wall fixing to confirm the bracket/ wall fixing is correct for the type or model of extinguisher in situ and is firmly fixed to the wall. If there is a fire stand or fire extinguisher cabinet are present, check it is the correct type of fire stand or fire extinguisher cabinet for the area and type/ model of extinguisher in situ. Surface stations have plastic fire stands and fire extinguisher cabinets whereas, sub-surfaces stations have non-conductive tubular metal stands or metal fire extinguisher cabinets due the fire resistance these provide. Check the fire stand or fire extinguisher cabinet for damage or any other type of defects. If the asset is not the correct stand or cabinet or in a bad condition a recommendation to TFL needs to be recorded on the PPM certificate for TFL approval
f) Remove Safety Pin and fully inspect. Safely remove head assembly, allowing any residual pressure to disperse
g) Empty all the water out and inspect the water. If bacteria are found to be present, the water is to be replaced at the time of the maintenance being carried out. Inspect Internal lining and integrity of the extinguisher and refill extinguisher with the water and install sterilisation

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tablets to kill any bacteria if present if original water is to be re-used. Inspect Syphon Tubes for deterioration and activation pin

h) Inspect head assembly unit under the handle for any obstructions, clean and slightly grease activation button. Check for any blockages in either the syphon tube, Hose assembly or head assembly. Check the condition of the hose and nozzle assembly. Check head assembly operates correctly and activation pin moves in a downward direction in a smooth manner. Examine gas cartridge and bursting disc for corrosion or damage or any other defects. Remove and replace if any issues are found. Replace all O-rings or seals. Any parts fitted must be the manufactured parts for the extinguisher in situ or a verified alternative. Evidence of any verified alternative parts must be obtained from the supplier and then submitted to TFL for assurances purposes
i) Weigh & Record Extinguisher Cartridge weight. Check against the marked mass on cartridge (Brutto weight). As per British Standards, there is to be no tolerance on the weight of a cartridge. If it has lost weight or is overweight, it must be replaced during the maintenance being carried out
j) (AFFF only) Weigh and inspect the cartouche. Check manufacture date, bursting disc and general condition of cartouche. Check for cracks, splits, and any other defects. Check water to confirm cartouche has not leaked at any point
k) Fully reassemble extinguisher
l) Weigh entire extinguisher and check against manufacturers specifications to confirm the extinguisher is maintained to the correct operational weight for the make and model being maintained.
m) Complete service label with all relevant service information maintenance label. Wipe extinguisher down and leave in the area where it was in situ.
n) Types of maintenance this extinguisher will require is a commission (5% tolerance on the weight) when being installed, a basic service after 12 months once installed (10% tolerance on weight) or in line with the PPM visit and an extended / discharge test after 5 years. Weight differences in line with BS5306 Standards.

7.1.1 Discharge/ Extended Service of Water/ AFFF Cartridge operated Extinguishers

12Monthly Visit/ Reactive Call Outs

a) Inspect area and confirm the extinguisher is the correct extinguisher for the area and the risk within said area.
b) Confirm the extinguisher complies to manufacturing standards such as BSEN3, BS 7863 has the correct CE mark (if applicable) or valid alternative.
c) Check Pin and Tamper Tag are in place and for signs of possible operation as the extinguisher maybe under pressure. If any of these are missing proceed with caution.
d) Check Extinguisher for any signs of corrosion or damage, condition of hose/nozzle, head assembly & legibility of operating instructions and manufactures servicing instructions.
e) Remove extinguisher from location and take to a designated location where discharge testing/ extended service is compliant with the regulations surrounding this type of maintenance to be carried out.
f) Completely discharge the medium within the extinguisher whilst assessing the throw of the medium and timing the amount of time it takes to fully discharge the medium. Check against manufacturers technical specification sheet to Confirm all elements of the test previously mentioned where met during the test for the make and model of the extinguisher being maintained.
g) Before removing head assembly, allow all residual pressure to be released from the extinguisher.
h) Inspect head assembly unit under the handle for any obstructions, clean and slightly grease activation button. Check for any blockages in either the syphon tube, Hose assembly or head assembly. Check the condition of the hose and nozzle assembly. Check head assembly operates correctly and activation pin moves in a downward direction in a smooth manner. Fully inspect the safety pin before re-fitting to the head assembly.
i) Rinse the extinguisher out with clean water and fully inspect the internal lining and neck threads & the integrity of the extinguisher including the welds, base (removing skirt if possible) for any corrosion, pitting or any other defective issues. If any of these are found the extinguisher should be condemned and removed from site.
j) Replace cartridge and Cartouche (AFFF only) Examine gas cartridge and bursting disc for corrosion, damage or any other defects. Weigh the cartouche and check the date of manufacture. Confirm the cartouche is in date and good condition with no splits, cracks or any other defects are found. Check bursting disc is in place. If any defects are found the cartouche is to be replaced. Weigh & Record Extinguisher Cartridge weight. Check against

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the marked mass on cartridge (Brutto weight). According to the British Standards there is no tolerance on the weight of a cartridge. If it has lost weight or is overweight, it must be replaced during the maintenance being carried out. Confirm there are no defects with the cartridge such as bubbling of the coating, corrosion. If these are found the cartridge must be replaced.

k) Replace all O-rings or seals. Any parts fitted must be the manufactured parts for the extinguisher via the manufacturer or a verified alternative. Evidence of any verified alternative parts must be obtained from the supplier and then submitted to TFL for assurances purposes.
l) Grease neck threads to protect from corrosion.
m) Follow manufacturer's instructions when refilling the extinguisher to Confirm the correct amount of medium is installed into the extinguisher.
n) Reassemble extinguisher and weigh the entire extinguisher to Confirm it is within specification requirements.
o) Fit new service label and complete with all relevant information including the type of service carried out and the date this was completed. The gross weight of the entire extinguisher in kilo grams with the second decimal point included. Date of next service. Date of next extended/discharge test.
p) Wipe extinguisher down so it is clean to use in the event of an emergency.
q) Check any mounting bracket/ wall fixing to confirm the bracket/ wall fixing is correct for the type or model of extinguisher in situ and is firmly fixed to the wall. If there is a fire stand or fire extinguisher cabinet are present, check it is the correct type of fire stand or fire extinguisher cabinet for the area and type/ model of extinguisher in situ. Surface stations have plastic fire stands and fire extinguisher cabinets whereas, sub-surfaces stations have non-conductive tubular metal stands or metal fire extinguisher cabinets due the fire resistance these provide. Check the fire stand or fire extinguisher cabinet for damage or any other type of defects. If the asset is not the correct stand or cabinet or in a bad condition a recommendation to TFL needs to be recorded on the PPM certificate for TFL approval.

7.1.2 Refit the extinguisher back where it was found on site. Wet Chemical & AFFF extinguishers (Stored Pressure)

12 Monthly Visit / Reactive Call Outs

a) Wet Chemical extinguishers are only to be found in canteen areas (No AFFF extinguishers are to be found in these areas)
b) Inspect area extinguisher is present in to confirm it is the right extinguisher for the area and covers the risks present in the area
c) Confirm the extinguisher complies to manufacturing standards such as BSEN3, BS 7863 has the correct CE mark (if applicable) or valid alternative
d) Check Pin and Tamper Tag are in place and for signs of possible operation as the extinguisher maybe under pressure. If any of these are missing proceed with caution.
e) Check Extinguisher for any signs of corrosion or damage, condition of hose/nozzle, head assembly & legibility of operating instructions and manufactures servicing instructions
f) Check any mounting bracket/ wall fixing to confirm the bracket/ wall fixing is correct for the type or model of extinguisher in situ and is firmly fixed to the wall. If there is a fire stand or fire extinguisher cabinet are present, check it is the correct type of fire stand or fire extinguisher cabinet for the area and type/ model of extinguisher in situ. Surface stations have plastic fire stands and fire extinguisher cabinets whereas, sub-surfaces stations have non-conductive tubular metal stands or metal fire extinguisher cabinets due the fire resistance these provide. Check the fire stand or fire extinguisher cabinet for damage or any other type of defects. If the asset is not the correct stand or cabinet or in a bad condition a recommendation to TFL needs to be recorded on the PPM certificate for TFL approval
g) Remove and fully inspect safety pin
h) Inspect under the activation handle, check for any obstructions. Clean and lightly grease the activation button to protect it from corrosion etc
i) Refit safety pin and fit tamper tag to secure safety pin in place
j) Fully inspect the condition of the body and integrity of the extinguisher, including the base and skirt area
k) Remove hose and nozzle assembly and in some cases the hose and lance assembly. Fully inspect of aspects of the hose and nozzle assembly/ Hose and lance assembly. Confirm they are in good condition and have no defects. If defects are found replace with the correct parts or verified alternative. Replace all O-rings or seals. Any parts fitted must be the manufactured parts for the extinguisher via the manufacturer or a verified alternative. Evidence of any verified alternative parts must be obtained from the supplier and then submitted to TFL for assurances purposes

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l) Fully inspect the head assembly, valve chamber and spindle
m) Refit hose and nozzle assembly/ Hose and lance assembly and inspect the housing on the skirt where the nozzle/ lance fits
n) Test the gauge via the correct tooling to confirm the needle is fully functional and is the green area of the gauge. Once tested fit the appropriate dot over the hole in the gauge to protect from dust, grit etc getting inside the gauge and possibly effecting the functionality of the gauge
o) Weigh entire extinguisher and check against manufacturers specifications to confirm the extinguisher is maintained to the correct operational weight for the make and model being maintained
p) Weight tolerances on a commission (installation) are 5 % + or – of the weight dictated on the manufacture's technical specification data sheet for the make and model of the extinguisher being maintained. Weight tolerances on an annual service is 10% of the weight dictated on the manufacture's technical specification data sheet. This is in line with BS5306 standard
q) Fit new or complete service label with all relevant information including the type of service carried out and the date this was completed. The gross weight of the entire extinguisher in kilo grams with the second decimal point included. Date of next service. Date of next extended/discharge test
r) Once the extinguisher is fully maintained, wipe the extinguisher clean for use in the event in an emergency and leave in the area where the unit was found

7.1.3 Wet Chemical & AFFF extinguishers (Stored Pressure) Discharge/ Extended Service & Recharge

5 Year (Extended Service) / Reactive

a) Inspect area extinguisher is present in to confirm it is the right extinguisher for the area and covers the risks present in the area.
b) Confirm the extinguisher complies to manufacturing standards such as BSEN3, BS 7863 has the correct CE mark (if applicable) or valid alternative.
c) Check Pin and Tamper Tag are in place and for signs of possible operation as the extinguisher maybe under pressure. If any of these are missing proceed with caution.
d) Check Extinguisher for any signs of corrosion or damage, condition of hose/nozzle, head assembly & legibility of operating instructions and manufactures servicing instructions.
e) Check any mounting bracket/ wall fixing to confirm the bracket/ wall fixing is correct for the type or model of extinguisher in situ and is firmly fixed to the wall. If there is a fire stand or fire extinguisher cabinet are present, check it is the correct type of fire stand or fire extinguisher cabinet for the area and type/ model of extinguisher in situ. Surface stations have plastic fire stands and fire extinguisher cabinets whereas, sub-surfaces stations have non-conductive tubular metal stands or metal fire extinguisher cabinets due the fire resistance these provide. Check the fire stand or fire extinguisher cabinet for damage or any other type of defects. If the asset is not the correct stand or cabinet or in a bad condition a recommendation to TFL needs to be recorded on the PPM certificate for TFL approval.
f) Remove extinguisher from location and take to a designated location where discharge testing/ extended service is compliant with the regulations surrounding this type of maintenance to be carried out.

g) Completely discharge the medium within the extinguisher whilst assessing the throw of the medium and timing the amount of time it takes to fully discharge the medium. Check against manufacturers technical specification sheet to confirm all elements of the test previously mentioned where met during the test for the make and model of the extinguisher being maintained.
h) Before removing head assembly, allow all residual pressure to be released from the extinguisher.
i) Inspect the head assembly unit under the handle for any obstructions, clean and slightly grease activation button. Check for any blockages in either the syphon tube, Hose assembly or head assembly. Check the condition of the hose and nozzle assembly. Check head assembly operates correctly and activation pin moves in a downward direction in a smooth manner. Fully inspect the safety pin before re-fitting to the head assembly.
j) Rinse the extinguisher out with clean water and fully inspect the internal lining and neck threads & the integrity of the extinguisher including the welds, base (removing skirt if possible) for any corrosion, pitting or any other defective issues. If any of these are found the extinguisher should be condemned and removed from site.

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k) Replace all O-rings or seals. Any parts fitted must be the manufactured parts for the extinguisher via the manufacturer or a verified alternative. Evidence of any verified alternative parts must be obtained from the supplier and then submitted to TFL for assurances purposes.
l) Extinguisher must be refilled with the manufacturer's product or a verified alternative for the make and model of extinguisher being maintained. Evidence of alternative product used must obtained from the supplier and then submitted to TFL for assurance purposes. At all times the manufacturer's guidelines for recharging/ refilling the product must be followed.
m) Loosely replace head assembly with hose & nozzle / hose & lance assembly attached.
n) Weigh entire extinguisher to confirm it is within the accepted tolerances for the make & model of extinguisher being maintained. This can be found via the manufacturer's technical specification data sheet.
o) Tighten head assembly and remove hose & nozzle/ hose & lance assembly.
p) Using calibrated regulator that is set to the correct bar pressure for the extinguisher being maintained and a in date nitrogen bottle, repressurise the extinguisher and observe the functionality of the needle and gauge to confirm the needle stops in the green area of the gauge. If the pressure is correct the needle should hold in the middle of the gauge. If not the gauge maybe faulty or further investigation is required. If fault cannot be rectified the extinguisher may need replacing.
q) Confirm new gauge patch is fitted to deter any moisture or grit effecting the functionality of the needle or gauge.
r) Refit hose & nozzle/ hose & lance assembly and tighten accordingly.
s) Fit new or complete service label with all relevant information including the type of service carried out and the date this was completed. The gross weight of the entire extinguisher in kilo grams with the second decimal point included. Date of next service. Date of next extended/discharge test.
t) Once the extinguisher is fully maintained, wipe the extinguisher clean for use in the event in an emergency and leave in the area where the unit was found.

Low Freeze Additive (LFA)

LFA is to be added, if not already present, to any water-based extinguisher that will be exposed to low external temperatures. Only use compatible LFA to the model being maintained. If LFA is added to an extinguisher, the 'competent person' must do the correct calculations, as per British Standard recommendations, to confirm the correct A class cover is obtained by way of the installation of additional equipment in the area effected. TFL will then assess whether the additional equipment is required. Low Freeze additive effects the A class rating of the extinguisher once installed into the extinguisher. Whilst installing LFA the correct PPE must be always worn. LFA installation must be recorded on the extinguisher via the service label and another label on the face of the extinguisher notifying the user that LFA is present.

7.2 CO2

12 Monthly Visits

a) Inspect area and confirm the extinguisher is the correct extinguisher for the area and the risk within said area
b) Confirm the extinguisher complies to manufacturing standards such as BSEN3, BS 7863. The must carry the correct CE mark (if applicable) or valid alternative.
c) Check Safety Pin and Tamper Tag for signs of operation by way of if they are missing or the tamper tag is missing. If any of these are missing proceed with caution.
d) Check Extinguisher for any signs of corrosion, damage, UV damage or any other defects.
e) Check the legibility of operating instructions (Pictograms) and manufactures maintenance instructions.
f) Check any mounting bracket/ wall fixing to confirm the bracket/ wall fixing is correct for the type or model of extinguisher in situ and is firmly fixed to the wall. If there is a fire stand or fire extinguisher cabinet are present, check it is the correct type of fire stand or fire extinguisher cabinet for the area and type/ model of extinguisher in situ. Surface stations have plastic fire stands and fire extinguisher cabinets whereas, sub-surfaces stations have non-conductive tubular metal stands or metal fire extinguisher cabinets due the fire resistance these provide. Check the fire stand or fire extinguisher cabinet for damage or any other type of defects. If the asset is not the correct stand or cabinet or in a bad condition a recommendation to TFL needs to be recorded on the PPM certificate for TFL approval.
g) Remove Safety Pin. Inspect safety pin, clean under the handle assembly. Clean and slightly grease the activation button. Replace safety pin and secure with relevant coloured tamper tag. (If this system is relevant to the model of extinguisher being worked on).

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h) Inspect head assembly and confirm the pressure release valve is clean and has no obstructions and is clean. If a bursting disc is fitted confirm this is secure.
i) Remove horn assembly and confirm there are no obstructions in the horn assembly. Fully inspect all parts of the horn assembly. In the case of 5kg Co2 units, these have a hose and horn assembly which requires a full inspection. Replace and slightly grease new O-ring/ washer and fit to the horn or hose & horn assembly. Replace all O-rings or seals. Any parts fitted must be the manufactured parts for the extinguisher via the manufacturer or a verified alternative. Evidence of any verified alternative parts must be obtained from the supplier and then submitted to TFL for assurances purposes. Carry out the '45-degree angle test' once the horn assembly is refitted to the 2kg Co2 extinguisher to confirm the horn stays in position if used in the event of a fire. All horns fitted to any 2kg Co2 unit of TFL premises must be of the twin insulation variety and the correct horn or a verified alternative for the make and model of Co2 extinguisher being maintained. 5kg hose and horn assembly must be the correct version or a verified alternative for the make and model being maintained.
j) Weigh the extinguisher without the horn assembly fitted. Compare recorded weight on the scales to the tare or gross weight stamped on the body of the extinguisher when manufactured or refurbished. In the event of a loss of content weight of 5% on a commission and 10% on an annual service replace the unit.
k) Complete up to date service label with all relevant information including commission/ service date, next service date, engineer's initials, date of life expiry of the extinguisher or overhaul date. Service label must have the details of the current company maintaining the asset including current registered address and contact details.
l) Once the extinguisher is fully maintained, wipe the extinguisher clean for use in the event in an emergency and leave in the area where the unit was found.
m) As these extinguishers are classified as "life safety equipment", it is the legal duty of the responsible person to submit this type of extinguisher to an overhaul immediately it is due. (BS5306 Part 3)

7.3 Fire Blankets

12 Monthly Visits/ Reactive Call Outs

a) Check blanket container for condition and fixings
b) Remove Blanket from the holder whilst the blanket is wall fix to test the integrity of the wall fixing and the tabs of the blanket
c) Fully inspect the blanket, in a clean environment to confirm the blanket does not become contaminated
d) Fully inspect for signs of damage, signs of use or deterioration, replace if required
e) Check integrity of tabs and stitching
f) Install Fire Blanket back into the container and fit back where the blanket was found.
g) Update maintenance label with all relevant service information
h) Fire blankets are to be replaced after 7 years after the date of manufacture, used, defective or stolen
i) Fire blanket signage is to be fitted to the wall and maintenance/ service label to only be fitted to the container of the Fire blanket

Service Labels

Fully completed service labels must always be found on the side of the extinguisher whilst it is in service. This label is usually a paper or vinyl label. In some areas of the TFL estate it is required that metal service labels are fitted as a back up to the paper/ vinyl labels as some areas are damp and this can affect the legibility of the paper/ vinyl service label. The metal service label is to be fully punched in the appropriate date space and attached to the extinguisher using a cable tie. This label is usually fitted around the top of the hose assembly close to the head assembly.

8. Maintenance Procedures – LFB Box

12 Monthly Visits

a) Inspect the box chassis, door, hinges and lock for condition and operation
b) Check the box chassis wall support/fixings
c) Check the box signage for condition and legibility
d) Clean the box (externally) and signage with appropriate materials

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Appendices

Appendix A - Fire Main (Flow & Pressure) Testing Requirements

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Appendix A - Fire Main (Flow & Pressure) Testing Requirements

In accordance with TfL Category 1 Standard S1084 A3, 'Table 1' identifies the testing requirements for the differing Fire Main construction (pipework) types found within London Underground Stations.

Where site or line specific O&M type documentation 'or' Company instruction is provided for the testing of Fire Main systems, this information will supersede the requirements provided in Table 1.

Within both the site-specific MARS and an all-sites testing spreadsheet, record all system pressure test results and flow test readings.

Table 1

Fire Main Type/ Construction (pipework)	Pressure Testing requirements	Flow Testing requirements
Steel - Dry/Wet Dropper * Installed before 31/05/2006	10bar – 15mins	4-5 bar at 1500 l/min (750l +/- 75) L/min at (4-5 bar) per outlet
Steel - Dry/Wet Dropper * Installed after 31/05/2006	10bar – 15mins	8bar +/- 0.5bar at 1500 l/min (750l +/- 75) L/min at (8 +/- 0.5 bar) per outlet
Steel - Dry/Wet Dropper * Installed after 31/01/2015	12bar – 15mins	8bar +/- 0.5bar at 1500 l/min (750l +/- 75) L/min at (8 +/- 0.5 bar) per outlet
Steel - Pump or Towns Mains Fed * Installed before 31/05/2006	10bar – 15mins	4-5 bar at 1500 l/min (750l +/- 75) L/min at (4-5 bar) per outlet
Steel - Pump or Towns Mains Fed * Installed after 31/05/2006	10bar – 15mins	8bar +/- 0.5bar at 1500 l/min (750l +/- 75) L/min at (8 +/- 0.5 bar) per outlet
Steel - Pump or Towns Mains Fed * Installed after 31/01/2015	12bar – 15mins	8bar +/- 0.5bar at 1500 l/min (750l +/- 75) L/min at (8 +/- 0.5 bar) per outlet
Cast-Iron – Towns Mains systems	Working Pressure	Full flow to 1500 l/min (750 L/min per outlet)
Cast-Iron – Dry Dropper systems	Pressure test to outlet working pressure of 4 - 5bar	4-5 bar at 1500 l/min (750l +/- 75) L/min at (4-5 bar) per outlet
Steel & Cast-Iron (Hybrid) – All systems	Pressure tested to 4 – 5bar	Full flow to 1500 l/min per outlet and at Pressures applicable to those noted above for the installation date.

* All configurations with PRV and/or PRLV

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Version	Modification Commentary	Sections Modified	Date Modified	Modified by
Master V1	See Draft V3.5 for prior updates	N/A	18/10/23	[redacted]
Master V1.1	Multiple updates, see ITT PPM Tec Spec v1.1 change commentary document	Multiple	07/11/23	

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APPENDIX E

MAINTENANCE ACTIVITY RECORD SUBMISSION EXAMPLE

The document labelled “APPENDIX E MAINTENANCE ACTIVITY RECORD SUBMISSION EXAMPLE" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX F

SAMPLE FAULT DATA

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APPENDIX G

COMPANY HERITAGE MAP

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APPENDIX H

BUSINESS UNIT ASSET MANAGEMENT SYSTEM

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APPENDIX I

MAINTENANCE MATRIX

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APPENDIX J

EQUIPMENT HIERARCHY SPECIFICATION

The document labelled “APPENDIX J EQUIPMENT HIERARCHY SPECIFICATION" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX K

AMS SUPPLIER PROCESSES

The document labelled “APPENDIX K AMS SUPPLIER PROCESSES" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX L

TFL HAZARDOUS MATERIALS REGISTER

SAMPLE DATA

The document labelled "APPENDIX L TFL HAZARDOUS MATERIALS REGISTER - SAMPLE DATA" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX M

COMPANY OWNED SPARES, MATERIALS AND EQUIPMENT

The document labelled "APPENDIX M COMPANY OWNED SPARES, MATERIALS AND EQUIPMENT" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 12:28am (Message Id: MSG255305726.4)

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APPENDIX N

EQUIPMENT REGISTERS

The document labelled "APPENDIX N EQUIPMENT REGISTERS" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX O

FAULT ALLOCATION MATRIX

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APPENDIX P

EARLY WORKING INITIATIVE

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APPENDIX Q

INTERFACE BOUNDARIES WITH THE ELIZABETH LINE INFRASTRUCTURE

The document labelled "APPENDIX Q INTERFACE BOUNDARIES WITH THE ELIZABETH LINE INFRASTRUCTURE" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX R

BUSINESS UNIT SPECIFIC REQUIREMENTS

The document labelled "APPENDIX R BUSINESS UNIT SPECIFIC REQUIREMENTS" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX S

BUSINESS UNIT SPECIFIC DATA

The document labelled "APPENDIX S BUSINESS UNIT SUPPORTING DATA" which was shared to the Supplier via the TfL SAP Ariba E-Tendering Portal and which was acknowledged by the Supplier on 20 August 2024 at 10:18am (Message Id:MSG255305726.2)

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APPENDIX T

NOT USED

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APPENDIX U

GREENWICH POWER STATION

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APPENDIX V

Not used

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Schedule 3

Payment

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Schedule 3

Payment

1 DEFINITIONS

1.1 For the purposes of this Schedule 3 (*Payment*), the following terms have the following meanings:

"Additional Works Volume Discount Percentage" means additional works volume discount percentage set out in paragraph 1 of Part G (*Volume Discount Percentage*) to this Schedule 3 (*Payment*);

"Annual Account Adjustment" means the amount calculated in accordance with paragraph 4.2 (*Annual Account Adjustment*) of this Schedule 3 (*Payment*);

"Core Team" has the meaning given to it in paragraph 5 of the Specification;

"Core Team Annual Amount" means the amount for each Financial Year set out in paragraph 1 of Part C (*Core Team Annual Amount*) of this Schedule 3 (*Payment*) as may be adjusted in accordance with Part E (*Price Adjustment for Inflation*) of this Schedule 3 (*Payment*);

"Core Team Price" means the price per Period calculated in accordance with paragraph 2.6(b) (*Core Team Price*) of this Schedule 3 (*Payment*);

"CPI" means the Consumer Prices Index published by the Office for National Statistics or failing such publication or in the event of a fundamental change to the index, such other index as the Parties may agree, or such adjustments to the index as the Parties may agree (in each case with the intention of putting the Parties in a no better or worse position than they would have been had the index not ceased to be published or the relevant fundamental change not been made) or, in the event that no such agreement is reached, as may be determined in accordance with the provisions of Schedule 5 (*Dispute Resolution Procedure*);

"Equipment Register Data Capture Price" means the price set out in paragraph 1 of Part A (*Planned Preventative Maintenance Unit Prices and the Equipment Register Data Capture Price*) to this Schedule 3 (*Payment*) payable by the Company to the Supplier for each Equipment Register Data Capture completed in accordance with the Contract, and evidenced in the Company's AMS;

"Fee" means the fee per Period calculated in accordance with paragraph 2.7(b) (*the Fee*) of this Schedule 3 (*Payment*) which shall be inclusive of:

(a) head office overheads;

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(b) managerial and supervisory staff costs where required in addition to the Core Team;

(c) all training costs and time associated with training;

(d) insurance costs (including employers liability, public liability, professional indemnity, travel insurance and vehicle insurances but excluding medical insurance relating to Supplier Personnel in the performance of the Services);

(e) profit; and

(f) all other costs incurred by the Supplier in the delivery of the Services but not recovered through the cost components A, B, C and D referred to in paragraph 2.2 (*the Price*) of this Schedule 3 (*Payment*);

"Fee Percentage" means the percentage set out in Part D (*Fee Percentage*) of this Schedule 3 (*Payment*);

"Forecast Number of Isolation Services Requests" means the number of requests relating to the Isolation Services set out in the third column of the table set out in paragraph 4 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*) as may be adjusted annually in accordance with paragraph 4.1(a)(ii) (*Annual Process*) of this Schedule 3 (*Payment*);

"Forecast Number of Reactive Maintenance Work Orders" means the number of Work Orders relating to the Reactive Maintenance Services set out in the fourth column of the table set out in paragraph 2 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*) as may be adjusted annually in accordance with paragraph 4.1(a)(ii) (*Annual Process*) of this Schedule 3 (*Payment*);

"Isolation Services Price" means the price per Period for the provision of the Isolation Services as calculated in accordance with paragraph 2.5(b) (*Isolation Services Price*) of this Schedule 3 (*Payment*);

"Isolation Services Requests" means the requests relating to the Isolation Services as identified in the Asset Management System;

"Isolation Services Unit Price" means the unit price set out in paragraph 3 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) to this Schedule 3 (*Payment*) as may be adjusted in accordance with Part E (*Price Adjustment for Inflation*) to this Schedule 3 (*Payment*);

"Mobilisation Fee" means the fee set out in Part F (*Mobilisation Fee*) of this Schedule 3 (*Payment*);

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"Mobilisation Payment" has the meaning given to that term in paragraph 9.3(b) to Schedule 14 (*Mobilisation Requirements*);

"Non-Services to Site Attendance" has the meaning given to that term in paragraph 8.1.5 of Schedule 2 (*Specification*);

"Non-Services to Site Attendance Price" means the price per Period calculated in accordance with paragraph 2.9(b) (*Non-Services to Site Attendance Price*) of this Schedule 3 (*Payment*);

"Non-Services to Site Attendance Unit Price" means the unit price set out in Part I (*Non-Services to Site Unit Price*) to this Schedule 3 (*Payment*) as may be adjusted in accordance with Part E (*Price Adjustment for Inflation*) to this Schedule 3 (*Payment*);

"Other Services Volume Discount Percentage" means other services volume discount percentage set out in paragraph 2 of Part G (*Volume Discount Percentage*) to this Schedule 3 (*Payment*);

"Payment Assessment Date" means the date falling five (5) days after the end of each Period;

"Planned Preventative Maintenance Asset Category" means each category set out in Part A (*Planned Preventative Maintenance Unit Prices and the Equipment Register Data Capture Price*) to this Schedule 3 (*Payment*);

"Planned Preventative Maintenance Price" means the price per Period for the provision of Planned Preventative Maintenance Services and completion of Equipment Register Data Captures (where applicable), as calculated in accordance with paragraph 2.3(b) (*Planned Preventative Maintenance Price*) of this Schedule 3 (*Payment*);

"Planned Preventative Maintenance Unit Price" means the unit price set out in paragraph 1 of Part A (*Planned Preventative Maintenance Unit Prices and the Equipment Register Data Capture Price*) to this Schedule 3 (*Payment*) as may be adjusted in accordance with Part E (*Price Adjustment for Inflation*) to this Schedule 3 (*Payment*);

"Planned Preventative Maintenance Work Orders" means the Work Orders relating to the Planned Preventative Maintenance Services as identified in the Asset Management System;

"Reactive Maintenance Asset Category" means each category set out in paragraph 1 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) to this Schedule 3 (*Payment*);

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"Reactive Maintenance Price" means the price per Period for the provision of the Reactive Maintenance Services as calculated in accordance with paragraph 2.4(b) (*Reactive Maintenance Price*) of this Schedule 3 (*Payment*);

"Reactive Maintenance Unit Price" means the unit price set out in paragraph 1 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) to this Schedule 3 (*Payment*) as may be adjusted in accordance with Part E (*Price Adjustment for Inflation*) to this Schedule 3 (*Payment*);

"Reactive Maintenance Work Orders" means the Work Orders relating to the Reactive Maintenance Services as identified in the Asset Management System; and

"Unit Price" means the Planned Preventative Maintenance Unit Price, the Reactive Maintenance Unit Price and the Isolation Services Unit Price.

2 PAYMENT

2.1 General clauses

The Parties acknowledge and agree that:

(a) the Price shall be inclusive of all costs and expenses (including, but not limited to all labour costs, materials, equipment, subcontractors, tools and protective equipment, profit, overhead, travel costs including parking and congestion charges; and travel time) of whatsoever nature and howsoever incurred by the Supplier in consideration of the provision of the Services and the performance of the Supplier's obligations in accordance with this Contract, including as detailed in this Schedule 3 (*Payment*);

(b) Bank Holidays, Public Holidays and leap years have been accounted for in the Price and the Supplier is not entitled to any further adjustment to take account of such days;

(c) the Price shall be fixed for the duration of this Contract save where varied in accordance with the terms of this Contract;

(d) the Supplier shall raise one Payment Application per Period in accordance with the process set out in Clause 18.3 and this Schedule 3 (*Payment*); and

(e) any costs that the Supplier incurs in re-performing the Services in accordance with Clause 19 (*Performance Measurement*) of this Contract shall be borne by the Supplier and shall not be taken into account when calculating the Price pursuant to this Schedule 3 (*Payment*).

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2.2 The Price

The Price for each Period shall be calculated as follows:

Price =	A + B + C + D + E + F + G + H

where:

A	means the Planned Preventative Maintenance Price;
B	means the Reactive Maintenance Price;
C	means the Isolation Services Price;
D	means the Core Team Price;
E	means the Fee;
F	means, if applicable, the Additional Works Price;
G	means any Annual Account Adjustment which is to be made in the Payment Application for that Period; and
H	means, if applicable, the Non-Services to Site Attendance Price.

2.3 Planned Preventative Maintenance Price

(a) The Supplier may include in each Payment Application the Planned Preventative Maintenance Price.

(b) The Planned Preventative Maintenance Price shall be calculated in accordance with the following formula:

Planned Preventative Maintenance Price =	$\sum PPM$; and
PPM =	(PPMWO x PPMUP) + (ERDC x ERDCP)

where:

∑ PPM	is the sum of the values of PPM for each Planned Preventative Maintenance Asset Category;

PPMWO	is the total number of Planned Preventative Maintenance Work Orders completed in the Period to which the Payment Application relates in a Planned Preventative Maintenance Asset Category;
PPMUP	is the Planned Preventative Maintenance Unit Price applicable to that Planned Preventative Maintenance Asset Category as set out in Part A (*Planned Preventative Maintenance Unit Prices and the Equipment Register Data Capture Price*) of this Schedule 3 (*Payment*);
ERDC	is the total number of Equipment Register Data Captures completed in the Period to which the Payment Application relates, provided that there shall only be one Equipment Register Data Capture per item of Equipment; and
ERDCP	is the Equipment Register Data Capture Price as set out in Part A (*Planned Preventative Maintenance Unit Prices and the Equipment Register Data Capture Price*) of this Schedule 3 (*Payment*).

(c) For the purposes of paragraph 2.3(b), the number of Planned Preventative Maintenance Work Orders completed in the relevant Period shall be the number shown in the Asset Management System, as verified by any audits carried out by the Company in accordance with this Contract.

2.4 Reactive Maintenance Price

(a) The Supplier may include in each Payment Application the Reactive Maintenance Price.

(b) The Reactive Maintenance Price shall be calculated in accordance with the following formula:

Reactive Maintenance Price =	$\sum RM$; and
RM =	FRMWO x RMUP

where:

∑ RM	is the sum of the values of RM for each Reactive Maintenance Asset Category;
FRMWO	is the Forecast Number of Reactive Maintenance Work Orders for the Period to which the Payment Application relates in a Reactive Maintenance Asset Category; and
RMUP	is the Reactive Maintenance Unit Price applicable to that Reactive Maintenance Asset Category as set out in paragraph 1 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*).

2.5 Isolation Services Price

(a) The Supplier may include in each Payment Application the Isolation Services Price.

(b) The Isolation Services Price shall be calculated in accordance with the following formula:

Isolation Services Price =	FNISR x ISUP

where:

FNISR	is the Forecast Number of Isolation Services Requests for the Period to which the Payment Application relates; and
ISUP	is the Isolation Services Unit Price as set out in paragraph 3 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*).

2.6 Core Team Price

(a) The Supplier may include in each Payment Application the Core Team Price.

(b) The Core Team Price shall be calculated in accordance with the following formula:

Core Team Price =	$\frac{\text{Core Team Annual Amount}}{13}$

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2.7 The Fee

(a) The Supplier may include in each Payment Application the Fee.

(b) The Fee shall be calculated in accordance with the following formula:

Fee =	(A + B + C) x FP

where:

A, B and C	have the same meaning as set out in paragraph 2.2 (*the Price*) of this Schedule 3 (*Payment*) for the relevant Period; and
FP	is the Fee Percentage.

2.8 Additional Works Price

Where Additional Works are carried out in accordance with Schedule 4 (*Contract Variation Procedure and Additional Works*) and completed in the Period to which the Payment Application relates, the Supplier may include in that Payment Application the Additional Works Price.

2.9 Non-Services to Site Attendance Price

(a) Where a Non-Services to Site Attendance occurs in a Period to which the Payment Application relates, the Supplier may include in that Payment Application the Non-Services to Site Attendance Price.

(b) The Non-Services to Site Attendance Price shall be calculated in accordance with the following formula:

Non-Services to Site Attendance Price =	NSSA x NSSAUP

where:

NSSA	is the number of occurrences of a Non-Services to Site Attendance in that Period, provided that there may only be

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	one Non-Services to Site Attendance in respect of each Site during the term of the Contract; and
NSSAUP	is the Non-Services to Site Attendance Unit Price.

(c) Where a Non-Services to Site Attendance occurs, the relevant Planned Preventative Maintenance Work Order shall not be treated as completed for the purposes of paragraph 2.3 (*Planned Preventative Maintenance Price*) of this Schedule 3 (*Payment*).

2.10 Payment process

(a) The Supplier shall assess the amount due and, by each Payment Assessment Date, shall apply to the Company for payment. There shall be a Payment Assessment Date in each Period from the Commencement Date until the Expiry Date in respect of the Services.

(b) The Supplier shall submit its assessment of the amount due in accordance with paragraph 2.2 (*the Price*) of this Schedule 3 (*Payment*) to the Company's Representative not less than five (5) days after the end of the last Period (each, a "Payment Application"). The Supplier shall submit any supporting documents that are reasonably necessary to enable the Company's Representative to check the Supplier's assessment of the amount due. The Payment Application and supporting documents (if any) shall specify the Supplier's assessment of the amount due to the end of the Period to which the Payment Application relates and the basis upon which that sum is calculated.

(c) The Company shall pay the Supplier the Price, subject to paragraph 2.11 (*HGCRA Requirements*) and such deductions and additional payments due under the Contract in respect to:

(i) the Mobilisation Payment;

(ii) performance adjustment in accordance with paragraph 3 (*Performance Measurement*) of this Schedule 3 (*Payment*);

(iii) adjustments in connection with Variation Orders in accordance with Part A of Schedule 4 (*Contract Variation Procedure and Additional Works*);

(iv) termination payments in accordance with Clause 44 (*Compensation on Termination*) of this Contract; and

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(v) other sums that may be payable by the Company to the Supplier or recoverable by the Company from the Supplier under the Contract.

(d) Any tax which the law requires the Company to pay to the Supplier is included in the amount due. If the amount to be paid to the Supplier is less than the amount to be paid by or retained from the Supplier, the difference is recoverable from the Supplier as a debt due on demand.

(e) Payments of the Price made by the Supplier in a currency other than the currency of this Contract shall be included in the amount due as payments to be made to the Supplier in the same currency.

(f) If any performance bond or parent company guarantee required by this Contract is not procured by the Supplier and delivered to the Company in accordance with Clause 53 (*Bonds, Warranties and Guarantees*) of this Contract then without prejudice to any other rights and remedies the Company may have, fifty per cent (50%) of the Price due to the Supplier may be retained in assessment of the amount due and shall not be payable to the Supplier until such documents have been delivered.

2.11 HGCRA Requirements

(a) The Company's Representative shall issue a payment notice to the Supplier within twenty-one (21) days of receipt of the Supplier's Payment Application (a "Payment Notice"). The first payment shall be the amount due. Other payments shall be the change in the amount due since the last payment certificate. A payment shall be made by the Supplier to the Company if the change reduces the amount due. Other payments are made by the Company to the Supplier. Payments shall be in the currency of this Contract unless otherwise stated in this Contract.

(b) For the purposes of Sections 109 to 111 of the HGCRA:

(i) the Payment Notice shall constitute a payment notice for the purposes of Section 110A of the HGCRA and the Company's Representative shall notify the Supplier of the amount that the Company's Representative considers to be due to the Supplier at the end of the Period to which the Payment Notice relates, if any, and the basis on which the amount is calculated and it is immaterial if the amount referred to in the Payment Notice is zero;

(ii) within seven (7) days of receipt of a Payment Notice (or if the Company's Representative has not issued a Payment Notice, within seven (7) days of the last date upon which a Payment Notice complying with paragraph

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2.11(a) could have been issued), the Supplier shall deliver to the Company's Representative a VAT invoice in the amount of the Payment Notice (or if a Payment Notice has not been issued in accordance with paragraph 2.11(a), the amount stated in the Supplier's Payment Application), with a copy of the Payment Notice (or relevant Payment Application if a Payment Notice has not been issued in accordance with paragraph 2.11(a)) attached; and

(iii) the date on which a payment becomes due is sixteen (16) days after the date on which the Company's Representative receives the Supplier's Payment Application in accordance with paragraph 2.10(b).

(c) The final date for payment of each invoice shall be twenty one (21) days after the date payment becomes due under paragraph 2.11(b)(iii) above.

(d) Subject to paragraphs 2.11(e) and (f) of this Schedule 3 (*Payment*), the Company shall pay the Supplier the sum referred to in the Payment Notice (or, if the Company's Representative has not served a Payment Notice, the sum referred to in the Supplier's Payment Application under paragraph 2.10(b)) (the "notified sum") on or before the final date for payment.

(e) If the Company intends to pay less than the notified sum, the Company's Representative shall notify the Supplier no later than one (1) day (the "Prescribed Period") before the final date for payment. The notice (a "**pay less notice**") shall specify:

(i) the amount the Company considers to be due for the relevant Period on the date the notice is served and any basis upon which that sum is calculated; or

(ii) if there is more than one basis, each basis and the amount attributed to it.

It is immaterial for the purposes of this paragraph 2.11(e) that the amounts referred to in sub-paragraphs (i) or (ii) may be zero. Where a notice is given under this paragraph 2.11(e), paragraph 2.11(d) applies only in respect of the sum specified in that pay less notice pursuant to this paragraph 2.11(e).

(f) Notwithstanding paragraphs 2.11(c) and (d) and without prejudice to Clause 44.2 if the Supplier is subject to an event set out in Clause 43.1(d) after the Prescribed Period, the Company shall not be required to pay the Supplier the notified sum on or before the final date for payment.

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(g) The Company's Representative shall correct any wrongly assessed amount due in a later payment certificate.

(h) The amount due is exclusive of any VAT. For the avoidance of doubt, notwithstanding the other terms of this paragraph, the Company shall be under no obligation to make any payment to the Supplier whatsoever in respect of VAT until the Supplier has provided to the Company a VAT invoice in the relevant amount. To the extent that any VAT paid by the Company in respect of any goods or services supplied by the Supplier under the Contract has been charged in error, is charged at a higher rate of VAT than is properly applicable, or there is an agreed reduction in the value of the supply between the Supplier and the Company, the Supplier shall without delay (and in any event within one (1) month of the mistake being discovered or a reduction being agreed) issue a valid credit note to the Company in respect of such VAT and the Supplier shall repay to the Company any such VAT paid by the Company to the Supplier in error in respect of supplies made under the Contract.

(i) Any payment made by the Company under the Contract, including any final payment, shall not prevent the Company from recovering any amount overpaid or wrongfully paid, however such payments may have arisen including, but not limited to, those amounts paid to the Supplier by mistake of law or fact. The Company's Representative shall be entitled to withhold from any sums due or which may become due to the Supplier from the Company any amount which the Company's Representative considers to be due or which may become due from the Supplier assessed on the basis of the Company's Representative's bona fide estimate, provided that an appropriate written notice to pay less has been served by the Company's Representative on the Supplier. Such estimates shall bind the Supplier unless varied by agreement between the Parties or by any award, decision, order or judgement, whichever is the earlier.

(j) A diagram setting out the payment process described in this paragraph 2.11 is set out in Part J (*Payment Process Example*) of this Schedule 3 (*Payment*).

2.12 Late Payment

(a) If any payment is not made in full by the final date for payment and no effective pay less notice is issued to the Supplier, the Supplier may suspend the performance of this Contract.

(b) The Supplier shall not exercise his right to suspend performance of this Contract for late payment unless it has given notice to the Company stating:

(i) its intention to suspend the performance of this Contract, and

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(ii) the grounds for suspending the performance of this Contract.

(c) The Supplier shall notify the Company not less than 7 days before the date on which it intends to suspend the performance of this Contract.

(d) Suspended performance shall be ended when the amount that should have been paid to the Supplier is paid to it in full. The Supplier shall resume performance on the next Working Day after payment is made unless the Company instructs otherwise.

(e) If a certified payment is late, or if a payment is late because the Company's Representative does not issue a certificate which it should issue, interest is paid on the late payment. Interest is assessed from the final date for payment until the date when the late payment is made and shall be included in the first assessment after the late payment is made.

3 PERFORMANCE MEASUREMENT

3.1 The Company shall have the right to levy Abatements in accordance with the provisions of Schedule 18 (*Performance Measurement*).

3.2 The Company may:

(a) deduct the Abatements from the Fee in accordance with paragraph 2.10(c)(ii) of this Schedule 3 (*Payment*); or

(b) recover the Abatements from the Supplier as a debt due on demand.

4 ANNUAL ACCOUNT ADJUSTMENT

4.1 Annual Process

(a) Within 40 Working Days of the end of each Financial Year, the Company shall notify the Supplier in writing of:

(i) the proposed:

(A) Reactive Maintenance Cost Reconciliation Amount calculated in accordance with paragraph 4.3 (*Reactive Maintenance Cost Reconciliation Amount*) of this Schedule 3 (*Payment*);

(B) Isolation Services Cost Reconciliation Amount calculated in accordance with paragraph 4.4 (*Isolation Services Cost Reconciliation Amount*) of this Schedule 3 (*Payment*);

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(C) Additional Works Volume Discount calculated in accordance with paragraph 4.4 (*Additional Works Volume Discount*) of this Schedule 3 (*Payment*); and

(D) Other Services Volume Discount calculated in accordance with paragraph 4.6 (*Other Services Volume Discount*) of this Schedule 3 (*Payment*),

together, being the "**Proposed Annual Final Account Amounts**"; and

(ii) the Forecast Number of Reactive Maintenance Work Orders and the Forecast Number of Isolation Services Requests which shall apply in the next Financial Year, such number to be determined by the Company in its absolute discretion.

(b) Within 20 Working Days of receipt of the notice pursuant to paragraph 4.1(a), the Supplier shall notify the Company in writing if it (acting reasonably) accepts or rejects the Proposed Annual Final Account Amounts submitted by the Company. If the Supplier does not accept the Proposed Annual Final Account Amounts, it shall submit to the Company its alternative proposal in writing and provide any supporting evidence reasonably requested by the Company.

(c) Within 20 Working Days of receipt of the Supplier's response pursuant to paragraph 4.1(b), the Company shall confirm in writing if it (at its absolute discretion) accepts or rejects the Supplier's alternative proposal.

(d) Where:

(i) the Proposed Annual Final Account Amendment is accepted by the Supplier pursuant to paragraph 4.1(b); or

(ii) the Supplier's alternative proposal is accepted by the Company pursuant to paragraph 4.1(c),

the Reactive Maintenance Cost Reconciliation Amount, the Isolation Services Cost Reconciliation Amount, the Additional Works Volume Discount and the Other Services Volume Discount shall be the "**Agreed Reactive Maintenance Cost Reconciliation Amount**", the "**Agreed Isolation Services Cost Reconciliation Amount**", the "**Agreed Additional Works Volume Discount**" and the "**Agreed Other Services Volume Discount**" for the purposes of paragraph 4.2 (*Calculation of the Annual Account Adjustment*) of this Schedule 3 (*Payment*).

(e) If the Company rejects the Supplier's alternative proposal pursuant to paragraph 4.1(c), the Supplier may refer the matter to the dispute resolution process under

Clause 65 (*Dispute Resolution*) of this Contract. Notwithstanding such referral, the Proposed Annual Final Account Amounts shall be deemed to be the "**Agreed Reactive Maintenance Cost Reconciliation Amount**", the "**Agreed Isolation Services Cost Reconciliation Amount**", the "**Agreed Additional Works Volume Discount**" and the "**Agreed Other Services Volume Discount**" for the purposes of paragraph 4.2 (*Calculation of the Annual Account Adjustment*) of this Schedule 3 (*Payment*) pending the outcome of any such Dispute.

4.2 Calculation of the Annual Account Adjustment

(a) The Annual Account Adjustment ("**AAA**") shall be calculated as follows:

AAA =	ARMCRA + AISCRA + AAWVD + AOSVD
AAA may be a positive or negative number	

where:

ARMCRA	means the Agreed Reactive Maintenance Cost Reconciliation Amount;
AISCRA	means the Agreed Isolation Services Cost Reconciliation Amount;
AAWVD	means the Agreed Additional Works Volume Discount; and
AOSVD	means the Agreed Other Services Volume Discount.

(b) The Parties agree that:

(i) where AAA is a positive number, that amount shall be included in the next Payment Application and shall be paid to the Supplier by the Company; and

(ii) where AAA is a negative number, that amount shall be deducted from the next Payment Application and the Company may treat it as a debt due.

4.3 Reactive Maintenance Cost Reconciliation Amount

(a) If the number of Reactive Maintenance Work Orders in a Reactive Maintenance Asset Category completed by the Supplier in a Financial Year is greater or less than the Forecast Number of Reactive Maintenance Work Orders for that

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Reactive Maintenance Asset Category by five per cent (5%) or less, there shall be no Reactive Maintenance Cost Reconciliation Amount.

(b) If the number of Reactive Maintenance Work Orders in a Reactive Maintenance Asset Category completed by the Supplier in a Financial Year is greater or less than the Forecast Number of Reactive Maintenance Work Orders for that Reactive Maintenance Asset Category by more than five per cent (5%), the Reactive Maintenance Cost Reconciliation Amount shall be calculated in accordance with the following formula:

RMCRA =	∑ RMCR; and
RMCR =	ATRMWO x RMUP,
RMCRA may be a positive or negative number	

where:

∑ RMCR	is the sum of the values of RMCR for each Reactive Maintenance Asset Category;
ATRMWO	is the number of Reactive Maintenance Work Orders in a Reactive Maintenance Asset Category completed by the Supplier in that Financial Year which exceed or are less than the Forecast Number of Reactive Maintenance Work Orders for that Reactive Maintenance Asset Category by more than 5 per cent (5%); and
RMUP	is the Reactive Maintenance Unit Price applicable to that Reactive Maintenance Asset Category as set out in paragraph 1 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*).

4.4 Isolation Services Cost Reconciliation Amount

(a) If the total number of Isolation Services Requests completed by the Supplier in a Financial Year is greater or less than the Forecast Number of Isolation Services Requests by five per cent (5%) or less, there shall be no Isolation Services Cost Reconciliation Amount.

(b) If the total number of Isolation Services Requests completed by the Supplier in a Financial Year is greater or less than the Forecast Number of Isolation Service

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Requests by more than five per cent (5%), the Isolation Services Cost Reconciliation Amount shall be calculated in accordance with the following formula:

ISCRA =	ANISR x ISUP,
ISCRA may be a positive or negative number	

where:

ANISR	is the actual number of Isolation Services Requests completed by the Supplier in that Financial Year which exceed or are less than the Forecast Number of Isolation Services Requests by more than 5 per cent (5%); and
ISUP	is the Isolation Services Unit Price as set out in paragraph 3 of Part B (*Reactive Maintenance and Isolation Services Payment Profile*) of this Schedule 3 (*Payment*).

4.5 Additional Works Volume Discount

The Company shall calculate the Additional Works Volume Discount for each Financial Year in accordance with the following formula:

AWVD =	AWS x AWVDP
AWVD shall be a negative number	

where:

AWS	means the amount paid by the Company in that Financial Year in respect of any Additional Works carried out by the Supplier, as identified in the Asset Management System and verified by any audits carried out by the Company in accordance with this Contract; and
AWVDP	means the Additional Works Volume Discount Percentage.

4.6 Other Services Volume Discount

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The Company shall calculate the Other Services Volume Discount for each Financial Year in accordance with the following formula:

OSVD =	OS x OSVDP
OSVD shall be a negative number	

where:

OS	means the amount paid by the Company in that Financial Year in respect of the Services (excluding any Additional Works) carried out by the Supplier, as identified in the Asset Management System and verified by any audits carried out by the Company in accordance with this Contract; and
OSVDP	means the Other Services Volume Discount Percentage.

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Schedule 4

Contract Variation Procedure and Additional Works

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Schedule 4

Contract Variation Procedure and Additional Works

Part A – Contract Variation Procedure

1 DEFINITIONS AND GENERAL TERMS

1.1 For the purposes of this Part A (Contract Variation Procedure) to Schedule 4 (Contract Variation Procedure and Additional Works), "Unit Prices" shall have the meaning given to that term in paragraph 1.1 of Schedule 3 (Payment).

1.2 Without prejudice to paragraph 2.4 below, the cost of any Variation Order shall be agreed between the Parties taking account of the reasons why the Variation Order was required.

2 VARIATIONS PROPOSED BY THE COMPANY

2.1 The Company may propose a variation by completing Part A of the Variation Proposal and submitting it to the Supplier.

2.2 Within five (5) Working Days of receipt of the Variation Proposal submitted pursuant to paragraph 2.1 (or within such other time period as may be agreed by the Company provided that the Supplier requests any extension to such period before the end of the fifth Working Day following receipt of the Variation Proposal), the Supplier shall complete Part B of the Variation Proposal and shall issue the Variation Proposal to the Company.

2.3 The Company shall be entitled, at any time within twenty (20) Working Days of receipt of Part B of the Variation Proposal issued pursuant to paragraph 2.2, to instruct and authorise the Supplier to proceed with the variation on the terms set out in the Variation Proposal by completing and signing Part C of the Variation Proposal (which, following such signature, will be referred to as a "**Variation Order**") and supplying such Variation Order to the Supplier.

2.4 The Supplier shall carry out the variation in accordance with the Variation Order on the terms determined by the Company and such variation shall take effect no later than five (5) Working Days (unless otherwise instructed by the Company) following receipt of the signed Variation Order by the Supplier.

2.5 Where the terms are not agreed by the Supplier, or where the Supplier fails to provide Part B of the Variation Proposal to the Company within the timescales set out in paragraph 2.2 above, the variation shall be deemed to be agreed and the Supplier shall proceed, at the request of the Company, to implement the variation in accordance with the specified terms within five (5) Working Days (unless otherwise instructed by the Company) of receipt of the original Variation Proposal by the Supplier.

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2.6 Where any Variation Order is disputed by the Supplier, the Supplier may refer this matter to the dispute resolution procedure pursuant to Schedule 5 (Dispute Resolution Procedure) but is required to implement the variation pending the outcome of the Dispute.

3 VARIATIONS PROPOSED BY THE SUPPLIER

3.1 The Supplier may propose a variation, after requesting the issue by the Company of a Variation Proposal variation number, by completing Parts A and B of a Variation Proposal and supplying it to the Company.

3.2 The Company shall be entitled, at any time within twenty (20) Working Days of receipt of the Variation Proposal issued pursuant to paragraph 3.1, to instruct the Supplier to proceed with the variation on the terms set out in the Variation Proposal by completing and signing Part C of the Variation Proposal (which, following such signature, will be referred to as a "**Variation Order**") and supplying such Variation Order to the Supplier.

3.3 The Supplier shall carry out the variation in accordance with the Variation Order on the terms determined by the Company and such variation shall take effect no later than five (5) Working Days (unless otherwise instructed by the Company) following receipt of the signed Variation Order by the Supplier.

4 FINANCIAL IMPACT OF THE VARIATION

4.1 In all Variation Proposals, the Supplier shall ensure that:

(a) the price indicated by the Supplier must be the full price and shall cover all costs associated with the variation;

(b) if appropriate a range of prices is shown corresponding to the extent of the Services to be carried out;

(c) the price of the variation is consistent with or derived from the Unit Prices and any deviations from the Unit Prices are fully justified to demonstrate best value;

(d) at all times it acts reasonably and shall price each variation at the least possible additional cost to the Company that it is reasonably and economically practicable for the Supplier to offer and which has the least possible impact on the terms of this Contract, including but not limited to, the Specification and the Annual Maintenance Plan; and

(e) the Variation Proposal includes such further information as may reasonably be required by the Company.

4.2 The Supplier may indicate in a Variation Proposal that the price is an estimated price but, if it does so, it shall supply a firm price to the Company in writing at least five (5) Working

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Days before the expiry of the time within which the Company is entitled to instruct the Supplier to proceed with the variation.

5 EXPEDITED VARIATIONS AND RETROSPECTIVE CLAIMS

5.1 In an Emergency, both Parties shall use their reasonable endeavours to expedite the actions permitted or required under the Contract Variation Procedure.

5.2 The Company will not accept any retrospective claims for additional work caused by a variation which has not been approved by the Company in accordance with the Contract Variation Procedure before the commencement of such additional work.

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Appendix 1

Form of Variation Proposal/Variation Order

APPENDIX 1: FORM OF VARIATION PROPOSAL/VARIATION ORDER			
To		From	
Contract No.		Variation No.	
Variation Title			
PART A (TO BE COMPLETED BY THE ORIGINATOR OF THE VARIATION ORDER)			
Requestor Name		Request Date	
VO Start Date		VO End Date	
Site (LCS 1/2)		Location on Site / SID (LCS-03)	
System		Asset	
Scope of Works			
Reason for Request			
Specific Information (e.g. Make, model no. etc.)			
PART B (TO BE COMPLETED BY THE SUPPLIER)			
Price Breakdown	Quote Ref.		
	Quoted Variation Price (incl. fee)		
PART C (TO BE COMPLETED BY THE COMPANY'S REPRESENTATIVE)			
Contract Price at Award (incl. fee)		Current Contract Price (incl. fee)	
Agreed Variation Price (incl. fee)		Total New Contract Price (incl. fee)	
Approver	Print Name	Signature	Date
Company Representative Approval			
Commercial Approval			

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Part B – Additional Works

1 DEFINITIONS

1.1 For the purposes of this Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works), the following terms have the following meanings:

"Additional Works" means the provision, on a temporary and/or ad hoc basis, of any additional:

(a) asset replacement or other remedial works or minor works; and/or

(b) labour, in excess of any of the quantities set out in the Specification, to provide services which relate to the type and nature of the general scope of the Services but which are outside of the specific scope of the Services;

"Additional Works Clearance Times" has the meaning given to that term in paragraph 1 of Schedule 18a (Performance Measurement Mechanism);

"Additional Works KPI" means KPI 8 set out in Schedule 18c (Key Performance Indicators);

"Additional Works Percentage Mark Up" means the percentage mark up set out in Part H (Additional Works Rates and Mark Up) to Schedule 3 (Payment);

"Additional Works Process" means the process set out in Appendix K to Schedule 2 (Specification);

"Additional Works Proposed Price" means the price for the Additional Works proposed by the Supplier and calculated in accordance with paragraph 3.1 of this Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works);

"Additional Works Rates" means the rates to be applied in relation to any Additional Works as set out in Part H (Additional Works Rates and Mark Up) to Schedule 3 (Payment); and

"Additional Works Work Order" means the Work Order in respect of any Additional Works required by the Company and submitted to the Supplier in accordance with paragraph 2.1 of this Part B (Additional Works) to Schedule 4 (Contract Variation Procedure and Additional Works).

2 PROCESS FOR AWARDING ADDITIONAL WORKS

2.1 Where the Company requires Additional Works, the Company shall submit to the Supplier an Additional Works Work Order via the Asset Management System in accordance with the Additional Works Process. The Additional Works Work Order shall include the priority

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level of the Additional Works for the purposes of Schedule 18e (Additional Works Clearance Times).

2.2 Where an Additional Works Work Order is submitted by the Company in accordance with paragraph 2.1, each Party shall comply with the Additional Works Process.

2.3 Where the Company approves the Additional Works Work Order in accordance with the Additional Works Process, the Supplier shall carry out the Additional Works.

2.4 Notwithstanding the right of the Supplier to refer a Dispute in relation to the Additional Works to the dispute resolution procedure pursuant to Schedule 5 (Dispute Resolution Procedure), in the event of a Dispute, the Supplier shall implement the Additional Works pending the outcome of the Dispute.

3 PRICING OF ADDITIONAL WORKS

3.1 Following receipt of any Additional Works Work Order, the Supplier shall submit a proposed price for the Additional Works in accordance with the Additional Works Process and such price shall be calculated in accordance with the following formula:

Additional Works Proposed Price =	(∑AWL + ∑AWM + ∑AWPE + ∑AWSS) x (AWPMU + 100)%;
AWL =	AWLH x AWLR;
AWM =	AWMV x AWMR,
AWPE =	AWPEV x AWPER; and
AWSS =	AWSSV x AWSSR,

where:

∑AWL	is the sum of the values of AWL for each type of labour required to carry out the Additional Works set out in the Additional Works Work Order;
∑AWM	is the sum of the values of AWM for each type of material required to carry out the Additional Works set out in the Additional Works Work Order;
∑AWPE	is the sum of the values of AWPE for each type of plant and equipment required to carry out the Additional Works set out in the Additional Works Work Order;

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∑AWSS	is the sum of the values of AWSS for each type of specialist sub-contractor required to carry out the Additional Works set out in the Additional Works Work Order;
AWLH	is the number of hours of each type of labour that the Supplier estimates will be required to carry out the Additional Works set out in the Additional Works Work Order;
AWLR	is, subject to paragraph 3.2: (a) where the type of labour required to carry out the Additional Works is specified in Part H (Additional Works Rates and Mark Up) to Schedule 3 (Payment), the applicable Additional Works Rate; and (b) otherwise, such reasonable labour rate as is agreed between the Company and the Supplier;
AWMV	is the volume of each type of material that the Supplier estimates will be required to carry out the Additional Works set out in the Additional Works Work Order;
AWMR	is: (a) where the type of material required to carry out the Additional Works is specified in Part H (Additional Works Rates and Mark Up) to Schedule 3 (Payment), the applicable Additional Works Rates; and (b) otherwise, the cost of such material to the Supplier or to the contractor carrying out the work (net of all discounts) provided that the Supplier submits to the Company supporting evidence that such costs have been reasonably and properly incurred;
AWPEV	is the volume of each type of plant and equipment that the Supplier estimates will be required to carry out the Additional Works set out in the Additional Works Work Order;
AWPER	is: (a) where the type of plant and equipment required to carry out the Additional Works is specified in Part H (Additional Works Rates and Mark Up) to Schedule

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	3 (Payment), the applicable Additional Works Rates; and (b) otherwise, the cost of such plant and equipment to the Supplier or to the contractor carrying out the work (net of all discounts) provided that the Supplier submits to the Company supporting evidence that such costs have been reasonably and properly incurred;
AWSSV	is the number of each type of specialist sub-contractor that the Supplier estimates will be required to carry out the Additional Works set out in the Additional Works Work Order;
AWSSR	is: (a) where the type of specialist sub-contractor required to carry out the Additional Works is specified in Part H (Additional Works Rates and Mark Up) to Schedule 3 (Payment), the applicable Additional Works Rates; and (b) otherwise, the cost of such specialist sub-contractor to the Supplier or to the contractor carrying out the work (net of all discounts) provided that the Supplier submits to the Company supporting evidence that such costs have been reasonably and properly incurred; and
AWPMU	is the Additional Works Percentage Mark Up.

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3.2 Wherever practicable the Supplier shall procure that any Additional Works are carried out by existing on-site and suitably qualified Supplier Personnel and no labour element shall be charged to the Company in respect of such works.

3.3 Where the Additional Works Proposed Price submitted by the Supplier pursuant to paragraph 3.1 is approved by the Company in accordance with the Additional Works Process, such proposed price shall be deemed to be the "**Additional Works Price**" in respect of those Additional Works.

3.4 The Supplier and the Company acknowledge and agree that the Additional Works Price is a fixed price payable by the Company in respect of the completion of the Additional Works set out in the Additional Works Work Order.

3.5 Other than the costs referred to in this paragraph 4, the Supplier shall make no charge to the Company for processing, implementing or managing the Additional Works.

4 IMPLEMENTATION

4.1 The Supplier shall perform the required Additional Works so as to minimise any inconvenience to the Company and shall complete the Additional Works within the Additional Works Clearance Times applicable to the priority level specified for those Additional Works in the relevant Additional Works Work Order.

4.2 The Supplier shall:

(a) notify the Company in accordance with the Additional Works Process when it considers that the Additional Works have been completed in accordance with the terms of this Part B (Additional Works); and

(b) provide supporting information in compliance with TfL's Project Management system `PATHWAY' where required in the Additional Works Work Order or otherwise requested by the Company, such supporting information may include (without limitation):

(i) declaration confirming completion;

(ii) design information;

(iii) concessions, waivers and non-compliance information;

(iv) drawings and schematics;

(v) asset registers;

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(vi) statutory and non-statutory documentation, certification and/or certificates of conformity;

(vii) inspection and test plans/results;

(viii) operation and maintenance manuals;

(ix) training, spares, plant and tooling;

(x) software and other user licenses;

(xi) maintenance records and warranty information; and

(xii) photographic evidence.

4.3 The Supplier's performance of its obligations under paragraph 4.1 shall be monitored and measured under the Additional Works KPI in accordance with Schedule 18 (Performance Measurement).

4.4 Notwithstanding the Supplier's obligations under Clause 50 (insurance) of the Contract, the Supplier shall maintain at its own cost such additional insurance in respect of the Additional Works as the Company may reasonably request. The Supplier shall ensure that such insurance is effected with a reputable insurer and shall produce within five (5) Working Days of any request from the Company satisfactory evidence that such insurance is being maintained in accordance with this paragraph.

5 PAYMENT

5.1 Where the Company has confirmed to the Supplier in accordance with the Additional Works Process that the Additional Works have been performed to its satisfaction, the Supplier may include the Additional Works Price in respect of such Additional Works in the next Payment Application that it submits pursuant to paragraph 2.9(b) of Schedule 3 (Payment).

5.2 All amounts payable in respect of Additional Works shall be invoiced and paid in accordance with Clause 18 and Schedule 3 (Payment) of this Contract.

6 DOCUMENTATION AND MONITORING

6.1 No due diligence (whether funder, legal, technical, insurance or financial) shall be required in relation to the Additional Works unless otherwise agreed between the Parties.

6.2 Unless otherwise agreed between the Parties, no changes shall be made to this Contract as a result of Additional Works, save for the encompassing of the subject matter of the Additional Works within the Specification.

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7 DISPUTES

Any Dispute may be referred by either party for resolution pursuant to Schedule 5 (Dispute Resolution Procedure), but the Supplier shall, nevertheless, be required to perform the Additional Works within the Additional Works Clearance Times notwithstanding the Dispute, where such Dispute concerns the Additional Works Price.

8 APPLICABILITY OF THE CONTRACT

In providing the Additional Works, the Supplier shall comply with the requirements of the Contract and (save to the extent the contrary is expressly set out in this Schedule that is agreed or determined in accordance with the Contract) any provisions in the Contract which impose obligations on the Supplier in respect of the provision of the Services shall apply equally to the provision of the Additional Works.

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Schedule 5

Dispute Resolution Procedure

1 DEFINITIONS

1.1 For the purposes of this Dispute Resolution Procedure the following terms have the meanings set out below:

"Nominating Authority" means the President or Vice President or other duly authorised officer of the London Court of International Arbitration;

"Notice of Adjudication" means any notice given by a Party to the other party or parties to the Dispute requiring reference of a Dispute to the Adjudicator in accordance with paragraph 3.6 of this Schedule 5 (*Dispute Resolution Procedure*) and such notice shall include:

(a) the nature and a brief description of the Dispute;

(b) details of where and when the Dispute arose; and

(c) the nature of the redress which is sought;

"Referral Notice" means a notice referring a Dispute to the Adjudicator in accordance with paragraph 4.4 of this Schedule 5 (*Dispute Resolution Procedure*).

2 CORE OBLIGATIONS

2.1 The Company and the Supplier shall follow the procedure set out in this Schedule 5 (*Dispute Resolution Procedure*) for the management and resolution of Disputes.

3 NOTIFICATION AND ESCALATION OF DISPUTES

3.1 Subject to paragraph 3.6, any Dispute may in the first instance be referred in writing from the referring Party to the Senior Representatives by notice in writing to the other Party. The written notice from the referring Party shall give brief written particulars of the Dispute, the relief sought and the basis for claiming the relief sought (including the provisions of this Contract that are relevant to the Dispute). The written notice shall also identify the referring Party's Senior Representative.

3.2 Within fourteen (14) days of receipt of the notice pursuant to paragraph 3.1, the responding Party shall provide the referring Party with a brief written response. The response shall include identification of the responding Party's Senior Representative.

3.3 The Senior Representatives shall meet and try to reach agreement to resolve the Dispute referred to them pursuant to paragraph 3.1.

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3.4 If the Senior Representatives are unable to, or fail to, reach agreement to resolve the Dispute within fourteen (14) days after the date of the response under paragraph 3.2, court proceedings shall not be commenced unless and until the Dispute has first been referred to adjudication (and an Adjudicator's decision has been obtained) in accordance with the procedure in paragraph 4 and notice has been given in accordance with paragraph 4.19.

3.5 Each Party bears its own costs and expenses in relation to any reference of a Dispute to the Senior Representatives. Discussions amongst the Senior Representatives and any documents prepared or exchanged in relation to the reference of the Dispute to the Senior Representatives (including, for the avoidance of doubt, the notice under paragraph 3.1 and any response under paragraph 3.2) are without prejudice and the Parties shall not make use of or rely upon any without prejudice statements in any proceedings.

3.6 Notwithstanding the provisions of paragraphs 2 and 3.1 to 3.5 (inclusive), either Party may give notice at any time of its intention to refer a Dispute to adjudication under the procedure set out in paragraph 4 by giving a Notice of Adjudication to the other parties to the Dispute.

4 ADJUDICATION

4.1 Should either Party give a Notice of Adjudication then:

(a) immediately thereafter the parties to the Dispute shall endeavour to agree upon a person whom they would consider suitable to act as the Adjudicator;

(b) in the event of the parties to the Dispute failing to agree upon a suitable person who is able to act as the Adjudicator, the referring Party shall request the Nominating Authority to select a person to act as the Adjudicator;

(c) the Nominating Authority shall communicate the selection of the Adjudicator to the Parties within four (4) days of receiving a request to do so; and

(d) any person requested or selected to act as the Adjudicator in accordance with this paragraph 4.1:

(i) shall be a natural person acting in their personal capacity; and

(ii) shall not be an employee of any of the parties to the Dispute, and shall declare any interest, financial or otherwise, in any matter relating to the Dispute.

4.2 The terms of remuneration of the Adjudicator shall be agreed by the parties to the Dispute and the Adjudicator with the object of securing the appointment of the Adjudicator within seven (7) days of the Notice of Adjudication. If any party to the Dispute (but not all parties

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to the Dispute) rejects the terms of the remuneration of the Adjudicator the same shall be settled (and binding upon the parties to the Dispute) by agreement between the Nominating Authority and the Adjudicator (provided that the level of the Adjudicator's remuneration does not exceed the level originally proposed to the parties to the Dispute by the Adjudicator). If all the parties to the Dispute reject the terms of remuneration proposed by an Adjudicator another person shall be selected as an Adjudicator in accordance with paragraph 4.1.

4.3 Where the Adjudicator has been selected in accordance with paragraph 4.1 the referring Party shall refer the Dispute in writing to the Adjudicator by the Referral Notice in accordance with paragraph 4.4 within seven (7) days of the date of the Notice of Adjudication or within two (2) days of the date of appointment of the Adjudicator, whichever is later. Upon receipt of the Referral Notice, the Adjudicator must inform every Party to the Dispute of the date that it was received.

4.4 The Referral Notice shall:

(a) include the facts relied upon by the referring Party in support of its claim(s);

(b) include a statement of the contractual and/or other basis relied upon by the referring Party in support of its claim(s);

(c) include a calculation of the specific monetary amount (if any) that the referring Party is seeking to recover in relation to each and every claim that is the subject matter of the Dispute;

(d) be accompanied by copies of, or relevant extracts from, this Contract and such other documents on which the referring Party relies; and

(e) include the addresses of all Parties to the Dispute,

and the referring Party shall send copies of the Referral Notice and the documents referred to in this paragraph 4.4 to the other Party at the same time as he sends them to the Adjudicator.

4.5 If a matter disputed by the Supplier under or in connection with a Sub-Contract is also a matter disputed under or in connection with this Contract, the Supplier may, with the consent of the Company, refer the Sub-Contract Dispute to the Adjudicator at the same time as the main Contract referral. The Adjudicator shall then decide the Disputes together and references to the parties for the purposes of the Dispute are interpreted as including the Sub-Contractor. The parties to the Dispute agree to consider and endeavour to agree in good faith any reasonable request by the Adjudicator for additional time to decide the main Contract and Sub-Contract Disputes.

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4.6 The parties to the Dispute may jointly terminate the Adjudicator's appointment at any time. In such a case, or:

(a) if the Adjudicator fails to give notice of their decision within the period referred to in paragraph 4.9 and the parties to the Dispute do not jointly extend time for their decision to be made in accordance with paragraph 4.9; or

(b) if the period referred to in paragraph 4.9 is extended in accordance with paragraph 4.10 or by agreement by the parties to the Dispute and the Adjudicator fails to give notice of their decision within such extended period, and the parties to the Dispute do not jointly extend time for their decision to be made in accordance with paragraph 4.9; or

(c) if at any time the Adjudicator declines to act or is unable to act as a result of their death, disability, resignation or otherwise;

a person shall be appointed to replace the Adjudicator in accordance with the provisions of paragraph 4.1. In the event of the parties to the Dispute failing to jointly appoint a person willing and suitable to act as replacement Adjudicator within three (3) days, any party to the Dispute may apply to the Nominating Authority to appoint a replacement Adjudicator. In any case where the Adjudicator is appointed as a replacement pursuant to this paragraph 4.6, the parties to the Dispute shall each send to the Adjudicator, as soon as reasonably practicable, copies of all documents supplied by them to the Adjudicator he replaces.

4.7 The Nominating Authority and its employees and agents shall not be liable to any Party for any act or omission unless the act or omission is in bad faith. The Parties also agree that any employee or agent of the Nominating Authority shall be similarly protected from liability.

4.8 The Party not making the referral may send to the Adjudicator within fourteen (14) days of the date of the referral, with a copy to the other Party, a written statement of the contentions on which it relies and any materials it wishes the Adjudicator to consider.

4.9 The Adjudicator shall reach their decision and give notice of the decision to the parties to the Dispute within twenty eight (28) days of the date of receipt of the Referral Notice mentioned in paragraph 4.3, or such longer period as is agreed by the parties to the Dispute after the Dispute has been referred to him. Notice of the Adjudicator's decision (stating that it is given under this Schedule 5 (*Dispute Resolution Procedure*)) shall be in writing and shall include a summary of the Adjudicator's findings and a statement of the reasons for their decision.

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4.10 The Adjudicator may extend the period of twenty eight (28) days referred to in paragraph 4.9 by up to fourteen (14) days, with the consent of the Party by whom the Dispute was referred.

4.11 The Adjudicator's decision shall be binding upon the parties to the Dispute and the Adjudicator unless and until the Dispute is finally determined by legal proceedings, by arbitration (if the parties otherwise agree to arbitration) or by agreement. The Adjudicator may on their own initiative or on the application of a Party correct their decision so as to remove a clerical or typographical error arising by accident or omission. Any correction of a decision must be made within five days of the delivery of the decision to the parties to the Dispute. As soon as possible after correcting a decision in accordance with this paragraph, the Adjudicator must deliver a copy of the corrected decision to each of the Parties to this Contract. Any correction of a decision shall form part of the decision. The Adjudicator may in their decision allocate their remuneration and expenses between the Parties in accordance with paragraph 4.18. If the Adjudicator's decision changes any payment which is due under this Contract, payment of the sum decided by the Adjudicator shall be due not later than seven days from the date of the decision or the date on which such payment is due in accordance with the provisions of this Contract, whichever is the later.

4.12 The Adjudicator:

(a) shall act impartially and as an expert (not as an arbitrator) in the conduct of the reference and in reaching their decision;

(b) shall consider any relevant information submitted to him by any of the parties to the Dispute and make available to them any information to be taken into account in reaching their decision provided in accordance with the procedure (if any) which the Adjudicator may decide;

(c) shall reach their decision in accordance with the law applicable to this Contract;

(d) may take the initiative in ascertaining the facts and the law in relation to the Dispute;

(e) may with the consent of the parties to the Dispute seek legal or technical advice from consultants whose appointment by the Adjudicator (including terms of remuneration) is subject to the approval of the parties to the Dispute;

(f) shall, where a translation of any document is required, decide by whom it should be provided in the event that the parties to the Dispute do not agree.

4.13 The Adjudicator shall decide in their discretion on the procedure to be followed in the adjudication. In particular he may, but is not obliged to:

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(a) convene meetings upon reasonable notice to the parties to the Dispute at which such parties and their representatives are entitled to be present;

(b) submit lists of questions to the parties to the Dispute to be answered in such meetings or in writing within such reasonable time as he requires;

(c) require the parties to the Dispute to provide him with such information and other facilities as he reasonably requires for the determination of the Dispute;

(d) otherwise take such action and adopt such procedures as do not conflict with any of the provisions of this Contract and are reasonable and proper for the just, expeditious and economical determination of the Dispute; and

(e) inspect any part of any relevant Sub-Contractor.

4.14 The Adjudicator shall not be liable for anything done or omitted in the discharge or purported discharge of their functions as an adjudicator unless the act or omission is in bad faith. The Parties also agree that any employee or agent of the Adjudicator shall be similarly protected from liability.

4.15 All meetings are private and save as required by law the Adjudicator and the Parties shall keep confidential the Dispute, all information of whatever nature provided to him by or on behalf of any Party and their decision.

4.16 The Parties to a contract to which the Dispute relates shall continue to observe and perform all the obligations contained in such contract, notwithstanding any reference to the Adjudicator, and insofar as the same is consistent with any safety review procedures to which the parties to the Dispute are bound, give effect forthwith to the Adjudicator's decision in every respect unless and until as hereinafter provided the Dispute is finally determined by a court in any legal proceedings, by arbitration (if the parties otherwise agree to arbitration) or by agreement. Any party to the Dispute may apply to any appropriate court for enforcement of the Adjudicator's decision. Neither any form of enforcement of the Adjudicator's decision nor any form of challenge to the enforcement of the Adjudicator's decision nor any Dispute arising out of or in connection with such enforcement or challenge are regarded and treated as a Dispute for the purposes of this Schedule 5 (*Dispute Resolution Procedure*).

4.17 After the giving of a Notice of Adjudication, the Parties may seek to agree how the Adjudicator allocates the costs and fees excluding their remuneration and expenses which are dealt with in paragraph 4.18 of the adjudication as between the Parties. If such an agreement is reached between the Parties, they shall notify the Adjudicator, who shall allocate costs and fees in accordance with such agreement. The Parties agree to be bound by the Adjudicator's allocation of costs and fees and to pay such costs and fees in

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accordance with the Adjudicator's direction unless and until the direction of the Adjudicator is set aside or revised by a court pursuant to any legal proceedings.

4.18 Subject to any agreement of the Parties, the Adjudicator shall allocate payment of their remuneration and expenses as between the Parties. Unless the Parties otherwise agree, the Adjudicator awards the payment of their remuneration and expenses on the general principle that costs should follow the event, except where it appears to the Adjudicator that in the circumstances this is not appropriate in relation to the whole or part of their remuneration or expenses. The Parties agree to be bound by the Adjudicator's allocation of payment of their remuneration and expenses and pay such remuneration and expenses in accordance with the Adjudicator's direction unless and until the direction of the Adjudicator is set aside or revised by a court pursuant to any legal proceedings.

4.19 All notices, written submissions and any other written communications between the parties to the Dispute and the Adjudicator shall either be delivered by hand, sent by email or sent by first class pre-paid post or recorded delivery (airmail if posted to or from a place outside the United Kingdom) and, in each case, copied simultaneously (delivered or sent as aforesaid) to the other Parties. Copies by way of confirmation of all communications by email between the parties to the Dispute and the Adjudicator shall also be sent by first class post (airmail if posted to or from a place outside the United Kingdom) not later than the next Working Day following the date of the original email.

4.20 All information of whatever nature provided to the Adjudicator by any party to the Dispute shall be copied to the other parties simultaneously.

4.21 If any party to a Dispute is dissatisfied with the Adjudicator's decision on that Dispute, that party may commence court proceedings for the final determination of the Dispute.

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Schedule 6

Deed of Novation

THIS DEED is made [●] day of [●] 20[●]

BETWEEN:

TRANSPORT FOR LONDON or **TfL**, a statutory corporation established under the Greater London Authority Act 1999 of 5 Endeavour Square, London E20 1JN (the "Company", which expression shall include its successors, transferees and assignees); and

[●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "Supplier"); and

[●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "New Company").

WHEREAS:

(A) The Company has an agreement dated [●] and referenced [insert contract number] with the Supplier for the provision of [describe in brief the scope of work/services] (the "Contract").

(B) The Company wishes to transfer [part of] its benefit and burden under the Contract to the New Company.

(C) The Supplier and the New Company have agreed to such transfer upon the terms and conditions of this Deed.

IT IS AGREED AS FOLLOWS:

1 In this Deed:

1.1 "Transfer Date" means [●].

2 With effect from the Transfer Date:

2.1 the New Company undertakes to perform the obligations of the Company under the Contract and be bound by its terms in every way as if the New Company is and had been named at all times as a party to the Contract in lieu of the Company;

2.2 the Supplier releases and discharges the Company from all demands and claims whatsoever in respect of the Contract and accepts the liability of the New Company in relation to the Contract in lieu of the liability of the Company and agrees to be bound by

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the terms of the Contract in every way as if the New Company were and had been a party to the Contract at all times in lieu of the Company;

2.3 for the avoidance of doubt, it is hereby expressly agreed that:

(a) any and all rights, claims, counter-claims, demands and other remedies of the Supplier against the Company accrued under or in connection with the Contract prior to the date hereof shall be exercisable and enforceable by the Supplier against the New Company; and

(b) any and all rights, claims, counter-claims, demands and other remedies of the Company against the Supplier accrued under or in connection with the Contract prior to the date hereof shall be exercisable by the New Company against the Supplier; and

2.4 the Company transfers its rights and obligations under the Contract to the New Company.

3 A person who is not a Party to this Deed may not enforce any of its terms by virtue of the Contracts (Rights of Third Parties) Act 1999.

Executed as a deed by the Parties and delivered on the date of this Deed

Executed as a Deed by)
Transport for London)

acting by its attorney) _____
…….…… Attorney

in the presence of:

_____

Name:

Address:

Executed as a Deed by [SUPPLIER])
Acting by)
) Authorised Signatory

and

) Authorised Signatory

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Executed as a Deed by [NEW COMPANY])
acting by)
) Authorised Signatory

and

) Authorised Signatory

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Schedule 7

Form of Parent Company Guarantee

THIS GUARANTEE is made the day of 20[●]

BETWEEN:

(1) [●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "Guarantor");

(2) **TRANSPORT FOR LONDON or TfL** a statutory corporation established under the Greater London Authority Act 1999 of 5 Endeavour Square, London E20 1JN (the "Company", which expression shall include its successors in title and assigns); and

(3) [●] a company registered in [England and Wales] under number [●] and having its registered office at [●] (the "Supplier")

(each a "Party" and together the "Parties").

WHEREAS:

(A) This Guarantee is supplemental to a contract (the "Contract") for the carrying out of [●] at [●] made between (1) the Company and (2) the Supplier.

(B) The Guarantor has agreed to guarantee to the Company the due and punctual performance of the Contract by the Supplier in the manner hereinafter appearing.

(C) The Supplier is a Party to this Guarantee in order to confirm its request that the Guarantor provide this Guarantee on the terms set out herein.

NOW IT IS HEREBY AGREED as follows:

1 The Guarantor unconditionally guarantees to the Company the proper and punctual performance and observance by the Supplier of all its obligations, warranties, duties, undertakings and responsibilities under the Contract and shall forthwith make good any default thereunder on the part of the Supplier and the Guarantor shall pay or be responsible for the payment by the Supplier to the Company of all sums of money, liabilities, awards, losses, damages, costs, charges and expenses that may be or become due and payable under or arising out of the Contract in accordance with its terms or otherwise by reason or in consequence of any such default on the part of the Supplier.

2 This Guarantee shall be a continuing guarantee and indemnity and accordingly shall remain in full force and effect until all obligations, warranties, duties and undertakings now or hereafter to be carried out or performed or observed by the Supplier under or arising out of the Contract have been duly and completely performed and observed in full.

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3 The Guarantee is in addition to and not in substitution for any other security or warranty which the Company may at any time hold for the performance of any obligations, warranties, duties and undertakings under the Contract and may be enforced by the Company without first taking any proceedings or exhausting any right or remedy against the Supplier or any other person or taking any action to enforce any other security, bond or guarantee.

4 The Guarantor shall be under no greater obligation or greater liability under this Guarantee than it would have been under the Contract if it had been named as the Supplier in the Contract.

5 The obligations and liabilities hereunder shall remain in full force and effect and shall not be affected, lessened, impaired or discharged by:

(a) any alteration or variation to the terms of the Contract;

(b) any alteration in the extent or nature or sequence or method or timing or scope of the works, services or supplies to be carried out under the Contract;

(c) any extension of time being given to the Supplier or any other indulgence or concession to the Supplier or any forbearance, forgiveness or any other thing done, omitted or neglected to be done under the Contract;

(d) any other bond, security or guarantee now or hereafter held for all or any part of the obligations of the Supplier under the Contract;

(e) the release, modification, exchange or waiver of any such bond, security or guarantee;

(f) any amalgamation or reconstruction or dissolution including liquidation of the Supplier;

(g) the making of a winding up order, the appointment of a provisional liquidator, the passing of a resolution for winding up, liquidation, administration, receivership or insolvency of the Supplier;

(h) any legal limitation, disability or incapacity relating to the Supplier (whether or not known to the Guarantor);

(i) any invalidity in, irregularity affecting or unenforceability of the obligations of the Supplier under the Contract;

(j) the termination of the Contract; or

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(k) anything the Company or the Supplier may do or omit or neglect to do including, but without limitation, the assertion of or failure or delay to assert any right or remedy of the Company or the pursuit of any right or remedy by the Company.

6 Until all amounts which may be or become payable and all liabilities, obligations, warranties, duties and undertakings in respect of the Supplier's obligations have been irrevocably paid, performed or discharged in full, the Guarantor shall not, after a claim has been made or by virtue of any payment, performance or discharge by it under this Guarantee:

(a) be subrogated to any rights, security or moneys held, received or receivable by the Company or be entitled to any right of contribution or indemnity in respect of any payment made or moneys received on account of the Guarantor's liability under this Guarantee;

(b) claim, rank, prove or vote as a creditor of the Supplier or its estate in competition with the Company unless the Company so directs; or

(c) receive, claim or have the benefit of any payment distribution or security from or on account of the Supplier, or exercise any right of set-off against the Supplier unless the Company so directs.

7 This Guarantee is irrevocable.

8 The benefit of this Guarantee may be assigned by the Company at any time to any assignee of the benefit of the whole of the Contract. No further or other assignments shall be permitted.

9 The Guarantor:

(a) gives the guarantee contained in this Guarantee as principal obligor and not merely as surety;

(b) agrees to indemnify the Company on written demand against any loss or liability suffered by it if any provision set out in the Contract guaranteed by the Guarantor becomes unenforceable, invalid or illegal, and

(c) waives any right it may have of first requiring the Company to proceed against, or enforce any other rights or security or claim payment from, any person before claiming from the Guarantor under this Guarantee.

10 Until all amounts which may be or become payable in respect of the Supplier's obligations have been irrevocably paid in full by the Guarantor, the Company may:

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(a) refrain from applying or enforcing any other moneys, security or rights held or received by the Company in respect of those amounts, or apply and enforce the same in such manner and order as it sees fit (whether against those amounts or otherwise) and the Guarantor shall not be entitled to the benefit of the same; and

(b) hold in a suspense account any moneys received from the Supplier on account of these Supplier's obligations or on account of the Guarantor's liability under this Guarantee.

11 The Company is entitled to make any number of demands under this Guarantee.

12 The invalidity, illegality or unenforceability in whole of or in part of any provisions of this Guarantee shall not affect the validity, legality and enforceability of the remaining part or provisions of this Guarantee.

13 This Guarantee may be executed in any number of counterparts each of which shall be an original and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

14 No person other than the Company shall have any right to a claim or remedy under or pursuant to this Guarantee and the provisions of the Contracts (Rights of Third Parties) Act 1999 are hereby excluded.

15 This Guarantee, executed and delivered as a deed, shall be governed by and interpreted according to the laws of England and the Courts of England shall have exclusive jurisdiction save that the Company shall have the right to bring proceedings in the courts of any other jurisdiction in which any of the Guarantor's assets may be situated.

[For non-UK resident Guarantors only:

17 For the purposes of this Guarantee the Guarantor hereby appoints [●] of [●] [to be a London address] to accept service of process on its behalf, and service on the said [●] at the said address shall be deemed to be good service on the Guarantor; and the Guarantor hereby irrevocably agrees not to revoke or terminate such appointment.]

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Executed as a deed by the Parties and delivered on the date of this Guarantee

Executed as a Deed by [GUARANTOR])

acting by)……

) Authorised Signatory

and)……

) Authorised Signatory

Executed as a deed by)
[COMPANY])

acting by its attorney) _____

…….…… Attorney

in the presence of:

_____

Name:

Address:

.....

Executed as a Deed by [SUPPLIER])

acting by)……

) Authorised Signatory

and)

) Authorised Signatory

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Schedule 8

Form of On Demand Performance Bond

BOND

(Letterhead of Guarantor)

To: Transport for London (its successors in title and assigns)

Contract Bond No. [●]

Whereas our clients [●] (the "Supplier") have entered into a contract with you dated [●] (the "Contract") in respect of [●], we [●] (the "Guarantor", which term shall include our successors in title and assigns) hereby irrevocably undertake as a primary obligation upon first demand in writing made by you upon us from time to time or at any time to pay to you on each occasion the sum demanded by you within five (5) Working Days upon service of your demand.

PROVIDED THAT:

1 This Bond shall come into force on the date hereof.

2 Any demand hereunder shall be substantially in the form of Appendix 1 (*Form of Demand from the Company to the Guarantor*) to this Bond, and as between you and us the facts set out in that demand shall be: (a) deemed to be true; and (b) accepted by us as conclusive evidence for the purposes of this Bond that the amount claimed in the demand is due and payable to you hereunder, it being our intention that the event upon which payment must be made hereunder is the service of your demand without any rights on our part to raise any objections, irrespective of the validity or the effectiveness of the Contract and the obligations arising thereunder and irrespective of the underlying facts or their significance under the Contract.

3 All sums payable under this Bond shall be paid in pounds sterling to such bank account as may be specified in your demand in immediately available funds, free of any restriction or condition and free and clear of and without any deduction or withholding whether for or on account of tax, by way of set-off, or otherwise, except to the extent required by law.

4 For the purpose of this paragraph 4, the expression "Expiry Date" means [●].

5 Our liability hereunder shall be limited as follows:

(a) we shall have no liability in respect of any demand received after the Expiry Date; and

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(b) in respect of a demand or demands received on or before the Expiry Date, our liability shall not exceed the aggregate sum of £[●].

6 Our obligations hereunder shall remain in full force and effect and shall not in any way be affected, reduced or discharged by:

(a) any alteration to the terms of the Contract made by agreement between you and the Supplier; and/or

(b) any defence, counterclaim, set-off or other deduction available to the Supplier under the Contract; and/or

(c) any alteration in the extent or nature or sequence or method or timing of the works/services to be carried out under the Contract; and/or

(d) any time being given to the Supplier or any other indulgence or concession to the Supplier or any forbearance, forgiveness or any other thing done, omitted or neglected to be done under the Contract; and/or

(e) any other bond, security or guarantee now or hereafter held by you for all or any part of the obligations of the Supplier under the Contract; and/or

(f) the release or waiver of any such other bond, security or guarantee; and/or

(g) any amalgamation or reconstruction or dissolution including liquidation or change in control or constitution of the Supplier; and/or

(h) the termination of the Contract; and/or

(i) any other event which might operate to discharge a guarantor at law or in equity.

GENERAL PROVISIONS

7 Terms defined in the Contract and not otherwise defined herein shall have the same meaning in this Bond unless inconsistent with the context.

8 This Bond shall be governed by, and interpreted according to, the laws of England and the Courts of England shall have exclusive jurisdiction in relation to any claim, dispute or difference concerning this Bond and any matter arising from it save that you shall have the right to bring proceedings in the Courts of any other jurisdiction in which any of our assets may be situated.

9 This Bond may be assigned or transferred without our prior consent to any member of the TfL Group. Any other assignment or transfer of this Bond by either Party shall require the consent of the other Party, such consent not to be unreasonably withheld or delayed.

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10 This Bond may not be amended, varied or supplemented in any manner whatsoever without your prior written consent, other than in accordance with its express terms.

11 Each of the provisions of this Bond is severable and distinct from the others, and if at any time any such provision is or becomes ineffective, inoperable, invalid or unenforceable it shall be severed and deemed to be deleted from this Bond, and in such event the remaining provisions of this Bond shall continue to have full force and effect.

12 All bank charges and other fees payable in relation to or in connection with this Bond are for the account of the Supplier and you shall have no liability or responsibility therefor.

13 Except to the extent it is inconsistent with the express terms of this Bond, this Bond is subject to the ICC Uniform Rules for Demand Guarantees, 2010 revision, ICC Publication No. 758.

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Executed as a deed by the Parties and delivered on the date of this Bond.

Executed as a Deed by [GUARANTOR])

acting by)……

) Authorised Signatory

and)……

) Authorised Signatory

Executed as a Deed by)
[COMPANY])

acting by its attorney) _____
…….…… Attorney

in the presence of:

_____

Name:

Address:

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APPENDIX 1: FORM OF DEMAND FROM THE COMPANY TO THE GUARANTOR

Dear Sirs

[Contract Title]

Contract No: [□] (the "Contract")

We refer to the Bond given by you to us dated [□].

An event has occurred of the type described in Clause [□] of the Contract.

We hereby demand payment from you of the sum of £[□] under the Bond. Please make payment by CHAPS made payable to [Company name / bank account details].

Yours faithfully

.....

[Company name]
5 Endeavour Square
London
E20 1JN

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Schedule 9

Form of Collateral Warranty

THIS AGREEMENT is made the day of 20[ ]

BETWEEN: -

TRANSPORT FOR LONDON or **TfL**, a statutory corporation established under the Greater London Authority Act 1999 of 5 Endeavour Square, London E20 1JN (the "Company", which expression shall include its successors, transferees and assignees);

[●] a company registered in [England and Wales] under number: [●] and having its registered office at [●] (the "Sub-Contractor"); and

[●] a company registered in [England and Wales] under number: [●] and having its registered office at [●] (the "Supplier"),

(each a "Party" and together the "Parties").

WHEREAS:-

(A) The Company has entered into a contract with the Supplier (the "Main Contract") pursuant to which the Supplier is to undertake and complete the supplies, services and works more particularly described in the Main Contract (the "Services").

(B) The Sub-Contractor has submitted a tender to the Supplier for the carrying out and completion of certain parts (the "Sub-Contract Services") of the Services referred to above as more particularly described in the tender.

NOW IN CONSIDERATION of the payment of £1 (one pound) by the Company to the Sub-Contractor (receipt of which the Sub-Contractor hereby acknowledges), **IT IS HEREBY AGREED** as follows:

1 The Sub-Contractor warrants to the Company that:

(a) the Sub-Contract Services have been and will be carried out with the skill and care to be expected of appropriately qualified and experienced professional contractors with experience in carrying out works or services of a similar type, nature and complexity to the Sub-Contract Services;

(b) reasonable skill and care has been and will continue to be exercised in connection with:

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(i) the design of any goods, works or services to the extent that the Sub-Contractor has or will be responsible for such design;

(ii) the selection of all goods and materials comprised in the Sub-Contract Services (in so far as such goods and materials have been or will be selected by the Sub-Contractor);

(iii) the satisfaction of any performance specification or requirement in so far as the same are included or referred to in the contract between the Supplier and the Sub-Contractor in relation to the Sub-Contract Services (the "Sub-Contract");

(iv) the execution and completion of the Sub-Contract Services;

(c) the Sub-Contract Services will, on completion of the Main Contract, comply with all Applicable Laws and Standards (as such capitalised terms are defined in the Main Contract);

(d) the Sub-Contract Services will be reasonably fit for the purposes for which they are intended (awareness of which purposes the Sub-Contractor hereby acknowledges) and in particular but without limitation will be so fit for the period and with a rate of deterioration reasonably to be expected of high quality, reliable, well designed and engineered goods, materials and construction; and

(e) it has the right to grant to the Company all licences (including without limitation all rights to sub-licence) of all intellectual property rights as contemplated in this Agreement.

For the purposes of construing the warranties in this Clause 1 references to the Sub-Contract Services shall include any part of the Sub-Contract Services. Each warranty shall be construed as a separate warranty and shall not be limited by reference to, or reference from, the terms of any other warranty or any other term of the Sub-Contract.

2 The Sub-Contractor shall, save in so far as he is delayed by any event in respect of which the Supplier is granted an extension of time under the Main Contract for completion of the Services:

(a) execute, complete [and maintain] the Sub-Contract Services in accordance with the provisions of the Sub-Contract; and

(b) ensure that the Supplier shall not become entitled to any extension of time for completion of the Services or to claim any additional payment under the Main Contract due to any failure or delay by the Sub-Contractor.

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3 The Sub-Contractor shall from time to time supply the Company and the Supplier with such information as either may reasonably require.

4 To the extent that the intellectual property rights in any and all Documents are not already vested in the Company or the Supplier, the Sub-Contractor hereby grants to the Company an irrevocable, non-exclusive, non-terminable, royalty-free licence to copy and make full use of any and all Documents and all amendments and additions to them and any works, designs or inventions of the Sub-Contractor incorporated or referred to in them for the following purposes:

(a) understanding the Services;

(b) operating, maintaining, repairing, modifying, altering, enhancing, re-figuring, correcting, replacing, re-procuring and re-tendering the Services;

(c) extending, interfacing with, integrating with, connecting into and adjusting the Services;

(d) enabling the Company to carry out the operation, maintenance repair, renewal and enhancement of the TfL Network and/or Sites (as such capitalised terms are defined in the Main Contract);

(e) executing and completing the Services; and

(f) enabling the Company to perform its functions and duties as Infrastructure Manager and Operator of the TfL Network and/or Sites (as such capitalised terms are defined in the Main Contract)

provided always that the Supplier shall not be liable for the consequences of any use of the Documents as aforesaid for any other purpose. Such licence shall carry the right to grant sub-licences and shall be transferable to third parties without the prior consent of the Sub-Contractor.

For the purposes of this Clause, the term "Documents" shall mean documents, items of information, data, reports, drawings, specifications, plans, software, designs, inventions and any other materials provided by or on behalf of the Sub-Contractor in connection with the Sub-Contract (whether in existence or to be made).

5 The Sub-Contractor agrees:

(a) on request at any time to give the Company or any persons authorised by the Company access to the material referred to in Clause 4 and at the Company's expense to provide copies of any such material; and

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(b) at the Sub-Contractor's expense to provide the Company with a set of all such material on completion of the Sub-Contract Services.

6 The Parties hereby agree that:

(a) this Agreement shall be personal to the Sub-Contractor;

(b) the Company may assign the benefit of this Agreement to any third party;

(c) the rights and remedies contained in this Agreement are cumulative and shall not exclude any other right or remedy available to either Party in law or equity.

7 The Sub-Contractor warrants and undertakes to the Company that he has maintained and will continue to maintain all insurances required to be maintained pursuant to the terms of the Sub-Contract and that, insofar as he is responsible for the design of the Sub-Contract Services, he has professional indemnity insurance with a limit of indemnity of not less than two million pounds (£2,000,000) in respect of each and every claim which may be made against the Sub-Contractor in respect of the Sub-Contract Services. The Sub-Contractor shall maintain such professional indemnity insurance for a period of 12 years from completion of the Services provided such insurance remains available at commercially reasonable rates and shall notify the Company forthwith if such insurance ceases to be available. When deciding whether such insurances are available at commercially reasonable rates, no account shall be taken of any increase in the premium or imposition of terms which arise as a result of the Sub-Contractor's insurance claims record.

8 If any dispute of any kind whatsoever arises between the Parties in connection with this Agreement or the Sub-Contract Services, and such dispute raises issues which, in opinion of the Company, are the same as or substantially the same as issues raised in a related dispute between the Company and the Supplier (the "Related Dispute") and such Related Dispute has already been referred to a conciliator or arbitrator appointed under the provisions of the Main Contract, then the Sub-Contractor hereby agrees that the Company may at its discretion by giving notice in writing to the Sub-Contractor refer the dispute arising out of this Agreement or the Sub-Contract Services to the adjudicator, conciliator, arbitrator or other party (the "Appointed Party") appointed to determine the Related Dispute. In this event the Appointed Party shall have power to give such directions for the determination of the dispute and the Related Dispute as he may think fit and to make such awards as may be necessary in the same way as if the procedure of the High Court as to joining one or more defendants or joint co-defendants or third parties was available to the Parties and to him.

9 Neither the Sub-Contractor nor the Supplier shall exercise or seek to exercise any right which may be or become available to it to terminate or treat as terminated the Sub-

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Contract or discontinue or suspend the performance of any of its duties or obligations thereunder or treat the Sub-Contract as determined without first giving to the Supplier or the Sub-Contractor (as applicable) not less than thirty five (35) Working Days (as such capitalised term is defined in the Main Contract) prior written notice of its intention to do so, with a copy to the Company, specifying the Sub-Contractor's or Supplier's grounds for terminating or treating as terminated the Sub-Contract or discontinuing or suspending its performance thereof or treating the Sub-Contract as determined.

10 If the Main Contract is terminated for any reason, within thirty five (35) Working Days of such termination the Company may give written notice to the Sub-Contractor and to the Supplier (a "Step-in Notice") that the Company or its appointee shall henceforth become the Supplier under the Sub-Contract in accordance with the terms of Clause 11 below.

11 With effect from the date of the service of any Step-in Notice:

(a) the Company or its appointee shall be substituted in the Sub-Contract as the Supplier thereunder in place of the Supplier and references in the Sub-Contract to the Supplier shall be construed as references to the Company or its appointee;

(b) the Sub-Contractor shall be bound to continue with the performance of its duties and obligations under the Sub-Contract and any exercise or purported exercise by the Sub-Contractor prior to the date of the Step-in Notice of any right to terminate or treat as terminated the Sub-Contractor to discontinue or suspend the performance of any of its duties or obligations thereunder or to treat the Sub-Contract as automatically determined shall be of no effect;

(c) the Company shall become bound by the terms and conditions of the Sub-Contract in respect of all obligations and duties of the Supplier thereunder which fall to be performed after the date of the Step-in Notice and shall promptly thereafter make payment of any amounts properly due to the Sub-Contractor as at the date of the Step-in Notice and still outstanding;

(d) the Supplier shall be released from further performance of the duties and obligations of the Supplier under the Sub-Contract after the date of the Step-in Notice, but without prejudice to any rights and remedies of:

(i) the Sub-Contractor against the Supplier in respect of any matter or thing done or omitted to be done by the Supplier on or before the date of the Step-in Notice; and

(ii) the Supplier against the Sub-Contractor in respect of any matter or thing done or omitted to be done by the Sub-Contractor on or before the date of the Step-in Notice; and

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(e) Notwithstanding anything contained in this Agreement and notwithstanding any payments which may be made by the Company to the Sub-Contractor, the Company shall not be under any obligation to the Sub-Contractor and the Sub-Contractor shall not be under any obligation to the Company unless the Company shall have served a Step-in Notice pursuant to Clause 10 above.

12 The Sub-Contractor's liabilities, duties and obligations hereunder shall be no greater and of no longer duration than the liabilities, duties and obligations which the Sub-Contractor owes to the Supplier under the Sub-Contract.

13 The Sub-Contractor further undertakes to indemnify the Company from and against the consequences of any breach by the Sub-Contractor of any of the warranties, covenants and undertakings contained in this Agreement.

14 The rights and benefits conferred upon the Company by this Agreement are in addition to any other rights and remedies that the Company may have against the Sub-Contractor including, without prejudice to the generality of the foregoing, any remedies in negligence.

15 Nothing contained in this Agreement shall in any way limit the obligations of the Supplier to the Company arising under the Main Contract or otherwise undertaken by the Supplier to the Company in relation to the Sub-Contract Services.

16 No amendment to this Agreement shall be valid unless it is in writing and signed by all Parties.

17 Any person who is not a Party to this Agreement may not enforce any of its terms under the Contracts (Rights of Third Parties) Act 1999.

18 This Agreement shall be governed by and construed in accordance with English law and shall be subject to the exclusive jurisdiction of the Courts of England and Wales.

Executed as deed by the Parties and delivered on the date of this Agreement.

Executed as a Deed by)
Transport for London)
acting by its attorney) _____
…….…… Attorney
in the presence of:

_____
Name:
Address:

And

Executed as a Deed by [SUB-)

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CONTRACTOR] acting by [●]	)……
	Authorised Signatory
	)
	)
	)……....
	Authorised Signatory

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Schedule 10

Contract Management

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Schedule 10

Contract Management

1. **Definitions**

In this Schedule 10 (*Contract Management*) the following terms shall have the following meanings:

"Annual Forecast" means the financial forecast applicable to this Contract including in relation to the Planned Preventative Maintenance Services, Reactive Maintenance and any Additional Works;

"EDI Action Plan" has the meaning given to that term in paragraph 1.1 of Schedule 17 (Responsible Procurement);

"Organisational Chart" means the chart of Supplier Personnel set out in Appendix 1 (*Organisational Chart*) to this Schedule 10 (*Contract Management*) as may be updated from time to time in accordance with paragraph 2.2; and

"Service Delivery Plan" means the plan prepared by the Supplier and delivered to the Company in accordance with this Schedule 10 (*Contract Management*).

2. **Governance/Management Groups and Meetings**

2.1. The Supplier shall establish and maintain an account management team suitable for the Services, both technically and managerially, to be responsible for the following, without limitation:

2.1.1. the satisfactory execution and day to day management of the Services on a timely basis and to the standard required as described in Schedule 2 (*Specification*);

2.1.2. ensuring proactive and pre-emptive management of all Services;

2.1.3. providing strategic advice and support in the provision of the Services;

2.1.4. acting as the liaison point between the Company's Representative and the Supplier; and

2.1.5. ensuring that the Services provided are carried out in accordance with the Contract and to the satisfaction of the Company's Representative.

2.2. The Supplier shall comply with the organisational chart attached at Appendix 1

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(*Organisational Chart*) to this Schedule 10 (*Contract Management*). The Supplier shall populate such organisational chart with the names of relevant Supplier's Personnel within twenty (20) Working Days of the Services Commencement Date. The Supplier shall update such organisational chart and submit it to the Company for approval each Period. Such organisation chart cannot be varied unless agreed by the parties in writing.

2.3. The Supplier shall set up, implement and maintain Contract Management Groups to govern the Contract at a strategic, tactical and operational level as set out in Table 1 (*Contract Management Groups*) of this Schedule 10 (*Contract Management*).

2.4. The Contract Management Groups shall meet, as a minimum, in accordance with the frequencies set out in Table 2 (*Contract Management Group Frequencies*) of this Schedule 10 (*Contract Management*).

2.5. The Supplier shall ensure that all Supplier Personnel attending meetings have the necessary delegated authority to act on behalf of the Supplier. In the absence of the Supplier's Account Director or other Key Personnel, a suitable qualified replacement shall be provided.

2.6. The Company shall, prior to each anniversary of the Services Commencement Date, develop and issue an annual schedule of meetings to monitor and manage the performance of the Services by the Supplier.

2.7. The Company shall develop and issue agendas for all meetings no later than two (2) Working Days prior to each meeting and shall take minutes of all meetings. The Meeting Chair (as set out in Tables 3-12 of this Schedule 10 (*Contract Management*)) shall be responsible for issuing the minutes of all meetings for agreement with the Company within five (5) Working Days of each meeting taking place.

2.8. All meetings shall be held at the Company's premises unless agreed otherwise by the Company.

2.9. The Supplier shall, in addition to all meetings and plans specified in this Schedule 10 (*Contract Management*), attend any meeting and produce reports in accordance with Schedule 3 (*Payment*).

2.10. The Supplier shall attend, with the Company in each Financial Year, the meetings set out in Tables 3 to 12 of this Schedule 10 (*Contract Management*), at the frequencies stated below:

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Relevant table	Meeting	Frequency
Table 3	Annual Strategic Review	Annually
Table 4	Quarterly Review	Quarterly
Table 5	Period Progress Meeting	Each Period
Table 6	Operational - Service Delivery Review	Daily (on Working Days)
Table 7	FRACAS	Each Period
Table 8	Planning	Each Period
Table 9	Performance	Weekly
Table 10	Commercial	Weekly
Table 11	Asset Management System	Each Period
Table 12	Additional Works	Two Weekly

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Table 1: Contract Management Groups

	Company – Contract Management	**Supplier – Contract Management**
Strategic	• Company Representative • Lead Operational Representatives • Lead Commercial Management Representatives	• Supplier Representative • Lead Operational Representatives • Lead Commercial Management Representatives
Tactical	• Senior Operational Contract Management Representatives • Senior Commercial Contract Management Representatives	• Senior Operational Contract Management Representatives • Senior Commercial Contract Management Representatives
Operational	• Operational Contract Management Representatives • Commercial Contract Management Representatives	• Delivery Management Representatives • Commercial Management Representatives

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Table 2: Contract Management Group Frequencies

Business Level	Company Attendees	Supplier Attendees	Frequency
Strategic	• Company Representative • Lead Operational Representatives • Lead Commercial Management Representatives	• Supplier Representative • Lead Operational Representatives • Lead Commercial Management Representatives	Annually
Tactical	• Senior Operational Management Representatives • Senior Commercial Management Representatives	• Senior Operational Contract Management Representatives • Senior Commercial Contract Management Representatives	Quarterly
Operational	• Commercial Contract Management Representatives • Operational Contract Management Representatives	• Delivery Management Representatives	Each Period / Weekly
		• Commercial Management Representatives	Daily (Working Days)

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Table 3: Annual Strategic Review

Strategic - Annual Strategic Review	
Purpose - A strategic assessment of the relationship between the parties, including: • business updates from the Company and the Supplier; • achievement of the Company's objectives for the Contract; • significant risks and issues affecting the Supplier's performance; • Supplier performance with agreement of actions for improvement; • review of the Supplier's Service Delivery Plan; • Supplier's compliance with the Specification and the service level requirements set out in Schedule 18 (*Performance Measurement*); • review of the Supplier's progress in respect of strategy, health, safety and environmental issues (including a review of the Strategic Labour Needs and Training Plan (as set out in the Service Delivery Plan), the Environmental Management Plan and compliance with QUENSH and any other non LUL business unit specific health and safety requirements in Schedule 16 Part A); and • developments within the parties and changes in the facilities management market and industry that affect the Contract.	
Title:	Annual Strategic Review
Frequency	Annual
Business Level	Strategic
Main Agenda Items	• Annual performance review • Annual financial review • Business and marketplace developments
Attendees (Company)	• Company's Representative • Lead Operational Representatives • Lead Commercial Management Representatives
Attendees (Supplier)	• Supplier's Representative • Lead Operational Representatives • Lead Commercial Management Representatives
Meeting Chair	• Company's Representative
Reports Required	• Cumulative Scorecard (as defined in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*)) summarising the

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	Supplier's performance during the relevant year • Annual Maintenance Plan
Decisions/ Reports/ Outputs	• Minutes • Actions with responsibility for completion allocated and target dates for completion

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Table 4: Quarterly Review

Tactical – Quarterly Review	
Purpose - An operational review of performance of the Services by Supplier, including: • review of progress by Supplier in respect of strategy, health, safety and environmental issues (including a review of the Strategic Labour Needs and Training Plan (as set out in the Service Delivery Plan), the Environmental Management Plan and compliance with QUENSH and any other non LUL business unit specific health and safety requirements in Schedule 16 Part A); • Quarterly review of Supplier performance; and • review of Permitted Delay Events.	
Title:	Quarterly Review
Frequency	Each Quarter
Business Level	Tactical
Main Agenda Items	• Performance review • Financial review • Business and marketplace developments
Attendees (Company)	• Company's Representative • Senior Operational Management Representatives • Senior Commercial Management Representatives
Attendees (Supplier)	• Supplier's Representative • Senior Operational Management Representatives • Senior Commercial Management Representatives
Meeting Chair	• Company's Representative
Reports Required	• Cumulative Scorecard (as defined in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*)) summarising the Supplier's performance during the relevant quarter • Updated Organisational Chart
Decisions/ Reports/ Outputs	• Minutes • Actions with responsibility for completion allocated and target dates for completion

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Table 5: Period Progress Meeting

Period Progress Meeting	
Purpose - An operational review of performance of the Services by the Supplier, including: • review of Supplier performance in previous Period; • review of Payment Applications, any adjustments to the Price pursuant to paragraph 2.8(c) of Schedule 3 (*Payment*) and the Annual Forecast; • evaluation of the Supplier's skills and resourcing requirements; • resolution of on-going Supplier performance issues; • review of Additional Works and Variation Orders; • review of progress by Supplier in respect of health, safety and environmental issues (including compliance with QUENSH and any other non LUL business unit specific health and safety requirements in Schedule 16 Part A), waste and resources management, carbon emissions and reductions; and • review of the performance by the Supplier in relation to the EDI Action Plan in accordance with paragraph 1.6 of Schedule 17 (*Responsible Procurement*).	
Title:	Period Progress Meeting
Frequency	Each Period
Business Level	Operational
Main Agenda Items	• Key Performance Indicator review • Financial review • Operational updates • Performance of the EDI Action Plan
Attendees (Company)	• Company's Representative • Operational Contract Management Representatives • Commercial Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives • Commercial Management Representatives
Meeting Chair	• Company's Representative
Reports Required	• The Period Performance Scorecard (as defined in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*)) summarising the Supplier's performance during the relevant Period

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	• The Cumulative Scorecard (as defined in paragraph 1 of Schedule 18a (*Performance Measurement Mechanism*)) summarising the Supplier's performance during each Period in the relevant year • Update on remedial actions undertaken by the Supplier • Update on achievement of Planned Preventative Maintenance and Reactive Maintenance activities • Reports on Reactive Maintenance Work Orders • Report on waste and resources management • Report on carbon emissions including embodied carbon emissions relating to the contract • Reporting information relating to vehicle fleet usage including but not limited to; number of vehicles used, total mileage, number of zero-emissions vehicles and vehicle emissions • Update on any resource/technical/safety issues • Annual Forecast • Update on progress in relation to the EDI Action Plan
Decisions/ Reports/ Outputs	• Minutes • Actions with responsibility for completion allocated and target dates for completion

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Table 6: Operational - Service Delivery Review

Operational – Service Delivery Review	
Purpose - A brief discussion to address operational concerns for that Period, including: • HSQE events • day to day operational issues; • review of Reactive Maintenance Work Orders and any breaches of statutory compliance • brief update on operational priorities for that day/week (as applicable); and • set-out actions and key objectives for the following 24 hours.	
Title:	Service Delivery Review
Frequency	Daily (Working Days)
Business level	Operational
Main Agenda Items	• HSQE events • Statutory Compliance • Outstanding jobs • Action plan
Attendees (Company)	• Company Representative (optional) • Operational Contract Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives
Meeting Chair	• Company Operational Contract Management Representatives
Reports Required	• Update on remedial actions undertaken by the Supplier • Update on achievement of Planned Preventative Maintenance and Reactive Maintenance activities • Update on Reactive Maintenance Work Orders • Update on assessment of risks
Outputs	Any decisions, reports or other outputs

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Table 7: FRACAS (Fault Reporting Analysis and Corrective Action System)

Operational - FRACAS (Fault Reporting Analysis and Corrective Action System)	
Purpose - A brief discussion to review Reactive Maintenance Work Orders trend analysis	
Title:	FRACAS
Frequency	Each Period
Business level	Operational
Main Agenda Items	• Review weekly failures (Service Delays as a minimum). • Update local failure action log • Review outstanding local actions • Review any failure analysis • Update and review Improvement plans.
Attendees (Company)	• Company Representative (optional) • Operational Contract Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives
Meeting Chair	• Company Operational Contract Management Representatives
Reports Required	• Update on Reactive Maintenance Work Order trends • Update on assessment of risks
Outputs	Any decisions, reports or other outputs

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Table 8: Planning

Operational – Planning	
Purpose - A brief discussion to address maintenance planning concerns for that Period, including: • General access queries • 3rd party intervention • Instances where booked Access has been denied and therefore frustrated ("Frustrated Access") • Training in relation to access and planning • Possessions	
Title:	Planning
Frequency	Each Period
Business level	Operational
Main Agenda Items	• Frustrated Access • Training • General access • Possessions
Attendees (Company)	• Company Representative (optional) • Operational Contract Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives
Meeting Chair	• Company Operational Contract Management Representatives
Reports Required	• Denied Frustrated Access report • Training Matrix • Programmes
Outputs	Any decisions, reports or other outputs

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Table 9: Operational - Performance

Operational – Performance	
Purpose - A brief discussion on the Supplier's performance under this Contract including in relation to the Key Performance Indicators and compliance with Schedule 18 (*Performance Measurement*).	
Title:	Performance
Frequency	Weekly
Business level	Operational
Main Agenda Items	• KPIs 1 - 11
Attendees (Company)	• Company's Representative • Operational Contract Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives
Meeting Chair	• Company's Representative
Reports Required	• Reports derived from the Company's AMS or other data sources (as described for each KPI in Schedule 18) providing updates on performance achieved against each KPI including but not limited to: ○ Reactive Maintenance Work Orders ○ Planned Preventative Maintenance ○ HSQE non-conformances
Outputs	Any agreement, decisions, reports or other outputs

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Table 10: Commercial

Commercial	
Purpose - A brief discussion to address commercial concerns including: • Variation Proposals and Variation Orders • any early warning notices given by the Supplier in accordance with Clause 11 (*Early Warning*) of this Contract • Payment Applications • Annual forecast	
Title:	Commercial
Frequency	Weekly
Business level	Operational
Main Agenda Items	• Annual forecast • Variation Proposals and Variation Orders • early warning notices given by the Supplier in accordance with Clause 11 (*Early Warning*) of this Contract • Payment Applications
Attendees (Company)	• Commercial Management Representatives
Attendees (Supplier)	• Commercial Management Representatives
Meeting Chair	• Company Commercial Management Representatives
Reports Required	• Annual forecast • A log of Variation Proposals and Variation Orders • A log of early warning notices • Application for payment
Outputs	Any agreements, decisions, reports or other outputs

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Table 11: Operational – Asset Management System

Operational – Asset Management System	
Purpose - A brief discussion to address asset information in the Asset Management System including: • asset details • asset changes • updating of information • day to day Asset Management System issues	
Title:	Asset Management System
Frequency	Each Period
Business level	Operational
Main Agenda Items	• asset details • asset changes • updating of information • day to day Asset Management System issues
Attendees (Company)	• Company's Representative • Operational Contract Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives
Meeting Chair	• Company's Representative
Reports Required	• Asset Register • System failure report
Outputs	Any decisions, reports or other outputs

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Table 12: Additional Works

Additional Works	
Purpose - A brief discussion to address operational & commercial concerns for that Period, including: • Quotations • Instructed works • Completion evidence • Workmanship • Sub-contractor management • the Additional Works Price and payment	
Title:	Additional Works
Frequency	Two Weekly
Business level	Operational
Main Agenda Items	• Quotations • Instructed works • Completion evidence • Workmanship • Sub-contractor management • the Additional Works Price and payment
Attendees (Company)	• Company Representative (optional) • Operational Contract Management Representatives • Commercial Management Representatives
Attendees (Supplier)	• Supplier's Representative • Delivery Management Representatives • Commercial Management Representatives
Meeting Chair	• Company Operational Contract Management Representatives
Reports Required	• Update on remedial actions undertaken by the Supplier • Update on achievement of Additional Works • Update on quotations • Programme

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	• Commercial forecast • Update on sub-contractor issues
Outputs	Any agreements, decisions, reports or other outputs

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3. **Supplier's Plans**

3.1. The Supplier shall comply with the following plans as provided and updated from time to time in accordance with paragraph 3.3:

3.1.1. Service Delivery Plan;

3.1.2. Quality Management Plan

3.1.3. Health, Safety, Quality and Environmental Plan;

3.1.4. Environmental Management Plan;

3.1.5. Environmental Performance Report;

3.1.6. Competency Management and Training Plan;

3.1.7. Strategic Labour Needs and Training Plan;

3.1.8. Business Continuity Plan;

3.1.9. Demobilisation Plan:

3.1.10. Good Work Standard self-assessment (including a SMART Action Plan):

3.1.11. Security Management Plan: and

3.1.12. Contract Management Plan.

3.2. The Supplier shall review and submit to the Company for approval, updated copies of such plans as per the frequencies specified in paragraph 3.4 of this Schedule 10 (*Contract Management*).

3.3. The Company shall provide the Supplier with comments on the plans within thirty (30) Working Days of receipt. The Supplier shall incorporate the comments and suggestions of the Company and shall issue a revised copy of the plans to the Company within fourteen (14) Working Days of receipt. No amended plan shall take effect until the Company's Representative has confirmed the Company's approval of the amended plan(s).

3.4. The Supplier shall be required to provide the above plans by the dates, and subsequently review / re-submit at the frequencies, stated below:

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Plan	Date for initial provision to the Company	Frequency of subsequent review and submission to the Company
Service Delivery Plan	At least twenty (20) Working Days before the Services Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Quality Management Plan	At least twenty (20) Working Days before the Services Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Health, Safety, Quality and Environmental Plan	At least twenty (20) Working Days before the Services Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Environmental Management Plan ("EMP")	An initial plan is to be submitted to the Company's Representative within thirty (30) days of the Commencement Date/ final EMP to be submitted to and approved by the Company's Representative within sixty (60) days of the Commencement Date	Annually (not later than twenty (20) days after each anniversary of the Commencement Date) and/or upon each amendment
Environmental Performance Report ("EPR")	Not later than the first anniversary of the Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Competency Management and Training Plan	At least twenty (20) Working Days before the Services Commencement Date	Periodically and/or upon each amendment

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Plan	Date for initial provision to the Company	Frequency of subsequent review and submission to the Company
Revised copy of Initial Strategic Labour Needs and Training Plan (in accordance with 3.2 of Schedule 19)	Within twenty (20) Working Days of the Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Business Continuity Plan	Within twenty (20) Working Days of the Services Commencement Date	Annually (not later than each anniversary of the Commencement Date) and/or upon each amendment
Demobilisation Plan	Within three (3) months of the Services Commencement Date	Annually (on each anniversary of the Services Commencement Date) and/or upon each amendment
Good Work Standard self-assessment (including a SMART Action Plan)	Within sixty (60) days of the Commencement Date, final version of the SMART Action Plan within ninety (90) days of the Commencement Date	Annually (on each anniversary of the Commencement Date) and/or upon each amendment
Security Management Plan	Within twenty (20) days of the Commencement Date	Annually (on each anniversary of the Commencement Date) and/or upon each amendment
Contract Management Plan	No later than four (4) weeks prior to the end of the Mobilisation Period	Annually (on each anniversary of the Services Commencement Date) and/or upon each amendment

3.4.1. **Service Delivery Plan**

3.4.1.1. The Supplier shall comply with the Service Delivery Plan. The Supplier

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shall provide such Service Delivery Plan in accordance with the requirements of this paragraph 3.4.1 at least twenty (20) Working Days before the Services Commencement Date. The Supplier shall update the Service Delivery Plan and submit to the Company for approval annually. The Service Delivery Plan cannot be varied unless agreed by the parties in writing.

3.4.1.2. The Supplier shall provide, on a Service-by-Service basis and in accordance with the Contract including Schedule 2 (*Specification*), details of how the Supplier shall deliver the Services.

3.4.1.3. The Supplier shall submit method statements setting out the Supplier's arrangements for providing the Services and details of the equipment and other resources that the Supplier proposes to use in the delivery of Services.

3.4.1.4. The Supplier shall describe its overall approach to managing the Contract. This shall include, but shall not be limited to:

- the names and positions of the Supplier's Key Personnel for each of the Contract Management Groups (as set out in Table 1 of this Schedule 10 (*Contract Management*));
- the Supplier's address for serving of notices;
- the management organisational structure for the Contract, showing full time equivalent allowances;
- roles, responsibilities and key skills and competencies of each member of the Supplier's management structure;
- the Supplier's approach to the management of the Services;
- the Supplier's approach to collaborative working;
- the Supplier's reporting processes;
- the Supplier's approach to recruitment, training and development of Supplier Personnel; and
- how the Supplier will manage Supplier Personnel and Sub-Contractors.

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3.4.2. **Quality Management Plan**

The Supplier shall provide a recognised Quality Management Plan in accordance with Part B (*Quality*) of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*).

3.4.3. **Health, Safety, Quality and Environmental Plan**

The Supplier shall provide a plan setting out its approach to health, safety, quality, environment and corporate social responsibility and how it shall comply with Schedule 16 (*Health, Safety, Quality and Environmental Requirements*) (the "Health, Safety, Quality and Environment Plan").

3.4.4. **Environmental Management Plan (EMP)**

The Supplier shall develop, implement and maintain a contract specific EMP for the delivery of the Services, in accordance with Part C (Environmental Requirements) of Schedule 16 (Health, Safety, Quality and Environmental Requirements), demonstrating its contribution towards delivering the Company's environmental objectives. The Supplier shall, as part of the EMP, develop, implement and maintain:

3.4.4.1 a Noise and Vibration Management Plan, for activities with the potential to generate noise and/or vibration in accordance with Part C (Environmental Requirements) of Schedule 16 (Health, Safety, Quality and Environmental Requirements);

3.4.4.2 a Waste Management Plan to cover the waste which arises from performance of the Services in accordance with Part C (Environmental Requirements) of Schedule 16 (Health, Safety, Quality and Environmental Requirements); and

3.4.4.3 a Carbon Resource Plan that demonstrates how the Supplier will prioritise and support the transition to a low-carbon circular economy in accordance with Part C (Environmental Requirements) of Schedule 16 (Health, Safety, Quality and Environmental Requirements).

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3.4.5. **Environmental Performance Report (EPR)**

The Supplier shall provide the Company's Representative with an EPR, to include information on the performance of the EMS and the EMP, in accordance with Part C (Environmental Requirements) of Schedule 16 (Health, Safety, Quality and Environmental Requirements).

3.4.6. **Competency Management and Training Plan**

The Supplier shall provide a plan demonstrating how the Supplier will meet all training requirements for itself and its Sub-Contractors in accordance with paragraph 3.3 of Schedule 2 (*Specification*).

3.4.7. **Strategic Labour Needs and Training (SLNT) Delivery Plan**

The Supplier shall provide a plan demonstrating how the Supplier will meet the minimum Strategic Labour Needs and Training outputs for itself and its Sub-Contractors in accordance with Schedule 19 (*Strategic Labour Needs and Training*).

3.4.8. **Business Continuity Plan**

3.4.8.1. The Supplier shall comply with the Business Continuity Plan attached at Appendix 2 (*Business Continuity Plan*) to this Schedule 10 (*Contract Management*). The Supplier shall provide such Business Continuity Plan in accordance with the requirements of this paragraph 3.4.8 within twenty (20) Working Days of the Services Commencement Date. The Business Continuity Plan cannot be varied unless agreed by the parties in writing.

3.4.8.2. The Business Continuity Plan shall detail how the Supplier will fulfil its responsibilities and obligations to the Company under the terms of the Contract in the event of an incident affecting the Supplier's ability to provide the Services, including its business recovery arrangements and testing regime.

3.4.8.3. The Supplier shall review and update, in conjunction with the Company's Representative, its Business Continuity Plan on an annual basis, unless an alternative frequency is agreed between the parties.

3.4.8.4. The Supplier shall review and test the robustness of its Business

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Continuity Plans annually (unless an alternative frequency is agreed between the parties) or following any incident or business change and implement changes to the plan based on test outcomes.

3.4.8.5. The Supplier shall be responsible for providing assurance to the Company that its Business Continuity Plan is fit for purpose to recover, within reasonable timescales, parts of the Supplier's business so as to provide continuity in performance of the Services in accordance with this Contract.

3.4.8.6. The Supplier shall provide to the Company, upon request, evidence that its Business Continuity Plan is tested on an annual basis. The Company reserves the right to ask for further details regarding the Supplier's Business Continuity Plan.

3.4.8.7. The Supplier shall identify risks to continuity of delivery of the Services to the Company and develop a specific Business Continuity Plan to ensure that all Services are available to the Company as required, and there is minimum disruption to the Company in the event of incidents where the Business Continuity Plan is enacted.

3.4.8.8. Within the Business Continuity Plan, the Supplier shall set out its approach to managing operational and commercial risk. This shall include, but shall not be limited to, the Supplier's Contract-specific plan for business continuity, incorporating the potential risks to business continuity, its mitigation strategies, how the Services will be delivered in the event of a disruption to normal operations and how the Business Continuity Plan will be tested.

3.4.9. **Demobilisation Plan**

The Supplier shall deliver a Demobilisation Plan in accordance with Schedule 15 (*Demobilisation*).

3.4.10. **Good Work Standard self-assessment (including a SMART Action Plan)**

The Supplier shall deliver a Good Work Standard self-assessment and SMART Action Plan in accordance with Schedule 17 (Responsible Procurement).

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3.4.11. **Security Management Plan**

The Supplier shall deliver a Security Management Plan, and comply with the associated Security Requirements, in accordance with Schedule 24 (Cyber Security).

3.4.12. **Contract Management Plan**

The Supplier shall deliver a Contract Management Plan in accordance with Schedule 14 (Mobilisation).

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Appendix 2 to Schedule 10

Business Continuity Plan

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Schedule 11

Not used

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Schedule 12

Not used

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Schedule 13

Access

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Schedule 14

Mobilisation Requirements

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Schedule 14

Mobilisation Requirements

1 DEFINITIONS

1.1 For the purposes of this Schedule 14 (*Mobilisation Requirements*) the following terms shall have the following meanings:

"Mobilisation Fee" has the meaning given to that term in paragraph 1.1 of Schedule 3 (*Payment*); and

"Mobilisation Plan" means the plan set out in Appendix 1 (*Mobilisation Plan*) to this Schedule 14 (*Mobilisation Requirements*).

2 GENERAL OBLIGATIONS

2.1 The Supplier shall comply with:

(a) the Mobilisation Plan; and

(b) the Business Continuity Plan set out at Appendix 2 (*Business Continuity Plan*) to Schedule 10 (*Contract Management*).

2.2 Without prejudice to the generality of paragraph 2.1:

(a) the Supplier shall establish its own asset and work management system in support of the Services and integrate such system with the Company's Asset Management System in accordance with the requirements specified in paragraph 7.6 of the Specification;

(b) the Supplier shall adhere to the processes relating to the Asset Management System set out in Appendix H (*AMS Supplier Processes*) to the Specification, with specific reference to the series of processes to be undertaken as part of the Mobilisation Works; and

(c) during the Mobilisation Period, the Parties shall hold a daily conference call at a set time each day and the Supplier shall participate in that call and provide daily verbal updates with written updates on a weekly basis (or daily if requested by the Company).

2.3 The Mobilisation Plan shall detail the Supplier's proposals for the mobilisation of the Services, including but not limited to transfer of staff, intellectual property rights and manuals, spares, equipment from the outgoing service provider. The Supplier shall liaise as necessary with the outgoing service provider in order to facilitate an orderly transfer and mobilisation of the Services.

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3 MOBILISATION WORKS

3.1 In order to support the seamless mobilisation of the Services, the Supplier shall, from the Commencement Date, undertake all necessary actions in connection with the mobilisation of the Services, including but not limited to the following:

(a) providing all necessary resource, including Supplier Personnel, equipment and materials to enable timely mobilisation;

(b) implementing its mobilisation team and mobilisation manager;

(c) ensuring that its mobilisation team attend Company chaired mobilisation/transition meetings;

(d) keeping the Company's Representative fully informed on the progress of the mobilisation;

(e) complying with all reasonable instructions of the Company in connection with the mobilisation;

(f) establishing and integrating with the Company's systems any IT systems to be used by the Supplier in providing the Services (including carrying out its obligations under paragraph 2.2(a) above);

(g) preparing procurement plans and establishing its supply chain for all resources provided by the Supplier; and

(h) preparing the Contract Management Plan in accordance with paragraph 4 below.

4 CONTRACT MANAGEMENT PLAN

4.1 The Supplier shall, no later than four (4) weeks prior to the end of the Mobilisation Period, prepare and submit for review and approval by the Company's Representative, a contract management plan setting out the project control processes it proposes to put in place to support the delivery of the Services (the "**Contract Management Plan**").

4.2 The Supplier shall prepare the Contract Management Plan during the Mobilisation Period (and thereafter maintain and update it) detailing the agreed processes for the administration of the Contract. The Contract Management Plan shall as a minimum cover the following subject areas:

(a) schedule of contract meetings;

(b) agendas, terms of reference and required attendees for contract meetings;

(c) relationship management;

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(d) safety leadership;

(e) performance management;

(f) financial reporting;

(g) accounting processes;

(h) strategic and upgrade workbank planning;

(i) asset data, condition and performance monitoring; and

(j) final accounting process,

and shall align with the requirements set out in this Contract relating to its management, including under Schedule 10 (*Contract Management*) and Schedule 18 (*Performance Measurement*).

5 FAMILIARISATION AND COLLABORATIVE WORKING

5.1 To ensure that the Supplier Personnel have a full understanding of the Supplier's contractual obligations and the roles and responsibilities of the Supplier Personnel, the Supplier shall:

(a) arrange all necessary training;

(b) prepare all necessary management training materials; and

(c) provide management training workshops,

in each case, such training and materials shall be developed and organised in consultation with the Company and the Supplier acknowledges and agrees that the Company may attend such training.

5.2 The Supplier shall ensure that its training workshops:

(a) include training on expected behaviours and ways of working together to achieve programme delivery objectives;

(b) provide an understanding of the Company's management and other systems and processes; and

(c) initially focus on training senior personnel of the Supplier (including Key Personnel) but thereafter be delivered to all staff.

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6 PROCUREMENT AND SUPPLY CHAIN

6.1 The Supplier shall, during the Mobilisation Period:

(a) confirm the appointment of all key Sub-Contractors and suppliers; and

(b) develop, document and implement a formal process for materials management and control to minimise waste and optimise utilisation.

7 DELAYS TO THE MOBILISATION WORKS

7.1 In the event that the Supplier considers that there is likely to be a delay in carrying out any of the activities contained within the Mobilisation Plan, and/or meeting any of the milestones identified in column 2 of the table set out in Appendix 2 (*Mobilisation Milestones*) to this Schedule 14 (*Mobilisation Requirements*) by the applicable date assigned to that task in column 3 of that table, it shall:

(a) immediately notify the Company, identify the reasons for such delay and provide its proposals as to how it will mitigate the impacts of any such delay to the Company for review and approval; and

(b) comply with any such proposals as are approved by the Company.

7.2 In the event that the Company considers that there is likely to be a delay in the Supplier carrying out any of the activities contained within the Mobilisation Plan, and/or meeting any of the milestones identified in column 2 of the table set out in Appendix 2 (*Mobilisation Milestone*s) to this Schedule 14 (*Mobilisation Requirements*) by the applicable date assigned to that task in column 3 of that table, it shall notify the Supplier in writing and, within one (1) Working Day of such notification, the Supplier shall:

(a) identify the reasons for such delay and provide its proposals as to how it will mitigate the impacts of any such delay to the Company for review and approval; and

(b) comply with any such proposals as are approved by the Company.

7.3 Any failure by the Supplier to comply with its obligations under paragraphs 7.1 or 7.2 shall be a breach of this Contract which the Company may treat as a Level 1 Non-Conformance for the purposes of Schedule 18 (*Performance Measurement*).

8 COMPLIANCE

8.1 Without prejudice to the generality of the above, the Supplier shall at all times:

(a) establish and maintain a statutory asset inspection and compliance schedule and register; and

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(b) ensure it understands and applies the Company's permit to work systems as referenced in the Specification and/or referred to in paragraphs 2,3,4 and 5 of Part A (*Health and Safety*) of Schedule 16 (*Health, Safety, Quality and Environmental Requirements*).

9 MOBILISATION MILESTONES

9.1 The Supplier shall perform each of the tasks identified in column 2 of the table set out in Appendix 2 (*Mobilisation Milestones*) to this Schedule 14 (*Mobilisation Requirements*) by the target completion date relating to that task as identified in column 3 of that table.

9.2 If the Supplier considers that it has completed a task identified in column 2 of the table set out in Appendix 2 (*Mobilisation Milestones*) to this Schedule 14 (*Mobilisation Requirements*), it shall submit to the Company in writing the evidence relating to that task as identified in column 4 of that table.

9.3 If, following receipt of the evidence submitted in accordance with paragraph 9.2, the Company is satisfied that the task identified in column 2 of the table set out in Appendix 2 (*Mobilisation Milestones*) to this Schedule 14 (*Mobilisation Requirements*) has been completed by the Supplier, the Company shall:

(a) notify the Supplier in writing; and

(b) add an amount equal to the percentage relating to such completed milestone, as identified in column 5 of that table, multiplied by the Mobilisation Fee (the "**Mobilisation Payment**") to the Price payable by the Company on the next Period payment date following such notification in accordance with Schedule 3 (*Payment*).

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Appendix 1

Mobilisation Plan

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Schedule 15

Demobilisation

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Schedule 15

Demobilisation

1 GENERAL OBLIGATIONS

1.1 The provisions of this Schedule 15 (Demobilisation) are without prejudice to the obligations of the Supplier to continue to provide the Services as required by the terms of the Contract and any services reasonably required to transition the Services to an incoming supplier with the minimum of disruption and so as to prevent or mitigate any inconvenience to the Company or disruption to its operations.

2 DEMOBILISATION PLAN

2.1 Without prejudice to paragraph 1.1, within three (3) months of the Services Commencement Date, and thereafter annually, on each anniversary of the Services Commencement Date until expiry of the Contract or earlier termination, the Supplier shall submit a draft demobilisation plan (the "**Draft Demobilisation Plan**") for review and approval by the Company. In addition, the Supplier shall update the Draft Demobilisation Plan at any time where requested by the Company (acting reasonably).

3 DEMOBILISATION ACTIVITIES

3.1 The Supplier shall at its own cost, at least twelve (12) months before the Expiry Date or as soon as reasonably practicable on receipt of any Termination Notice:

(a) prepare and submit for review and approval by the Company's Representative, a detailed demobilisation plan (based on the most recently approved Draft Demobilisation Plan) for the Services containing the Supplier's proposals for the demobilisation of the Services, including but not being limited to the transfer of Supplier Personnel, intellectual property rights and manuals, spares and equipment and the return of the TfL Supplied Resources to the Company (the "**Demobilisation Plan**") and thereafter update the Demobilisation Plan as requested by the Company;

(b) in order to support the seamless transition of the Services following the expiry or early termination of this Contract, undertake all necessary actions in connection with the demobilisation, including but not being limited to the following:

(i) providing all necessary resource, including Supplier Personnel, equipment and materials to enable timely demobilisation;

(ii) identifying its demobilisation team and demobilisation manager;

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(iii) ensuring that its demobilisation team shall attend Company chaired demobilisation/transition meetings;

(iv) keeping the Company's Representative fully informed on the progress of the demobilisation;

(v) complying with all reasonable instructions of the Company in connection with the demobilisation; and

(vi) ensuring, supporting and facilitating migration of any data used by the Supplier in providing the Services or performing its other obligations under the Contract, including through provision of a royalty free, non-exclusive licence (including the right to grant sub-licences) to access the area of the Supplier's IT system which holds such data and/or providing said data in a form which is compatible with commercial off-the-shelf software used by the Company or by a contractor providing services similar to the Services in whole or in part, as required by the Company;

(c) cooperate fully with and provide all reasonable and necessary assistance and information in connection with the Services and/or to facilitate the orderly transfer of responsibility for and conduct of the Services to the Company and any incoming supplier or suppliers in the transition of the Services before the Expiry Date or termination date (as the case may be) and for a period of three (3) months after such dates to ensure that the changeover to the incoming supplier (or back to the Company) is effected with minimal disturbance and disruption; and

(d) maintain records, data, files, information and Documentation relating to the Services in such form and manner as to enable the Supplier to effectively transfer them in full to the Company and/or to any third party nominated by the Company, so as to put the Company and/or the third party into a position where the Company and/or the third party can provide a level of service which is similar to or the same level as Services provided under this Contract.

3.2 The requirement for the Supplier to provide cooperation pursuant to paragraph 3.1(c) above extends to any retender process for the Services carried out by the Company in relation to an incoming supplier or suppliers and for these purposes the Supplier shall:

(a) grant access to the Company and any incoming supplier or suppliers to the Locations, TfL Supplied Resources and/or Company Personnel; and

(b) provide, on reasonable notice during the term of the Contract, information for the purpose of the Company carrying out a competition and managing the transition to an incoming supplier or suppliers, such information to include:

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(i) details of the Services;

(ii) details of employees who would transfer to the replacement supplier;

(iii) management information; and

(iv) any other information that the Company may reasonably require.

3.3 On receipt of an instruction from the Company, the Supplier shall return to the Company's Representative all TfL Supplied Resources provided to the Supplier in accordance with Clause 23 (Other Materials, Staff and Labour) of this Contract.

3.4 Without prejudice to the provisions of Clauses 13 (Records and Audit) and 37 (Confidentiality) of this Contract, the Supplier shall:

(a) hand back to the Company (at the Expiry Date or the termination date (as the case may be)) all records, data, files, information and documentation owned by the Company but used by the Supplier in the performance of the Services and, where requested by the Company, subsequently destroy all such electronic copy information in the possession of the Supplier and provide a certificate of destruction to the Company's Representative;

(b) provide the Company and/or incoming supplier or suppliers with all reasonable help, assistance and co-operation to make available and effect the transfer of records, data, files, information and Documentation to an incoming supplier or suppliers so as to enable the Company and/or incoming supplier or suppliers to set up and effect the transition of the Services; and

(c) hand over to the Company (upon request of the Company's Representative but in any event, at the Expiry Date or termination date (as the case may be)) all Company issued passes, entry permits or keys.

3.5 The Supplier shall ensure that (at the Expiry Date or termination date (as the case may be)):

(a) all Equipment (whether of a temporary or permanent nature) used in the delivery of the Services owned by the Company is fully maintained, serviced and fully functional with an up-to-date service and maintenance history;

(b) any Equipment which fails to meet the conditions set out in paragraph 3.5(a) shall be replaced with new Equipment by the Supplier at its own cost and in the event that the Supplier is in breach of this paragraph 3.5(b) (irrespective of whether the Equipment is in the ownership and responsibility of the Supplier or a Sub-Contractor), the Company shall be entitled to purchase such Equipment itself and recover the associated costs from the Supplier;

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(c) all Assets, Spares and Critical Spares, are handed over to the incoming supplier and the Company and that relevant members of the Supplier's Personnel are present at handover; and

(d) all areas which the Supplier, or any of its Sub-Contractors, has used for storage or operation have been left clean and tidy and all rubbish has been removed from the Locations.

4 COMPANY AUDITS

4.1 During demobilisation the Supplier shall promptly provide all reasonable co-operation and support resource in relation to any audit or check required by the Company and commissioned by the Company's Representative, including in each particular circumstance:

(a) granting or procuring the granting of access to any premises used in performance of the Contract, whether the Supplier's own premises or otherwise;

(b) granting or procuring the granting of access to any equipment (including all computer hardware, software and databases) used (whether exclusively or non-exclusively) in the performance of the Supplier's obligations under the Contract, wherever situated and whether the Supplier's own equipment or otherwise;

(c) making any contracts and other documents, records and information related to the provision of the Services available for inspection;

(d) granting copying facilities to the Company and/or LUL's auditor for the purposes of making copies of any or all the information, records and documents;

(e) complying with the Company's reasonable requests for access to senior personnel, or any Key Personnel, engaged in the Supplier's performance of the Contract; and

(f) granting access to the Locations to staff of the incoming suppliers (with the approval of the Company) for the purpose of mobilisation and transitioning of the Services including providing access to all plant, equipment, contract related records, staff, TfL Supplied Resources and escorting the incoming staff as requested by the Company's Representative.

5 NON-COMPLIANCE

5.1 In the event of a failure by the Supplier to comply with any of the obligations set out in this Schedule 15 (Demobilisation) in the final twelve (12) months of the Contract the Company shall be entitled to deduct from each payment per Period due to the Supplier a sum of up to 5% of the Supplier's Fee. This paragraph 5.1 is without prejudice to the right

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of the Company to claim general damages as a result of the Supplier failing to comply with the obligations set out in this Schedule 15 (Demobilisation).

5.2 The Parties agree that the deduction referred to in paragraph 5.1 shall not be a penalty and is reasonable and proportionate to protect the Company's legitimate interest in the Supplier's performance of this Schedule 15 (Demobilisation).

6 OTHER

6.1 The Supplier is required to notify any Sub-Contractors of the relevant demobilisation procedures set out in this Schedule 15 (Demobilisation) and/or the Demobilisation Plan.

6.2 Any Necessary Consents shall not transfer from the Supplier to an incoming supplier or suppliers and the incoming supplier or suppliers shall be required to obtain any consents that they require to comply with their obligations under any successor agreement with the Company.

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Schedule 16

Health, Safety, Quality and Environmental Requirements

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Schedule 16

Health, Safety, Quality and Environmental Requirements

References made in the Appendices attached to Part A (*Health and Safety*) and Part C (*Environmental Requirements*) to this Schedule 16 (*Health, Safety, Quality and Environmental Requirements*) to:

- "Client" shall mean the "Company"; and
- "TfL" shall mean the "Company".

Part A – Health and Safety

1. SUMMARY

1.1 POLICY

1.1.1 At all times the Supplier shall have and shall maintain an appropriate health and safety policy ("Health & Safety Policy") which outlines a commitment to the prevention of injury, ill health and continual improvement by establishing, implementing and maintaining a programme for achieving its objectives which includes:

(a) designation of responsibility and authority for achieving objectives at relevant functions and levels;

(b) the means and time-frame by which the objectives are to be achieved; and

(c) commitments to the prevention of injury and ill health, compliance with applicable legal requirements and with other requirements to which the organization subscribes, and to continual improvement.

1.1.2 The Supplier shall demonstrate commitment by ensuring the availability of resources essential to establish, implement, maintain and improve occupational health and safety.

1.2 ORGANISATION

1.2.1 **Control**

The Supplier shall define roles and allocate responsibilities and accountabilities to facilitate effective health and safety management and shall ensure that persons in the workplace take responsibility and are accountable for the aspects of occupational safety and health over which they have control.

1.2.2 **Competency and Training**

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(a) The Supplier shall ensure that any persons under its control are competent on the basis of appropriate education, training or experience. It shall provide training or take other action to meet these needs, evaluate the effectiveness of the training or action taken, and retain associated records.

(b) The Supplier shall designate sufficient competent staff, subject to the approval of the Company's Representative or designated deputy, to support the Supplier and assist them in undertaking the measures they need to take to comply with the requirements and prohibitions imposed upon them by or under the relevant statutory provisions as detailed in the Management of Health and Safety at Work Regulations 1999 regulation 7 or any subsequent amendments.

(c) As a guide, the level of competency can be assumed to be a higher or equivalent to the National Diploma in Occupational Health and Safety.

1.2.3 **Communication and Consultation**

(a) The Supplier shall establish, implement and maintain procedures for effective communication both internally and with other suppliers, visitors and interested parties.

(b) The Supplier shall establish, implement and maintain a procedure for the participation of workers in respect of hazard identification, Incident (as defined in paragraph 1.4.3) investigation and development and review of health and safety policies and objectives.

(c) The Supplier shall consult and ensure workers are represented on occupational health and safety matters. Workers shall be informed about their participation arrangements, including who is their representative.

1.3 ARRANGEMENTS FOR ASSESSING AND MANAGING RISK

1.3.1 The Supplier shall develop and issue health and safety procedures and associated documentation as required by the Contract. The format and content of all documentation and procedures shall be produced in accordance with the Supplier's management system requirements.

1.3.2 The Supplier shall establish, implement and maintain a procedure for the ongoing hazard identification, risk assessment, and determination of necessary controls. The Supplier's methodology for hazard identification and risk assessment shall be defined with respect to its scope, nature and timing to ensure it is proactive rather than reactive and provide for the identification, prioritization and documentation of risks and the application of controls. They shall be:

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(a) when determining controls, the Principles of Prevention (detailed in the Management of Health and Safety at Work Regulations 1999, regulation 4) should be applied;

(b) the Supplier shall ensure insofar as is reasonably practicable, that persons (whether in its employment or not) who may be affected by the Services are not exposed to risks to their health and safety;

(c) the Supplier shall document the significant risks and display the assessment and method statement at point of works; and

(d) the Supplier shall keep the results of hazard identification, risk assessments and control measures up-to-date.

1.3.3 The Supplier Personnel and any sub-contracted personnel shall hold a current and approved health and safety certification (for example an approved industry certification such as the CSCS card) in order to undertake works on any part of the TfL Network and Sites. The Supplier shall appoint a person with overall responsibility for managing health and safety when undertaking operational maintenance activities and other associated property works including verification and certification works and the operation of a permit to work system.

1.4 MONITORING AND REVIEW

1.4.1 The Supplier shall review their safety management system at regular and planned intervals, and adjusted as necessary, to ensure that the objectives set in the Supplier's Health & Safety Policy are achieved.

1.4.2 The Supplier shall develop implement and maintain monitoring and measuring processes including but not limited to:

(a) independent auditing;

(b) workplace inspections;

(c) regular meetings and communications at all levels; and

(d) feedback to staff regarding health and safety concerns.

1.4.3 **Incident & Accident Investigation**

(a) An "**Incident**" is an unplanned, undesired event that under slightly different circumstances could have resulted in harm to people, damage to property, damage to the environment, or loss of service/process (and includes near misses / near hits).

(b) An "**Accident**" is an unplanned, undesired event that did result in harm to people, damage to property, damage to the environment and a loss of service / process.

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(c) The Supplier shall establish, implement and maintain a procedure to record, investigate and analyse safety Incidents and Accidents in order to:

i determine the root cause of the Incident and/or Accident and the subsequent underlying occupational health and safety deficiencies/other factors that contributed to the Incident and/or Accident;

ii identify the need for corrective and preventative action and opportunities for continual improvement;

iii ensure that all Incidents and Accidents occurring on TfL premises are reported to the Company using the TfL Accident and Incident Reporting Systems, the IE2 system. The Supplier is to manage each Incident in line with the requirements of the system and the Company's requirements, which is not limited to, the assigning of accountable managers, delivering the investigations, actions and meeting timescales all to be agreed with the Company. Relevant timeframes are set out in Section 7 of Appendix 1 (*FAQ for InfoExchange HSE*);

iv in respect of serious Incidents and Accidents where enforcement authorities are involved or have been informed, ensure that procedures exist to inform the Company immediately;

v document, maintain and report to the Company at least quarterly, the results of Incident and Accident investigations; and

vi fully cooperate and liaise with the Company's Representative and any other parties regarding investigation into Incidents and Accidents in compliance with the Company's requirements.

1.4.4 The Company reserves the right to stop any works, operations or actions of Supplier Personnel or Sub-Contractors, if in the opinion of the Company or the Company's Representative, the manner in which these are being undertaken constitutes a risk to the safety and or health of persons or damage to property.

1.4.5 When establishing and reviewing its objectives, the Supplier shall consider its technological options, its financial, operational and business requirements, and the views of relevant interested parties.

1.5 AUDIT

1.5.1 The Supplier shall ensure that all processes in respect of safety and health are in place during the life of the Contract, are documented and made available for inspection and/or audit by the Company or the Company's Representatives at all times.

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1.5.2 The Company shall have the right to conduct or commission an audit of the Supplier's health, safety, quality, and environmental management system and activities at any time.

1.6 QUENSH INSPECTIONS

1.6.1 The Company shall have the right to undertake a QUENSH Inspection at any time.

1.6.2 Following each QUENSH Inspection, the Company shall submit a QUENSH Work Order via the AMS in accordance with the AMS Supplier Processes detailed in Appendix K (AMS Supplier Processes) to the Specification.

1.6.3 The Company shall ensure that each QUENSH Work Order:

(a) is scored as compliant or non-compliant by the Company in accordance with the AMS Supplier Processes detailed in Appendix K (AMS Supplier Processes) to the Specification; and

(b) specifies any actions identified during the QUENSH Inspection for the Supplier to carry out in order to ensure compliance with its obligations under this Schedule 16 (Health, Safety, Quality and Environmental Requirements).

1.6.4 The Supplier shall carry out any actions identified in the QUENSH Work Order as soon as is reasonably practicable.

1.6.5 For the purposes of this paragraph 1.6, the terms "QUENSH Inspection" and "QUENSH Work Order" shall have the meanings set out in section 5 of the Specification.

2. **HEALTH & SAFETY (QUENSH) – LUL sites**

The Supplier shall comply with the requirements of the Contract Quensh Conditions (LUL Category 1 Standard S1552 A18) as defined by the following Quensh Menu ("QUENSH") for LUL Sites contained in Appendix 2 (QUENSH).

3. **HEALTH & SAFETY – Rfli sites**

The Supplier shall comply with the health and safety requirements of the RfLi Health, Safety and Environmental Contract Conditions contained in Appendix 3.

4. **HEALTH & SAFETY – London overground sites**

The Supplier shall comply with the health and safety requirements for the London overground sites contained in Appendix 4.

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5. **HEALTH & SAFETY – Trams sites**

The Supplier shall comply with the health and safety requirements for the trams sites contained in Appendix 5.

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Appendix 1

FAQ for InfoExchange HSE

1) Why can't I access an Incident via the link I have been given?
In order to access the system you need to have been set up as a user. This is a change from the old reporting system where anyone who was given a link could access and edit an Incident. By requiring users to be registered, this controls who has access and ensures that individuals only see the Incidents which they need to.

2) Who is the "Accountable Manager"
The Accountable Manager (AM) is a new role which is assigned to a manager with accountability for an area / programme. It is suggested that these should be Band 4 managers. There is no requirement for the AM to do anything once he/she is notified, however, if they want, they can access the Incident and make changes if necessary and they can assign an Investigation Lead (Reviewer).

3) Who is the "Investigation Lead"
The Investigation Lead (also referred to as the Reviewer) is the person responsible for 'owning' the investigation of the Incident and for ensuring that any actions identified are entered and that the category and root causes of the Incident are identified.

4) Why are there suppliers listed in the "Responsible Area/Project" list
The reasons for this are twofold.

Firstly – this allows the accurate assignment of responsibility for an Incident – this will facilitate in depth analysis of the performance of different suppliers working in a particular project or organisational unit as well as comparing the performance of that supplier across different projects within TfL if they have multiple contracts.

Secondly – this allows employees of the supplier companies to be given access to the InfoExchange System to directly report Incidents as well as (where appropriate) review/investigate the Incidents. Linking the supplier companies to the **Responsible Area/Project** means that their permissions and notifications are limited to only Incidents that are the responsibility of that supplier.

5) Can you give me an overview of the system components?
In broad outline, an Incident is composed of a number of forms. The main forms are described below:

Incidents: This is the form that is filled in with details of 'what happened' – in this form a series of questions are asked to capture the key details needed to determine the Incident Type (Injury/Asset Damage/Near Miss etc) which determines the notifications that need to be sent out. The field for 'Responsible Area/Project' is also completed in this form which determines who the notifications are sent to. It is necessary to fill in all of the mandatory questions in this form before an Incident can be saved and a reference number generated;

Person Involved: It is possible to create as many Person Involved forms as required – this is the form where the details of anyone injured or taken ill is captured. The form can also be used to record details of customers, witnesses, emergency services, 3rd parties etc. whose details need to be captured. For workers (employees and contractors) suffering Lost Time Injuries (as defined in the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 as amended from time to time) this is the form where details about the injury and time off work are recorded; and

Review & Investigation: This is the form where the details of the investigation to be carried out are recorded, the findings of that investigation and the categorisation of the Incident along with contributory factors and root causes (where applicable) are captured. The Review & Investigation form contains a workflow component so that the Investigation Lead can keep track of his/her open investigations. Commencement of this workflow component will provide senior managers with confidence that an investigation has started and provides the ability to generate further notifications.

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Actions: This is another form of which multiple copies can be created for a single Incident. This is a straightforward form in which the action required, due date etc and closure comments are captured. As per the Review & Investigation, there is a workflow associated with each action to allow tracking and reporting;

Documents: This form allows the uploading of electronic files (photos, reports etc.) as well as capturing any appropriate notes / titles; and

Other Forms that may be seen include 'Train/Tram Involvement', 'SPAD/SPAS', 'Station Closure'. These record details relating to these topics if these are required.

6) How do I report and close out an Incident?

The steps required to report and close an Incident are as follows:

a) report Incident (either via phone line or via a direct entry if these permissions have been requested and granted);
b) choose the type of investigation to be carried out (or None), and assign the 'Investigation Lead' to the workflow in the 'Review & Investigation' form:
   (i) the Investigation Lead can be assigned by any user with edit permissions to the 'Review and Investigation' form; and
   (ii) the Investigation Lead position can be assigned to any user with the role of 'Reviewer' and who has permission to see Incidents for the current 'Responsible Area/Project';
c) carry out appropriate investigation, record findings, assign causes and close the workflow;
d) identify actions to be carried out in response to the Incident e.g. to prevent a re-occurrence – not what was done immediately in sorting out the Incident. If there are no further specific Incidents – then declare this via the tick box in the 'Review & Investigation' form that no further actions are required; and
e) once the investigation is completed (workflow closed) and all actions are closed (workflows closed) the Incident is closed.

7) What do the Status' mean?

There are 3 separate Status' associated with each Incident – these are described as below. The system will not move to the next Status until all preceding criteria have been met.

a) Incident Status

STATUS	Fields and Criteria	Explanation
Awaiting Data or Review	Investigation Type = NULL	Investigation not yet started
Data or Review Overdue	Investigation Type = NULL + Today > Incident date + 7 Days	Investigation not yet started + 7 days after the Incident
Under Investigation	Investigation Completion Date = NULL	Investigation has not been completed
Investigation Overdue	Investigation Completion Date = NULL + Today > Incident date + 28 Days	Investigation has not been completed + 28 days after the Incident
Investigation Complete - Actions Undefined	Action Count = 0 + "No Further Actions Required" = NULL	No Actions Identified + Investigation Lead has not declared that "No Further Actions Required"
Investigation complete- Actions Outstanding	Action Status <> "Closed"	At least one Action not closed
Investigation Complete – Actions Overdue	Action Status = "Overdue"	At least one Action not closed and is now overdue

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Incident Closed	Investigation Completion Date <> NULL + Action Status = "Closed"	Investigation workflow is complete + All Actions are Closed
Investigation Complete – Actions Reopened	Investigation Completion Date <> NULL + Action Status = "Reopened"	Investigation workflow is complete + At least one Action has been re-opened for further close out details
Incident Closed(2)	Investigation Completion Date <> NULL + Action Status = "Closed (2)"	Investigation workflow is complete + All Actions closed (following one Action being re-opened)

b) Investigation Status

STATUS	Field and Criteria	Explanation
Open	Incident Date + 28' <= Today + Completion Date = NULL	Investigation is open and it is 28 or less days since the incident
Overdue	Incident Date + 28 > Today + Completion Date = NULL	Investigation is open and it is more than 28 since the incident
Closed	Completion Date <> NULL	There is a Completion Date (created automatically when the workflow is finalised)

c) Action Status

STATUS	Field and Criteria	Explanation
Open - due in >90 days	Action Due Date > Today + 90) + Completion Date = NULL	Action due in more than 90 days
Open - due within 90 days	Action Due Date > Today + 28 + Action Due Date > Today + 90) + Completion Date = NULL	Action due within 90 days
Open - due within 28 days	Action Due Date> Today + 7 + Action Due Date > Today + 28) + Completion Date = NULL	Action due within 28 days
Open - due within 7 days	Action Due Date < Today + 7 + Completion Date = NULL	Action due within 7 days
Overdue	Action Due Date < Today + Completion Date = NULL	Action Overdue
Closed	Completion Date <> NULL	Action closed (Workflow completed)
Reopened	Action Workflow = stage (2)	Action Workflow moved to stage (2) – (Action re-opened)
Closed(2)	Action Workflow = stage (3)	Action Workflow moved to stage (3) – (Action re-closed following a re-opening)

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8) How do I reassign an incident

If any one of the Accountable Manager, Incident Reviewers or HSE manager of the original (source) area or project also has permissions to see the target area, then that person can re-assign the Incident to the new (Target) Area.

This is likely to occur if the target area is within the same part of the TfL organisational area as the source area e.g. between track and signals in asset performance or between projects within a particular programme in CPD.

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Appendix 2

LUL Sites - QUENSH

Docusign Envelope ID: 22B9855B-191A-45EB-AB47-E5A8F0D4FB4C

F0780 A18 Contract Menu

This Contract Menu must be used in conjunction with Category 1 Standard S1552 "Contract QUENSH Conditions"

Contract Menu

Contract No:	WS1219541290
Contract Name	Fire Systems (Rail) Maintenance
Client:	TfL
Supplier:	TBC

Principal Contractor: Yes ☐√ No ☐

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Guidance

The menu is a tool which is used by the Client to identify conditions that apply to specific contracts and communicate these conditions to the Supplier.

How to complete the menu

1) The Client evaluates the scope of work and enters 'Y' or 'N' in the 'Identified by the Client' column of the menu against each condition selected as applicable or not applicable to the Contract. In the 'Other documents / comments' column the Client can make references to other documents which are supplementary information which is available although not contained within the QUENSH manual but should be considered by the Supplier when they review the conditions. Copies of any additional documents identified in the menu shall be made available to the Supplier. All documents referenced in the Menu shall be current issue, unless otherwise advised. This column can also be used to communicate information (comments) to the Supplier which may be of use to the Supplier when reviewing the conditions.
2) The Client fills in 'Client menu (Invitation to Tender)' section on the last page of the menu and issues the menu as part of the ITT.
    a) The Supplier receives the ITT, evaluates the scope of work and, as a requirement of the tendering process, inserts 'Y' or 'N' in the 'Identified by the Supplier' column of the menu against each condition selected as being applicable. These selections may be different from those identified by the Client. Where the Supplier's selection differs from the Client's selection, a clear explanation of the reason for these differences shall be given by the Supplier. A reference to these explanations shall be put in the 'Reference to explanation' column on the menu.
    b) The Supplier representative signs and dates the 'Supplier menu (Tender)' on the last page of the menu and submits it with the tender, for consideration by the Client.
    c) Differences in the Client and Supplier menu selections will be discussed and resolved with the Client at subsequent tender review meetings. The agreed final version of the menu selections shall form a mandatory part of the Contract and shall be complied with by all Suppliers and their sub-contractors.
    d) The menu shall be subject to project version and document control.

Queries on the menu

Any queries in relation to the Contract QUENSH Conditions selected on the menu are to be referred to the Client representative, see contact details/address on last page of the menu.

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Contract menu

Requirements in QUENSH

Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	Topic	Other documents / Comments	Y / N	Y / N	Reference to explanation - see Section 2a in attached Guidance Notes
4	Agreement of the applicable QUENSH contract conditions				
5	Supplier's selection of sub-contractors		Y		
6	Identification of Safety Critical Activities		N		
7	Works Environmental Management		Y		
8	Emergency Plan		Y		
9	Method Statements		Y		
10	Health, Safety and Environment File		Y		
11	Pre-start LU health, safety and environment meeting		Y		
12	Supplier's site induction		Y		
13	Site Person in Charge		Y		
14	**Staff requirements**	Fire Service Specification	**Y**		
14.1	**Behaviours**	Fire Service Specification	**Y**		
14.1.1	Alcohol and drugs	S1251 / S1257	Y		
14.2	**Control of hours worked**	Fire Service Specification	**Y**		
14.2.1	Working Time Regulations		Y		
14.2.2	Fatigue		Y		
14.3	**Knowledge**	Fire Service Specification	**Y**		
14.3.1	English language		Y		
14.3.2	Access Card and Worksite Briefing		Y		
14.3.3	Visitors to sites		Y		
14.4	**General competence**	Fire Service Specification	**Y**		
14.4.1	Evidencing competence of safety critical staff		N		
14.4.2	Identification of safety critical staff		N		
14.4.3	Competent external safety critical personnel		N		

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Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
14.4.4	Training		Y		
14.4.5	Asset specific competence		Y		
14.5	**Medical requirements**	S1602 / S1601	Y		
14.6	**Identification of Suppliers staff**		Y		
14.7	**Clothing**	S1483	Y		
15	**Permits and licences**	Fire Service Specification	**Y**		
15.1	LU specific permits and licences		Y		
15.2	Permits, licences and certificates for Supplier's staff		Y		
16	**The Principles of Access**	Fire Service Specification	**Y**		
16.1	Introduction		Y		
16.2	Access to Stations		Y		
16.3	Access to Track		Y		
16.4	Access to depots		Y		
17	**Applying for Planned Access**	Fire Service Specification	**Y**		
17.1	Introduction		Y		
18	Applying for General Access		Y		
18.1	Constraints that apply to Generic Access		Y		
19	Access for fault repair		Y		
20	Operational Assurance		Y		
21	**Closures and possessions**		**N**		
21.1	Requirements for closures		N		
21.2	Requirements for possessions		N		
22	**Controls at point of access**	Fire Service Specification	**Y**		
22.1	Publication of works		N		
22.2	Checks at point of access		Y		
22.3	Signing-on with the Station Supervisor		Y		
22.4	**Track specific requirements**	Fire Service Specification	**Y**		
22.4.1	Person providing protection	Provided by the Company	N		

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Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
22.4.2	Possessions		N		
23	Removal of supplier's personnel from LU Premises		Y		
24	Incidents		Y		
25	Notification of regulatory concern or action		Y		
26	Confidential Incident Reporting and Analysis System (CIRAS)		Y		
27	**Monitoring**	Fire Service Specification	**Y**		
27.1	LU inspections		Y		
27.2	Monitoring the supply chain		Y		
27.3	Health, safety and environmental surveillance by the supplier's personnel		Y		
27.4	Work location inspection and audit		Y		
27.5	Timescales for rectifying non-compliances		Y		
28	Radio transmitters and transceivers		Y		
29	Mobile phones		Y		
30	Knives		Y		
31	Site health, safety and environment committee		N		
32	Site housekeeping and security		Y		
33	Accidental damage, obstruction or interference with assets		Y		
34	Delivery of materials		Y		
35	**Conveyance of loads**	Fire Service Specification	**Y**		
35.1	Conveyance of loads on lifts and escalators	S1092 / S1093	Y		
35.2	Conveyance of hazardous materials and substances	S1085	Y		
36	Asbestos (non asbestos removal projects)		Y		
37	Working in or near lifts and escalators		Y		
38	Work on or adjacent to utilities and High Voltage cables (buried services)		Y		
39	Working on or about the track		Y		

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Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
40	Access to electrical sub-stations, working equipment, relay and other secure rooms		Y		
41	Entering areas with gaseous fire suppression systems	Acess required to carry out (Fire) PPM as per requirements of the Planned Preventitive Maintenance Technical Specification	Y		
42	**Fire prevention**	Fire Service Specification	**Y**		
42.1	General requirements		Y		
42.2	Temporary fire points		N		
42.3	Timber		Y		
42.4	Composites	G085	Y		
42.5	Sheeting materials		Y		
42.6	**Gas cylinders**		**N**		
42.6.1	Use of gas cylinders in below ground locations		N		
42.6.2	Storage of gas cylinders (above ground)		N		
42.7	**Flammable and highly flammable materials**		**N**		
42.7.1	Use of flammable and highly flammable materials below ground		N		
42.7.2	Storage of flammable and highly flammable materials below ground		N		
43	**Hot work and fire hazards**		**Y**		
43.1	Hot work		Y		
43.2	Reasonable notice of works		Y		
43.3	**Precautions**		**Y**		
43.3.1	Buildings and assets		Y		
43.3.2	Gas cylinders		N		
43.3.3	Gas detection		Y		
44	**Storage**	Fire Service Specification	**Y**		
44.1	General requirements for storage		Y		

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Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
44.2	Trackside storage		N		
44.3	Hazardous materials and substances	Hazardous Materials Management Procedure	Y		
44.4	Allocation of space on operational property	S1472	Y		
45	Plant and equipment	S1171	Y		
46	Clearance approvals		Y		
47	Access equipment		Y		
48	Temporary works		N		
49	Temporary fences and hoardings		N		
50	**Temporary lighting and power supplies**		**Y**		
50.1	General requirements		Y		
50.2	Lighting in tunnels and shafts	S1066	Y		
51	Screening of lights and positioning		Y		
52	**Environmental requirements**	Refer to SEPARATE Environmental Requirements in Part C of Schedule 16	**Y**		
52.1	General environmental requirements		X		
52.2	Environmental nuisance		X		
52.3	Water		X		
52.4	Waste management		X		
52.5	Noise and vibration		X		
52.6	Archaeology, historical interest and listed buildings		X		
52.7	Wildlife and Habitats		X		
52.8	Resource Use		X		
52.9	Pest control		X		
52.10	Land and water pollution prevention		X		

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Applicable requirements identified by Client				Applicable requirements identified by Supplier	
Section	**Topic**	**Other documents / Comments**	**Y / N**	**Y / N**	**Reference to explanation - see Section 2a in attached Guidance Notes**
53	**Quality requirements**	Refer to SEPARATE Quality Requirements in Part B of Schedule 16	Y		
53.1	Records		X		
53.2	Retention period		X		
53.3	Availability of records for inspection		X		
53.4	Statistical process control, audit and inspection procedures		X		
53.5	General quality requirements		X		
53.6	Quality Plan		X		
53.7	Testing and inspection		X		
53.8	Certification of conformity		X		
53.9	Quarantine		X		
53.10	Traceability		X		
53.11	Maintenance and servicing		X		
53.12	Design		X		
53.13	Computer aided design		X		
53.14	Asset commissioning and handover		X		

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Other requirements / comments

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Client/Supplier approval

Client Menu (Invitation to Tender)

Prepared by: [redacted] Signature: _____

Approved by (the Client's representative): [redacted] Signature: _____

Title: _____

Address: _____

Phone No: _____

Email: _____

Revision of this menu: _____

Supplier Menu (Tender)

Approved by (the Supplier's): _____ Signature: _____

Title: _____

Address: _____

Phone No: _____

Email: _____

Revision of this menu: _____

Contract Menu (Final Approval of Menu)

Evidence shall be recorded of any amendments to the Client's menu which were agreed in establishing the Contract Menu.

Client's representative approval: _____ Signature: _____

Supplier's representative acceptance: _____ Signature: _____

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Appendix 3

RfLi Health, Safety and Environmental Contract Conditions – RfLi Sites

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Transport for London

RFLI - Rail for London (Infrastructure) Ltd

Document Number:	**RFLI-GEN-HS-PRO-0031**
Revision:	**4.0**
Revision Date:	**08/11/2023**

RFLI Health, Safety & Environmental Contract Conditions

Originated by:	Name:	[redacted]	
	Title:		
	Signed:		8th November 2023
Checked by:	Name:		
	Title:		
	Signed:		8th November 2023
Authorised by:	Name:		
	Title:		
	Signed:		8th November 2023

The classification of this document is TfL RESTRICTED

Docusign Envelope ID: 22B9855B-191A-45EB-AB47-E5A8F0D4FB4C

Document History

Revision	Date	Change	Author
1.0 (Draft)	November 2018		[redacted]
2.0	March 2019	Issued for Use	
3.0	May 2019	Issued for Use	
4.0	November 2023	Issued for Use	

Record of Holds in Document

Hold No.	Section	Description of Hold	Responsible

Review

Revision reviewed	Reviewer	Date	Comments incorporated
4.0	[redacted]	8/11/2023	UAV section added
4.0		8/11/2023	Yes
4.0		8/11/2023	Yes

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1. Introduction

1.1 Purpose

The purpose of this document is as follows:

To detail the appropriate RFLI requirements in addition to relevant legislation and industry requirements that ensure risks are understood and that controls embedded in plans and working arrangements for work / activities undertaken by Suppliers at their own premises or on RFLI Operational Property or other RFLI premises which affect and or impact upon the operational railway.

1.2 Scope

1.2.1 In scope for this document

All works undertaken by Suppliers (and their Contractors) engaged by RFLI to undertake works on RFLI managed assets or property.

1.2.2 Out of scope for this document

Any works undertaken by RFLI employees.

1.3 Who should read this document

Contractors appropriate Management and relevant RFLI employees involved in the management of those contracts / contractors.

1.4 Document review and update

This document will be reviewed for update no later than 30/11/2024

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2. Roles and Responsibilities

2.1 The Company

The Company (RFLI) shall.

a) Be responsible for ensuring the requirements outlined in these contract conditions are suitably managed
b) Identify the point of contact within the Company's organisation. This individual will be the RFLI Responsible Person (RFLIRP).

Note: The Company's representative (RFLIRP) shall be responsible for ensuring compliance with the Company's requirements. This work may be amalgamated within other, recognised roles within the Company's organisation

2.2 The Supplier

The supplier shall be responsible for managing the activity of their organisation and supply chain so that compliance with the RFLI Health, Safety & Environment Contract Conditions (HSECC) and any applicable legislation / regulation is achieved.

The supplier shall:

a) Be responsible for satisfying RFLI HSECC requirements applicable to the works;
b) Have or develop a comprehensive knowledge of the RFLI HSECC;
c) Have or develop an understanding of how 'works' can, impact the operational railway, including staff, customers and assets;
d) Ensure that all suppliers forming part of the supply chain (sub-contractors), including nominated TfL contractors, comply with all applicable RFLI HSECC requirements.
e) Upon contract award, identify a point of contact who will represent the supplier's organisation and their supply chain.

This representative shall assure RFLI that full compliance with the RFLI HSECC is being achieved within the supplier organisation and its supply chain where applicable. This work may be amalgamated within other recognised roles within the Supplier's organisation.

3. Agreements for the Management of Health and Safety Risks

The Supplier shall demonstrate how their Health and Safety Management System meets the relevant requirements of RFLI HSECC as part of Contract award and pre-start assurance to RFLIRP.

4. Suppliers Selection of sub-contractors

The supplier shall ensure that its procurement management system evaluates and selects sub-contractors not solely on the basis of cost but also for their health and safety knowledge, skills, experience and their ability to meet the Company's requirements.

The Supplier shall provide with their tender, details of the basis for the selection of all proposed sub-contractors and how they are selected.

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5. Suppliers Selection of Safety Critical Activities

Suppliers shall identify, and review on a regular basis all Safety Critical Activities associated with the Contract and demonstrate how relevant legislation and RFLI standard RFLI-GEN-HS-PRO-0014 'Safety Critical Work' are met. Agreement shall be reached between RFLI and the Supplier regarding which Safety Critical Activities are associated with the Contract.

6. Works Environmental Management

The Supplier shall demonstrate the arrangements for managing environmental impacts in line with relevant legislation, RFLI and wider TfL environmental requirements in their Environmental Management Plan and associated Method Statements and Risk Assessments.

7. Emergency Plan

Where the Supplier has control of a premises or enclosed / segregated area, they shall prepare Emergency Plans relating to fire and other health, safety and environmental emergencies and shall define the arrangements, procedures and measures that will be implemented to eliminate or minimise the identified hazards and the potential hazards.

All such plans shall reflect and be complementary to the local RFLI evacuation procedures for the location.

The Emergency Plan shall be kept at site along with any other documents, posters or notices required by law or directed by RFLI. The Supplier shall provide the Company with a copy of the Emergency Plan.

Where the supplier is working within a non-enclosed / unsegregated area, the supplier shall ensure their personnel, including any sub-contractors are made aware of and comply with the emergency arrangements for the premises.

8. Risk Assessments and Method Statements

The Supplier is free to use its own format for risk assessments and method statements; but they must be in line with UK health and safety legislation, best practice and be suitable and sufficient for the tasks being undertaken.

The Supplier shall provide a schedule of risk assessments and method statements 21 days prior to commencement of the Contract. This shall include risk assessments for any chemicals being used. A copy of all applicable documentation is to be made available (including where changes are made in the future) to RFLI for potential review to identify any potential omissions or misunderstandings.

9. Health, Safety and Environmental File

RFLI shall provide information and any other stored health and safety information on the known or potential hazards and risks that are present at a location.

The supplier shall supply the information to any party requesting it to whoever is either engaged or potentially involved in work at that location and shall provide the Company with all relevant information to ensure that any Health, Safety and Environment file is adequately maintained.

10. Pre-start Company Health, Safety and Environmental Meeting

The RFLIRP shall determine the need for an RFLI specific pre-start health, safety and environment meeting where additional individuals from relevant stakeholders will also be invited.

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Appropriate attendees shall also be invited to visit the site on a regular basis. The Supplier shall comply with any instructions from the RFLIRP resulting from these visits.

11. Supplier's Site Induction

The Supplier shall ensure that their personnel and any visitors to the site are made aware of the Supplier's health, safety and environmental requirements specified in the Contract relevant to site safety.

12. Supervision

The Supplier shall submit to the RFLIRP details of the Supplier's proposed level of supervision of activities.

13. Site Task Leader (STL)

All work groups shall have a trained and competent STL and have the relevant documentation to demonstrate so.

14. Access to Health and Safety Advice and Support

The Supplier shall provide the name, contact details and evidence of competence of the health and safety advisor appointed to support the Contract.

15. Provision of Health and Safety Performance Information

The Supplier shall provide health and safety performance data in accordance with the requirements and timescales notified by the RFLIRP. This information may include, but not be limited to, incidents, hours worked and results of monitoring activities, relating to their own organisation and any sub-contractors employed.

16. Staff Requirements

16.1 Alcohol and Drugs

In compliance with TfL standards R2692 'Alcohol and drugs at work information for managers and employees' staff are prohibited from consuming alcoholic drinks or consuming or using drugs at work, or from being under the influence of alcohol, drugs or other substances that might impair the proper performance of their duties on RFLI's Premises. Drugs prescribed by a medical practitioner shall be assessed for their impact on the safe completion of tasks with the working environment.

16.2 Smoking

Supplier's employees are prohibited from smoking on RFLI's premises, including the use of e-cigarettes or vaping devices

17. Control of Hours Worked

17.1 Working Time Regulations

Suppliers shall comply with the Working Time Regulations and any subsequent Amendments. This shall include, but is not limited to:

The minimum amount of rest between any two shifts shall be 11 hours.

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As determined by the Supplier, the consecutive days that may be worked before a rest period when working on, over or adjacent to the railway shall be either:

a) six consecutive days, followed by a rest period of not less than 24 hours

b) 12 consecutive days, followed by two consecutive rest days, each of which is not less than 24 hours

c) within any 14 day period, two rest periods, each of which is not less than 24 hours.

In calculating the number of hours worked by personnel, the Supplier shall take fully into account those hours worked for any other Company / Supplier / Contractor.

The Supplier shall maintain records of employee's working hours and these shall be made available to the RFLIRP, immediately upon request, for monitoring and audit purposes.

Where the contract is to provide support to RFLI personnel, it is expected that the Suppliers / Contractors will work in alignment with RFLI rosters and working hours.

17.2 Fatigue

Adherence to the Working Time Regulations does not manage the risk of fatigue; suppliers shall implement and inform the RFLIRP of controls to reduce, so far as is reasonably practicable, risks arising from employee fatigue. The control of risk from fatigue is needed even if there is no shift work, significant overtime or safety critical work being undertaken.

18. Knowledge

18.1 English Language

The default language for all Suppliers and services to RFLI shall be English and this requirement shall extend to:

a) Oral communications

b) All written communications and instructions, including any training or technical material provided by any Supplier following the modification, renewal or replacement of any asset.

Employees that have responsibility for managing the Contract and the Supplier's personnel whilst they are working on RFLI Premises shall be able to communicate in both written and oral English to a standard appropriate to the tasks being performed.

18.2 Access Card and Worksite Briefing

All Supplier personnel shall be able to provide evidence by approved methods that they have successfully attended the relevant RFLI approved specific training courses for the tasks and activities being undertaken. Prior to any work activities the Supplier's appointed STL will provide a pre-start worksite briefing to staff. These records shall be made available to the RFLIRP upon request.

19. General Competence

19.1 Evidencing Competence of Safety Critical Staff

The Supplier shall demonstrate the competence, medical fitness, qualifications and training of safety critical staff as set out in RFLI Standard RFLI-GEN-HS-PRO-0014 'Safety Critical Work'.

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19.2 Identification of Safety Critical Staff

The Supplier shall provide a means of identification for all staff employed on safety critical works as set out in RFLI Standard RFLI-GEN-HS-PRO-0014 'Safety Critical Work'.

19.3 Training

The Supplier shall ensure that its employees (and those of its appointed supply chain) attend and achieve the required standard in the courses agreed with the RFLIRP. These courses will cover the rules, procedures and instructions to ensure that staff are safe on or about the operating railway. Training can only be provided by a RFLI / TfL Accredited Training Provider.

19.4 Asset Specific Competence

Asset specific competence; suppliers shall demonstrate to the RFLIRP the competency to perform works on specific assets as required by the governing standards / specifications.

19.5 Medical Requirements

All Suppliers shall comply with RFLI medical requirements as set out in RFLI standards RFLI-GEN-HS-SDD-0002 'RFLI Standard for Medical Fitness'.

19.6 Identification of Suppliers Staff

The Supplier's personnel and their sub-contractors shall wear high visibility clothing which carriers the Supplier's company name, at all times when on or about the operational railway.

High visibility vests shall comply with the requirements of relevant approved Network Rail Standard.

19.7 Clothing

Suppliers shall not wear any garments or article that impedes their vision or hearing when working on RFLI infrastructure, unless required as part of a safe system of work, e.g. hearing protection.

20. RFLI Specific Permits and Licences

Permits and licenses shall be required for:

a) Working at height
b) Working in confined spaces
c) Authorisation of Hot works
d) Work involving isolation of fire safety systems
e) Live working on electricity supply systems
f) Working on HV and LV electrical isolations
g) Digging and excavating
h) Use of Unmanned Aerial Vehicles (UAVs)

Where licenses or permits are required, the Supplier shall ensure they are prominently displayed at all times during the work period and in a position and manner approved by the RFLIRP. If the licence or permit is defaced, removed or obstructed without authority, the Supplier shall apply for it to be replaced immediately.

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The Supplier shall apply for permits or licences to the RFLIRP at least 21 days prior to the proposed commencement date.

Permits, certificates and licences are issued on an individual basis and are not transferable to other persons or companies. If any of these documents are lost or damaged, the supplier must advise the RFLIRP as a matter of urgency.

20.1 Permit, Licences and Certificates for Suppliers Staff

Suppliers shall:

a) Hold a record of all licenses, permits and certificates issued to its staff by RFLI or Accredited Training Providers

b) Ensure that their staff carry their DAMSP (Drugs, Alcohol Medical Screening Programme) certificates and relevant training certificates

c) Allow sufficient time to ensure that its staff are properly trained and registered before starting work on the Contract.

If the Supplier's employees fail to produce the stipulated licences when requested to do so by any member of RFLI, London Underground Ltd (LUL), Mass Transit Railway - Crossrail (MTR-C) and Network Rail (NR) staff, they shall be required to leave the RFLI Premises immediately. No cost or delay incurred by the Supplier as a result of such a failure will be accepted by RFLI.

20.2 The Principles of Access

Access to the RFLI network is controlled by separate interdependent regimes e.g. London Underground Ltd (LUL), Mass Transit Railway - Crossrail (MTR-C) and Network Rail (NR).

21. Access

21.1 Access to Stations, Depots and Track

All Suppliers shall access RFLI infrastructure and / or premises in accordance with the relevant RFLI access and planning process. All individuals are required to be competent with the required level of competence and licences held for the task or activity to be undertaken.

21.2 Applying for Planned Access

All access requests shall be made via the RFLI maintenance planning section as detailed in RFLI-MTC-MR-PRO-0001/3&4 – RFLI Crossrail Central Operating Section Planning Process Module. Authorisation will be issued to the supplier once the request has been operationally reviewed, clash checked and approved detailing the protection and or possession arrangements and where applicable, the relevant individuals to liaise / contact as part of the arrangements. Additional arrangements may need to be made where work is being undertaken in areas under the direct control of others (LUL / MTR-C etc.).

21.3 Shared Access

There may be instances where a Supplier cannot have sole occupation of a site. In such cases communication, co-ordination and co-operation will be managed in line with good practice as detailed in the CDM Regulations.

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21.4 Access to Locations under the Control of a Principal Contractor or other Infrastructure Managers

Where access is required to a location under the control of a Principal Contractor or other Infrastructure Manager, arrangements shall be made in line with their requirements unless there is agreement in place for RFLI to manage the process on their behalf. The Supplier shall comply with the Principal Contractor's or Infrastructure Managers access requirements, site rules and PPE requirements in addition to the requirements of 21.1 above. The Supplier shall provide the Principal Contractor or Infrastructure Manager with the risk assessments and method statements for the activities being undertaken within the area under the Principal Contractor's or Infrastructure Managers control.

21.5 Access to Secure Rooms

Requests for access to secure rooms shall be requested via the RFLIRP. All equipment within such rooms must be protected in an agreed suitable manner. The Supplier shall not use such rooms as stores or workrooms.

21.6 Access for Fault Repair

Access in response to a reported fault is managed in the same way as planned access, although at short notice (see section 21.2 above).

22. Operational Assurance

Operational Assurance (OA) approval (by RFLI) is required when planned work could impact on station or train operations. The criteria for this are set out in RFLI HSE site 'Assurance & Improvement'.

The OA process ensures that,

a) Safety risks to customers and staff are being managed to As Low As Reasonably Practicable (ALARP)

b) Suitable consultation has taken place between the relevant individuals at the Route Control Centre (RCC) or their nominated representatives and those conducting the work.

23. Possessions

The requirements for planning and managing possessions are specified in RFLI Operations Central Operating Section Rule Book T3 'Possession for engineering work in the Central Operating Section'. For possessions involving other infrastructure controllers or equivalent, the site owner's procedures and Site Specific Engineering Agreements must also be applied. A representative from the other organisation must attend the possession planning meeting.

24. Controls at Point of Access

24.1 Publication of Works

All planned work, after approval, is published" in the Weekly Operating Notice (WON) and Periodic Operating Notice (PON).

Planned Work cannot take place unless published in one of the above.

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24.2 Checks at Point of Access

The Supplier must be prepared to show evidence of:

a) booking reference number (including General Access) or fault number

b) appropriate Personal Protective Equipment (PPE)

c) that they have successfully attended RFLI specific Health & Safety induction along with other certificates and licences as appropriate.

The Supplier shall ensure that copies of the relevant Health, Safety and Environment arrangements and safe systems of work are readily available at work sites.

25. Person Providing Protection

All possessions will be taken by a member of RFLI staff on behalf of the supplier.

26. Removal of Supplier's Personnel from RFLI Premises

Suppliers shall take appropriate actions to prevent and eliminate unacceptable behaviour or conduct. RFLI reserves the right to object to and (where appropriate) immediately expel any of the Supplier's personnel or supply chain personnel employed on the works.

27. Incidents

All suppliers shall have contingency plans and remedial measures for incidents, including provision of support for individuals experiencing trauma as consequence of an incident.

27.1 Incident Investigation

The supplier shall ensure that all incidents are subject to an appropriate investigation by a competent person. As a minimum the investigation shall:

a) Identify the immediate causes of the incident

b) Identify the root causes of significant incidents

c) Identify and implement actions to minimise risk of recurrence

d) Provide a record of the key findings and recommendations of the investigation

Suppliers shall provide copies of the incident investigation report and details of the actions being taken to prevent recurrence.

The Supplier shall cooperate with any RFLI / TfL / MTR-C / NR investigation undertaken in relation to incidents.

28. Notification and Reporting of Incidents

The RFLIRP shall be notified as soon as practicable of incidents which:

affected or could have affected RFLI employees, customers, or other parties affected by RFLI's operations, or occurred within the boundary of RFLI premises or infrastructure or affected RFLI operations.

To whom notification shall be made, shall be agreed with Company via the RFLIRP;

a) The Supplier may make initial notification verbally.

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b) The Supplier shall provide the Company with a written incident report within 24 hours of the incident.

29. Confidential Incident Reporting and Analysis System (CIRAS)

Suppliers shall ensure that all staff are aware that they can contact the CIRAS on FREEPHONE 0800 4 101 101 at any time, shall they wish to report (in complete confidence) any matter of health, safety or environmental concern, where existing reporting systems are considered to have been ineffective or inappropriate.

Suppliers and their employees and supply chain shall co-operate fully with any investigation arising from the use of CIRAS.

30. Accidental Damage, Obstruction or Interference with Assets

Should any damage occur to an asset the Supplier shall immediately report the damage to the RCC.

The supplier is not permitted to rectify the damage for works out of scope without authorisation from the RFLIRP as this may increase the risk of a consequential incident.

31. Notification to Regulatory Bodies

The Supplier shall directly notify the Health and Safety Executive (HSE) / Office of Rail and Road ORR), where required under the Reporting of Injuries, Diseases or Dangerous Occurrences Regulations (RIDDOR), of incidents related to RFLI's business which, involved their own employees or contractors, or occurred outside the boundary of RFLI controlled infrastructure or Company premises.

Such notification shall be made within the time-scale and by the means specified by the regulator.

32. Notification of Regulatory Concern or Action

The Supplier shall notify the RFLIRP of any regulatory concern or action by the end of the following working day. The notification shall include a description of the concern or action, the response and any additional information to aid understanding. Copies of any communication in connection with the regulatory concern or action shall be provided.

33. Monitoring

33.1 RFLI Inspections

A schedule of site inspections may be required by the RFLIRP as part of the arrangements made to provide assurance.

33.2 Monitoring the Supply Chain

The Supplier shall monitor the performance of its staff and its supply chain and ensure that the results are used to:

a) Control their activities

b) Assess its suppliers' suitability for future works.

c) These results (records) shall be made available to the RFLIRP upon request.

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33.3 Health, Safety and Environmental Surveillance by the Supplier's Personnel

The Supplier shall submit to the RFLIRP details of the Supplier's proposed level of site health, safety and environmental surveillance together with the nomination of health, safety and environmental supervisors and officers who will have an overview of all site health, safety and environmental matters. Such details shall include outline programmes for:

a) Safety tours and detailed safety inspections

b) The auditing of site activities to ensure that the correct health, safety and environmental management procedures are followed.

33.4 Work Location Inspection and Audit

All suppliers shall provide full and free access to RFLI for the purpose of carrying out audits and site inspections to monitor compliance with the health, safety, quality and environmental conditions attached to their Contract. RFLI (or their agents) may at any time undertake inspection of the equipment and audit or check any aspect of the Supplier's performance of the Contract. RFLI (or their agents) shall inform the Supplier of the objective of any audit prior to its commencement.

The Supplier will promptly provide all reasonable co-operations in relation to any inspection, audit or check including:

a) Granting access to any premises, equipment, plant, machinery or systems used in the Supplier's performance of the Contract, or where such premises, equipment, plant, machinery or systems are not the Supplier's own using reasonable endeavours to procure such access

b) Ensuring that appropriate security systems are in place to prevent unauthorised access to, extraction of and alteration to data during audit

c) Making any contracts, other documents and records referred to in the health, safety, quality or environment Contract Conditions available for inspection

d) Providing a reasonable number of copies of any contracts, other documents and records referred to in the health, safety, quality or environment Contract Conditions, required by the auditor, or granting copying facilities to the auditor for the purposes of making copies.

RFLI (or their agents) shall have the right to carry out such inspections or audits, as they consider necessary. The Supplier shall make available, at the Supplier's cost, any of their specialist staff as may be agreed necessary for the performance of such inspections or audits carried out by RFLI personnel on matters of health, safety and environment.

The supplier shall fully and unreservedly accept that responsibility for the safety of the works rests with the Supplier. The participation of RFLI staff or their agents in inspections and audits does not in any absolve the Supplier from that responsibility.

33.5 Timescales for Rectifying non-conformances

RFLI (or their agents) and the Supplier shall agree the timescale for rectifying any non-conformances or sub-standard conditions that are identified during any audit or inspection.

34. Radio Transmitters, Transceivers and Mobile Phones

No radio sets, transmitters or receivers are permitted to be used on RFLI Infrastructure unless prior written permission has been received from RFLI Engineering via the RFLIRP.

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The use of mobile phones shall comply within the remit of the "Elizabeth Line Central Operating Section Rule Book". Mobile phones of any description shall only be used when the user is in a place of safety or if there is an emergency. Hands-free mobile phones shall not be used in the track environment or any other environment where it is necessary to receive an audible message. In the track environment mobile phones shall be on silent whilst duties are being undertaken to avoid the risk of distraction to the user or anyone else in the vicinity.

35. Lasers

No Lasers are permitted to be used without prior written permission has been received from RFLI Engineering via the RFLIRP.

The use of Lasers will be in accordance with TfL Guidance G2136 – Management of lasers. The supplier shall comply with the contents of this document.

36. Knives

The use of **fixed blade** knives is prohibited on all RFLI work sites.

37. Site Housekeeping and Security

The Supplier shall keep the work location in an orderly state appropriate to the avoidance of danger to persons and avoidance of adverse impact on the environment.

The Supplier shall ensure that the work site is free from all the Supplier's equipment, materials and waste on completion of the works or when the site is returned to normal operations, unless covered by a storage licence.

The Supplier shall make suitable provision for disposing of unused or redundant assets and materials and are responsible for determining the correct disposal methods. Consideration shall be given to reusing and recycling these materials. The Supplier shall ensure that the RFLIRP is informed of plans for disposing of assets and materials.

38. Protective Barriers

The Supplier shall provide suitable barriers at work areas; including provision for associated exclusion zones where required, to prevent unauthorised access or harm to RFLI / MTR-C / NR employees, customers and the public.

39. Accidential Damage, Obstruction or Interference with Assets

Should any damage occur to an asset the Supplier shall immediately report the damage to the RCC.

The Supplier is not permitted to rectify the damage for works out of scope as this may increase the risk of a consequential incident. For example, correcting the alignment of a platform camera accidentally knocked could well create a blind spot.

If the damage affects RFLI operations or if there is a risk to any person the Supplier shall report the details to the RCC.

40. Delivery of Materials

Suppliers shall not deliver materials through public areas of the operational railway during Operational Hours except with the approval of the relevant RFLI / MTR-C / NR operational / access

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manager. Suppliers shall also consider the environmental impacts associated with deliveries in accordance with clause 53.8 'Noise and vibration'.

41. Conveyance of Loads

41.1 Conveyance of Loads on Lifts and Escalators

Permission shall be sought from LU / MTR-C prior to the use of lifts or escalators on stations. For shafts, the requirement for using the RFLI service lift as part of the work should be made when requesting access and be detailed in the access permission / approval issued prior to the works.

41.2 Conveyance of Hazardous Materials and Substances

Suppliers may transport materials and hazardous substances, where approved for use, in the required containment and in a manner addressed and agreed under an accepted safe system of work.

The Supplier shall ensure that all materials for use in sub-surface stations are approved for use or have a valid concession in place for the specific use in accordance with LU Standard S1085 'Fire Safety Performance of Materials - Stations and Tunnel Infrastructure'.

42. Work On or Adjacent to Utilities and OLE / Buried Cables

The Supplier shall consider the presence of OLE / buried services when planning works. The Supplier shall consult the Company as early as possible to ascertain whether any electrical distribution cables or apparatus, or other utility services will be affected by the proposed works.

The supplier shall ensure work methods take account of OLE / buried services. The supplier shall ensure all risk assessments consider such hazards and stipulate the controls required to prevent such hazards being realised. The Supplier shall make all necessary arrangements to safeguard the OLE / buried services.

Where work will involve the disconnection or disturbance of the Station / Tunnel / OLE earthing or bonding, a detailed methodology of the activities is to be provided to the RFLIRP for approval. This is to include re-connection checks to confirm continued integrity of the system. A record of any continuity test etc. shall be maintained and submitted to the RFLIRP.

43. Working In or Near Lifts and Escalators

Suppliers shall comply with requirements detailed by LU / MTR when working on these assets.

44. Work On or Adjacent to Utilities and High Voltage Cables (buried services)

The location (where known) of utilities and HV cables (buried services) will be made available.

The supplier shall ensure work methods take account of hidden High Voltage cables. The supplier shall ensure all risk assessments consider such hazards and stipulate the controls required to prevent such hazards being realised. The Supplier shall make all necessary arrangements to safeguard the cables or apparatus.

45. Working On or About the Track

All Suppliers working on or about the track shall comply with the requirements in the following Elizabeth Line COS Rule Books: Module COS/G1 'General safety responsibilities and personal

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track safety for non-track workers'; Handbooks COS/HB1 'General duties and track safety for track workers' For work on station platforms, Suppliers shall also comply with Rule Book Support document 'Working on a station platform' and any other requirements dependent upon the location of the platform (LU, MTR-C, NR / GE / GW stations).

46. Access to Electrical Sub-stations, Working Equipment, Relay and Other Secure Rooms

When access is required to designate secure rooms all personnel must have successfully completed the relevant course or be otherwise authorised by an appropriate authority after successful completion of other recognised training courses. Access to secure rooms will be detailed in the access permission / approval issued prior to the works and undertaken as detailed in the relevant training course.

All equipment within such rooms must be suitably protected by an approved means from damage or by products of the work activities (dust, water etc.).

The Supplier shall not use such rooms as stores or workrooms.

47. Entering Areas with Gaseous Fire Suppression Systems

Certain rooms (for example switch rooms, transformer rooms and relay rooms) on RFLI Premises are currently fitted with a gaseous fire protection system.

Entry into these rooms is not permitted without the RFLIRP's approval and attendance on the relevant training course.

Some extinguished gases released within a confined space are hazardous to health under certain conditions.

48. Fire Prevention

Suppliers shall not

a) Dispose of waste or other materials by burning on any site

b) Take or store anywhere on the railway any cylinders of industrial or flammable gases and containers of flammable or volatile substances without the prior written permission of the RFLIRP and appropriate licence

c) Store extremely flammable materials (i.e. flashpoint below 0ºC and DERV) under ground; and shall not store any flammable or highly flammable materials except where approved for use on the (C)COS and under storage licence in the quantities and containers specified, and in conditions and locations specified under that licence. This clause does not apply to diesel stored within the fuel tank of a stabled rail vehicle

d) Use cookers, gas or petrol heaters and space heaters at below ground locations

e) Overload power sockets at any time or use any adapters in connection with electrical equipment and power outlet sockets

f) Relocate existing fire points

g) Obstruct existing fire points, call points, hydrants and extinguishers ensuring that they are available for operation at all times

h) Obstruct or obscure exists, signs and means of access, emergency stairs and doors

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i) Use, or permit to be used, fire fighting equipment and appliances for any purpose other than fire fighting

j) Use or provide dry powder or halon extinguishers

k) Install temporary huts made from combustible materials in below ground locations

l) Use timber for any works in below ground locations without the prior approval of the RFLIRP

m) Use polythene or other combustible materials to wrap, encapsulate, or protect any packages, equipment or materials brought in and stored or installed in below ground locations

n) Store or allow to accumulate, any flammable or combustible materials on site, except as authorised under the appropriate RFLI standard

o) Obstruct, interfere with or remove existing fire plans (kept in secure boxes at station entrances, and sited for use by the local Fire Brigade).

Suppliers shall:

a) Ensure that all personnel are fully aware of RFLI requirements in respect to fire prevention and protection

b) Take strict precautions to protect the site, any adjacent property and all persons from fire

c) Minimise the quantities of approved flammable materials temporarily stored under storage licence, which shall at all times be the minimum consistent with safety and construction requirements and never greater than the maximum allowed for that material under the licence

d) Remove immediately all empty drums, empty containers, surplus or waste material and used packing materials from the operational premises and below ground locations at the end of each working shift

e) Minimise all fire risks, including mopping up spillages or absorbing them in sand or other suitable material which shall then be disposed of by the Supplier

f) Carry out a risk assessment of the site and arrange adequate fire safety training

g) Heat water using electric immersion-heaters

h) Use electric convection heaters for space-heating

i) Ensure that existing facilities at the site remain accessible

j) Request, via the RFLIRP, the isolation of fire detection equipment when any works may have an adverse impact on the equipment, e.g. smoke or dust, ensure that de-isolations are performed prior to the running of trains in passenger service unless current exemptions are in place

k) Implement a system of hourly checks of the entire site in the event of such isolation being approved

l) Provide suitable and sufficient firefighting equipment throughout the site when the output of a risk assessment indicates an increase in the risk of fire at any work site or when required to do so by the client

m) Provide and maintain fire points in each work area and working level when the output of a risk assessment indicates an increase in the risk of fire at any work

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site or when required to do so by the RFLIRP. In all cases a fire point must be located within 20 metres of each work site

n) Ensure that periodic inspections of the Supplier's firefighting equipment are undertaken by competent personnel

o) Where appropriate nominate person to act as Fire Watchpersons who must hold an LU Fire Watchperson certificate

p) Provide the client representative with full information on moves and consequent changes, however minor, which may affect fire plans

q) Prepare emergency plans that reflect local arrangements

r) Satisfy the requirements of RFLI, LU / MTR and the Fire Brigade and provide their representatives with the facilities to inspect the fire prevention arrangements on the site

s) Make such alterations and additions to the fire protection arrangements as the RFLIRP may reasonably require

t) Make information available on request to the RFLIRP and any other authority that requires it

and

u) Make adequate provision for raising the alarm in case of fire

48.1 Temporary Fire Points

Where identified as being required by either risk assessment or the RFLIRP, the fire point shall be constructed in a manner which is easily recognisable.

48.2 Timber

No timber shall be used in below ground locations unless approval is obtained through the RFLIRP. No softwood timber shall be stored in below ground locations. It shall be returned to the surface immediately it is not required.

Where the Supplier provides timber that has been treated with fire retardant materials, the Supplier shall, at the time of delivery, provide a copy of all relevant certificates of the fire retardant treatment and treated timber for approval by the RFLIRP. Timbers shall be readily identifiable and traceable by a treatment Supplier's stamp or other method approved by the RFLIRP.

48.3 Composites

The use of plastics, including polythene and glass fibre resins, shall be avoided. Material shall meet TfL's requirements, TfL standard S1085 'Fire Safety Performance of Materials - Stations and Tunnel Infrastructure'. The TfL Manual of Good Practice G085 'Code of practice - Fire Safety of Materials and Fire Safety of Specific Items and Materials' gives further guidance.

Materials delivered in plastic packaging shall be opened and the packaging removed from site immediately or, in the case of small quantities, by the end of the shift at the latest. The Supplier shall not leave such materials at the site after the end of the shift.

The Supplier shall fill rubbish bags and take these off site in one operation, and not stockpile the rubbish bags. Empty bags shall not be stored on site. Plastic materials shall not be used to form material storage compounds.

Where work has to be protected approved flame retardant non-plastic sheeting shall be used.

Plastic safety fencing shall not be used in areas accessible to the public.

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Where it is used in other areas plastic safety fencing shall be checked regularly to ensure it remains properly erected and does not become a hazard in its own right.

Where any plastics are used, they shall be protected from any hot work or other fire hazardous work operations. The Supplier shall enforce, stringently, the working arrangements required by any permits.

48.4 Sheeting Materials

Only approved materials shall be used on RFLI Premises below ground.

48.5 Gas Cylinders

No gas cylinders are to be stored on site.

48.6 Flammable and Highly Flammable Materials

Use of flammable and highly flammable materials below ground

Suppliers shall provide adequate ventilation if the Supplier's use of flammable substances and volatile materials creates any risk of heavy vapours in confined spaces and take other environmental issues into consideration. Where flammable or highly flammable materials are required to be used below ground the Supplier shall ensure that approval is sought from the RFLIRP in line with TfL Manual of Good practice G085 'Code of practice - Fire Safety of Materials and Fire Safety of Specific Items and Materials' and a method statement is included with the application.

48.7 Storage of flammable and highly flammable materials below ground

No flammable or highly flammable materials are to be stored on site.

48.8 Hot Works and Fire Hazards

Hot Works shall only be carried if an 'Authorisation of Hot Works' permit has been issued in accordance with RFLI-GEN-HS-PRO-0030 Authorisation of Hot Works.

48.9 Reasonable Notice of Hot Works

Suppliers shall submit applications for hot working at least two weeks before the intended start date. This period of notice shall extend to three weeks where the isolation of fire detection or prevention equipment or exemptions is required.

In an emergency a lesser period of notice may be given provided that a contingency method statement has been approved by the Hot Works Authoriser to cover such eventualities.

48.10 Precautions

a) **Buildings and Assets**

The Supplier shall protect the fabric of the building, its assets and decorations with suitable non-combustible material and take every precaution to prevent damage by scorching fire

b) **Gas Cylinders**

Hoses connected to gas cylinders shall be of the braided or armoured type to prevent damage and risk of gas leakage.

c) **Gas detection**

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At work sites in below ground locations the Supplier shall provide and use suitable gas detection equipment in order to detect the possible presence of flammable gases prior to (and during) any hot work or other fire hazardous operation.

49. General Requirements for Storage

No Supplier or person shall store materials or tools on RFLI Premises without prior written permission from RFLIRP.

Trackside Storage

There will be no storage trackside unless within a maintenance pod, where prior written permission has been received from RFLI planning.

50. Plant and Equipment

No plant or equipment is to be stored on site. The engineering requirements for specific types of plant and the requirement for verification of conformity with these engineering requirements are set out in the RFLI Rule Book:

a) Elizabeth Line COS Rule book Module COS/OTM “Working of on-track machines (OTM) in the central operating section”

b) Elizabeth Line COS Rule book Handbook COS/HB 15 “Duties of the machine controller (MC) and on-track plant operator”

50.1 Clearance Approvals

No structure (temporary or permanent), plant, equipment or materials may be erected or stored within 3 metres of a running rail or within 2.75 metres of the OLE.

The exception to this requirement for vicinity (within 3 metres) to the running rail is where the items concerned are only in place or use during non-operational Hours or a possession with adequate protection, which ensures that no trains or engineer's vehicles will run on the track adjacent to those items.

The exception to this requirement for vicinity (within 2.75 metres) to the OLE is where an isolation of the OLE is in place or a possession with adequate protection, which ensures that no trains or engineer's vehicles will run on the track.

50.2 Access Equipment

Where access equipment is being used on RFLI Premises, Suppliers shall gain prior approval from the RFLI planning section and included in the access permission / approval issued prior to the works.

Suppliers shall state in their method statements what access equipment shall be used during the work activities.

50.3 Unmanned Aerial Vehicles (drones)

Suppliers shall gain prior approval from the RFLI planning section and obtain TfL plant approval for permission / approval to use unmanned aerial vehicles.

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51. Temporary Works

All temporary works shall comply with the requirements set out in the TfL standard S1062 Temporary works.

Suppliers shall:

a) Provide, maintain and remove on completion of the contract all temporary works needed for the execution of the Contract

b) Submit detailed design drawings, calculations and specifications for all temporary works to the RFLIRP for acceptance

c) Ensure that designs are submitted at such times agreed with the RFLIRP

d) Design all temporary structures to carry the loads they are required to support

e) Modify the detailed design drawings, calculations and specifications for temporary works if required by the RFLIRP

f) Note that acceptance by the RFLIRP of the detailed drawings of temporary structures in no way relives the Supplier of any responsibility under the Contract

g) The duration of the work shall be agreed with the RFLIRP.

51.1 Temporary Fences and Hoardings

All site hoarding, fencing and barriers shall comply with the requirements in TfL Standard S1027 Site Hoarding, Fencing and Barriers.

52. Temporary Lighting and Power Supplies

52.1 General Requirements

The Supplier shall obtain approval from the RFLIRP for the design of lighting or other electrical installations where it is proposed to use RFLI's power supply. This is to allow the RFLIRP to check that the lighting will not cause any problems. The use of generators shall be approved by the RFLIRP.

52.2 Lighting in Tunnels and Shafts

Task lighting shall be suitable and sufficient for the tasks and activities to be undertaken. All temporary lighting will be removed at the end of the shift and before passenger service.

53. Environmental Requirements

53.1 General Environmental Requirements

Responsible Procurement.

RFLI will proactively conduct its procurement process in line with the Greater London Authority (GLA) Group's Responsible Procurement Policy. Within its obligations as a Best Value authority, and in compliance with EU and UK legislation, RFLI will adopt the principles of 'Reduce, Reuse, Recycle' and 'Buy Recycled'. RFLI is committed to applying these principles in its procurement of goods, works and services, where the required criteria for performance and cost effectiveness can be met. RFLI will actively promote 'Responsible Procurement' throughout its supply chain

Suppliers shall:-

a) Use good industry practice to minimise the environmental impact of all activities

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b) Apply for all permits, agreements, consents and licenses as required and abide by conditions within the permits, agreements, consents and licenses. No work shall commence until all permits, agreements, consents and licences are obtained.

c) A copy of the licences, agreements, consents and permits shall be made available to the RFLIRP upon request

d) In the event of a breach of permit, agreement, consent or licence conditions the Supplier's representative and regulatory body/bodies will be informed at detailed in sections 28 and 31 above.

e) Exercise a duty of care and be liable for all claims, costs, expenses incurred directly or indirectly by any party as a result of any breaches of the applicable environmental laws

f) Employ competent Suppliers with proven environmental performance.

53.2 Site Investigations

a) Ensure Suppliers are aware of all environmental conditions and hazards on site

b) Undertake investigations and evaluations at such a stage in the project that the implications of any findings can be incorporated into the design, program of works and method statements as necessary

53.3 Mitigation and Process

a) Appropriately mitigate impacts from the scheme on the environment

b) Submit to the RFLIRP and adhere to arrangements and/or method statements which outline and demonstrate how the supplier will manage environmental performance and impact;

c) Notify the RFLIRP immediately of any changes to method statements or environmental arrangements which result in significant changes to the environmental risk profile

53.4 Reporting

a) Monitor and report on environmental performance as agreed with the RFLIRP' and

b) Make available to RFLI upon request the results of any monitoring undertaken.

Suppliers shall record environmental incidents such as spillages, disturbance of invasive/protected species etc. through an appropriate incident reporting system.

53.5 Environmental Nuisance

Suppliers shall ensure that best practical means are followed to control nuisances to RFLI, its customers and neighbours, derived from noise, smells, fumes, dust, smoke, light, vibration, air pollution, overspray from herbicides or pesticides, congestion and parking associated with the works.

53.6 Water

Suppliers shall:

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a) Assess whether the site has the potential to suffer from water ingress. This shall include as a result of weather conditions, tidal conditions, and rising groundwater and ensure that mitigation measures are in place based upon the risk of water ingress

b) Identify where waterways, drains, springs, wetland habitats or water supplies may be intercepted, interfered with or cut through by the works, and outline in method statements and/or environmental arrangements suitable mitigation measures and actions to ensure functionality of these watercourses is not impeded. This shall include any requirements to notify, or receive permission from regulatory authorities or other bodies

c) Take all necessary precautions to prevent water being discharged from the site from entering the works of adjacent contracts or adjacent properties

d) Not make temporary or permanent connections to any water supply mains or wastewater networks without informing and receiving the necessary permission from the relevant authority

e) Be responsible for any necessary actions for the draining, diverting, or conducting of open streams or drains intercepted by the works

f) Provide suitable measures to prevent water contamination from suspended solids, hydrocarbons etc.

53.7 Waste Management

Suppliers shall:

a) Be responsible for all waste materials generated by the works, as agreed by the RFLIRP (except where otherwise specified in the Contract); and

b) Undertake their responsibilities as required by legislation.

53.8 Noise and Vibration

Suppliers shall, undertake the necessary investigation to establish whether or not work activities have the potential to produce significant noise impacts in relation to the sensitivity of surrounding and working areas.

53.9 Archaeology, Historical Interest and Listed Buildings

Suppliers shall undertake the necessary investigations to establish what archaeological, historical or listed features are in the affected area and whether or not the works have the potential to damage or affect these areas including interior features and any effects in respects of the character of such premises and shall include liaison with the RFLIRP and suspend all activities on the discovery of archaeological finds until the client has been contacted and suitable measures have been taken to prevent damage to the remains unless the works are of safety critical nature.

53.10 Wildlife and Habitats

Suppliers shall:

a) Undertake assessments to establish whether tree protection orders, conservation areas, sites of importance to nature conservation, protected species, pest species etc. are present at the works location

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b) Organise and programme construction activities to ensure that the impacts on any protected species or habitat are minimised in line with legislative or regulatory requirements

c) Preserve and protect all trees and plant species (excluding noxious or invasive species) where possible within the scope of the work

d) Not lop, fell, damage or cut roots of trees with Tree Protection Orders unless the safety of the railway is impeded or a permit has been obtained from the local authority

e) Replace any trees which are permitted to be cut down or are damaged by the supplier as part of the reinstatement works in accordance with British Standards and with consideration for the local environment and biodiversity

f) Minimise damage to mature trees within or in the vicinity of work sites by adopting the mitigation measures outlined in the environmental arrangements and/or method statements.

53.11 Resource Use

Suppliers shall:

a) Ensure that all systems which use electricity or gas are designed to conserve energy

and

b) Consider the potential for using recycled materials and recycling resources/materials.

53.12 Pest Control

Suppliers shall:

a) Outline arrangements for how any noxious and invasive plants identified will be managed in accordance with industry Codes of Practice and relevant requirements

b) Submit details of the pesticide and herbicide type(s) to be used, outline the proposed quantities and detail the application methods and

c) Adequate provision shall be made so as to avoid the migration of pests from site and to mitigate against any other pest nuisance at the site.

53.13 Land and Water Pollution Prevention

Suppliers shall:

a) Ensure that land or water pollution is prevented through managing all potential pollutants in accordance with relevant legislation and codes of practice

and

b) In the event of causing land or water pollution, return the site to the condition it was prior to contamination or better

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54. Quality Requirements

54.1 Records

The Supplier shall maintain such records that are specified by RFLIRP, and this shall include as a minimum:

a) Details of any non-compliance against RFLI Standard

b) Records of audits and site inspections

c) Records of the qualifications, competence and training of staff

d) Quality assurance inspections conducted (including the identity of the inspector concerned)

e) Equipment test calibration and verification checks conducted (including the identity of the inspector or tester concerned)

f) Process and manufacturing data relating to the Contract, including an audit trail for material or component identity, source and status

g) Any process, inspection or test activity so directed by special instructions or any Contract Quality Plan invoked by the Contract

h) Non-conforming service or product records

i) Records all related incoming and outgoing certificates of conformity and associated release documentation

j) Records of tender and contract reviews

k) The Supplier's policy with regard to quality.

54.2 Retention Period

Records shall be retained by the Supplier for a minimum of seven years unless otherwise specified by the RFLIRP at contract award.

54.3 Availability of Records for Inspection

The supplier shall make all records available to RFLI and the RFLIRP within three working days of any such requests.

54.4 Statistical Process Control, Audit and Inspection Procedures

Where, for quality management purposes, statistical process control procedures, audit or inspection procedures are adopted, full details of the proposed procedures used on the Contract are to be submitted to the RFLIRP for approval prior to implementation.

54.5 General Quality Requirements

Suppliers shall:

a) Appoint member(s) of their management team who, irrespective of other responsibilities, have defined authority that includes:

b) Ensuring that a quality management system is implemented and maintained

c) Reporting to senior management on the performance of the quality management system, including needs for improvement

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d) Ensuring awareness of customer requirements throughout the Supplier's organisation

e) Liaison with customers on matters relating to the Supplier's management system that result from auditing or non conformances.

f) Ensure that during internal processing and final delivery of product or service to the intended destination that the identification, packaging, storage, preservation and handling do not affect conformity with product or service requirements

g) Not proceed past 'hold points' until all the specified activities have been satisfactorily completed and the related documentation is available and authorised

h) Following receipt of a rejection, take immediate action to inspect all stocks and work in order to assess risk and loss and advise the RFLIRP of the findings

i) Take preventative action to avoid a recurrence of the non-conformities

j) Immediately inform the RFLIRP when the Supplier has reason to suspect non conformities with previously supplied products or services

k) Be responsible for ascertaining the cause of and responsibility for non-conformance, and for taking suitable corrective action to prevent their recurrence

l) Document all corrective actions

m) Ensure that their supply chain work to correct practices including accepted documentation defining the techniques to be used, workmanship criteria, safety of others (including the public), health precautions, plant and equipment to be used and training and licensing requirements

n) Ensure that the works comply with any manufacturer's recommendations, instructions and guidelines, unless otherwise directed by the RFLIRP

o) Operate and maintain all plant, equipment and processes in accordance with the relevant manufacturer's or Supplier's specification or procedure, unless otherwise directed by the RFLIRP

p) Take all necessary steps to identify, recall, re-inspect and replace any equipment or parts which have been inspected using inspection, measuring or test equipment whose calibration is found to be defective or unknown

q) Store and protect inspection, measuring and test equipment and materials to prevent misuse, damage and deterioration and

r) Ensure that all equipment bears an identification of its calibration or maintenance status, in a manner that clearly indicates it is within the calibration or maintenance period

54.6 Quality Plan

The Supplier shall

a) Complete and submit a Quality Plan with the tender if required by the RFLIRP for review and acceptance

b) Ensure that the Quality Plan demonstrates the Supplier's process control system as required for the Contract and

c) Maintain and periodically revise the Quality Plan and forward it in its amended form to the RFLIRP

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d) The format of the Quality Plan may be determined by the RFLIRP

54.7 Testing and Inspection

When required by the RFLIRP, Suppliers shall:

a) Demonstrate to the RFLIRP's satisfaction that acceptance sampling techniques are utilised and such sampling shall meet the requirements of the relevant British Standards

b) Identify which sampling plan it intends to apply to the Contract and forward it to the RFLIRP

c) Reference the sampling once it has been approved in all relevant Contract Quality Plans submitted to the RFLIRP

d) Be prepared to revert to 100% inspection in such cases where the failure rate exceeds the level of acceptance identified within the sampling plan

e) Prepare for the approval of the RFLIRP an inspection and test plan which shall include such hold points agreed with the RFLIRP

f) Maintain sampling inspection records in accordance with the RFLIRP's requirements

54.8 Certificate of Conformity

Suppliers shall provide certificates of conformity for services and products that include:

a) Supplier's name and location address

b) Supplier's full company name and manufacturing address, if different to above

c) Employer's supplier rating system number

d) Unique certificate reference number and date of certificate

e) Details of valid third party approvals, applicable to the services or products provided and the establishment providing the services or products to the RFLIRP

f) The RFLIRP's contract reference and, if applicable, quality plan number

g) Full description and quantity of supplies, including specification, drawing number and issue numbers and British, EC or relevant standards applicable

h) Identification marks and serial numbers as appropriate

i) Details of authorised non conformities, RFLI concession or production permit references and a full statement of authorised deviations, operations or processes not conducted

j) For all materials (raw or finished):

   i. Cast and/or batch number(s)

   ii. Test report reference and, if called for, copies of test results and additionally for metallic materials

   iii. The condition of the material despatched

   iv. Recommended heat treatment if the material is being delivered not in a final use condition

   v. Chemical analysis and/or mechanical testing certificates

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vi. Inspection stamp and/or authorising signature

vii. Details of packaging and transportation where appropriate

viii. Country of origin

k) Ensure that all certificates include one of the following statements of conformity signed by an authorised signatory, on behalf of the Supplier:

i. For supplies from a manufacturer, the format shall be 'Certified that the whole of the supplies detailed hereon have been inspected and tested, and (unless otherwise stated) conform in all respects with the requirements of the Contract'

ii. For supplies from an agent, stockist or distributor (i.e. where the Supplier is not the manufacturer) the format shall be 'Certified that the whole of the supplies detailed hereon have been inspected and tested and (unless otherwise stated) conform in all respects with the requirements of the Contract'

iii. For services the format shall be 'Certified that the services detailed hereon have been inspected and tested, and (unless otherwise stated) conform in all respects with the requirements of the Contract'.

l) Provide a copy of the Supplier's authorised signatory list, showing as a minimum, name, job title, signature, designated authority level at the commencement of the Contract

m) Ensure that any certification from sub-contractors for parts or services related to the Contract accompanies the Supplier's certificate of conformity

n) Agree with the RFLIRP a certificate of conformance for use where projects or part projects are handed over

o) Include in the certificate of conformance a 'Statement of design performance' where design work is provided

p) Provide statutory test certificates where applicable

54.9 Quarantine

Suppliers shall provide secure quarantine storage for the storage of materials and products that are the subject of investigation regarding their conformance, or non-conformance.

54.10 Traceability

The Supplier shall ensure that all the materials to be incorporated into works delivered to site are controlled at installation and are able to be traced to manufacturer, unless indicated otherwise by the RFLIRP.

54.11 Maintenance and Servicing

Suppliers that maintain or service RFLI assets shall provide the RFLIRP with written details of how their arrangements for maintenance and servicing will ensure the reliability, maintainability, durability and serviceability of the asset.

54.12 Design

No person shall change the design of any engineering or training system for the installation, operation and maintenance of infrastructure equipment.

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Suppliers shall:

a) Operate a change control system so that the appropriate issue of drawings, technical specifications, training material and current deviations and concessions including customer supplied standards can be readily determined at all times

b) Ensure that all design changes and modifications are identified, documented, reviewed and approved by authorised personnel and written authorisation sought from the RFLIRP before their implementation

c) Record the results of all design assessments and hand over such records to the RFLIRP

d) Appoint or nominate a design authority for each design

e) Ensure that designers hold BS-EN-ISO-9001 certification relevant to the scope of work or, if the design Supplier is not certificated to BS-EN-ISO 9001, a documented management system which includes design shall be required, which would satisfy the requirements of the standard.

54.13 Computer Aided Design

Suppliers shall provide computer aided designs in a style, format and software specified by the RFLIRP.

54.14 Asset Commissioning and Handover

No project shall be considered complete unless the RFLIRP is in possession of the information deliverables specified in contract documents.

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Appendix 1. Reference Documents

Documents used in the preparation of this document are listed in the table below.

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

Ref.	Document Reference	Document Title
1	RFLI-GEN-HS-PRO-0014	Safety Critical Work
2	TfL R2692	Alcohol and drugs at work
3	RFLI-GEN-HS-SDD-0002	RFLI Standard for Medical Fitness
4	RFLI-MTC-MR-PRO-0001/3&4	RFLI Crossrail Central Operating Section Planning Process Module 1/3&4
5	RFLI Operations Central Operating Section Rule Book T3	Possession for engineering work in the Central Operating Section
6	RIDDOR	Reporting of Injuries, Diseases or Dangerous Occurrences Regulations
7	RFLI-GEN-SM-RUL-0038	Elizabeth Line Central Operating Section Rule Book
8	TfL Guidance G2136	Management of lasers
9	LU Standard S1085	Fire Safety Performance of Materials - Stations and Tunnel Infrastructure
10	Elizabeth Line COS Rule Books: Module COS/G1	General safety responsibilities and personal track safety for non-track workers
11	Handbooks COS/HB1	General duties and track safety for track workers' For work on station platforms
12	TfL Manual of Good Practice G085	Code of practice - Fire Safety of Materials and Fire Safety of Specific Items and Material
13	RFLI-GEN-HS-PRO-0030	Authorisation of Hot Works
14	Elizabeth Line COS Rule book Module COS/OTM	Working of on-track machines (OTM) in the central operating section
15	Elizabeth Line COS Rule book Handbook COS/HB 15	Duties of the machine controller (MC) and on-track plant operator
16	TfL standard S1062	Temporary works
17	TfL Standard S1027	Site Hoarding, Fencing and Barriers
18	BS-EN-ISO-9001	Quality Management Systems

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Appendix 2. Terms, Acronyms and Definitions

Acronyms, abbreviations and terms used within this document are listed in the table below.

Term / acronym	Definition
ALARP	As Low As Reasonably Practicable
CDM	Construction, Design and Management
CIRAS	Confidential Incident Reporting and Analysis System
(C)COS	(Crossrail) Central Operating Section
DAMSP	Drugs, Alcohol Medical Screening Programme MTR
EC	European Commission
EU	European Union
GE	Great Eastern
GLA	Greater London Authority
GW	Great Western
HSE	Health, Safety & Environment
HSECC	Health, Safety & Environment Contract Conditions
HV	High Voltage
LU(L)	London Underground (Limited)
LV	Low Voltage
MC	Machine Controller
MTR-C	Mass Transit Railway -Crossrail
NR	Network Rail
OA	Operational Assurance
OLE	Overhead Line Equipment
ORR	Office of Rail and Road
OTM	On Track Machine
PON	Periodic Operating Notice
PPE	Personal Protective Equipment
RCC	Route Control Centre
RFLI	Rail for London Infrastructure
RFLIRP	Rail for London Infrastructure Responsible Person
RIDDOR	Reporting of Injuries, Diseases or Dangerous Occurrences Regulations
STL	Site Task Leader
SWP	Safe Work Pack
TfL	Transport for London
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
WON	Weekly Operating Notice

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Appendix 4

Health, Safety and Environmental Contract Conditions – London Overground Sites

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Schedule 16 HSQE Part A – Appendix 4

LONDON OVERGROUND

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WI1100H&S.2	Health Safety and Environment Management System
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WI1100H&S.5	PPE
WI1100H&S.6	Hazardous Material
WI1100H&S.7	Site Rules
WI1100H&S.8	Documentation
WI1100H&S.9	Fire
WI1100H&S.10	Electromagnetic Disturbance

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WI1100H&S.1 Health, Safety and Environment ("HSE") Requirements

1.0 Health, Safety and Environment Requirements

1.1 Legislation and Standards

(1) The Supplier shall comply with all current safety, health, welfare and environmental legislation and with all relevant approved codes of practice of the Health and Safety Executive.

(2) The Supplier shall comply with all TfL, NR and other Standards. The Supplier will be notified of changes in TfL standards.

1.2 Performance Monitoring

(1) The Supplier's health, safety and environmental performance will be monitored by the Company using KPIs 4 and 10 as set out in Schedule 18 (Performance). The frequency for assessment shall be determined by the Company in light of the level of activity or performance.

(2) The Supplier shall participate in the assessment through the provision of information and evidence requested by the Company in respect of the criteria.

(3) The results of the assessment will be discussed with the Supplier upon completion. If required, the Supplier will be asked to prepare an action plan in response; progress against which is monitored as part of subsequent assessments.

1.3 HSE Meetings

(1) The Supplier will be required to attend HSE meetings. These will include as a minimum, pre-start meetings, Zero Harm forum and HSE leadership meeting.

(2) The Supplier will share any best practice and HSE initiatives. The Supplier reviews health, safety, environmental and sustainability issue during progress meetings in order to ensure that the works are proceeding in accordance with plans and arrangements.

WI1100H&S.2 Health Safety and Environment Management System

2.0 Health Safety and Environment Management System

2.1 HSE Management System

(1) Unless otherwise agreed with the Company's Representative, the Supplier's health and safety management system arrangements shall comply with the following requirement:

- The Supplier shall operate a health and safety management system that, as a minimum, meets the requirements contained in OHSAS 18001, HSG65 or can be demonstrated as equivalent.

2.2 HSE KPI reporting

(1) The Supplier shall report its own and its subcontractors HSE performance to the Company on a periodic basis. The data shall be provided in the format prescribed by the Company (details of the current requirements can be found in Annex A). The data is to be submitted within 3 business days of the TfL accounting period ending.

2.3 Audit

(1) The Supplier shall provide a risk-based health, safety and environmental audit schedule. The reports completed after all audits shall be forwarded to the Company's Representative, for information, within 2 weeks of the audit being completed. The report shall include details of any

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identified issues and any proposed corrective actions. The report shall be reviewed during periodic HSE progress meetings.

(2) The Supplier allows the Company to observe or participate in these audits and to conduct additional independent audits, acting reasonably with the cooperation of the Supplier, to provide assurance that the works are being conducted in accordance with the contract requirements. The Supplier shall provide the facilities and access necessary for these audits to be carried out.

2.4 Inspections

(1) The Supplier shall undertake regular health, safety and environmental inspections of the Site works at a frequency agreed with the Company to monitor performance in respect of health, safety and the environment. Completed inspection reports shall be submitted to the Company for Information no later than 5 business days following the date of inspection.

(2) The Supplier allows the Company to observe or participate in these inspections and to conduct additional independent inspections, as they consider appropriate, to provide assurance that the works are being carried out in accordance with the contract requirements.

2.5 Incident Reporting and Investigation

(1) The Supplier shall initially report all HSE incidents, accidents and near miss events which occur during the Contract via the Company Representative or the Company's HSE advisor before the end of the shift in which the incident occurred. This will be until such time an InfoExchange account has been set up for the Supplier. An account maybe be set up prior to contract commencing, should the Supplier forward details (name and contact details including telephone number, email, and position of their personnel to the Company's HSE advisor. It is recommended two names are submitted.

(2) The Supplier shall, within forty eight (48) hours submit an initial written report and after 14 days a full report detailing as a minimum the following:

- Description of the incident
- Immediate actions taken
- Immediate causes
- Root causes
- Actions taken to prevent a recurrence

(3) With the agreement of the Company a longer timescale to complete the final report may be agreed.

(4) All investigation reports will be completed to establish root causes and to a level of detail acceptable at the time to the Company. Any comments provided by the Company shall be addressed by the Supplier and an updated report submitted if required.

(5) Where serious accidents occur – Major injuries and Dangerous Occurrence (as defined in RIDDOR) - these shall be subject to a thorough formal investigation. The Company reserves the right to take part in any investigation led by the Supplier and/or in certain instances lead their own investigation.

(6) If the incident is serious enough to warrant press attention – all communications with the press will be via the Company.

(7) Nothing in this document supersedes the Supplier's responsibility for statutory reporting of incidents/accidents.

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3.0 Health, Safety and Environmental Competence and Training

3.1 HSE Advice

(1) The Supplier shall at all times have access to competent health, safety and environmental support to fully implement all the applicable HSE requirements and to ensure a presence on Site at regular periods for inspections, advice and instruction.

3.2 HSE Training

(1) All operatives and management on site employed directly or indirectly by the Supplier shall have received such health, safety and environment training necessary for the work they are required to undertake and are to be made fully aware of the techniques and procedures to be used during the works with regard to their own health and safety and the health and safety of others and the protection of the environment.

3.3 Licenses

(1) The following licenses are required when working for London Rail:

<u>London Overground</u>

- London Overground Induction (when working on the East London Line)
- London Overground Depot Induction (when working in New Cross Gate Depot)
- Personal Track Safety (PTS) (when working on or near the track)
- Controller of Site Safety (COSS) (when controlling works on or near the track)
- Network Rail Level C Substation Competency (for entry into LO Substation, Track Paralleling Huts and Transformer rooms).

3.4 Briefings

(1) The Supplier shall attend any HSE briefings specified by the Company and include all relevant information from these in their own briefings.

(2) The Supplier shall ensure that all visitors to the Site (including the Company's staff) are provided with HSE briefing and induction, which will include as a minimum an overview of the activities taking place on Site, the likely hazards on site, the areas where they are permitted to walk, emergency evacuation routes, personal protective equipment (PPE) and first aid. These briefings/inductions must be aligned with the Company's local inductions where applicable.

(3) The Supplier shall make available to the Company a record of training and the relevant certification for all of their site operatives under their control in order to demonstrate that the operatives are suitably qualified for the operations they are carrying out.

(4) The Supplier shall arrange regular relevant toolbox talks for staff, and maintain a register of attendees of these sessions for the Company to inspect. The Supplier shall take a proactive stance on promoting health, safety and environmental awareness on the site and may be asked to participate acting reasonably in any Company led HSE forums and campaigns.

3.5 Construction Skills Certification Skills

(1) The Supplier shall ensure that all employees, subcontractors and suppliers of any tier and other contractors entering the Sites are in possession of a valid Construction Skills

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Certification Scheme (CSCS) card. The Supplier shall ensure that the CSCS card held by individuals is appropriate to the specific role on the project.

(2) An exception to this requirement is granted where the individual holds a valid card from a CSCS affiliated or amalgamated scheme or other accepted scheme which has been assessed as meeting similar standards or holds site specific training for access and maintenance activities. Dispensation against this requirement may be given by the Company following a written request by the Supplier.

3.6 Non English Speaking Workers

(1) The Supplier shall have adequate arrangements in place to communicate health and safety information to non-fluent English speakers on site such that:

- they receive the required HSE training/briefing (including any emergency procedures before commencing the work); and
- instructions are effectively communicated to, and understood by, all such team members.

(2) These arrangements shall be described in the Construction Phase Plan.

3.7 Safety Critical Work

(1) The Supplier shall identify all Safety Critical tasks (as defined by Railways and Other Guided Transport Systems (Safety) Regulations 2006 and amendments) associated with the Contract and agree these with the Company.

(2) The Supplier shall demonstrate that it has suitable and sufficient arrangements in place to monitor the competence and fitness of those carrying out safety critical tasks. These arrangements should be described in the Construction Phase Plan.

(3) The Supplier shall provide a means of identification for all staff employed on safety critical tasks.

4.0 F10

(1) N/A

4.4 Health and Safety File

(1) A Health and Safety File shall be produced for this project in accordance with Network Rail Standard (NR NR/L2/OHS/0047 ISSUE 7), even where there is only one contractor involved. The Supplier shall work with the Company to compile the Health and Safety File in the Network Rail format specified by the Company.

(2) Where the Principal Designer appointment is terminated or where there is no Principal Designer appointment the Supplier shall be responsible for the compiling of the Health and Safety File.

WI1100H&S.5 PPE

5.0 PPE

(1) The Supplier shall assess and provide the appropriate PPE for his personnel, sub-contractors, suppliers and visitors.

(2) The Company requires that high visibility clothing compliant with:

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- NR-L2-OHS-021 – Personal Protective Equipment and Work Wear; and
- NR/L3/MTC/RCS0216/DP01 – Risk Control Manual working on or near HV distribution systems

must be worn at all times when on the LO network/when on or near the line or lineside.

(3) This high visibility clothing shall carry the Supplier's company name. The Supplier's staff shall not wear London Rail branded high visibility clothing, unless working under a 'labour only' contract and requested to by the Company's Representative.

(4) The Supplier's staff shall not wear any garment or article that impedes their vision or hearing when working for London Rail, unless required as part of a safe system of work e.g. hearing protection.

(5) The wearing of hats, clothing with hoods and any other headwear is prohibited when working for London Overground with the exception of:
- Hoods or headwear required as PPE in response to a risk assessment
- Headwear specifically designed:
  - to be compatible with PPE; and
  - not to impede vision or hearing
- Headwear worn for religious reasons which cannot not be easily removed or accommodate hardhat, or not allowed to be removed due to religious reasons.

WI1100H&S.6 Hazardous Material

6.0 Hazardous Materials

6.1 Control of Substances Hazardous to Health (COSHH)

(1) The Supplier is obliged to notify the Company of any substances to be used in the works that are, or may be, classified as hazardous and which could impact on others in the vicinity of the work where the material is to be used. The Supplier shall provide full details of such substances, including storage details and the risk assessment for the works to be undertaken. These details shall be submitted to the Company prior to the work involving these materials commencing.

6.2 Asbestos

(1) The Company will supply all information in its possession in respect of the presence of asbestos within the site in the form of an asbestos register. Based on this information, the Supplier shall liaise with the Company to determine where additional surveys will be required and the type of survey to be undertaken.

(2) Where the Supplier believes that it has disturbed asbestos as a consequence of its works, they shall stop works immediately, inform the LO Fault Report Centre and report the incident as a near miss via the TfL reporting line.

WI1100H&S.7 Site Rules

7.0 Site Rules will be captured via the LO Induction and Depot Induction. Site access to the LO network shall adhere to the following London Overground/ Network Rail procedures:

LO-MS-103-03-0002_03 - Work Request Application Process

LO-MS-103-03-0031_01 - Faulting Request Application Process

LO-MS-101-02-0001_02 - LO Access to the Railway Procedure

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LO-MS-103-02-0005 - Medical Requirements for Staff Access to the Railway

LO-MS-103-02-002 - Safety Induction

NR/L2/OHS/019 - Safety of People Working On or Near the Line

NR/L2/OHS/021 – Personal Protective Equipment and Work Wear

7.1 Agreement of Site Rules

(1) The Supplier shall propose site rules for agreement by the Company and shall ensure that all persons for whom the Supplier is responsible abide by the same. The Site Rules shall be included in the Construction Phase Plan.

7.2 Drugs and Alcohol

(1) The Supplier shall operate a drugs and alcohol policy at least as stringent as London Overground Misuse of Drugs LO-MS-101-02-0003; London Overground Alcohol at Work Procedure LO-MS-101-02-0002; Railway Group Standard GE/RT8070 where safety critical work is to be undertaken on Network Rail infrastructure.

(2) The Supplier shall implement suitable arrangements to verify compliance with its policy including undertaking the necessary alcohol and drug testing. In addition the Supplier shall co-operate with the Company who may require the execution of random and/or for cause alcohol and drug tests. The Supplier shall provide records of testing if requested by the Company. The testing arrangements shall be described in the Construction Phase Plan.

7.3 Smoking

(1) Smoking (including e-cigarettes) within the working areas is prohibited with the exception of designated smoking areas. The Contactor shall take all reasonable measures to prevent personnel under his control from smoking on the streets adjacent to worksites.

7.4 People and Plant Exclusion Zones

(1) The Supplier shall implement a system that prevents the risk of injury and fatality from moving plant.

7.5 Welfare

(1) The Supplier is responsible for cleaning, inspecting and maintaining all sanitary conveniences and facilities provided in the working areas, whether shares or provided for use by the Supplier or Company.

WI1100H&S.8 Documentation

8.0 Documentation

8.1 Construction Phase Plan

(1) The Supplier shall ensure that all health, safety and environment information provided by the Company is addressed in the Construction Phase Plan (CPP) and/or the Environmental Management Plan (EMP) in the format agreed with the Company. For smaller scale works and with the agreement of the Company, the EMP can be incorporated into the CPP.

(2) A suitable CPP and EMP shall be in place and accepted by the Company at the end of the

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mobilisation period.

(3) For larger/more complex projects, a separate security plan may be required, otherwise security arrangements shall be incorporated into the CPP.

(4) The Supplier shall maintain the CPP as required by the CDM Regulations. Following the Company's acceptance of the initial CPP, subsequent updates shall be submitted to the Company for acceptance.

(5) Where sub-contractors are used to undertake surveys or additional works and they are appointed as the Principal Contractor or Contractor under the CDM Regulations, the Supplier shall ensure that they have reviewed and approved the CPP and EMP produced by the sub-contractor before they are submitted to the Company.

8.2 Emergency Preparedness Plan

(1) The Supplier shall provide the client a business continuity plan to cover critical roles to enable successful delivery of the project/contract.

8.3 Method Statements/Work Package Plans

(1) The Supplier is responsible for producing and approving all Method Statements (also known as Safe Systems of Work and Work Package Plans) in a format agreed with the Company. The Supplier shall submit a schedule of Method Statements to the Company for acceptance at contract start date. The Company shall determine which Method Statements they will review for acceptance.

(2) The Supplier shall submit all Method Statements to the Company with adequate time allowed for any required acceptances to be gained prior to that element of the works starting on site. The time allowed for review will be agreed with the Company. No element of the work shall commence without a Method Statement being produced and approved by the Supplier and being accepted by the Company where required.

(3) All Method Statements and supporting documentation, including any relevant approvals from others, shall represent and detail the Supplier's planned works and address construction sequences, co-ordination with third parties and the relevant control and mitigation measures for identified risks.

(4) Within each Method Statement the Supplier shall include a risk assessment that demonstrates how potential HSE risks resulting from the works have been mitigated to ALARP status.

(5) Where sub-contractors are used, the Supplier shall ensure that they have reviewed and approved all Method Statements produced by the sub-contractor before they are submitted to the Company.

WI1100H&S.9 Fire

9.0 Fire

(1) The Supplier shall be aware of London Overground's Fire Safety Management Procedure LO-MS-102-02-0004_01 Fire Safety Management

9.1 General Requirements

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(1) The Supplier shall ensure that all works are compliant with the relevant legislation, Standards, TfL guidance and industry best practice in terms of fire compliance.

(2) The Supplier shall make itself aware of any existing fire evacuation arrangements for the sites, and co-ordinate their own arrangements with those of the site landlord (as provided in the HSE pre-construction information).

(3) The Supplier shall develop a fire evacuation procedure for agreement with the Company within its work package plan/ method statement. The Supplier shall ensure that all persons working at a Site or who may have authority to visit a Site from time to time are aware of this procedure and receive any instruction that might be appropriate.

(4) The Supplier shall remove all superfluous flammable materials from each Site on a daily basis.

(5) The Supplier shall obtain the consent in writing from the Company before storing or using plant, equipment or materials involving risk of fire or posing any hazard to any person and property.

(6) The Supplier shall provide any additional fire extinguishers or other fire suppression systems on each Site as may be required to deal with the Supplier's method of working and/or any materials, packaging and equipment brought or stored on each Site by the Supplier.

(7) The Supplier shall take all precautions to prevent the outbreak of fire arising from the works.

9.2 Isolations of Fire Detection and Suppression Systems

(1) London Overground utilises the following procedures for managing Fire Isolations and Fire Precautions. The Supplier shall ensure these are adhered to.

LO-MS-103-03-0051_02 Fire Isolation Procedure
LO-MS-102-02-0005_02 Managing Changes to Fire Precautions

9.3 Hot Works

(1) The Supplier shall liaise with the Company regarding works which involve the use of open fires, flames and the application of heat by means of tools or equipment, and the obtaining of any necessary permits associated with these works.

WI1100H&S.10 Electromagnetic Disturbance

10.0 Electromagnetic Disturbance

(1) The Supplier shall take all necessary precautions to avoid excessive electromagnetic disturbance of apparatus outside of the site. The Supplier shall ensure that all electrical plant is suppressed as not to cause unacceptable electrical or other interference to surrounding properties.

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Works Information Appendices:

Annex A:

HEALTH, SAFETY and ENVIRONMENT	Unit of Measure	Guidance	P1
Number of hours worked	**No.**	**The total number of hours worked by employees and operatives on the project**	
Construction, Demolition and Excavation Waste	**tonnes**	**Total amount of waste generated**	
Construction, Demolition and Excavation Waste, Reused, Recycled and Recovered	**tonnes**	**Amount of waste generated that was reused, recycled or recovered**	
Hazardous (Construction, Demolition and Excavation) Waste	**tonnes**	**Total amount of hazardous waste generated**	
Hazardous (Construction, Demolition and Excavation) Waste, Reused etc.	**tonnes**	**Amount of hazardous waste generated that was reused, recycled or recovered**	
Number of HSE related complaints	**No.**	**Number of HSE complaints received - please provide a short explanation of any complaints received**	
No. Of PGIs completed	**No.**	**Number of Planned General Inspections completed in the period**	
No. Of Safety Tours completed	**No.**	**Number of Safety Tours completed in the period**	
No. Of Toolbox talks delivered	**No.**	**Number of Toolbox talks delivered in the period**	
% of safety actions completed	**%**	**% of actions from inspections or investigations that have been completed by the due date**	
Number of Incidents	No.	The total number of incidents reported to the incident line including Near Misses, Minor Injuries, Major Injuries, LTIs, RIDDOR reportable incidents and asset damage incidents	
Number of Near Misses	Mo.	Total number of Near Miss (Near Hit) incidents reported	
Number of Minor Injuries	Mo.	The total number of injuries that are not classed as Major Injuries	
Number of Major Injuries	No.	The total number of Major Injuries, including those which are RIDDOR reportable	
Number of LTIs	No.	Number of Lost Time Injuries including those which are also minor injuries, major injuries of RIDDOR reportable injuries	
Number of RIDDORs (Injuries)	No.	Number of RIDDOR reportable injuries	
Number of RIDDORs (Dangerous Occurrences)	No.	Number of RIDDOR reportable dangerous occurrences	

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Appendix 5

Health, Safety and Environmental Contract Conditions – Trams Sites

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Schedule 16 HSQE Part A – Appendix 5

Trams

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1 Licenses and Certificates for Supplier's Personnel

(1) The following licenses are required by the Supplier when working on London Trams premises and infrastructure:

- Tram Safety Awareness Course (Pink Ticket course) (when working on or near the track);
- Tramlink Possession Supervisor/Tramlink Worksite Supervisor (when track possessions and 'worksites' are required); and
- Authorised Person (AP) for those carrying out electrical isolations.

2 Drugs and Alcohol

(1) The Supplier shall operate a drugs and alcohol policy that is at least as stringent as the Company's drugs and alcohol policy.

(2) The Supplier shall comply with TfL procedure PR0659 'Drugs and Alcohol Requirements for TfL's third parties'.

(3) When working for London Trams the Supplier shall comply with:

- London Tramlink Drugs and Alcohol Policy LT-IMS-SHEQ-070
- Railway Group Standard GE/RT8070 Testing Railway Safety Critical Workers for Drugs and Alcohol

3 Personal Protective Equipment (PPE)

(1) When working on London Trams premises or infrastructure the Supplier shall ensure that all Supplier staff wear high visibility clothing compliant with Rail Safety and Standard Board's High Visibility Clothing Standard: LT-IMS-PROC-SHE-950 Personal Protective Equipment and Rail Industry Standard RIS-3279-TOM at all times when on the Tram network/when on or near the line or lineside.

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SCHEDULE 16

PART B

Quality

1. Records

1.1 The Supplier shall maintain such records that are specified by the Company, or required under legislation, and this shall include (as a minimum):

1.1.1 details of any non-compliance against any Standard;

1.1.2 records of audits and Site inspections;

1.1.3 records of the qualifications, competence and training of staff;

1.1.4 quality assurance inspections conducted (including the identity of the inspector concerned);

1.1.5 equipment test calibration and verification checks conducted (including the identity of the inspector or tester concerned);

1.1.6 process and manufacturing data relating to the Contract, including an audit trail for material or component identity, source and status, any process, inspection or test activity so directed by special instructions or any contract quality plan invoked by the Contract (including those set out in paragraph 6.1 of this Schedule 16 Part B (*Quality*));

1.1.7 non-conforming service or product records;

1.1.8 records of all related incoming and outgoing plant and equipment, material and product certificates of conformity and associated release documentation;

1.1.9 records of tender and contract reviews; and

1.1.10 the Supplier's policy with regard to quality.

2. Retention Period

Records shall be retained by the Supplier for a minimum of twelve years unless otherwise specified by the Company, or for any longer period as required by Applicable Laws.

3. Availability of Records for Inspection

The Supplier shall make all such records available to the Company within three (3) Working Days of any request by the Company.

4. Statistical Process Control, Audit and Inspection Procedures

Where, for quality management purposes, statistical process control procedures, audit or inspection procedures are adopted, full details of the proposed procedures used by the Supplier are to be submitted to the Company for approval 4 weeks before the Services Commencement Date.

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5. General Quality Requirements

5.1 The Supplier shall:

5.1.1 appoint member(s) of its management team who, irrespective of other responsibilities, have defined authority which includes:

5.1.2.1 ensuring that a quality management system is implemented and maintained;

5.1.2.2 reporting to senior management on the performance of the quality management system, including any areas for improvement;

5.1.2.3 ensuring awareness of customer requirements throughout the Supplier; and

5.1.2.4 liaising with customers on matters relating to the Supplier's management system that result from auditing or non-conformances;

5.1.2 ensure that during internal processing and final delivery of a product or Service to the intended destination, that the identification, packaging, storage, preservation and handling do not affect conformity with that product or Service requirements;

5.1.3 not proceed past “hold points” until all the specified activities have been satisfactorily completed and the related documentation is available to and authorised by the Company;

5.1.4 following receipt of a rejection, take immediate action to inspect all stocks and work in order to assess risk and loss and advise the Company of the findings;

5.1.5 take preventative action to avoid a recurrence of the non-conformities;

5.1.6 immediately inform the Company when the Supplier has reason to suspect non-conformities with previously supplied products or Services;

5.1.7 be responsible for ascertaining the cause of and responsibility for non-conformance, and for taking suitable corrective action to prevent reoccurrence;

5.1.8 document all corrective actions undertaken by the Supplier;

5.1.9 ensure that its supply chain work to correct practices, including accepted documentation defining the techniques to be used, workmanship criteria, safety of others (including the public), health precautions, plant and equipment to be used and training and licensing requirements;

5.1.10 ensure that the works comply with any manufacturer's recommendations, instructions and guidelines, unless otherwise directed by the Company;

5.1.11 operate and maintain all plant, equipment and processes in accordance with the relevant manufacturer's or supplier's specification or procedures, unless otherwise directed by the Company;

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5.1.12 take all necessary steps to identify, recall, re-inspect and replace any equipment or parts which have been inspected using inspection, measuring and testing equipment (IMTE) whose calibration is found to be defective or unknown;

5.1.13 store and protect inspection, measuring and test equipment and materials to prevent misuse, damage and deterioration;

5.1.14 ensure that all equipment bears an identification of its calibration or maintenance status, in a manner that clearly indicates it is within the calibration or maintenance period; and

5.1.15 deliver all Services, technical and non-technical, in accordance with the Specification and relevant ISO standards as listed in the Contract.

6. Quality Plan

6.1 The Supplier shall:

6.1.1 provide a recognised Quality Management Plan in accordance with ISO 10005 (as required pursuant to Schedule 10 (*Contract Management*)) and Quality Assurance and Management System applicable to the compliant delivery of the Services, certified to the BS EN ISO 9001 2015 standard, or equivalent, by a United Kingdom Accreditation Service ("UKAS") (or equivalent accredited certification body);

6.1.2 have in place a Quality Management Policy to the standard of BS EN ISO 9001, or equivalent; ensure the Quality Management System applied to this Contract shall be annually and independently audited and verified by a UKAS accredited body. This applies equally to environmental management, health and safety, and any other which may be included in the Contract or which may be introduced at any time;

6.1.3 oversee all activities and tasks needed to maintain optimisation and delivery of the Services. This includes creating and implementing quality planning and assurance, as well as quality control and quality improvement. The Supplier shall ensure that the Quality Management Plan demonstrates the Supplier's process control system as required for the Contract. It shall include the practice and fundamental principles of Total Quality Management (“TQM”) including: plan, do, check act;

6.1.4 ensure the Quality Management Plan shall be operated by the Supplier throughout the duration of the Contract and the Supplier shall maintain and periodically revise the Quality Management Plan as required (and in accordance with Schedule 10 (*Contract Management*)) and provide it in its amended form to the Company each time it is amended; and

6.1.5 have in place a robust audit regime to ensure optimisation of quality and standards of the delivery of the Services.

6.2 The format of the Quality Management Plan shall be determined by the Company and should be developed in accordance with BS ISO 10005:2018 (Guidance on Quality Plans).

7. Testing and Inspection

7.1 When required by the Company, the Supplier shall:

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7.1.1 demonstrate to the Company's satisfaction that acceptance sampling techniques are utilised and such sampling shall meet the requirements of BS6001:1-5/ ISO2858/ ISO2859 "Sampling procedure for inspection by attributes";

7.1.2 identify which sampling plan the Supplier intends to apply to the Contract and forward it to the Company for approval;

7.1.3 reference the sampling once it has been approved in all relevant Quality Management Plans submitted to the Company;

7.1.4 be prepared to revert to 100% inspection in such cases where the failure rate exceeds the level of acceptance identified within the sampling plan;

7.1.5 prepare for the approval of the Company an inspection and test plan which shall include such hold points agreed with the Company; and

7.1.6 maintain sampling inspection records in accordance with the Company's requirements.

8. Certification of Conformity

8.1 The Supplier shall:

8.1.1 provide (for the Company) certificates of conformity for the Services and products that include:

a) the Supplier's name and location address;

b) the Supplier's full company name and manufacturing address, if different to the above;

c) the Company's supplier rating system number;

d) the unique certificate reference number and date of certificate;

e) details of valid third party approvals applicable to the Services provided and the establishment providing the Services to the Company;

f) the Company's contract reference and, if applicable, quality plan number;

g) a full description and quantity of supplies, including specification, drawing number and issue numbers and British, EC or relevant standards applicable;

h) identification marks and serial numbers as appropriate;

i) details of authorised non-conformities, Company concession or production permit references and a full statement of authorised deviations, operations or processes not conducted; and

j) for all materials (raw or finished):

i. cast and/or batch number(s);

ii. test report reference and, if called for, copies of test results and additionally for metallic materials;

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iii. the condition of the material despatched;

iv. recommended heat treatment if the material is being delivered not in a final use condition;

v. chemical analysis and/or mechanical testing certificates;

vi. inspection stamp and/or authorising signature;

vii. details of packaging and transportation where appropriate;

viii. country of origin (EC requirement);

8.1.2 ensure that all certificates include one of the following statements of conformity signed by an authorised signatory, on behalf of the Supplier:

(a) for supplies from a manufacturer, the format shall be "Certified that the whole of the supplies detailed hereon have been inspected and tested, and (unless otherwise stated) conform in all respects with the requirements of the Contract";

(b) for supplies from an agent, stockist or distributor (i.e. where the Supplier is not the manufacturer) the format shall be "Certified that the whole of the supplies detailed hereon have been inspected and tested and (unless otherwise stated) conform in all respects with the requirements of the Contract"; and

(c) for services, the format shall be "Certified that the services detailed hereon have been inspected and tested, and (unless otherwise stated) conform in all respects with the requirements of the Contract";

8.1.3 provide a copy of the Supplier's authorised signatory list, showing as a minimum, name, job title, signature, designated authority level at the Commencement Date;

8.1.4 ensure that any certification from Sub-Contractors for parts or Services related to the Contract accompanies the Supplier's certificate of conformity;

8.1.5 agree with the Company a certificate of conformance for use where projects or part projects are handed over;

8.1.6 include in the certificate of conformance a "Statement of Design Performance" where design work is provided; and

8.1.7 provide statutory test certificates, where applicable.

9. Quarantine

The Supplier shall provide secure quarantine storage for the storage of materials and products that are the subject of investigation regarding their conformance or non-conformance.

10. Traceability

The Supplier shall ensure that all the materials to be incorporated into the Services or works delivered to the Sites are controlled at installation and are able to be traced to the manufacturer, unless indicated otherwise by the Company.

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11. Maintenance and Servicing

The Supplier shall provide the Company with written details of how its arrangements for maintenance and servicing will ensure the reliability, maintainability, durability and serviceability of the assets.

12. Design

12.1 In respect of LUL only, no person shall change the design of any engineering or training system for the installation, operation and maintenance of infrastructure equipment without complying with LU Standard 1-538 (Assurance).

12.2 The Supplier shall:

12.2.1 operate a change control system so that the appropriate issue of drawings, technical specifications, training material and current deviations and concessions, including customer supplied standards, can be readily determined at all times;

12.2.2 ensure that all design changes and modifications are identified, documented, reviewed and approved by the Company prior to implementation;

12.2.3 record the results of all design assessments and hand over such records to the Company;

12.2.4 appoint or nominate a design authority for each design; and

12.2.5 ensure that designers hold BS-EN-ISO-9001 certification relevant to the Services or, if the design Supplier is not certificated to BS-EN-ISO 9001, a documented management system which includes design shall be required.

13. Computer Aided Design

The Supplier shall provide computer aided designs in a style, format and software as specified by the Company.

14. Asset Commissioning and Handover

14.1 No project shall be considered complete unless the Company agrees it has in its possession complete and final information deliverables specified within the project contract documents.

14.2 As a minimum, these shall include, though not be limited to:

14.2.1 as-built drawings;

14.2.2 installation drawings;

14.2.3 O&M documents;

14.2.4 warranty documents;

14.2.5 inspection and test results

14.2.6 commissioning certificates; and

14.2.7 handover certificates.

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Part C - Environmental Requirements

1 ENVIRONMENT SCHEDULE

1.1 The Supplier is required to demonstrate how it will respect and deliver on the principles outlined in the Company's Corporate Environment Plan ("CEP"), as set out in Appendix 2 (The Company's Corporate Environment Plan) to this Schedule 16 Part C (Environmental Requirements), and any other associated strategies as are notified by the Company to the Supplier from time to time, such as the Mayor of London's Transport and Environment Strategies. The Supplier shall support the Company to achieve the environmental targets set out in its CEP as more particularly described in paragraphs 1.3 below (the "Company's Environmental Targets").

1.2 The Company is committed to continue being the strong green heartbeat of London and fully supports the Mayor of London's aims to make London one of the greenest cities in the world.

1.3 The Company's Environmental Targets are set out in its CEP. These include:

(a) contributing to achieve the Mayor's target of a carbon neutral London by 2030 and net-zero carbon by 2050;

(b) achieving zero-carbon emissions across the Company's operations and head office buildings by 2030;

(c) instilling carbon performance measurement and appraisal through contracts, proposals, projects, programmes, business cases, scheme designs and pathway processes;

(d) converting the Company's fleet vehicles to zero emission; and

(e) supporting a circular economy which prevents waste and re-uses waste to achieve the Mayor's target to become a zero waste city by 2050.

2 ENVIRONMENTAL MANAGEMENT SYSTEM

2.1 The Supplier shall have in place an Environmental Management System ("EMS") that is bespoke to the Contract and which, as a minimum, meets the requirements set out below:

(a) the EMS shall be certified to the BS EN ISO14001 standard, or equivalent standard, by a United Kingdom Accreditation Service ("UKAS") or equivalent accredited certification body or the Supplier shall have an environmental management policy, and also an independently audited EMS to the standard of BS EN ISO14001, or equivalent;

(b) the EMS shall include a requirement for the Supplier to carry out assessments to identify all potential environmental aspects and impacts related to the provision of the

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Services and the Supplier shall provide details of any necessary environmental control measures to the Company;

(c) the EMS shall include a requirement for the Supplier to review the environmental aspect and impact assessments as a minimum once a year and ensure that the aspect and impact assessments (and any associated control and mitigation measures) remain pertinent to its performance of the Services; and

(d) the EMS shall be consistent with and support the principles of the TfL Safety, Health and Environment Policy set out in Appendix 1 (TfL Safety, Health and Environment Policy) and the Company's CEP set out in Appendix 2 (The Company's Corporate Environment Plan (CEP)) to this Schedule 16 Part C (Environmental Requirements) as each is amended from time to time.

3 ENVIRONMENTAL MANAGEMENT PLAN(S)

3.1 As part of the EMS, the Supplier shall:

(a) develop, implement and maintain a Contract specific Environmental Management Plan ("EMP") outlining the processes that the Supplier uses to identify measures to improve the environmental sustainability performance within the contract and deliver upon the principles outlined within the Company's CEP; and

(b) within thirty (30) days of the Commencement Date, provide to the Company for its review and comment, an initial draft of the EMP.

3.2 Within forty (40) days of the Commencement Date, the Supplier shall attend an environmental kick off meeting to discuss the initial draft EMP, sustainability objectives, targets and key performance indicators and contract conditions with the Supplier's Representative and the Company's Representative.

3.3 Within sixty (60) days of the Commencement Date, the Supplier shall incorporate any feedback received from the Company and provide to the Company an updated version of the EMP which, once agreed by the Company, shall become the "Agreed EMP". As a minimum, the Agreed EMP shall include or define:

(a) the environmental risks and opportunities within the Contract and the actions to be taken to address these;

(b) the Company's Environmental Targets and the Supplier's plans for achieving these – demonstrating how these directly support the achievement of the aims and targets specified within the Company's CEP;

(c) the environmental key performance indicators that have been identified to support the Supplier's plan for achieving the Contract's environmental objectives;

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(d) the processes and roles and responsibilities for implementing, communicating and ensuring the effectiveness of the Supplier's EMS;

(e) the processes for preparing for, and responding to, environmental Incidents (as such term is defined in paragraph 1.4.3(a) of Part A (Health and Safety) to this Schedule 16) and near misses, including the reporting and investigation of such occurrences;

(f) the processes for reporting against the Company's Environmental Targets agreed at the environmental kick off meeting and how these will be used to monitor and improve environmental performance;

(g) a Carbon Resource Plan that demonstrates how the Supplier will prioritise and support the transition to a low-carbon circular economy through selection of options to reduce carbon, prevent waste, set plans to achieve the Contract's targets for reduction in waste and the use of virgin materials, and increase re-used and recycled content on this project, including through the use of energy within manufacturing, materials, equipment and tools where technically viable and innovative solutions, in conjunction with key stakeholders (a "Carbon Resource Plan");

(h) the content of the Carbon Resource Plan shall be agreed with the Company and any updates shall be implemented within a period agreed with the Company;

(i) the process for reporting progress against the Carbon Resource Plan within an agreed format set out in the Agreed EMP;

(j) a Waste Management Plan, as required pursuant to paragraph 5.9 below; and

(k) progress against the Carbon Resource Plan shall be reported within an agreed format set out in the EMP to set out how sustainability will be incorporated into the design, manufacture, and operation of items supplied within the contract. Documents relating to the Carbon Resource Plan can be found in Appendix 3 (Documents relating to the Carbon Resource Plan) to this Schedule 16 Part C (Environmental Requirements).

3.4 The Supplier shall use the agreed indicators set out in the Agreed EMP to monitor and report upon environmental sustainability performance, and thereby demonstrate the effective delivery of an environmentally sustainable contract. These will be subject to review within environmental workshops which will be held at regular intervals throughout the duration of the Contract, the frequency of which will be determined at the kick-off workshop.

3.5 Targets will relate to supporting the transition to a low-carbon circular economy through:

(a) establishing a baseline of carbon emissions within the Contract in the first year and year on year improvement for the duration of the Contract;

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(b) establishing a baseline of embodied carbon within products and materials supplied in the first year of the Contract leading to year-on-year improvement for the duration of the Contract;

(c) maximising the use of re-used and recycled materials within items and materials supplied. A minimum of twenty (20%) percent is to be used establishing a baseline in the first year and year on year improvement for the duration of the Contract;

(d) minimisation of packaging waste, particularly single use plastic and ensuring all packaging materials can be maintained at the highest points of the waste hierarchy to be re-used or recycled. All packing is to be made of one hundred (100%) percent recycled material;

(e) recovery of items supplied at end of life for re-use; and

(f) ensuring environmental best practice is applied setting and achieving a target/reduction in noise in line with the Company's CEP.

3.6 The Carbon Resource Plan and proposed sustainability measures will be discussed and agreed within the environmental kick off meeting following commencement of the Contract. The Supplier shall ensure that systems are in place for delivering those measures which are applicable to activities within the Supplier's control. The Carbon Resource Plan document will be used to track the proposed sustainability measures/innovations and any subsequent measures proposed throughout the duration of the Contract.

3.7 The Supplier shall, on each anniversary of the Commencement Date, review the Agreed EMP and within twenty (20) days of such review propose any updates to the Company for incorporation into the Agreed EMP. Any such updates shall only be incorporated into the Agreed EMP on agreement between the Parties.

4 REDUCING WHOLE LIFE CARBON, WATER USAGE AND COST

4.1 The Supplier shall maximise the sustainable performance of their activities (including through its supply chain) and minimise the whole life carbon impact within the Contract.

4.2 The Supplier shall support the Company's carbon objectives by working to its Operational Carbon Hierarchy, as shown in figure 1 below:

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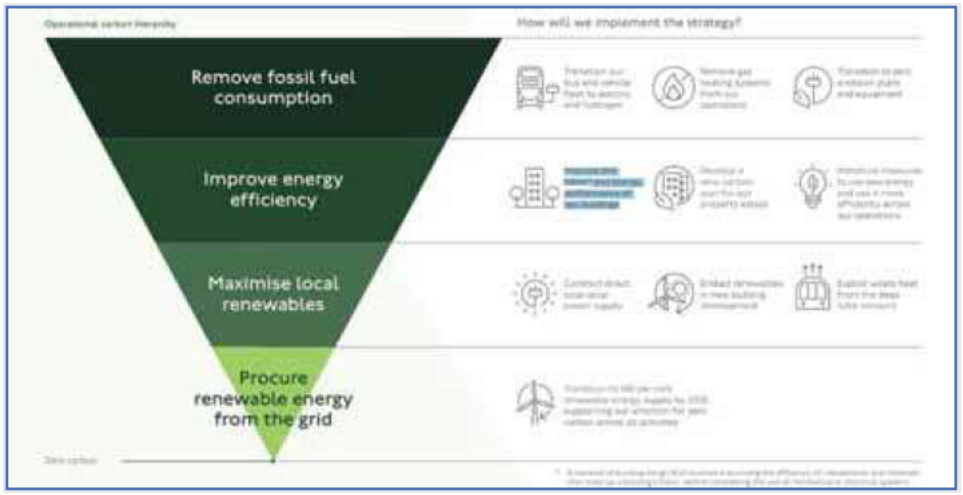


Figure 1

4.3 Where the Supplier is responsible for the design of items, the Supplier shall strive to lower the Contract's whole life carbon and whole life cost by investigating, and where practicable implementing, innovative sustainable design and manufacturing solutions.

4.4 For example, the Supplier shall:

(a) use principles that consider the longer-term design life of services supplied and shall offer solutions that remain state of the art;

(b) use designs, systems, and practices that will reduce energy and fossil fuels within services supplied;

(c) adopt processes and methods that minimise water use;

(d) adopt processes and methods that minimise use of virgin raw materials; and

(e) adapt processes which utilise end of life items generated within the Contract within the manufacture of new products in a circular method.

4.5 The Supplier shall state the savings and/or efficiencies achieved, documenting all assumptions made in the forecast of savings as well as any risks to the delivery of the initiative into the Carbon Resource Plan.

4.6 The Supplier shall, where applicable:

(a) ensure that when replacing Assets, the Supplier selects the most energy efficient replacements and/or equipment. The Supplier shall notify the Company's Representative where this is not technically feasible, for example, in relation to a heritage feature or fire compliance limitation.

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(b) make use of the Company's automated Monitoring and Targeting ("aM&T") software to analyse Location performance, control out of hours consumption and also suggest, measure and verify efficiency enhancement projects; and

(c) maintain the Company's Assets in accordance with all ozone depleting substances and fluorinated greenhouse gas legislation compliance, including statutory air conditioning inspections, to optimise efficiency of cooling equipment, for current, pending and future Applicable Laws in accordance with the Specification.

5 WASTE AND RESOURCE MANAGEMENT

5.1 The Company requires the Supplier to promote the minimisation of waste within its operation and items supplied including packaging to play a supporting role in helping the Company achieve its environmental targets.

5.2 The London Environment Strategy has the following aim: London will be a zero-waste city. The Supplier shall recycle commercial and industrial waste associated with this Contract and achieve the target established within the environmental kick off meeting held upon commencement of the contract with a minimum of sixty five (65%) percent recycling by 2030 (unless otherwise agreed in the environmental kick off meeting). The Supplier shall consider the waste hierarchy and prioritise waste reduction and reuse of materials before recycling. This applies to both items supplied and packaging during provision of the Services. The Supplier shall maintain and increase the current recycling rate in accordance with targets agreed throughout the term of the Contract. This will be done while avoiding the use of single use plastic.

5.3 The Supplier shall ensure that sustainable resource use and waste management are considered as an integral part of the planning and design of items provided in this Contract.

5.4 The Supplier shall implement circular economy business models over traditional systems, as far as reasonably practicable. The Supplier shall discuss how it will utilise circular economy models to design out waste within the environmental kick off meeting upon commencement of the Contract and at the workshops held throughout the term of the Contract.

Material efficiency and selection for packaging of supplied

5.5 All cardboard, paper and other packaging where appropriate, must be 100% recyclable and from a source accredited by the Forest Stewardship Council (FSC), or be made from 100% recycled materials. The Supplier shall provide evidence of the packaging materials within a timescale to be agreed during the environmental kick-off meeting. All plastic packaging must be made from 100% recycled materials and be 100% recyclable.

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5.6 The Supplier shall outline within the Carbon Resource Plan items of single use plastic with the view to managing a plan to reduce and remove single use plastics in packaging associated with this Contract.

5.7 The Supplier shall outline within the Carbon Resource Plan a plan for takeback schemes which will demonstrate reuse of packaging.

5.8 The Supplier shall record evidence to confirm that it has considered the selection of materials and the reduction of waste in the Carbon Resource Plan.

5.9 The Supplier shall develop, implement and maintain a Waste Management Plan ("WMP"), as part of the EMP, to cover the waste that arises from its performance of the Services and that it is therefore responsible for, support the Company's objective to use materials more efficiently and divert one hundred (100%) percent of waste from landfill.

5.10 The Supplier's WMP shall document how the Supplier will:

(a) comply with Applicable Laws in relation to the storage, handling, treatment, transfer and disposal of all waste materials produced in the performance of the Services. As a carrier of waste, the Supplier shall be registered as a waste carrier with the Environment Agency and shall provide evidence of registration within the WMP and on renewal of the registration;

(b) set waste reuse, recovery and recycling targets that meet or exceed agreed targets;

(c) monitor and report waste arising in line with the Supplier's reporting requirements under Schedule 10 (Contract Management) each Period in advance of the Period Progress Meeting;

(d) ensure all Supplier Personnel are trained in waste minimisation and management techniques;

(e) increase recycled content of materials used in construction and any other materials purchased; and

(f) document all decisions taken during any design work to reduce waste, and ensure this information is passed to the Company within the Carbon Resource Plan.

5.11 The Supplier shall implement and update the WMP, maintain records throughout the duration of this Contract and make available all such records for review by the Company on request.

5.12 The Supplier is responsible for the management and removal of all waste that arises from its performance of the Services as soon as practicable in accordance with Good Industry Practice.

5.13 The Supplier shall make available to the Company, within three (3) Working Days of request, any waste records (such as consignment notes and transfer notes).

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5.14 Where involved in project work managed with TfL's Pathway process, the Supplier shall comply with the requirements of the TfL Pathway Resource and Waste Management Plan (set out in Appendix 4 (TfL Pathway Resource and Waste Management Plan) to this Schedule 16 Part C (Environmental Requirements)).

6 CLIMATE RESILIENCE

6.1 The Supplier shall ensure that any design, installation and maintenance work it performs as part of the Services takes into account the climate parameters over the whole design life in which the building and Asset must perform, to support resilience to extreme weather.

6.2 The Supplier shall ensure that the building and Asset remains fit-for-purpose for the Company's needs during its design life period, taking into account the range of extreme weather and climate parameters that may occur during that time. This shall include, but shall not be limited to:

(a) keeping the Locations, buildings and Assets within specified temperature tolerances; and

(b) all refits including measures to assist with keeping Locations, buildings and Assets resilient during their design life including, but not limited to, water efficiency, natural ventilation and shading, greening, and sustainable drainage.

7 ENVIRONMENTAL REPORTING

Annual

7.1 The Supplier shall provide the Company's Representative with an annual Environmental Performance Report to share the following information in an agreed format established within the environmental kick off meeting:

(a) summary of the performance against the Agreed EMP including environmental statistics in relation to agreed topics established in the contracts initial environmental workshop e.g., carbon emissions, waste collected, environmental incidents;

(b) a summary of environmental innovations implemented into the Contract;

(c) a summary of any changing circumstances, including developments in legislation; and

(d) proposed environmental improvement targets together with commentary on the performance in relation to the previous year's improvement targets, including the status of corrective and preventative actions.

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Periodic

7.2 The Supplier shall provide the actual volumes of waste items collected, recycling rates and end destinations in an agreed format with a frequency to be agreed during the environmental kick-off meeting.

7.3 The Supplier shall provide emissions data relating to embodied carbon in items provided and/or used in the supply chain for, and performance of, the Services in an agreed format. The frequency of this will be determined in the environmental kick off meeting.

8 AIR QUALITY / VEHICLES

8.1 The Supplier shall identify, assess and utilise transport opportunities that will reduce vehicle mileage and associated carbon / air quality emissions. These may include, but is not limited to, delivery by rail, river, E-cargo bike etc. or the consolidation of loads.

8.2 The Supplier shall deliver the Contract using zero emission vehicles wherever feasible to minimise air quality impacts.

8.3 The Supplier is free to adopt a technology neutral approach (i.e. the Supplier is free to choose which vehicle propulsion/fuel/energy source is used) to meet the emissions requirements contained herein.

8.4 In transitioning to the use of zero emission vehicles to deliver the Contract the Supplier, as far as practicable, shall meet or better the following:

(a) from January 2025, all M1 category cars shall be zero-emission;

(b) from January 2025 all N1 category commercial vehicles not exceeding 3,500 kg maximum authorised mass shall be zero emission capable (ideally meeting or exceeding the performance requirements for eligibility for a plug-in grant from the Department of Transport (see: https://www.gov.uk/plug-in-car-van-grants));

(c) from January 2030, all N2 and N3 category commercial vehicles exceeding 3,500 kg maximum authorised mass shall be fossil fuel free.

If the Supplier can demonstrate to the Company that it is unable to secure the use of vehicles that meet the requirements stipulated above, the Supplier may, with the Company's written approval, use vehicles which meet the following minimum requirements until such time as the Supplier is able to secure the use of vehicles which meet the more stringent requirements:

(i) M1 category cars - Euro 6 emission standard;

(ii) N1 Class I, II & III vans - Euro 6 emission standard; and

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(iii) N2 and N3 category vehicles exceeding 3,500 kg maximum authorised mass - Euro VI emission standard.

8.5 The Supplier shall ensure that all vehicles are maintained and operated so that environmental impacts are reduced as far as reasonably practicable. As a minimum, the Supplier shall:

(a) ensure vehicles are regularly serviced in line with the manufacturers' recommendations

(b) ensure all faults or problems on such vehicles are repaired/addressed as soon as practicable, and

(c) monitor and record all vehicle fuel and mileage in connection with the performance of the Services.

9 EQUIPMENT AND NON-ROAD MOBILE MACHINERY

9.1 The Supplier shall ensure that the adverse impacts of emissions from plant and Equipment used in the performance of the Services are minimised. Measures to be considered for limiting emissions and avoiding nuisance will include any one or more of the following as appropriate (and as far as reasonably practicable):

(a) ensuring that the engines of all vehicles, plant and Equipment used in connection with the Services are not left idling;

(b) requiring plant, Equipment and vehicles to be well maintained, with routine servicing to be completed in accordance with the manufacturers' recommendations and records maintained for the work undertaken;

(c) requiring all vehicles, including off-road vehicles, to hold current MOT certificates, where required by Applicable Laws (or tested to an equivalent standard) and requiring them to comply with exhaust emission regulations for their class;

(d) using routes and operating equipment away from potential receptors such as houses, schools and hospitals;

(e) avoiding the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment; and

(f) maximising energy efficiency (this may include using alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing).

10 NON-ROAD MOBILE MACHINERY

10.1 Non-road mobile machinery (NRMM) is any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road.

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10.2 The Supplier shall ensure that all NRMM used to deliver the Scope meets the progressively tightening emission requirements of the Greater London Authority's (GLA's) NRMM Low Emission Zone, as set out in the Mayor's London Environment Strategy (Policy 4.2.3). Further information may be found in guidance published by the GLA - see: https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/pollution-and-air-quality/nrmm.

10.3 The Supplier shall demonstrate compliance with the NRMM Low Emission Zone by using the GLA's NRMM register to log all applicable NRMM used to deliver the Scope.

10.4 The Supplier shall apply to the GLA for an exemption to the NRMM Low Emission Zone for any NRMM that does not meet the requirements.

10.5 The Supplier shall ensure that all emissions reduction systems retrofitted to NRMM used to deliver the Services shall be certified via the Energy Saving Trust Register.

10.6 The Supplier shall immediately stop using, and then remove from site, all NRMM that does not meet the NRMM Low Emission Zone requirements and has had an exemption request rejected.

10.7 The Supplier shall comply with the progressively tightening standards of the NRMM Low Emission Zone throughout the delivery of the Contract. Any changes to the requirements of the NRMM Low Emission Zone shall not constitute a change to the Scope.

10.8 The Supplier ensures that all vehicles and NRMM are regularly serviced and switched off when not in use.

11 DUST

11.1 The Supplier shall use the best practicable means to reduce dust and other emissions at all times during performance of the Services and shall endeavour not to create a dust nuisance.

11.2 If the Company's Representative decides that the Supplier is not dealing adequately with the control of dust or other emissions, the Company's Representative may instruct the Supplier to carry out such additional measures as the Company's Representative considers necessary. Such measures are not subject to the Contract variation procedure set out in Schedule 4 Part A (Contract Variation Procedure) of the Contract.

12 NOISE AND VIBRATION

12.1 General

12.2 The Supplier shall ensure that performance of the Services do not breach conditions within any local noise abatement notices in sensitive locations, and shall:

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(a) use the best practicable means to control and limit noise and/or vibration levels so that affected properties, and other sensitive receptors, are protected from excessive or prolonged noise and vibration associated with all activities;

(b) develop and maintain a Noise and Vibration Management Plan, as part of the EMP, for activities with the potential to generate noise and/or vibration. The Noise and Vibration Management Plan shall set out how noise and vibration requirements shall be managed and the Supplier shall undertake the Services in strict adherence to this plan;

(c) apply the best practicable means to reduce noise and vibration at all times having regard to the provisions of the latest edition of BS5228 (Code of Practice for Noise and Vibration Control) or other relevant Good Industry Practice or Standards;

(d) stipulate and ensure adherence to behavioural conditions for workers in relation to minimising impacts to neighbours, such as conduct when arriving and leaving the Company's Locations during any night works;

(e) employ a trained and competent person to undertake noise and/or vibration monitoring if required by the Company and comply with any additional measures required including relocation or modification of equipment to reduce noise and vibration. The monitoring scope shall be agreed in advance of works going ahead with the Company's Representative and monitoring results shall be provided to the Company on request; and

(f) In its performance of the Services, the Supplier shall comply with the requirements of the Company's Site Noise and Vibration Evaluation and Control (set out in Appendix 5 (Company's Site Noise and Vibration Evaluation and Control) to this Schedule 16 Part C (Environmental Requirements)).

13 PRIOR CONSENT

13.1 If activity with the potential to generate noise and vibration is to be carried out outside of normal working hours, and/or the noise and vibration generated is likely to cause significant disruption or harm, the Supplier shall:

(a) liaise with the Company to determine whether a Section 61 consent (under the Control of Pollution Act 1974), or other form of noise agreement, will need to be in place prior to commencing the relevant works;

(b) provide the Company with the following information to enable a decision to be made on whether a Section 61 Consent, or other form of noise agreement, is required:

(i) the nature of the activity being undertaken;

(ii) the time of day the activity will be undertaken;

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(iii) the duration of the activity;

(iv) the proximity of neighbours; and

(v) the sensitivity of neighbours (for example, residents, schools, hospitals and places of worship) that would likely be considered more sensitive to noise than industrial areas; and

(c) be responsible for obtaining the consent prior to commencing the relevant works, and for complying with all aspects of the consent.

14 NOTIFICATIONS

14.1 The Supplier shall take a proactive approach to notifying neighbours and other relevant stakeholders in advance of the commencement of any construction or maintenance works being performed by the Supplier as part of the Services that will affect them in any way, including noise and vibration impacts, impacts from staff or Supplier Personnel noise, access, parking, travel and welfare.

14.2 The Supplier shall submit to the Company's Representative the draft notification letters for approval no less than fourteen (14) days prior to the works commencing.

14.3 Notification letters shall include details of the:

(a) location of works;

(b) reason for the works;

(c) information about potential impacts, noise and vibration, parking, staff access and welfare locations;

(d) duration of the works;

(e) working hours; and

(f) Company customer services details.

14.4 The Supplier shall ensure that all notification letters shall be produced on Company letterhead and the Company shall provide a template where requested by the Supplier.

14.5 Once the details of the notification letters have been accepted by the Company's Representative, the letters shall be distributed to all properties potentially affected by the proposed works no less than ten (10) days prior to works commencing. In most instances, distribution will be arranged by the Company. For smaller areas of impact, the Supplier will be directed to undertake the distribution directly. In ascertaining the distribution area, the Supplier shall carefully consider potential noise and vibration, areas affected by staff or Supplier Personnel parking, access or welfare requirements, delivery and loading of equipment.

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14.6 A briefing note about work activities that could potentially affect the community shall be provided by the Supplier to the Company's community relations representative in advance of the commencement of the works. This briefing note will be used to brief key stakeholders to address any complaints or enquiries. The briefing note shall contain a copy of the notification letter, the recommended distribution area of the letter, a location map of the works, best practicable means used to mitigate potential adverse impacts and the name and contact details (for internal use only) of the Supplier's Representative, who is required to provide further information where requested in accordance with the Supplier's complaints handling process.

15 NOISE COMPLAINTS HANDLING

15.1 The Supplier shall develop a complaints handling process agreed with the Company's Representative. As a minimum, the complaints handling process shall include the following:

(a) the Company's customer services details on all public facing communications;

(b) information on how complaints and enquiries will be responded to when passed on by the Company's customer services;

(c) details of the emergency response system that will be employed for dealing with emergency issues; and

(d) reporting all complaints/enquiries and their responses within twenty-four (24) hours of receipt to the Company using the Company's customer services and to the Company's Representative.

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Appendix 1

TfL Safety, Health and Environment Policy

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P133 A9 TfL Safety, Health and Environment Policy-Feb 2022

Our commitment

Our customers, users, employees and suppliers have an expectation that when using or delivering our services or assets they will remain harm free. Our vision is "Everyone home safe and healthy every day". We are committed to meeting our vision and these expectations.

We want to ensure that:

- every journey is a safe journey for our customers and users
- the security of our customers and employees is assured
- our employees, agency staff and contractors go home safe and healthy every day
- we maintain our assets and deliver projects safely
- we fulfil our commitments to prevent pollution and nuisance protect biodiversity improve air quality and reduce waste and carbon emissions
- we are inclusive and accessible to all customers and users, including those with disabilities.

How we go about this

We have put in place health, safety and environment rules and procedures, including emergency procedures that are regularly updated. These are for you to use. If you do not know where to find them ask your line manager or your Safety, Health and Environment (SHE) manager.

We assess risks and introduce SHE measures to ensure risks remain as low as reasonably practicable. We tell you the risks and the measures we have taken to control risks. We will comply with legislation.

There is regular review of safety, health and environment statistics to identify positive and adverse trends and their root causes, so necessary action can be taken. We also assure ourselves that our suppliers maintain a good safety, health and environment record.

Each year we develop detailed SHE improvement plans to enhance what we do. These plans are regularly reviewed by the Directors in your part of the business.

When working for TfL or one of its companies you will receive the necessary training and equipment to ensure that you can undertake your job safely, ensure the safety of customers and protection of the environment.

As an employee, your physical and mental health and wellbeing is also important and we provide occupational health services to help you stay healthy and in work and provide suitable welfare facilities at your work place.

We want to maintain a fair culture and employees or their representatives are consulted on health and safety matters as they arise, in a meaningful way through scheduled health and safety meetings or more regularly where needed.

What we can all do

We all need to look out for each other and speak up if anything is unsafe or damaging to health or the environment.

We all have a duty to follow our SHE rules and procedures. Do not take shortcuts. If you think rules or procedures are unhelpful let your manager know. Where necessary rules and procedures can be changed.

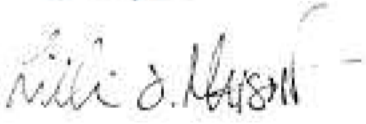
We can learn from the past, so always report and investigate accidents, incidents and near misses/close calls.

Demonstrate the TfL behaviours in everything we do. In this way we can work together so that our vision for a safe and healthy environment is achieved.

Andy Byford
Commissioner



Lilli Matson
Chief Safety, Health
& Environment Officer



Gareth Powell
Chief Customer and Strategy Officer



Stuart Harvey
Chief Capital Officer



Andy Lord
Chief Operating Officer



Tricia Wright
Chief People Officer



Howard Carter
General Counsel & Board Secretary



Simon Kilonback
Chief Finance Officer



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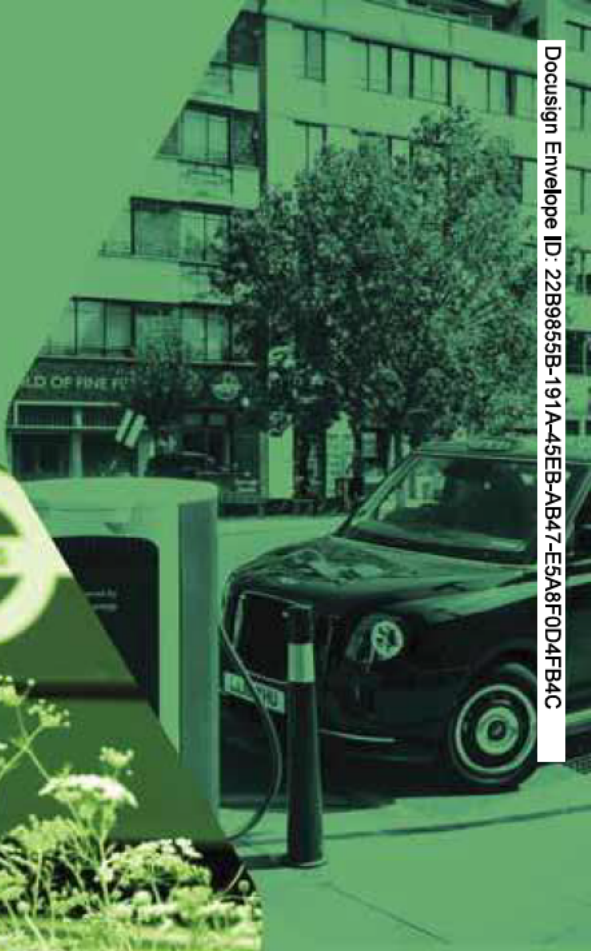
Appendix 2

The Company's Corporate Environment Plan (CEP)

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At the heart of a greener London

Corporate Environment Plan 2021

MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

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Commissioner's foreword

Environmental sustainability must be integral to our business and the way we work. It has to become a core part of our culture if we are to fulfil London's standing as a global city, while also addressing the great global challenges of our time. We need London's recovery from the pandemic to be green and sustainable, and such a recovery will have a substantial impact on the UK's sustainable development.

We face huge challenges, including the fact that a quarter of London's greenhouse gas emissions are from transport and that we are London's biggest user of electricity. However, there is also the opportunity to have a big influence, through our commercial development portfolio, our procurement activity and, not least, the management of the vast areas of land in London that we own.

This plan sets out our approach to supporting the Mayor's ambition of a carbon neutral London by 2030 and delivering our existing environmental commitments, as set out in the Mayor's Transport Strategy and London Environment Strategy. It also looks at how we will embed environmental sustainability into everything we do. This work is vital in managing risks to the transport network as the climate and ecological crisis continues, for attracting investment, and making sure that we attract and retain talent in our business.

Our activity is crucial to the development of the UK as we provide a multitude of jobs and services, and have significant influence. I want us all to be proud of the work we already do to deliver environmental improvements and be committed to doing more.

My vision is for Transport for London (TfL) to actively influence the regeneration of London's environment and be at the heart of delivering a sustainable city for all Londoners.



Andy Byford
London's Transport Commissioner



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Our role in London

Realising the Mayor's Transport Strategy

As London's strategic transport authority, we lead the development and implementation of the Mayor's Transport Strategy. This has a strong focus on the environment and is aligned with the London Environment Strategy. The strategy includes policies and proposals on air quality, carbon emissions, green infrastructure, climate change adaptation and noise. We work closely with other transport authorities and providers within London, from the boroughs to Network Rail and Highways England, to ensure that the strategic environmental priorities in the Mayor's Transport Strategy are met across the city. Examples include setting and operating road transport emission schemes, such as the Ultra Low Emission Zone (ULEZ), and supporting the boroughs to deliver a wide range of environmental outcomes through their Local Implementation Plans.

Promoting active travel

We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for all Londoners' that is safer, fairer, greener, healthier and more prosperous. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys in London to be made by walking, cycling or using public transport by 2041. To complement the Mayor's Transport Strategy, we have published a Cycling action plan, Walking action plan and Vision Zero action plan which set out how the Mayor and TfL will promote safe and active travel across the city to meet the 2041 target. Boroughs manage 95 per cent of London's road network and are key partners in delivering improvements on their streets, from School Streets and Low Traffic Neighbourhoods to bus priority, cycling routes and local town centre improvements. This Corporate Environment Plan also sets out actions that will support the shift to active travel on our own networks.

Operating road transport emission schemes

We support urgent action to reduce harmful emissions from road transport and to meet legal limits for air pollution in London as soon as possible. We introduced tighter standards for the London-wide Low Emission Zone in March 2021 and will expand the ULEZ from central London to the North and South Circular Roads in October 2021. We are phasing out polluting diesel buses, retrofitting older buses and introducing all-electric buses so that our 9,000 strong bus fleet now meets or exceeds the cleanest Euro VI emission standards. We are also cleaning up London's taxi and private hire fleets, with zero emission capable licensing requirements. We operate the Congestion Charge in central London and are continuously reviewing the scheme to ensure it remains effective, having launched a consultation on new proposals on 28 July 2021. By ensuring the scheme remains effective at reducing traffic and congestion it will improve air quality and encourage more journeys to be made by walking, cycling and public transport.

Delivering electric vehicle charging infrastructure

We support the transition of London's road vehicles to zero emission technologies to improve air quality and meet the zero-carbon London ambition. We support the delivery of electric vehicle charging infrastructure across London by working with boroughs and the Office for Zero Emission Vehicles. Through the Mayor's Electric Vehicle Infrastructure Taskforce we work with stakeholders to plan for the Capital's future charging infrastructure requirements. Further information can be found in our EV Infrastructure Delivery Plan online.

Connecting Londoners to green spaces

The Mayor wants to ensure that Londoners have access to green space within 10 minutes of where they live. We have a key role in supporting this through our work to improve walking and cycling. We also work with boroughs to provide opportunities to create new green spaces as well as routes to new green spaces as part of our schemes.

Implementing the London Recovery Programme and Green New Deal Mission

We play a crucial part in supporting London's recovery from the coronavirus pandemic. As a member of the London Recovery Board, we will help deliver its nine recovery missions, including a Green New Deal. Achieving this requires large-scale transformation by 2030, and new approaches, greater coordination and faster action. Our actions, including those described in this plan, will help London tackle the ecological emergencies, improve air quality while supporting growth of London's Green Economy and reducing inequalities exacerbated by the pandemic. Recovery plan details for the Capital are available on the Greater London Authority's (GLA's) dedicated webpage.

Responsibility and opportunity as an employer

We are a large employer in London. By setting an example in the way we undertake our activities we hope to engage our people to lead more sustainable lifestyles. These changes will impact London more widely. We are fortunate to have in-house communications specialists who are leading our internal #Greenfuture communications campaign. In addition, our passionate Sustainability Staff Network Group provides inspiration and resources to engage and support people on their professional and personal environmental journeys.

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What is our Corporate Environment Plan?

We are committed to protecting and improving the environment. As one of the world's largest and most high-profile transport operators and developers, we can lead and have a huge positive impact on people's quality of life and the environment. Our Corporate Environment Plan sets out our environmental ambition and how we will achieve this through our operations, maintenance and construction activities. It forms the environmental pillar of our approach to sustainable development, as described in our Sustainability Report.

We must demonstrate bold leadership on environmental sustainability. Through our contracts, stakeholder engagement and partnerships we will make very clear that we expect high environmental performance and ambition from everyone that we work with.

As London's strategic transport authority, we lead the realisation of the Mayor's Transport Strategy's environmental outcomes. Our wider role in London in this regard is described on the previous page. The Corporate Environment Plan, however, focuses on our own activities, procurement, products and services as a transport operator.

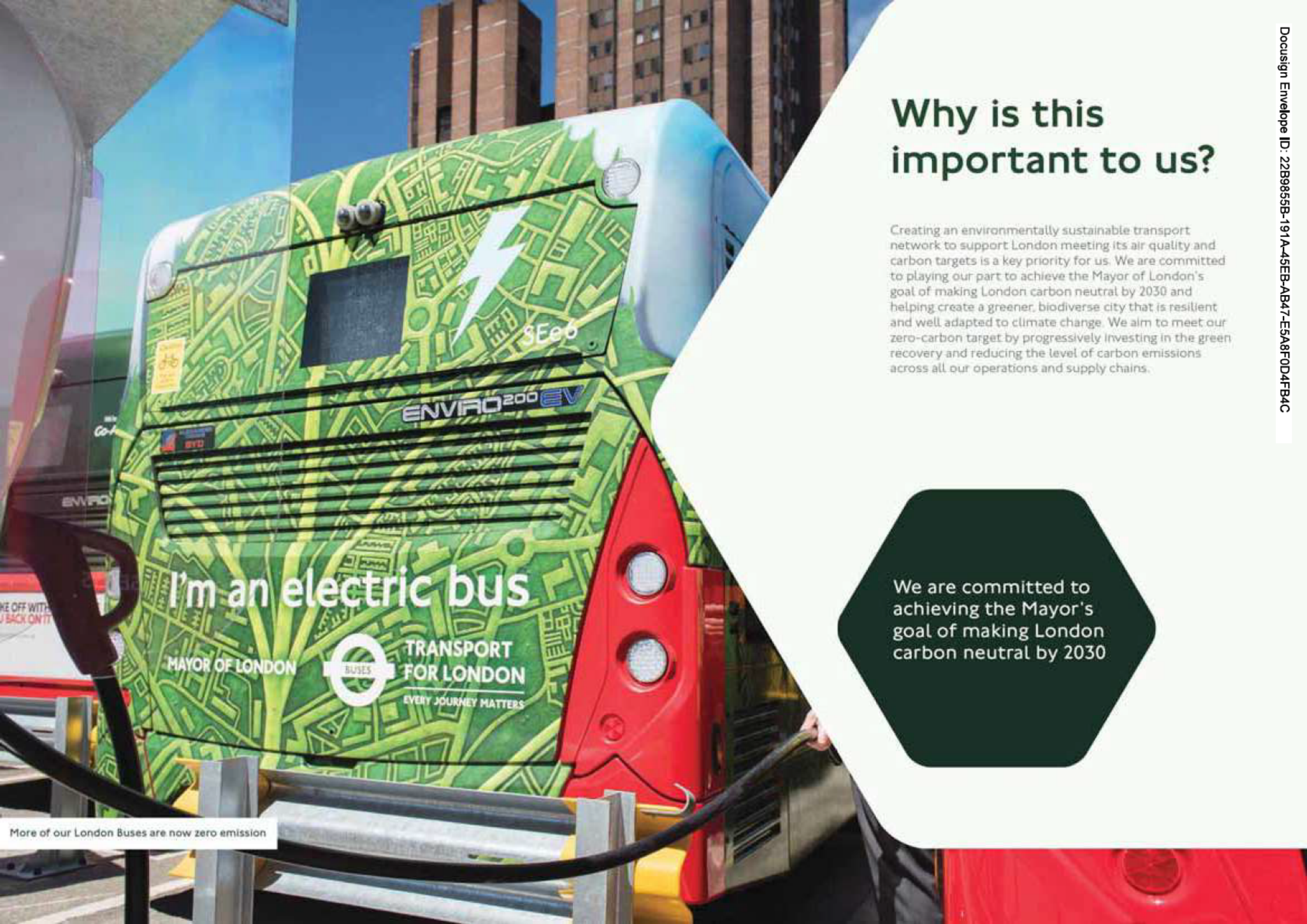
We have developed our plan so that we can:

- Drive continual improvement in our environmental performance
- Transparently communicate our environmental ambition and priorities to our stakeholders, including our colleagues
- Nurture an environmental culture which places environmental sustainability at the heart of our business decisions
- Develop the baseline against which to set targets for our environmental performance. Track and measure progress both effectively and accurately
- Help demonstrate the environmental benefits of what we do



Dedicated cycle infrastructure encourages more active travel

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More of our London Buses are now zero emission

Why is this important to us?

Creating an environmentally sustainable transport network to support London meeting its air quality and carbon targets is a key priority for us. We are committed to playing our part to achieve the Mayor of London's goal of making London carbon neutral by 2030 and helping create a greener, biodiverse city that is resilient and well adapted to climate change. We aim to meet our zero-carbon target by progressively investing in the green recovery and reducing the level of carbon emissions across all our operations and supply chains.

We are committed to achieving the Mayor's goal of making London carbon neutral by 2030

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How is our Corporate Environment Plan structured?

Tackling the climate emergency is our top environmental priority and is not simply about reducing carbon emissions. It's also about adapting to climate change, improving air quality, making London greener, using fewer materials and reducing waste, and following environmental best practice in everything we do. We have developed our Corporate Environment Plan around five key, complementary themes which will help us contribute to a zero-carbon London:

Climate emergency

Reduce carbon emissions from our activities and ensure we are ready for the impacts of climate change

Air quality

Reduce emissions of harmful air pollutants from our activities

Green infrastructure

Protect, connect and enhance our green infrastructure, including the biodiversity, habitats and ecosystem services on our estate

Sustainable resources

Support a low-carbon circular economy

Best environmental practices

Deliver our activities responsibly and be a good neighbour



We can help London become a zero-carbon city

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Our environmental framework and ambitions

Sustainable resources

- We use resources and materials sustainably
- We think of a material's carbon cost across its lifecycle
- We support London's goal of being a zero-waste city

Best environmental practices

- We are a good neighbour
- We comply with our obligations and legal requirements
- We go beyond our minimum obligations to apply environmental and sustainability best practices

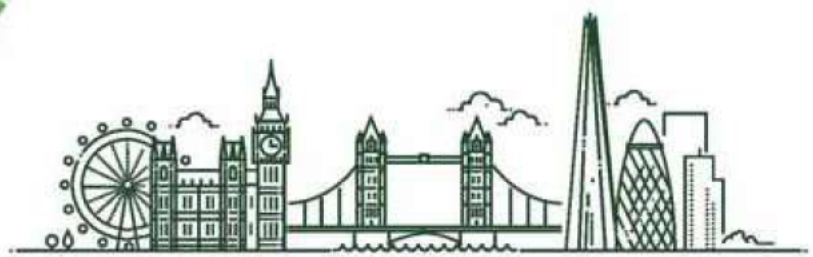
Climate emergency

- **Mitigation:** We reach zero carbon in all our activities
- We support London becoming a zero-carbon city
- **Adaptation:** We are ready for the impacts of climate change

Air quality

- We deliver and operate major air quality schemes
- We will bring vehicle fleets under our control to zero emission
- We manage emissions from our buildings and on the Tube

Zero-carbon London



Green infrastructure

- Protect, connect and enhance our green infrastructure, including the biodiversity, habitats and ecosystem services on our estate

Making it happen

- Make it a core part of TfL culture, advocated by leaders and championed in every team
- Incorporate into standards, specifications, contracts and management systems
- Deliver through business planning, asset management and procurement

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Climate emergency

Reduce carbon emissions from our activities and ensure we are ready for the impacts of climate change

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We need to be prepared for the impacts of climate change

Climate emergency

The years leading up to 2030 are crucial in the global fight to prevent devastating climate change. The UK must make significant reductions in its carbon emissions if it is to meet its legally binding goal of reaching net-zero carbon emissions by 2050. In London, the Mayor has set an ambitious goal for the Capital to become carbon neutral by 2030.

Transport is responsible for more than a quarter of London's carbon emissions, and this proportion is increasing as other sectors decarbonise more quickly. We play a vital role in providing low-carbon public transport to Londoners and supporting walking and cycling. As London recovers from the coronavirus pandemic, our actions are vital to avoid a car-led recovery and the higher carbon emissions which will result from this.

However, to truly support London in becoming carbon neutral, we must lead by example and reduce emissions across everything we do. As London's largest electricity user, we need to optimise energy saving and efficiency, and lead the transition to fully renewable electricity across our network, thereby stimulating the growth of renewable energy generation in London and the UK. Our ambition is to convert our bus fleet and the vehicles used to support maintenance and operation of our transport network to zero emission and ensure the energy supplying those fleets is zero carbon. Furthermore, this ambition means putting all our buildings – from offices to stations and from maintenance depots to property developments – on a clear path to zero carbon.

We must lead by example and reduce emissions in everything we do

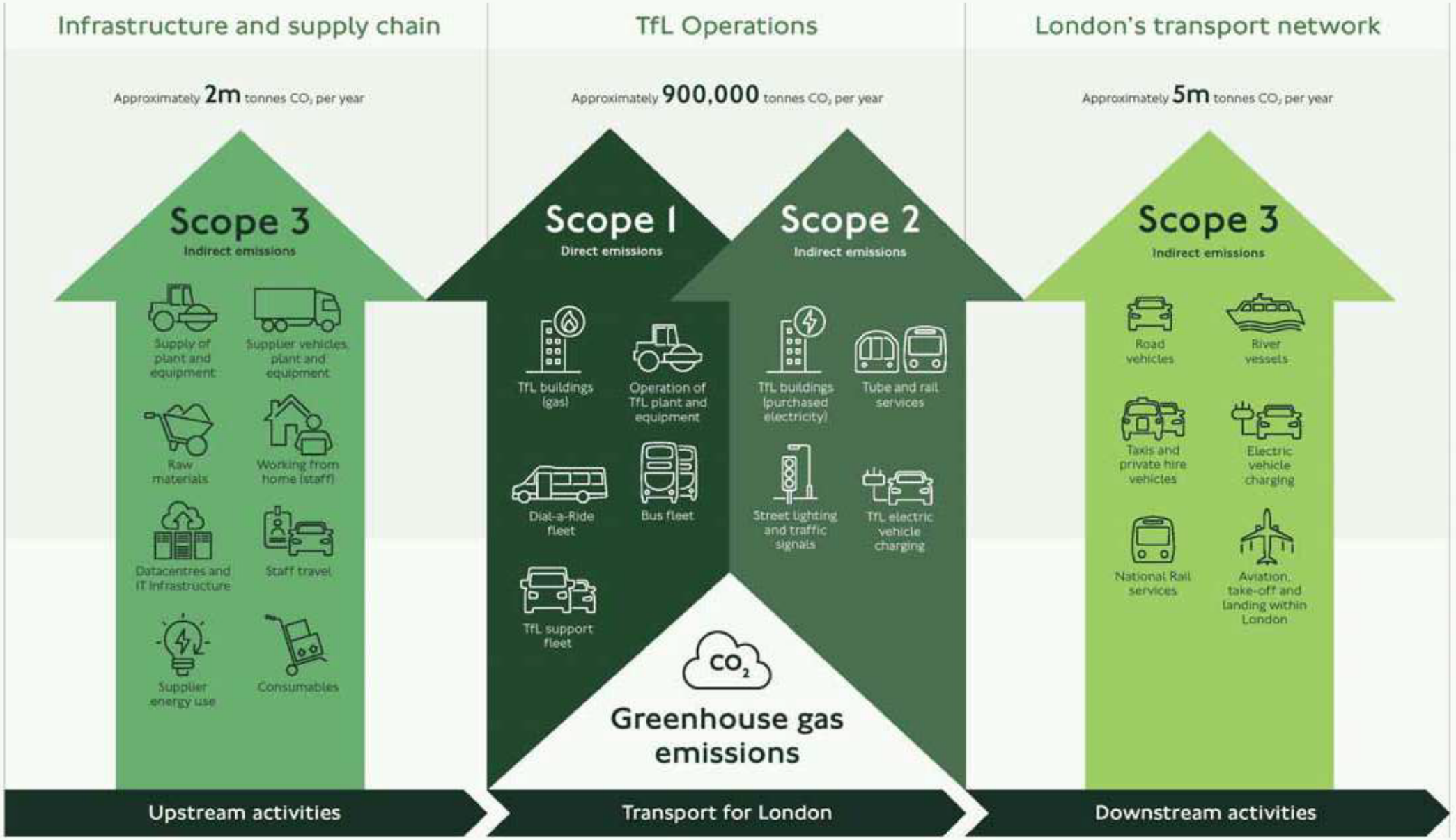
Additionally, we need to work closely with our supply chain to reduce the carbon from the products and services that we buy. Our infrastructure is designed, built and operated to help our customers make the move away from private car use to more sustainable and active means of transport. It is our responsibility to account for the carbon emissions created during construction and operation, and to reduce these as much as possible. High level assessments suggest that carbon emissions from our supply chains could potentially be twice as much annually as our operational emissions. We are progressing more detailed assessment work to establish a baseline for our scope 3 emissions and identify areas where we can best focus our reduction efforts.

We are developing tools that will help us estimate and work out the carbon emissions produced across the whole life of our assets, from design, to construction, to operation and disposal. These tools will help us identify high-carbon areas and work to reduce these as much as possible.

However, no matter how successful we are in reducing carbon emissions in all that we do, we are already experiencing climate change and it will continue to affect and shape how we operate. The UK is already experiencing some of the impact of climate change, such as the frequency and intensity of severe weather events, and this is expected to increase in the future. We will adapt to reduce the impacts of this and increase our resilience to any climate change impacts that do occur.

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Scope and reach of our carbon emissions



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Achieving zero-carbon operations

Our ambitions

- Achieve zero-carbon emissions across our operations and head office buildings by 2030

How will this be reached?

Our operations

- Ensure our public transport services support low carbon travel in London by maintaining and renewing our existing assets
- Develop a plan for removing fossil fuels from our operations
- Convert our bus fleet to zero emission by no later than 2034, with government support we can do this by 2030
- Convert our other fleet vehicles to zero emission
- Reduce energy demand and improve energy efficiency across our organisation
- Support London reaching zero-carbon emissions by reusing waste heat from within our deep tube network and supply local buildings
- Increase the amount of renewable energy supplying our assets

Our buildings and property estate

- Create a carbon baseline of our entire property estate to understand the challenge ahead
- Adopt a zero-carbon plan for our head office buildings and develop decarbonisation plans for all our other buildings
- Encourage and empower all our employees to reduce carbon emissions at work and in their day-to-day life

Our scope 1 and 2 targets

- Aim for zero operational carbon emissions by 2030
- Zero-emission bus fleet by 2034, with an ambition to achieve this by 2030

How will this be monitored?

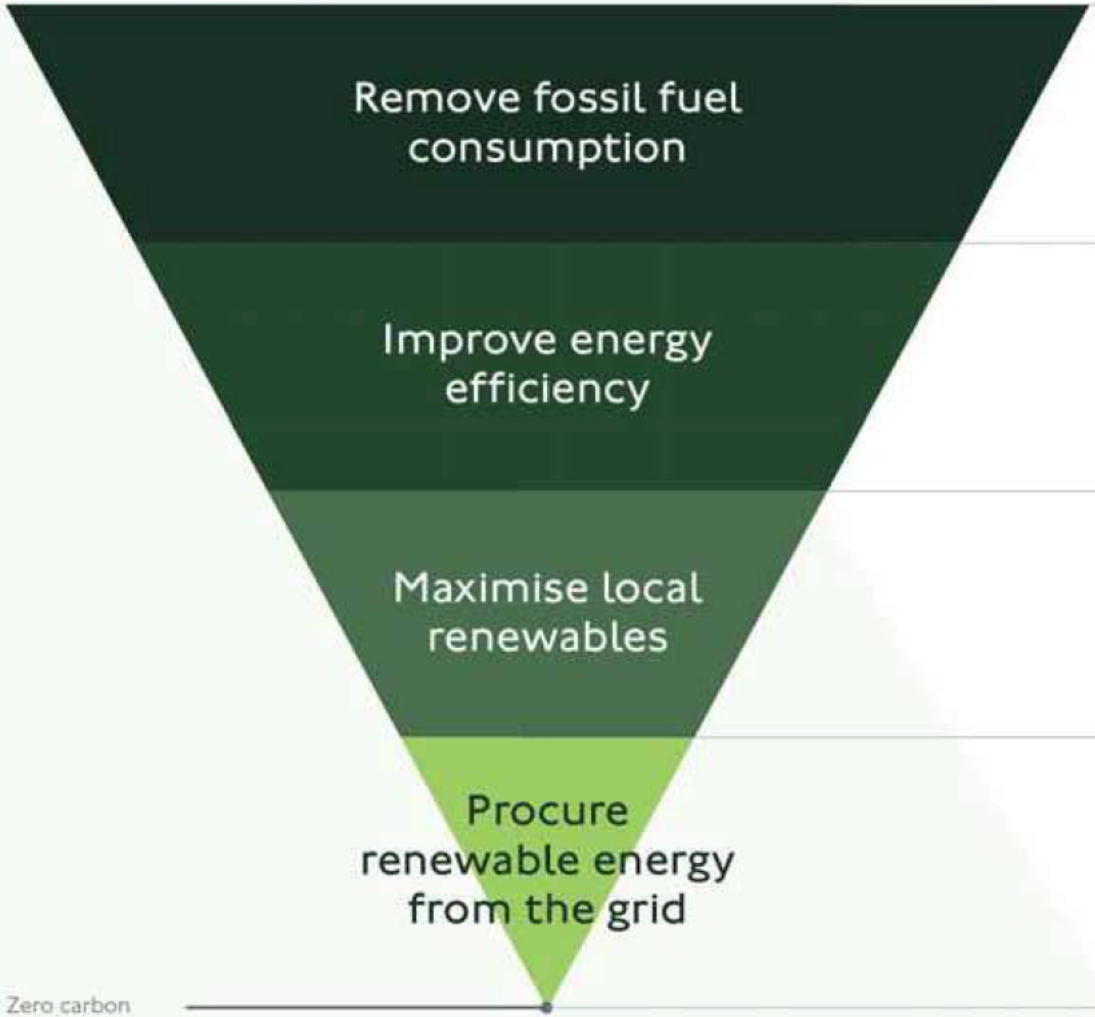
- Measure and monitor our operational carbon emissions and report through our Scorecard and Annual Report
- Track and improve on our zero-carbon buildings progress indicators
- Instil carbon performance measurement and appraisal through contracts, proposals, projects, programmes, business cases, scheme designs and Pathway processes
- Work with suppliers to monitor, reduce and continually improve performance

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Our energy and carbon strategy

We will adopt a hierarchy approach to reduce our operational carbon emissions to support our ambition of achieving zero carbon operations by 2030

Operational carbon hierarchy



How will we implement the strategy?

- Transition our bus and vehicle fleet to electric and hydrogen
- Remove gas heating systems from our operations
- Transition to zero emission plant and equipment
- Improve the fabric* and energy performance of our buildings
- Develop a zero-carbon plan for our property estate
- Introduce measures to use less energy and use it more efficiently across our operations
- Contract direct local solar power supply
- Embed renewables in new building development
- Exploit waste heat from the deep tube network
- Transition to 100 per cent renewable energy supply by 2030, supporting our ambition for zero carbon across all activities

* A method of building design that involves maximising the efficiency of components and materials that make up a building's fabric, before considering the use of mechanical or electrical systems.

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Energy efficiency across our operations and buildings

As one of London's largest landowners, we own and operate a wide variety of buildings. These include stations, depots, river piers, head offices, approximately 3,000 rental properties and housing developments. Each type of building requires specific plans to be developed to reduce carbon emissions and we are already progressing a range of measures across our estate.

We will continue to reduce energy demand with the installation of LED lighting across all our operational estate and further decarbonise our building stock through targeted activities to improve energy efficiency. We will continue to strive for efficiency when replacing assets, such as the new Piccadilly line trains that will begin service in the mid-2020s, which are more energy efficient than their predecessors.

One of our rail operators, Arriva Rail London, achieved a range of benefits recently replacing lighting under canopies and on platforms with more efficient LEDs. This resulted in significant savings, cutting the electricity supply for lighting by fifty per cent, whilst also improving the quality and reliability of lighting in these safety critical areas.

We've signed up to the Better Buildings Partnership's climate change commitment to work with our peers in the property industry, to improve our buildings and their energy supplies while being transparent on our progress.

We are launching our Sustainable Development Framework for our development estate that will ensure our new developments meet the highest standards in construction and building performance and deliver social value in the communities they serve.

One such example is the Southwark Over Station Development, which aims to provide office and community space around Southwark station and unlock neighbouring land for the council to build new affordable housing. The project is targeting the highest BREEAM rating of 'Outstanding', achieved by less than two per cent of of new buildings in the UK.

The building is able to achieve both net-zero carbon (in line with the UK Green Building Council and London Energy Transformation Initiative definitions) and a 42 per cent reduction in operational carbon emissions* due to its overall energy strategy consisting of an energy efficient fabric and building services approach. This includes using air source heat pumps, making provisions for a connection to an external heat network (when available at a future date) and generating renewable energy on-site through a photovoltaic (PV) panel array.

* Compared to London Plan Part L Gas Boiler baseline

We will continue to reduce energy demand across our operational estate



We continue to strive for efficiency in our major development projects

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We are working to explore ways of procuring more renewable electricity

What we are already doing

Renewable energy procurement
We are the biggest consumer of electricity in London, using more than 1.5TWh annually, equivalent to around 400,000 homes, and have a strategy in place to procure 100 per cent renewable energy by 2030.

We are going to market for the first of our renewable power purchase agreements (PPAs) in 2021. Renewable PPAs are long-term contracts with renewable generators for the purchase of their electricity in agreed volumes and prices. These contracts provide generators with a guaranteed income, enabling them to develop new renewable energy generation projects in the UK.

We are working with our partners in the GLA to explore opportunities to jointly procure renewable electricity for the GLA Group, and thereby actively investing in new renewable generation assets. We will continue to increase the proportion of our electricity that comes from renewables through the decade to achieve our target of 100 per cent by 2030.

Solar power
We aim to install solar PV on all new buildings as they are constructed, most recently with completion of the Train Modification Unit in Acton which included more than 173kWp* of solar capacity. Our own land holdings, buildings and trackside areas have been assessed for their potential to host solar panels and while opportunities exist, there is a far greater potential on larger land holdings near to our network, which is the current focus.

Adopting a Solar PV Private Wire approach means connecting directly to new solar farms installed near the London Underground network. These solar arrays will be funded by the supplier and installed on local land, with us paying for electricity per unit produced. This guarantees that local, zero-carbon electricity will link directly to the London Underground network.

Initial feasibility work indicates up to 64MWp** of solar capacity could be possible, the equivalent of installing more than 10,000 standard residential solar installations, providing up to 5 per cent of our annual electricity demand.

Waste heat from the Tube
Waste heat from the London Underground network currently provides heating and hot water to more than 1,350 homes, a school and two leisure centres in Islington thanks to the pioneering project that developed into the Bunhill 2 Energy Centre.

We are exploring additional locations to make use of waste heat from the network, including London Underground ventilation shafts, with the potential to serve up to 15,000 homes.

Using the heat generated from these sources to replace gas heating in nearby buildings can save more than 1,000 tonnes of carbon at each site, every year. We are also exploring ways in which we can achieve benefits from water which is pumped from our tube network every day.

*, ** Standard measures of solar output peak power generation. There are 1,000 kilowatts (kW) in a Megawatt (MW)

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Case study

Managing lifecycle carbon emissions in our major projects

The Major Projects Directorate has developed a three-year carbon strategy that will enable carbon reduction targets to be set and carbon practices to be embedded within TfL. The actions in the strategy fall under four themes: carbon footprint baseline assessment; establishing carbon reporting and assurance; creating a carbon culture and growing capability; and carbon reduction. The strategy's execution will be supported by a new team of programme carbon management leads who will provide a crucial common link between programmes to help early sharing of learning and best practice in carbon management.

The Major Projects Directorate carbon strategy has been developed based on learning gained from the Piccadilly line upgrade. Since December 2020, the Piccadilly line upgrade delivery team has been trialling carbon modelling processes, including: updates to works information to aid procurement and contracting; the development of an in-house carbon modelling tool; and carbon modelling training for project managers and engineers.



Trialling carbon modelling will help reduce lifecycle carbon emissions

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Reducing carbon from our infrastructure and supply chain

Our ambitions

- Reduce carbon emissions across the lifecycle of our assets and infrastructure
- Work with our suppliers to reduce carbon across all products and services we procure

How will this be reached?

Infrastructure

- Evaluate the carbon footprint of our assets across their lifecycle, including construction, operation, maintenance and disposal
- Ensure that considerations for carbon use are embedded in our decision-making process and set targets for our capital programmes
- Manage whole lifecycle carbon emissions throughout our capital projects, evaluating sources of carbon as early as possible in designs and embedding carbon reduction in business cases, procurement and supplier management
- Collaborate closely with other infrastructure owners, suppliers and cross-industry bodies to develop and share best practice in infrastructure carbon management

Supply chain

- Measure and monitor the carbon impacts of our supply chain, focusing on the highest priority areas to reduce emissions
- Work in partnership with our suppliers to identify and further deliver emissions reductions
- Specify sustainable standards and ensure our supply contracts incentivise suppliers to reduce carbon from the products and services we procure

Our Scope 3 target

- Agree and set a reduction target for our scope 3 emissions by the end of 2022

How will this be monitored?

- Instil carbon performance and appraisal through contracts, proposals, projects, programmes, business cases, scheme designs and other processes
- Work with suppliers to monitor, reduce and continually improve performance

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