Transport for London

Call-off Contract

FOR

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

Tarmac Kier Joint Venture

Call-Off Contract under the tfl_scp_001746d Surface Transport Infrastructure Construction Framework

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Project Reference Number: tfL_scp_002178

Version: Final

Date: May 2023

WORKS CALL-OFF FORM OF AGREEMENT AND CONTRACT DATA

Form of Agreement

THIS DEED is made the ..... day of 20

BETWEEN

1. **TRANSPORT FOR LONDON a statutory corporation established under the Greater London Authority Act 1999** of 5 Endeavour Square, London, E20 1JN, United Kingdom ("the *Client*") which expression shall include its successors in title and assigns;

AND

2. **TARMAC TRADING LIMITED,** a company incorporated in and in accordance with the laws of England and Wales having as its registered number 453791 and its registered office at Ground Floor T3 Trinity Park, Bickenhill Lane, Birmingham, United Kingdom, B37 7ES ("Tarmac") and **KIER HIGHWAYS LIMITED** a company incorporated in and in accordance with the laws of England and Wales having as its registered number 5606089 and its registered office at 2nd Floor, Optimum House, Clippers Quay, Salford, M50 3XP ("Kier") (acting jointly and severally in an unincorporated joint venture and referred to in this contract as "the *Contractor*").

RECITALS

(1) This contract is made pursuant to a framework agreement between Transport for London (the "Framework Client") and the *Contractor* relating to the provision of works and/or services dated 9th April 2021 ("the Framework Agreement").

(2) The *Client* wishes the *Contractor* to Provide the Works.

(3) Subject to the provisions of this contract, the *Contractor* Provides the Works and corrects Defects therein in accordance with this contract.

NOW IT IS HEREBY AGREED as follows:

1. In this Form of Agreement, unless the context otherwise requires, words and expressions shall have the same meaning as set out in the *conditions of contract.*

2. The *conditions of contract* are an amended NEC4 Engineering and Construction Contract 4th Edition June 2017 (with amendments January 2019 and October 2020) as set out in Schedule 2- Part A to the Framework Agreement.

3. This contract shall mean this Form of Agreement and the following documents which are hereby incorporated into and shall comprise this contract:

    3.1 the *conditions of contract*;

    3.2 the Contract Data Part One;

    3.3 the Contract Data Part Two;

    3.4 the Scope (Annex 1);

    3.5 the Site Information (Annex 2);

    3.6 Schedules 1, 2 part A, 3, 4 part B, 6, 10, 13, 15, 21 of the Framework Agreement inclusive of the Framework Agreement;

3.7 the Contractor's quality submission (Annex 3)

3.8 the Pricing Information (Annex 4)

4. The several documents forming this contract are to be taken as mutually explanatory of one another. In the event of any ambiguity they shall be construed in the order set out in Clause 3 of this Form of Agreement.

5. The *Contractor* under this contract means TARMAC TRADING LIMITED and KIER HIGHWAYS LIMITED in joint venture and the rights, obligations and liabilities of each such party under this contract are joint and several.

6. The *Contractor* Provides the Works in accordance with this contract and the terms of the Framework Agreement.

7. The *Client* pays the *Contractor* for complying with his obligations to Provide the Works the amount due in accordance with this contract.

8 Notwithstanding the manner of execution of this contract it is agreed that:

8.1 the limitation period within which any claim may be brought by the *Client* for breach of this contract by the *Contractor* is 12 years from the date of breach; and

8.2 the *Contractor* agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.

9 This Form of Agreement may be executed, without limitation:

9.1 by the electronic application of a party's authorised signatory's/signatories' signature(s) and provision of an electronic copy of the same; and

9.2 in any number of counterparts and each counterpart will when executed be an original of this Form of Agreement and all counterparts together will constitute one instrument.

THIS DOCUMENT is executed as a deed and delivered on the date stated at the start of this Deed.

Executed as a Deed by **Tarmac Trading Limited** acting by a Director and its Company Secretary or two Directors:

Executed as a Deed by K**ier Highways Limited** acting by a Director and its Company Secretary or two Directors:

The common seal of
Transport for London
was affixed to this deed
in the presence of:

Contract Data

PART ONE – DATA PROVIDED BY THE *CLIENT*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

For Stage One, the *conditions of contract* are the core clauses and the clauses for the following main Option, the Option for resolving and avoiding disputes and secondary Options of the amended NEC4 Engineering and Construction Contract 4th Edition June 2017 (with amendments January 2019 and October 2020) as set out in Schedule 2- Part A to the Framework Agreement

Main Option: E — Option for resolving and avoiding disputes: W2

For Stage Two, the *conditions of contract* are the core clauses and the clauses for the following main Option, the Option for resolving and avoiding disputes and secondary Options of the amended NEC4 Engineering and Construction Contract 4th Edition June 2017 (with amendments January 2019 and October 2020) as set out in Schedule 2- Part A to the Framework Agreement

Main Option: C — Option for resolving and avoiding disputes: W2

For Stage One and Stage Two:

Secondary Options: X1 (only applicable to Stage Two), X2, X4, X7, X10, X15, X16, X18, X21, X22, X23

The *works* are: As described in the Scope

and, if Option X22 applies, the *works* are more particularly described in the supplemental Contract Data provided with the Notice to Proceed

The *Client* is

Name: Transport for London

Address for communications:
5 Endeavour Square,
London, E20 1JN,
United Kingdom

Address for electronic communications:

The *Project Manager* is

Name: [redacted]

Address for communications: [redacted]

Address for electronic communications: [redacted]

The *Supervisor* is

Name

Address for communications

Address for electronic communications

and, if Option X22 applies, the *Supervisor* is named in the supplemental Contract Data provided with the Notice to Proceed

The Scope is in: Annex 1 to this agreement

and, if Option X22 applies, the Scope is amended and supplemented by the information referred to as forming part of the Scope in the supplemental Contract Data provided with the Notice to Proceed

The Site Information is in: Annex 2 to this agreement

and, if Option X22 applies, the Site Information is amended and supplemented by the information referred to as forming part of the Site Information in the supplemental Contract Data provided with the Notice to Proceed

The *boundaries of the site are*: As detailed in the Scope

and, if Option X22 applies, the *boundaries of the site* are described in the supplemental Contract Data provided with the Notice to Proceed

The *language of the contract* is: set out in the Framework Data, Schedule 1 to the Framework Agreement

The *law of the contract* is the law of: set out in the Framework Data, Schedule 1 to the Framework Agreement

The *period for reply* is: two weeks except that

- The *period for reply* for _____ is _____
- The *period for reply* for _____ is _____

The following matters will be included in the Early Warning Register

Early warning meetings are to be held at intervals no longer than _____

2 The *Contractor's* main responsibilities

If the *Client* has identified work which is set to meet a stated *condition* by a *key date*

The *key dates* and *conditions* to be met are

	condition to be met	*key date*
(1)		
(2)		
(3)		

and, if Option X22 applies, the *key dates* and *conditions* to be met for Stage Two are stated in the supplemental Contract Data provided with the Notice to Proceed

If Option C, or E is used

The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* at intervals no longer than: 4 weeks

Clause 27.7

The *Principal Contractor* is

Name: The Contractor

Address:

The *Principal Designer* is

Name: The Contractor

Address:

3 Time

The *starting date* is: 15 May 2023

The *access dates* are

	part of the Site	date
(1)	Whole Site within operational restrictions and approval from the *Client*	from the *starting date*
(2)		
(3)		

and, if Option X22 applies, the *access dates* for Stage Two are identified in the supplemental Contract Data provided with the Notice to Proceed

The *Contractor* submits revised programmes at intervals no longer than: 4 weeks

If the *Client* has decided the *completion date* for the whole of the *works*

The *completion date* for Stage One is: 11 months from the *starting date*

if Option X22 applies, the *completion date* for the whole of the *works* is stated in the supplemental Contract Data provided with the Notice to Proceed

Taking over the *works*

The *Client* **is not** willing to take over the *works* before the

before the Completion Date Completion Date

If no programme is identified in part two of the Contract Data

The period after the Contract Date within which the *Contractor* is to submit a first programme for acceptance is: 2 weeks

4 Quality management

The *quality statement* is: in Schedule 19 of the Framework Agreement and Annex 3 of this agreement (the *Contractor's* quality submission)

The period after the Contract Date within which the *Contractor* is to submit a quality policy statement and quality plan is: 2 weeks

The period between Completion of the whole of the *works* and the *defects date* is: 52 weeks

The *defect correction period* is: 2 weeks except that

- The *defect correction period* for [ ] is [ ]
- The *defect correction period* for [ ] is [ ]

5 Payment

The *currency of the contract* is the: set out in the Framework Data, Schedule 1 to the Framework Agreement

The *assessment interval* is: 4 weeks

The *interest rate* is: 2 % per annum (not less than 2) above the Base rate of the Bank of England

If Option C is used

The *Contractor's share percentages* and the *share ranges* are:

Share range	*Contractor share percentage*
over 130%	100%
over 115% up to 130%	75%
over 110% up to 115%	60%
over 100% up to 110%	50%
over 90% up to 100%	50%
over 85% up to 90%	50%
up to 85%	30%

If Option C, or E is used

The *exchange rates* are those published in Bank of England

on 12:00 on Monday in the week in which the transaction takes place (date)

Clause 50.10A

The *Client* is an End User for the purposes of this contract.

6 Compensation events

The place where weather is to be recorded is Heathrow

The *weather measurements* to be recorded for each calendar month are

- the cumulative rainfall (mm)
- the number of days with rainfall more than 5 mm
- the number of days with minimum air temperature less than 0 degrees Celsius
- the number of days with snow lying at 09:00 hours GMT

and these measurements:

None

The *weather measurements are* supplied by Met Office

The *weather data* are the records of past *weather measurements* for each calendar month

which were recorded at The Met Office. Building Consultancy Group, Johnson House, London Road, Bracknell, Berkshire, RG12 2SY

and which are available from The Met Office

Where no recorded data are available

Assumed values for the ten year weather return *weather data* for each *weather measurement* for each calendar month are

If Option A is used

The *value engineering percentage* is 50%, unless another percentage is stated here, in which case it is [ ] %

8 Liabilities and insurance

The minimum amount of cover for insurance against legal liability for loss of or damage to propert (except the *works*, Plant and Materials and Equipment) and legal liability for bodily injury to or deat of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor*

Providing the Works (Public Liability insurance) for any one event is [redacted]

and, if Option X22 applies, the amount stated in the supplemental Contract Data provided with the Notice to Proceed

The minimum amount of cover for insurance against death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with the contract for any one event is [redacted]

If the *Client* is to provide Plant and Materials

The insurance against loss of or damage to the *works*, Plant and Materials is to include cover for Plant and Materials provided by the *Client* for an amount of [ ]

If additional insurances are to be provided

The *Client* provides these additional insurances

(1) Insurance against	All risks of loss or damage (not excluded or limited by the terms and conditions of the policy) to permanent works and materials or equipment for incorporation therein, any temporary works (i.e. other works erected or constructed for the purpose of making possible the erection or installation of permanent works) constructional plant and equipment temporary buildings and other property owned by or supplied by a Client ("Construction All Risks" insurance)
Minimum amount of cover is	[redacted] per occurrence (first loss limit)
The deductibles are	See below
(2) Insurance against	
Minimum amount of cover is	
The deductibles are	
(3) Insurance against	
Minimum amount of cover is	

The deductibles are	

The *Contractor* provides these additional insurances

(1) Insurance against	Loss or damage to constructional plant, tools, equipment, temporary buildings (including contents therein) belonging to or the responsibility of the Contractor
Minimum amount of cover is	The full replacement value
The deductibles are	To be completed by the Contractor
(2) Insurance against	Negligence omission or default in respect of the design for which the Contractor is responsible (Professional Indemnity insurance)
Minimum amount of cover is	[redacted] per occurrence and in the annual aggregate
The deductibles are	To be completed by the Contractor
(3) Insurance against	
Minimum amount of cover is	
The deductibles are	

The insurances provided by the Client:

Public liability insurance: Deductible is [redacted] each and every occurrence.

Construction All Risks insurance Deductibles are:

- GBP [redacted] each and every loss other than –
- GBP [redacted] each occurrence in respect of loss or damage caused by storm tempest water damage subsidence or collapse
- GBP [redacted] each occurrence in respect of loss or damage caused by defect in design plan specification materials or workmanship (DE3)
    - However in respect of defective design, plan, specification, materials or workmanship the following will apply where option is selected by the Insured: -
    - GBP [redacted] each and every loss but this will only apply to those claims which are recoverable under DE4 but not under DE3.
    - GBP [redacted] each and every loss but this will only apply to those claims which are recoverable under DE5 but not under DE3.
- The first [redacted] of each and every loss whichever is the higher in respect of Additional Cost of Construction
- The first [redacted] of each and every loss whichever is the higher in respect of Additional Cost of Reconstruction
- The first [redacted] of each and every loss whichever is the higher in respect of Additional Cost of Working

The Contractor bears the cost of all deductibles or excesses for losses which are the Contractor's risk. The Client bears the cost of the deductibles and excesses under the insurances provided by the Client for losses which are the Client's risk

The Framework Agreement, Schedule 14, Insurance Table, is amended for this agreement as follows;

INSURANCE TABLE

INSURANCE AGAINST	WHICH PARTY PROVIDES	MINIMUM AMOUNT OF COVER OR MINIMUM LEVEL OF INDEMNITY
All risks of loss or damage (not excluded by the terms and conditions of the policy) to permanent works and materials or equipment for incorporation therein, any temporary works (i.e. other works erected or constructed for the purpose of making possible the erection or installation of permanent works) constructional plant and equipment temporary buildings and other property owned by or supplied by a Client	Employer	[redacted] per occurrence (first loss limit)
Public and Product Liability All sums for which the insured shall become legally liable to pay as damages in respect of death of or injury or illness or disease to third parties and/or loss of or damage to third party property obstruction loss of amenities trespass nuisance or any like cause happening during the period of insurance and arising out of or in connection with the Framework Agreement and each Call-Off Contract	Employer	[redacted] ny one occurrence and unlimited in the period of insurance (and in the annual aggregate in respect of product liability and pollution or contamination) or such other amount identified in each Call-Off Contract
Employers' Liability Liability for death of or bodily injury or illness sustained by employees of the Contractor arising out of or in the course of their employment in connection with the Framework Agreement and each Call-Off Contract	Contractor	[redacted] any one occurrence and unlimited in the period of insurance or such other amount identified in each Call-Off Contract
Loss or damage to constructional plant, tools, equipment, temporary buildings (including contents therein) belonging to or the responsibility of the Contractor	Contractor	The replacement cost
Professional Indemnity Insurance Negligence omission or default in respect of the design for which the Contractor is responsible	Contractor	[redacted] each and every claim and in the annual aggregate per annum

The Contractor provides additional insurances as required by the Client in relation to third party organisations such as Network Rail and as stated in the Contract Data.

The Contractor ensures that each insurance is in place and provides cover from the date of the Framework Agreement until the date of completion by the Contractor of its obligations under each Call-Off Contract and in respect of Professional Indemnity Insurance until the date 12 years after the date of completion by the Contractor of its obligations under each Call-Off Contract.

Resolving and avoiding disputes

	The *tribunal* is	set out in the Framework Data, Schedule 1 to the Framework Agreement

If Option W1 or W2 is used

The *Senior Representatives* of the *Client* are

Name (1)	[redacted]
Address for communications	
Address for electronic communications	
Name (2)	
Address for communications	
Address for electronic communications	

The *Adjudicator* is

Name	an independent person appointed to act as an adjudicator in accordance with clause W2.2
Address for communications	
Address for electronic communications	the President or Vice President or other duly authorised officer of the London Court of international Arbitration the President or Vice President or other duly authorised officer of the London Court of International Arbitration

The *Adjudicator nominating body* is

X1: Price adjustment for inflation (used only with Options A, and C)

If Option X1 is used

The proportions used to calculate the Price Adjustment Factor are

0.	4	linked to the index for	BCIS Labour Cost Index #1061
0.	075		PAFI (Highways Maintenance) 2010 Series - R10/ 3 Equipment – Road Vehicles
0.	4		BCIS Materials Cost Index #1071
0.	05		PAFI Series 4 Highway Maintenance - Index

			for Professional Services (4/HM/WC/03)
0.	075	non-adjustable	N/A
1.00			

The *base date* for indices is 1/04/2022

These indices are Published by the *Building Cost Information Service* of the Royal Institution of Chartered Surveyors

X3: Not used

X5: Not used

X6: Not used

X7: Delay damages

If Option X7 is used without Option X5

Delay damages for Completion of the whole of the *works* are [redacted] [to be agreed during Stage One] per day

Clause X7.4

The *Contractor's* total liability to the *Client* for delay damages is limited to 10% of the total of the Prices

If Option X7 is used with Option X5

Delay damages for each *section* of the *works* are

section	description	amount per day
(1)		
(2)		
(3)		
(4)		

The delay damages for the remainder of the *works* are

if Option X22 applies, for Stage Two the delay damages for each *section* of the *works* are identified in the supplemental Contract Data provided with the Notice to Proceed

X8: Not used

X10: Information modelling

If Option X10 is used

If no *information execution plan* is identified in part two of the Contract Data

The period after the Contract Date within which the *Contractor* is to submit a first Information Execution Plan for acceptance is 4 weeks

The minimum amount of insurance cover for claims made against the *Contractor* arising out of its failure to use the skill and care normally used by professionals providing information similar to the Project Information is, in respect of each claim [redacted]

The period following Completion of the whole of the *works* or earlier termination for which the *Contractor* maintains insurance for claims made against it arising out of its failure to use the skill and care is 12 years

X12: Not used

X13: Not used

X14: Not used

X15: The *Contractor's* design

If Option X15 is used

The *period for retention* following Completion of the whole of the *works* or earlier termination is 12 years

X16: Retention (not used with Option F)

If Option X16 is used

The *retention free amount* is [redacted]

or, if Option X22 applies, the *retention free amount* is stated in the supplemental Contract Data provided with the Notice to Proceed

The *retention percentage* is [redacted] %

or, if Option X22 applies, the *retention percentage* is stated in the supplemental Contract Data provided with the Notice to Proceed

Retention bond

The *Contractor* **may/~~may not~~** give the *Client* a retention bond. (Delete as applicable)

X17: Not used

X18: Limitation of liability

If Option X18 is used[1]

The *Contractor's* liability to the *Client* for indirect or consequential loss is limited t

[redacted]

For any one event, the *Contractor's* liability to the *Client* for loss of or damage to the *Client's* property is limited to

The *Contractor's* liability for Defects due to its design which are not listed on the Defects Certificate is limited to

The *Contractor's* total liability to the *Client* for all matters arising under or in connection with the contract, other than excluded matters, is limited to

The *end of liability date* is 12 years after the Completion of the whole of the *works*

X20: Not used

X22: Early *Contractor* involvement

If Option X22 is used

The Budget is

item	description	amount
(1)	The *works*	The total of the Prices
(2)		
(3)		

(4)		
Total		

The *Contractor* prepares forecasts of the total Defined Cost of the work to be done in Stage One at intervals no longer than: 4 weeks

The *Contractor* prepares forecasts of the total Project Cost at intervals no longer than: 4 weeks

If there are additional events which could change the Budget

These are additional events which could change the Budget

(1)

(2)

(3)

Option X22.7

Option X22.7 does not apply

If Option X22.7 applies

The *budget incentive* is N/A % of the saving

Y(UK)1: Project Bank Account

Charges made and interest paid by the *project bank*

The *Contractor* **is not** to pay any charges made and to be paid any interest paid by the *project bank*

The *account holder is* ***the Contractor***

Y(UK)3: Not used

Z: *Additional conditions of contract*

If Option Z is used

The *additional conditions of contract* are

incorporated into Schedule 2, Part A of the Framework Agreement

PART TWO – DATA PROVIDED BY THE *CONTRACTOR*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The *Contractor* is named in the Framework Data, Schedule 1 to the Framework Agreement

The *parent company* is

Name

Address for communications

Address for electronic communications

[redacted]

The *fee percentage* is

Stage one: [redacted]
Stage two: [redacted]

The *working areas* are

Blackwall Tunnel including approaches & vent shafts
183-185 Union Street, London, SE1 0LN

Blackwall Tunnel Depot, Naval Row, E14 9PS

43 Picketts Lock Lane, London, N9 0AT
Mclaren House, 46 The Priory Queensway, Birmingham B4 7LR (for KDS PMO)

2nd Floor, Optimum House, Clippers Quay, Salford, M50 3XP (for estimating team)

and

Working from home where approved by the Project Manager in writing prior to the work taking place for key staff that are not included in the fee;

- Project Director
- Senior Project Manager
- Planner
- Construction Manager
- Commercial Manager
- Senior Quantity Surveyor
- Trainee Quantity Surveyor
- Administrator
- Public Liaison Manager
- Quality & Systems Manager
- Health & Safety Manager
- BIM Manager.

if Option X22 applies, the *working areas* include the areas identified in the supplemental Contract Data provided with the Notice to Proceed

The *key persons* of the *Contractor* who are not already named in the Framework Agreement as Key Personnel are:

Name (1)

Job

Responsibilities

Qualifications

Experience

handover period

Name (2)

Job

Responsibilities

Qualifications

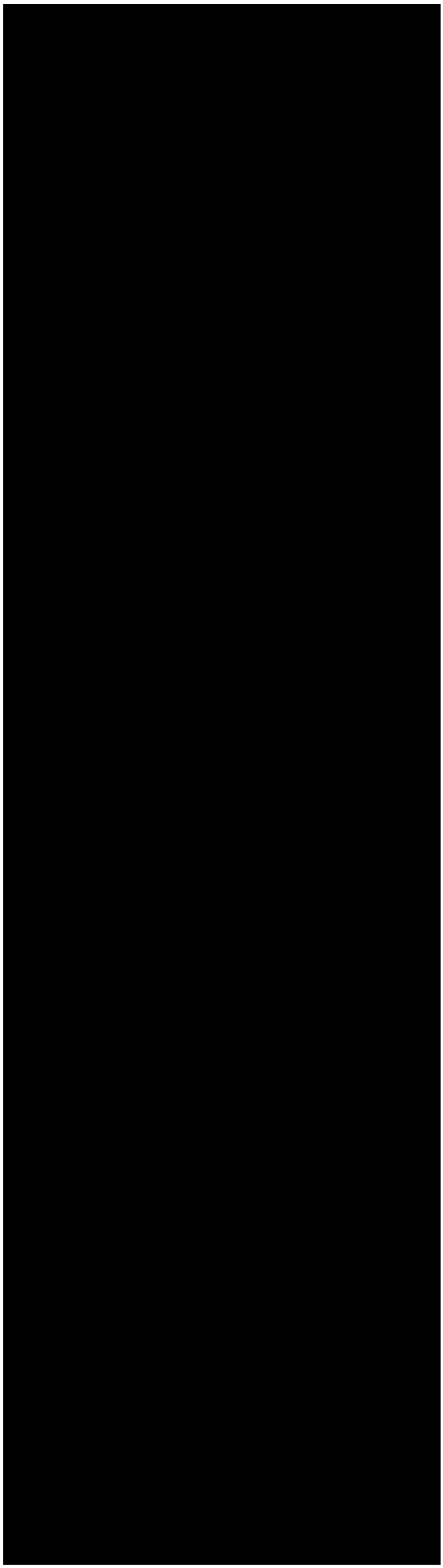
Experience

handover period

Name (3)

Job

Responsibilities



Qualifications

Experience

handover period

Name (4)

Job

Responsibilities

Qualifications

Experience

handover period

Name (5)

Job

Responsibilities

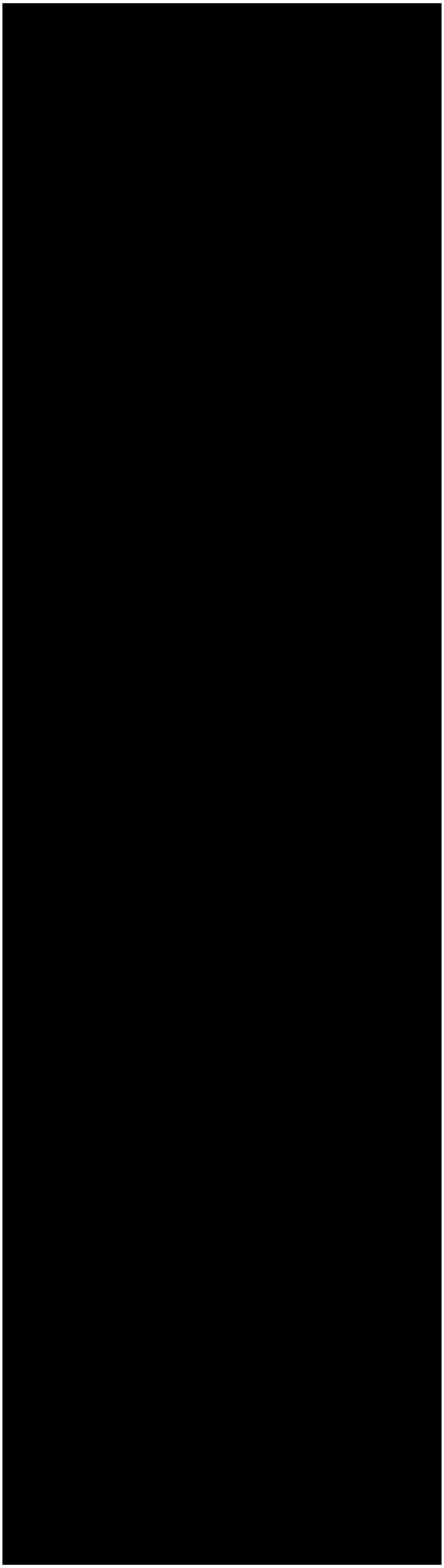
Qualifications

Experience

handover period

Name (6)

Job



Responsibilities

Qualifications

Experience

handover period

Name (7)

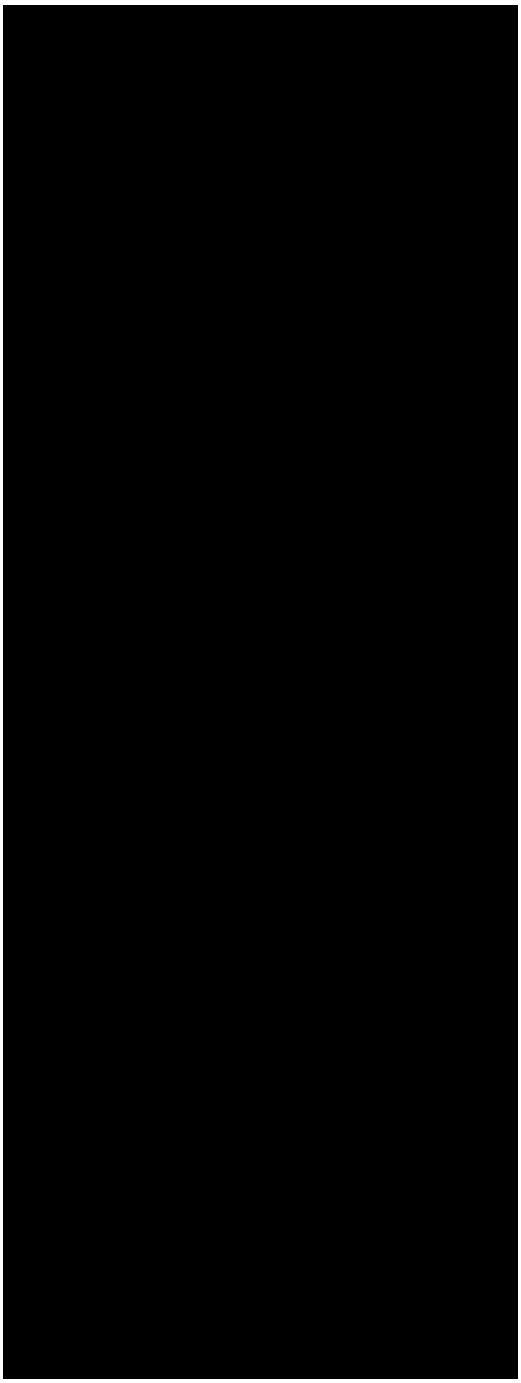
Job

Responsibilities

Qualifications

Experience

handover period



if Option X22 applies, additional *key people* for Stage Two are identified in the supplemental Contract Data provided with the Notice to Proceed

Subcontractors nominated by the *Contractor* are:

Subcontractor	Contact details	Work Type
Hybrid Electrical Solutions	[redacted]	*Lighting & Technology*
Tarmac	[redacted]	*Surfacing*
Curran Lewis & Martin	[redacted]	*Concrete Repairs*
Metrail	[redacted]	*Waterproofing*
RM Steel	[redacted]	*Cladding*

Chevron	[redacted]	*Traffic Management*
Wilson & Scott	[redacted]	*Road Marking*
(enter)	*(enter)*	*(enter)*

(a)

The following matters will be included in the Early Warning Register

2 The *Contractor's* main responsibilities

If the *Contractor* is to provide Scope for its design	The Scope provided by the *Contractor* for its design is in and, if Option X22 applies, the Scope for the *Contractor's* design is amended and supplemented by the information referred to as forming part of the Scope for the *Contractor's* design in the supplemental Contract Data provided with the Notice to Proceed	

3 Time

If a programme is to be identified in the Contract Data	The Stage One programme identified in the Contract Data is	ncluded in Annex 3 to this agreement, The Contractor's Quality Submission, Section 1.a Programme for Delivery
If the *Contractor* is to decide the *completion date* for the whole of the *works*	The *completion date* for the whole of the *works* is if Option X22 applies, the *completion date* for the whole of the *works* is stated in the supplemental Contract Data provided with the Notice to Proceed	25 Months from the *starting date*

5 Payment

If Option E is used	The Stage One Defined cost forecast is	ncluded in Annex 4 to this agreement, Pricing nformation, Part A, The Stage One Defined Cost Forecast
If Option E is used	The Stage One Tendered total of the Price is	[redacted]
If Option A or C is used	The Stage Two *activity schedule* is	The Stage Two Activity Schedule stated in the supplemental Contract Data provided with the Notice to Proceed
If Option A, or C is used	The Stage Two tendered total of the Prices is	[redacted]

Resolving and avoiding disputes

Option W2 is used	The *Senior Representatives* of the *Contractor* are Name (1) Address for communications	[redacted]

Address for electronic communications	[redacted]

Name (2)

Address for communications

Address for electronic communications

[redacted]

X10: Information modelling

If Option X10 is used

If an *information execution plan* is to be identified in the Contract Data

The *information execution plan* identified in the Contract Data is

X22: Early *Contractor* involvement (only used with Options C and E)

If Option X22 is used

The Stage One *key persons* are

Name (1)

Job

Responsibilities

Qualifications

Experience

Name (2)

Job

Responsibilities

Qualifications

Experience

[redacted]

The Pricing Information is in

Included in Annex 4 to this agreement, Pricing Information

Y(UK)1: Project Bank Account

If Option Y(UK)1 is used

The *project bank* is

named suppliers are

Data for the Schedule of Cost Components (only used with Options C or E) except where set out below, is as set out in Pricing Template which is specific to this Call-Off Contract or, if not set out in the Pricing Template, is as set out in the Pricing Schedule.

The rates for special Equipment are

Equipment	rate

Data for the Short Schedule of Cost Components (only used with Options A) is, except where set out below, is as set out in Pricing Template which is specific to this Call-Off Contract or, if not set out in the Pricing Template, is as set out in the Pricing Schedule.

The rates for other Equipment are

Equipment	rate

Transport for London

Annex 1

Scope

FOR

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

Call-Off Contract under the tfl_scp_001746d Surface Transport Infrastructure Construction Framework

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Project Reference Number: tfL_scp_002178

Version: Final

Date: May 2023

SCOPE

S 100

DESCRIPTION OF THE WORKS

S 100 – Description of the works

1.1 Organisational overview

1.1.1 The scope of work for this commission is related to Pathway Stages 4 and 5 (Detailed the *Client*'s Surface Major Project & Renewals team within the IDP Directorateis responsible for ensuring all Surface Transport assets: roads; pavements; bridges; lighting; traffic signals; bus stations; bus stops and shelters; and trees, within the boundaries of the TRLN, are provided and managed in a way that is fit for now and for the future, by minimising costs, and creating safe, reliable and cared for infrastructure for our customers.

1.1.2 The *Client's* TfL Engineering Directorate is the Technical Approval Authority.

1.1.3 This project is to be managed and delivered by the *Client*'s Project and Programmes Directorate (PPD).

1.1.4 TfL follows an integrated project management delivery methodology known as Pathway. Pathway comprises six stages:

0	Initial Proposition	The problem to be addressed is understood and the proposition has been included in the Business Plan
1	Outcome Definition	Establishes the business outcomes and benefits that the project must deliver
2	Option Selection	Determines whether the proposed outcomes and benefits are achievable and deliver best value – that all the options have been assessed and a single feasible option has been selected
3	Concept Design	Defines the design principles and freezes the scope of the project
4	Detailed Design	Produces a detailed design that delivers the required outcomes and is used as the basis of a contract for delivery of the physical outputs
5	Delivery	Builds the physical outputs of the project, confirms acceptance by end users and hands the outputs over into operational/business use and maintenance, including necessary supporting documentation
6	Project Close	Ensures that the project is closed in a controlled manner

The scope of work for this commission is related to Pathway Stages 4 and 5 (Detailed Design and Delivery) only.

1.2 Structure description

1.2.1 The 2-lane carriageway Blackwall Tunnel Southbound road tunnel on the A102 was opened in 1967 and has a length of 1174m between portals. The structure connects the Blackwall district of Poplar in the Borough of Tower Hamlets north of the river to the Peninsular district in the Borough of Greenwich south of the river. The speed limit in the tunnel and approaches is 30mph.

1.2.2 The tunnel comprises a primary cast iron segmental lining, 8.585m in diameter and 875m in length with cut and cover circular reinforced concrete sections of 118m. The walkways are separated from the carriageway by coated steel handrails.

1.2.3 There are two ventilation shafts situated at approximately quarter points, 780m apart, between which the road forms a structural roof to a sub-tunnel below. The sub-tunnel acts as an air duct through which fresh air is blown and ducted to openings into the vertical face of the walkway adjacent to the roadway above. Foul air is extracted through roof vents.

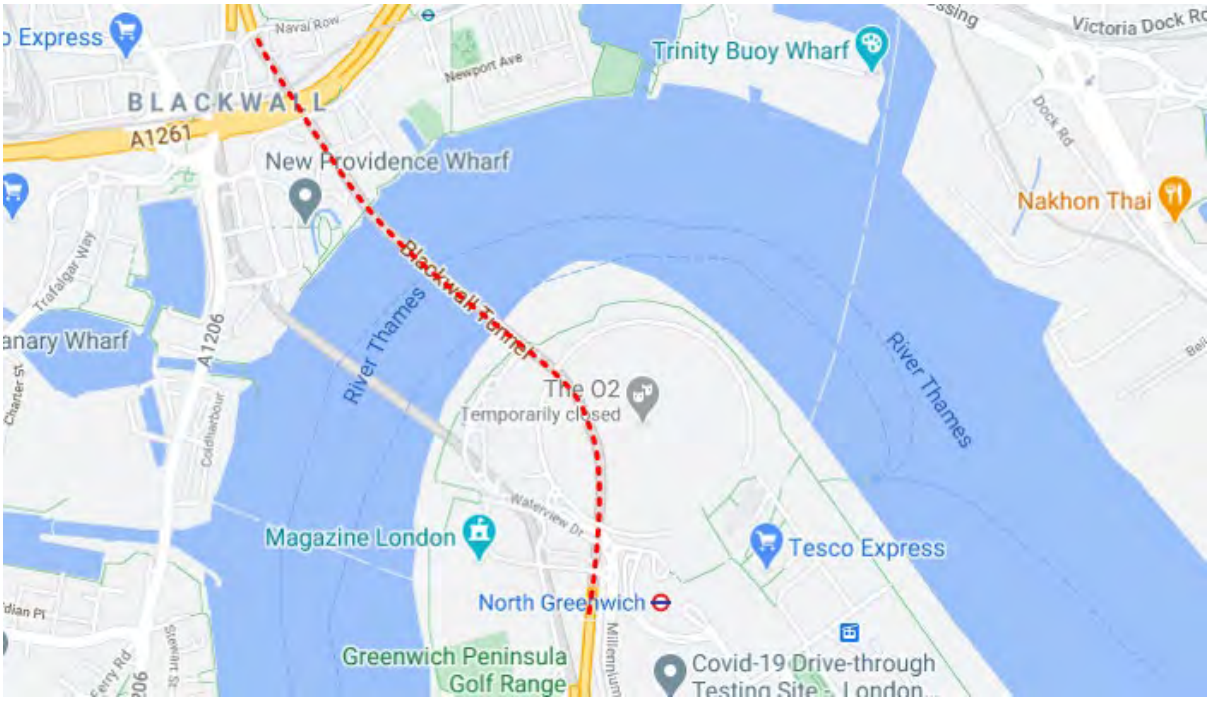
1.3 Site location/working areas

Figure 1 shows the location of the structure.

The tunnel carries the A102, the southern portal is located in the London Borough of Greenwich, the northern portal is located in the London Borough of Tower Hamlets.

Grid references:
Northern Portal Portal: 51.509135, -0.006596
Southern Portal: 51.500428, 0.001897

Figure 1: Structure location



1.4 Background

1.4.1 Blackwall Tunnel Southbound has been identified as a critical project. A 2018 feasibility study confirmed critical tunnel systems are in urgent need of renewal as they are in poor condition, have declining performance and have high fault frequencies.

1.4.2 Many elements of these systems have obsolete components which are no longer being manufactured and are becoming increasingly difficult and costly to source.

1.4.3 Additional maintenance requirements and increasing failures/outages are causing disruption to road users and increasing operational costs.

1.4.4 The strategic context for the project was set out as part of the Major Assets and Renewals Programme (MARP) which requires Blackwall Tunnel to be safe and operable. Strategic service descriptions are defined in Table 1.

Table 1: Strategic service descriptions

Service	Description	What does this look like?
Safe	The assets are safe to use and do not pose an undue level of risk to customers, staff or supply chain	Low level of incidents and claims linked to assets We are able to robustly demonstrate we are maintaining a safe asset/network
Operable	The assets are able to perform their required function (although not necessarily to required levels of reliability)	Assets may be out of service for short periods of time to restore operability (hence impact on reliability) A network is considered operable if no more than one major asset/link is out of service at a time and for no more than 3 to 6 months Adopting this approach is not considered to be appropriate for the Rail/LU networks
Reliable	The assets support a reliable service	The assets deliver the defined level of service reliability; there may be different levels of reliability defined, e.g. Gold, Silver, Bronze Close link between safety and reliability on Rail/LU networks

1.5 Objectives

1.5.1 The key objectives of the Blackwall Tunnel Southbound project are to:

- Reduce unacceptable safety and functional risks;
  - Assess and upgrade the tunnel systems using As Low as Reasonably Practicable (ALARP) principles.
- Minimise reactive maintenance requirements and ongoing costs;
- Upgrade of equipment will reduce maintenance costs.
- Reduce operating costs by installing energy efficient LED lighting.

1.5.2 Due to financial constraints and the operational need for the tunnel to be open for the duration of TfL's Silvertown Tunnel project build, this project is being undertaken in two phases:

- Phase 1's primary aim is to stabilise the tunnel for the next 5 years, to ensure the tunnel is safe and operable for the duration of the Silvertown Tunnel

delivery; replacing critical assets at the end of their serviceable life or obsolete assets where spares are no longer available.

- Phase 2 scope will be the main refurbishment including the ventilation improvements. This requires extensive closures to complete therefore has been planned to be carried out after Silvertown Tunnel is operational.

1.5.3 This scope is for Phase 1 - critical issues that need to be addressed in order to operate the tunnel safely for the next five years, as a minimum.

1.6 Works Overview

1.6.1 The high-level *works* are as follows; more detail is found in section 3.3 (Design):

- Replace lighting with LED based system
- Replace lighting support structure
- Replace CCTV system with modern system (in-bore and on approaches)
- Replace VMS signs with modern slimmer types (in-bore and on approaches)
- Replace Lane Control Signs (in-bore)
- Undertake carriageway works. This consists of concrete repairs, crack sealing and waterproofing of the road deck and manhole ringbeam for the mid river pump room
- Replace tunnel cladding where panels are currently missing

1.7 High level requirements

1.7.1 The *works* are to undertake the detailed design work required by Pathway Stage 4 and delivery work required by Pathway Stage 5 for the renewal of safety critical assets in Blackwall Tunnel Southbound, Phase 1.

1.7.2 For Stage One, the *Contractor*:
Mobilises a design delivery team and arranges a Mobilisation Workshop with the *Client* with a view to completing the mobilisation deliverables, within 2 weeks of the *starting date*. The aim of the workshop is to:

- Confirm the project team; key people from the *Client* and Consultancy – roles and positions
- Confirm the *Contractor*'s supply chain
- Agree stakeholder map
- Discuss the requirement of additional surveys, investigations and testing, including any necessary consents and approvals if required
- Discuss *Contractor*'s quality statement; agree and identify any gaps
- Agree the Early Warning Register
- Discuss and agree any key risks and opportunities
- Discuss and agree any significant health, safety and environmental issues
- Agree progress meetings schedule
- Discuss and agree the baseline programme

The *Contractor* provides a programme for acceptance by the *Client* within 2 weeks of contract start; the programme should:

- Be produced in Microsoft Project clearly stating name of each activity and its reference number as shown in the table of deliverables in Section 10 (MSP Unique ID column), duration and sequence with key deliverables shown;
- Be submitted in Microsoft Project and PDF format to project team;
- Upon request from *Client's* Planner – be also submitted in Primavera P6 professional, on Asite;
- Highlight dates where information is required from TfL and other parties;
- Identify *Clients* TAA review periods;
- Is produced in accordance with the constraints as outlined in 2.0
- Produces a stakeholder management plan and engages stakeholders appropriately;

The *Contractor* develops a Stakeholder Management Plan, containing an engagement tracker of all identified stakeholders. The *Contractor* records all contact made with stakeholders, including contact details, a summary of what was discussed and any actions.

The *Contractor*:

- Updates and maintains a tracker, identifying additional stakeholders and detailing interfaces, desired levels of engagement, power and interest information and risks concerning new and existing stakeholders
- Identifies opportunities and synergies in undertaking the site works to minimise disruption, and
- Makes this information available to the *Client*

Stakeholders include, but are not limited to:

- Kier – Tunnel Maintenance *Contractor*
- TfL Project and Programme Delivery Directorate
- TfL Investment Delivery Planning Directorate
- TfL Engineering – Project Engineer
- TfL Discipline TAA's (various)
- TfL Tunnel Manager
- TfL Tunnel Safety Officer
- TfL Asset Operations
- TfL SHE Business Partners
- TfL BIM Representative
- TfL Systems stakeholders – i.e. Core Controls and Indra
- Representatives from neighbouring London Boroughs

- Undertakes a comprehensive review of existing information, including the Pathway Stage 3 concept design;
- If additional surveys are required, a programme of site visits, surveys and site investigations shall be agreed with the *Client*, and undertake the programme to complete any knowledge;
- Produces a design management plan and manages the project design interfaces;
- Develops a set of detailed designs and TRSs for the work packages;
- Ensures the design incorporates appropriate buildability and maintainability considerations;
- Undertakes the Principal Designer and Principal *Contractor* duties under CDM Regulations;
- Ensures the design incorporates appropriate Health & Safety considerations;
- Ensures the design incorporates appropriate Environmental considerations;
- Undertakes value engineering in conjunction with the *Client*;
- Ensures all design work undergoes technical assurance (see section 1.15) ;
- Develops the BIM documentation for each scope package and ensures the *Client's* systems are up to date;
- Confirm the Pathway Stage 5 contract price and seeks approval from the Project Manager for any cost and programme amendments compared to the tender price submission; and
- Hands over the final designs (including assumption logs and version control registers), AiP documents and completion certificates.

1.7.3 For Stage Two to completion, the *Contractor* delivers the full scope of work of the detailed design in line with their proposals for Stage 2 (section 1.8). Stage two will comply with SQA 2022 (Structures Development and Acceptance Proposals Issue 2) and SQA 2026 (Tunnels and Structures Health and Safety Files Records and Maintenance Manuals Issue 5). This will include but will not be limited to:

- Highways works and traffic management
- Enabling works, where required
- Structural works including construction specifications. Note, the scope does not include a specific construction element. Structural works are expected to be limited to those required to enable other in scope items. Departures from that will be presented for consideration to the *Client*.

- Health & Safety File
- Construction Management Plan, in accordance with CDM regulations
- Pre Construcion information
- Inspection and test plans and their results (see S700), including commissioning certificates where appropriate.
- Utility diversions; note, the concept design did not indicate that any utility diversions are required. Should, during detailed design or construction, it is discovered that a utility is impacted then the *Contractor* will develop a proposal for agreement with the *Client* and subsequently implement the solution.
- The *Contractor* will decommission and remove all assets made redundant by the implemented detailed design. The *Contractor* will make clear, as part of the detailed design, what will be decomisioned and removed for agreement with the *Client.* This will include the asset itself and any support structure and CMS where this does not affect other retained assets.
- Final O&M Manuals, including record drawings, manufacturers operating and maintenance instructions and typed test results, and spares recommendation
- Snagging/Defects register
- Asset Database Verification Report
- All drawings and models will be delivered in accordance with the *Client*s BIM requirements. The *Client* will check and verify that the information has been loaded on to the *Client*s Common Data Environment and confirm to the *Project Manager* that it is fully compliant before that obligation is considered complete.
- Project Completion & Handback Certificate

1.8 Proposals for Stage Two

The *Contractor* submits its proposals and design for Stage Two in accordance with the submission procedure stated in the Scope. The *Contractor* consults the *Project Manager* in preparing its proposals for Stage Two.

At the end of Stage One the *Contractor* submits to the *Project Manager* for acceptance Its proposals for Stage 2 . The proposal will include, but not be limited too, the *Contractor*s strategy for delivering the following;

- Working within the constraints described (S200) and others that may become apparent during Stage 1. This will include a strategy for access, taking into account the maintainers needs
- Traffic Management Proposals & Diversion Plans (detailed in S300)
- The activities described for completion (S400)
- Any outstanding Stage 1 activities that the *Contractor* believes need input from or are provided by the build *Contractor*. The *Client* will agree those before instructing the commencement of Stage 2.A revised programme
- Any revisions to the Access Dates, Key Dates and the Completion Date and

- The total of the Prices or any change to the total of the Prices in accordance with the submission procedure stated in the Scope.

This should be aligned to the final design submission for Stage One. The *Contractor* should allow a minimum of 25 working days in their programme for the formal review and acceptance of each submission at each stage by the *Client*.

In line with clause X22.3 (9) the updates to the total of the Prices for Stage Two are in the format of updates to the Activity Schedule and the activity build up. The Prices for Stage two are managed in accordance with clause X22.2 (5) and forecasts of the Project Cost are in the format of updates to the tendered Activity Schedule and activity build up.

In addition to the reasons stated for not accepting the *Contractor's* submission, the *Project Manager* may give the following as the reason for not accepting the *Contractor's* submission

- It will cause unnecessary delay to the *access dates*, Key Dates or the Completion Date
- The *Project Manager* is not satisfied that the total of the Prices or any changes to the total of the Prices have been properly assessed.

If the *Project Manager* issues a notice to proceed to Stage Two, the *Project Manager* changes the Prices, the *access dates*, the Key Dates and the Completion Date accordingly and accepts the revised programme.

SCOPE

S 200

CONSTRAINTS ON PROVIDING THE WORKS

S 200 – Constraints on Providing the Works

2.1 Constraints

The *Client* requires that the *Contractor* takes the following constraints into account when providing the *work*s:

- TMAN and Road works permits constraints- (these, along with Chapter 8 TM, tunnel security, rescue teams, confined space teams, plant and equipment are all the responsibility of the contactor) - (refer to section 2.4).
- Permitted working hours must align with TFL guidance on tunnel closures (only one Thames tunnel crossing to be closed at any one time) to be approved by CAP team – (working hours and tunnel closure strategy to be developed between TfL and the *Contractor* during Stage 4- Detailed Design).
- TfL Pathway & governance process and associated turnaround time – (refer to section 1.1.4 and 1.7.1).
- TfL technical approval process and associated turnaround time – (refer to section 1.8).
- TFL's maintenance *Contractors'* sequence of tunnel closures with works embargo's (this will be provided as supplemtary information).
- Requirements on works notices given to public and key stakeholders – (guidance provided by TFL Communications Team; TDM and LCP).
- Facilitating access for and co-ordinating with Statutory Undertakers - (currently no known utilities within the works area, co-ordination will only be required if any buried services are discovered).
- Noise pollution and the permitted hours for noisy works - (*Contractor* to apply for Section 61 as required- this will determine the times permitted for noisy works).
- Control of noise, vibration, dust and mud – (for details, please refer to Section 11.2 and the Health, Safety and Environmental requirements specified in the *Surface Transport Infrastructure Construction Framework Contract*).
- Mayor's Strategy on roadworks – (Refer to Policy 4.2.3. Further information may be found in guidance published by the GLA).
- Delivery and/or storage of materials and spoil whilst maintaining traffic and/or pedestrian flow – (to be developed in the Construction Phase Plan).
- Maintaining safe access to all public, retail and business properties whilst works on site are taking place – (to be developed in the Construction Phase Plan).
- All Authority fees or charges and any third-party compensation payments or access charges will be paid by TfL.

2.2 Security Arrangements with Others

For Working Areas where the *Contractor* is not the Principal *Contractor* i.e. a maintenance closure – the *Contractor* cooperates, liaises, coordinates and complies with the Principal *Contractor*'s security arrangements and may be required to:

- Have available at all times the *Contractor*'s security manager or nominated deputy to act as co-ordinator between the *Contractor*, the Principal *Contractor*, the *Project Manager* and the emergency services.
- Provide up to date contact details to the Principal *Contractor*.

- Cooperate with the Principal *Contractor* in provision of records and evidence of checks pursuant to the issue of permanent passes
- Provide up to date site plans to the Principal *Contractor*.
- Attend regular meetings with the Principal *Contractor*, and the *Client*'s security team.
- Liaise with the Principal *Contractor* to ensure that electronic access control systems are compatible;
- Develop the procedures required to meet the obligations of this clause and included in the Principal *Contractor*'s security manual;
- Protect members of the public from site activities with adequate hoarding at all times; and
- When assessing hoarding requirements, take into account the presence of schools, hospitals, disabled persons etc. and the specific conditions of the Site.In interest of site security and confidentiality, the *Contractor* will not share any information relating to the asset, or obtained during the project, with unauthorised parties and will follow TfL security processes. In the event that information needs to shared with sub-contractors and other third parties, permission must be sought from the TfL Project Team. Information regarding TfL security processes that will need to be followed will shared with the contractor once the contract award has been finalised. TfL will reserve the right to check compliance with these security arrangements at any time.

2.3 Condition Surveys

The *Contractor* undertakes a condition survey of the areas affected by the *works* and agrees it with the *Project Manager*. The *Contractor* reinstates all areas disturbed by the *works* or any of its activities back to the condition recorded in the survey and agreed with the *Project Manager* and in accordance with all relevant statutes and local authority / *Client* requirements.

The proposed condition surveys will be agreed with the *Client* before being performed

The *Contractor* produces and submits to the *Project Manager* for acceptance a survey plan within 28 days of the *starting date*. The purpose of this plan is to identify and describe the *Contractor*'s strategy and approach to the advance surveying of the area of the *works* prior to any physical change to the built environment as a result of the *works.* The plan addresses the requirements of this section, includes a survey schedule and all necessary method statements, risk assessments, designs, drawings and other documents required to complete condition surveys and defects surveys.

2.4 Access to the Tunnel/Sub-tunnel

The *Project Manager* provides the *Contractor* with a closure option / summary for the Build phase (Stage 2) and a schedule of maintenance closures for all known Thames River crossings. The *Contractor* identifies any efficiencies that can be provided against the closure option and proposes any innovative ways of working to reduce / mitigate impacts to the Network. The *Contractor* notifies the *Client* of any efficiencies e.g., working within maintenance closures where possible. The *Contractor* submits a closure programme deemed most efficient to the *Project Manager* for review and acceptance.

The current closure option assumes all closures will be 'stand-alone', and the below applies:

- the bus route 108 which goes through the Blackwall Tunnel, will preferably be on diversion

- TfL Bus Operations team(s) require a minimum of 12 weeks to implement the diversionClosure Option 3a – preferred closure option ;
  - will be for a 57 week programme
  - the programme will incorporate 4 x nights per week closures with assumed working hours of 22:00 – 05:00
  - the 57 week programme will incorporate 9 x full blockade weekend closures with assumed working hours of Friday 23:59 – 05:00 Monday
- the *Contractor* will submit a TMAN (provisional/formal) to the *Client's* Coordination, Assessment & Permitting team (CAP) prior to application for permits – who will confirm hours permitted to carry out any works, following their assessments
- the *Contractor* will submit PAA's at least 12 weeks prior to the proposed / planned closure dates. The *Contractor* submits PA's upon approval of the PAA's
- the *Contractor* will be the Principal *Contractor* whilst carrying out any works (including surveys/investigations) in the tunnel/ sub-tunnel
- the *Contractor* will liaise with the maintenance *Contractor* regarding any inductions to be undertaken, ensuring all areas of accessing the tunnel / sub-tunnel are covered, including raising the alarm and how to safely evacuate the asset
- the *Contractor* will agree a handover strategy with the maintenance *Contractor* for handover of the asset, at the start and end of every closure/shift
- the handover strategy will detail any interfaces between the Principal *Contractor* and tunnel maintainer, as well as any associated asset liabilities and who accepts the liability (Principal *Contractor* or Tunnel Maintainer)

For any closures where the *Contractor* is not the Principal *Contractor* i.e., any maintenance closures the *Contractor* cooperates, liaises, coordinates and complies with the Principal *Contractor*'s (maintenance *Contractor*'s) security arrangements and will be required to:

- undertake an induction carried out by the tunnel maintainer
- agree safe methods of carrying out any proposed works with the Tunnel Maintainer, that are not in conflict with maintenance works being undertaken
- identify / agree any associated asset liabilities regarding any interfaces of the works being carried out by the *Contractor* and who accepts the liability (Principal *Contractor* or Tunnel Maintainer)

SCOPE

S 300

CONTRACTOR'S DESIGN

S 300 – *Contractor*'s design

3.1 Record Information

To assist with design, all available records and archived documents relevant to the project, including any previous surveys, investigations & testing are available (the *Client's Design*).

Further information in the form of inspection records, historic construction drawings, reports and other documents are available to the *Contractor* via read-only access to BridgeStation for two nominated email addresses upon request. The *Client* does not take responsibility for the accuracy or currency of the information provided.

The *Contractor* controls the use and dissemination of any *Clients* records obtained, and information must not be provided to any part of the *Contractors* organisation where it is not required to perform the *works*. The *Contractor* ensures that any sub *Contractor* takes the responsibility for information provided to them.

3.2 Contractor's Design Responsibilities

The *Contractor* is appointed, and complies with his duties, as the *Principal Designer* in accordance with the CDM Regulations 2015. The *Contractor* ensures that his designers are suitably qualified and competent to carry out the work.

Where the *Contractor* is responsible for design, the *Contractor* is the *Principal Designer*, and complies with the duties of the *Principal Designer* as defined in the CDM Regulations 2015.
The *Client* requires that the systems handed over at completion work together in a coherent manner. To that end the *Contractor* is responsible for the coordination of the individual design work packages and all systems engineering aspects to deliver assets with no residual interoperability issues.

The *Contractor* takes the *Clients* concept design and develops that through the detail design phase required by Pathway Stage 4. During the detailed design phase, the *Contractor* may propose alternative solutions that differ from the concept design phase or encounter issues as a result of assumptions inevitably made at concept stage. The *Client* will work with the *Contractor* to resolve issues and agree solutions as would be expected during a detailed design phase.
The *Contractor* appoints a design manager (the "*Contractor's* Design Manager") who is responsible for the management, coordination, quality control and assurance of design work.
The *Contractor's* Design Manager is the primary interface with the *Project Manager* on design matters.

The *Contractor*'s Design Manager, with the appropriate knowledge, skills and experience to carry out the role, in order to:

be responsible for all aspects of the *Contractor's* design including management, coordination, integration, quality control and assurance;
put in place a design management system and a Design Management Plan and ensure that these are implemented and maintained;

- be the primary interface with the *Project Manager* and their representatives (e.g. the *Client*'s project engineers and the *Supervisor*) on design matters and queries;
- be responsible for managing the exchange of information between the various discipline designers in order to achieve a co-ordinated design;
- chair design team meetings and produce minutes and action logs;
- conduct regular informal interdisciplinary reviews and at least one formal documented interdisciplinary review prior to the design being submitted to the *Project Manager*;
- collate all design information and maintain the official copy of the design; and

- be the first point of contact for any design changes.

The Design Manager is required to have the skills, knowledge and experience for the role and duties described above for a project with the complexity of the one described in this Scope.

The *Project Manager* appoints a Project Engineer who is responsible for liaising with the *Contractor* at all stages during the preparation of the *Contractor's* design.

The *Contractor* is responsible for ensuring and demonstrating that its designers have been assessed as being suitably qualified and competent to carry out the design. The *Contractor* is responsible for ensuring and demonstrating that this assessment is kept under review throughout the design process.

The *Contractor* will ensure that all relevant design staff comply with CG300 (Technical approval of highway structures). In particular the Design Manager and those approving design check certificates are qualified and competent in relevant fields of engineering related to the work and is to be a chartered member of a relevant institution (endorsed by the Engineering Council).

The *Contractor* provides competent representatives of the *Contractor*'s designer throughout the construction phase in order to monitor all of the *Contractor's* construction activities. These representatives have the following duties:

- review construction progress and monitoring information:
- verify that the *works* are being constructed in accordance with the design intent;
- Manage any changes to the design that may become necessary during the construction phase as a result of new information discovered. The representative will liaise with the *Client* to verify that any departure to the design intent is acceptable and is correctly and assured.

The *Contractor* appoints a Temporary Works Coordinator, who undertakes the duties and role described in BS 5975:2008 and its associated code of practice, and ensures that sufficient competent temporary works engineers are deployed on the Site to verify that all temporary works comply with the design prior to loading.

3.3 Design

The *Contractor* completes the design for the *works* as follows:

Asset	Design
Tunnel lighting	Design of a full replacement tunnel lighting system in the main tunnel bore, with associated mechanical supports for luminaires and cables, and a luminance control system. The lighting is to be based on LED technology throughout, and no filament, fluorescent or discharge light sources (or similar technologies) must be used. The replacement tunnel lighting system must be installed from portal to portal and must comprise normal, boost and emergency lighting which performs in compliance with BS5489-2, TfL's LED Tunnel Lighting Designers' Guidance Notes (Revision 03, 2017), and the relevant parts of DMRB CD 352 Design of Road Tunnels. A concept design for the replacement tunnel lighting has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: • The lighting is to be offset 500mm from the centre line into lane 1, which will facilitate maintenance. • The replacement system can be installed while the existing

Asset	Design
	system remains in service. • The LED luminaire drivers are installed remotely from the tunnel bore. • All luminaires are to be alternately fed by existing 'A' and 'B' UPS supplies. Power supplies and cable routes should provide diversity of routing and operation to ensure failure of a group of drivers fed from a common power source, or failure of a single UPS supply, will not cause adjacent luminaires to be extinguished.(Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
Underpass lighting	Design of a full replacement lighting system in the A13 East India Dock Road underpass, with associated mechanical supports for luminaires and cables, and a luminance control system. The lighting is to be based on LED technology throughout, and no filament, fluorescent or discharge light sources (or similar technologies) must be used. Design of the replacement underpass lighting system that must be installed from portal to portal and must comprise normal and boost lighting in compliance with BS5489-2 and TfL's LED Tunnel Lighting Designers' Guidance Notes (Revision 03, 2017). A concept design for the replacement underpass lighting has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: • The LED luminaire drivers are installed remotely from the trafficked underpass. • Both northbound and southbound sides of the A13 underpass lighting are to be replaced. • The underpass lighting control system is standalone and not part of the tunnel lighting control system. (Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
Street lighting	Design of replacement LED lighting heads on columns at the north and south tunnel approaches Design of replacement street lighting systems north and south of the Blackwall Southbound tunnel, extending from the south portal of the A13 East India Dock Road Underpass in the north, to column BWTE15 in the south.The replacement lighting is to be based on LED technology throughout, and no filament, fluorescent or discharge light sources (or similar technologies) must be used. The street lighting systems must comprise replacement heads on the existing lighting columns, and wall mounted luminaires north of the tunnel. Lighting performance is to be compliant with BS5489-1. A concept design for the replacement street lighting has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: • An assumption that the existing street lighting columns are in good condition and suitable for uninterrupted use for at least 5 years following completion of the project works. The *Contractor*

Asset	Design
	is responsible for carrying out suitable non-destructive testing and/or inspections to the street lighting columns and their mounting systems to ensure suitability for continued use, and any columns or mounting systems found unsuitable are to have their defects corrected or be replaced with new. • Similarly, the existing street lighting cables and switched control apparatus are assumed suitable for re-use. The *Contractor* is responsible for carrying out suitable electrical testing and/or inspections to these assets to ensure suitability for continued use, and any assets found unsuitable are to have their defects corrected or be replaced with new. • New luminaire drivers, cut-outs and column cables are assumed to be required. • The replacement street lighting is to be integrated into the existing street lighting control systems north and south of the tunnel. • The *Contractor* must liaise with the Silvertown Tunnel design team to ensure an integrated detailed design for the columns south of the Blackwall Southbound tunnel is provided. The detailed design must identify and take account of the timings of the two schemes to ensure the Blackwall Southbound scheme makes suitable allowances for, and does not preclude, disconnection and removal of columns required as part of the Silvertown scheme. (Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
Low level evacuation lighting	Design of a new low level evacuation lighting system in the Blackwall Southbound main tunnel. The lighting is to be based on LED technology throughout, and no filament, fluorescent or discharge light sources (or similar technologies) must be used. The new low level evacuation lighting system must be installed from portal to portal and must comprise lighting in compliance with BS EN 16276. A concept design for the low level evacuation lighting has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: • The lighting is to be fed from existing UPS supplies. • The lighting is to be extinguished during normal tunnel operation, and lit under control of the tunnel SCADA/PLC control system as part of pre-defined emergency plans. • The lighting is to be installed on both sides of the bore on the vertical faces of the raised walkways. • Individual lighting must be at 20-25m intervals, staggered between each side of the tunnel, so that lights on one wall are approximately central to the gaps between lights on the opposite

Asset	Design
	wall. • Lights must be designed for protection from damage by impact or tunnel washing by virtue of being fully sealed from water ingress, and low profile and/or positioned to avoid vehicle impact. • Individual lights must be straightforward to replace in the event of failure or impact damage, with a minimal requirement for in-situ re-wiring support. The *Client* requires a plug & socket solution for each luminaire at the appropriate IP rating. (Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
Tunnel lighting support structures	Design of steelwork required to support the replacement lighting system in the Blackwall Southbound main tunnel, including associated cable management. A concept design for the steelwork has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: A combined lighting support system and cable management system is proposed The lighting is to be offset by 500mm into lane 1 Cable trays/baskets are to be supported on cantilevers, not trapezes, to allow for faster installation of cables Cable trays/baskets are to run around the periphery of the two ventilation shaft grilles in the tunnel soffit Lighting cables will exit the ventilation shaft risers at high level and run north/south along the tunnel soffit The lighting support system must fasten to the existing stainless steel arches which also support the cladding and other M&E systems The lighting support system must pass above the tunnel variable message signs All components of the lighting support system must be A4/316 stainless steel The lighting support system must position the luminaires at a height which conforms with the lighting design, and provides at least the minimum traffic clearances above the carriageway surface as specified in the concept designs (Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
Underpass lighting support structures	Design of steelwork required to support the replacement lighting system in the northbound and southbound sides of the A13 East india Dock Road underpass, including associated cable management. A concept design for the steelwork has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: The lighting support system must fasten to the existing structure and position the luminaires in a visually straight line in the cornices. All components of the lighting support system must be A4/316 stainless steel The lighting support system must position the luminaires at a height which conforms with the lighting design, and provides at least the

Asset	Design
	minimum traffic clearances as specified in the concept designs (Ref: Technical Requirement Specification – Lighting ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001)
CCTV cameras	
Tunnel and portal Variable Message Signs	Design of replacement variable message signs (VMS) in the Blackwall Southbound tunnel bore and on the north portal. A concept design for the VMS has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: The new VMS must not reduce the existing headroom in the tunnel bore. Tunnel VMS are to be spaced at approximately 200m centres Tunnel VMS are to have 100mm character height The north portal VMS is to be offset to the right above the lanes, and will replace the existing rotating prism sign. The new VMS must use the same mounting points unless surveys, testing and calculation prove that these mounting points are not viable, in which case additional/alternative mounting points are to be designed and used. The north portal VMS must have 160mm character height All signs must communicate using NMCS2 over RS485 as far as the existing Moxa interfaces, thereafter NMCS2 over IP to Horus. All signs must interface to and be operable from Horus. Technical Requirement Specification - Signs ST_PJ530-CCS-TRS-XX_XX-REQ-EE-00016
Tunnel Lane Control Signs	Design of replacement lane control signs (LCS) in the Blackwall Southbound tunnel bore and on the north and south portals. A concept design for the LCS has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: The new LCS must not reduce the existing headroom in the tunnel bore. Tunnel LCS are to be spaced at approximately 50m centres Tunnel LCS are to incorporate 10mph, 20mph and 30mph mandatory (not advisory) speed limit aspects LCS are to located centrally over each lane. All signs must communicate using NMCS2 over RS485 as far as the existing Moxa interfaces, thereafter NMCS2 over IP to Horus. All signs must interface to and be operable from Horus.

Asset	Design
	Technical Requirement Specification - Signs ST_PJ530-CCS-TRS-XX_XX-REQ-EE-00016
Concrete repairs and crack sealing	Design of repairs to the underside of the concrete deck slab. A concept design for the concrete repairs has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: Testing of identified areas of concrete defects to inform the detailed design Breakout and remediation of areas of spalled concrete Resin injection treatment to cracks All work is to be carried out in the sub-tunnel, which is a confined space. The repair techniques and durations must be achievable within this constraint. Use of tooling and techniques which avoid sparks or other sources of ignition Technical Requirement Specification - Water Proofing and Concrete Repairs - ST_PJ530-CST-BAS-05_06-REQ-CE-00007 In addition concrete repairs are required to mid river pump room manhole ring and transverse beams. Specifically I. South Beam - Remove cable conduit and break out all loose contaminated concrete on the north beam soffit and elevation of the beam around exposed steel reinforcement bars, undertake mechanical cleaning of the reinforcement bars and protect using a suitable, approved, impervious anticorrosive coating. II. North Beam - break out all loose contaminated concrete on the north beam soffit and elevation of the beam around exposed steel reinforcement bars, undertake mechanical cleaning of the reinforcement bars and protect using a suitable, approved, impervious anticorrosive coating. III. Tranverse Beam - break out all loose contaminated concrete on steel reinforcement bars on the elvation of the beam, undertake mechanical cleaning of the reinforcement bars and protect using a suitable, approved, impervious anticorrosive coating. IV. Form new concrete casing to the bottom and sides of the ring and transverse beams to achieve a minimum 35 mm concrete cover using suitable approve concrete repair mortar and bonding agent to the exposed reinforcement bars adjusting accordingly for the service pipe below V. Treat all sides and soffits of the concrete ring beams with a suitable approved anti- carbonation coating. VI. All concrete repairs materials, specifications and workmanship to be in accordance with the Highways England Standard CS462 Repair and management of

Asset	Design
	deteriorated concrete highway structures. Additional information can be found in 'Ring Beams Structural capacity validation in the assessment Southbound Blackwall Tunnel' RPT-BAS-TfL – 0502099 (Rev 01). Note, the manhole resealing activity will be carried out by the *Client*. The waterproofing described in the report will form part of the road deck water proofing scope of this commission.
Road deck waterproofing	Design of a waterproofing layer to the upper side of the concrete road deck between the ventilation shafts. A concept design for the waterproofing has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: Waterproofing is to be installed laterally from raised walkway to raised walkway, which requires kerbs to be taken out and reinstated. Repairs will be required to areas of the upper surface of the road deck where the concrete has failed, typically at locations where there is evidence of potholes in the surfacing, but may be more extensive. The waterproofing system is expected to be spray applied over a suitably prepared (milled) surface. A suitable allowance should be made to repair waterproofing in the areas between ventilation shafts and portals where deeper repairs are to be carried out due to rutting and previous repairs. In order to conform with any concrete repair manufacturer's product warranty, the waterproofing must be done prior to any concrete repairs in the sub tunnel. Technical Requirement Specification - Water Proofing and Concrete Repairs - ST_PJ530-CST-BAS-05_06-REQ-CE-00007
Carriageway resurfacing	Design to plane out and resurface the carriageway between the portals gates. A concept design for the resurfacing has been developed, which includes important principles to be adopted in the detailed design, including but not limited to: The extent of the resurfacing will be carriageway between the landing plates for the north and south flood gates, which provide a convenient transverse joint. The resurfacing must not reduce the operating headroom in the tunnel. The resurfacing must not increase the dead load imposed on the structure. To fit with the acceptable design and build programme, it is expected that the detailed design will accommodate sectional plane out and resurfacing over a number of tunnel possessions, with a sacrificial wearing course laid. A final possession will allow the full tunnel length of the sacrificial wearing course to be planed out and replaced with a single lay of the permanent wearing course. Waterproofing and upper deck concrete repairs are constraints imposed on the resurfacing and integrated detailed designs are required for these elements. Technical Requirement Specification – Carriageway ST_PJ530-CST-BAS-05_06-REQ-CE-00002
Wall cladding panels	Design to replace cladding panels in the Blackwall Southbound main tunnel. A concept design for the cladding has been developed, which includes

Asset	Design
	important principles to be adopted in the detailed design, including but not limited to: The extent of the cladding to be replaced As a minimum, the missing light coloured wall panels are to be replaced. Missing panels immediately in front of the public address speaker horns are to be replaced. Severely damaged panels and trim strips are to be replaced. The ventilation riser shafts are to be closed off from the main tunnel bore by replacing missing panels and fire breaks. Technical Requirement Specification – Cladding ST_PJ530-CST-BAS-05_06-REQ-CE-00001

Where exiting fixings, supports, cabling or other existing interfacing assets are used in conjunction with new systems, the *Contractor* will use due reasonable professional skill and care to assure the *Client* of their suitability in accordance with CG300.

The *Contractor* will ensure that power requirements are considered and managed during the works to ensure that sufficient power is available to test and commission new assets before existing assets are decommissioned.

3.4 Design for the *works*

Within four weeks of the *starting date* the *Contractor's* Design Manager prepares, in consultation with the Project Engineer, a Design Management Plan which includes but is not limited to the following:

A list of all design deliverables including all drawings, specifications and other design data which the *Contractor* intends to produce together with the dates by which the *Contractor* plans to complete each deliverable identified in the list;

A list of the *Contractor's* key design staff and specialist designers and Sub*Contractor*s, and evidence of their competence to undertake the design work, and identifying those with delegated authority to certify the *Contractor's* design;

A list of the independent checker's key staff and evidence of their competence to undertake the checking, and identifying those with delegated authority to sign-off check certificates;

A list of all acceptances of the *Contractor's* design required from the *Project Manager* and Others including technical approval bodies;

- The Contract Quality Plan and procedures applicable to the *Contractor's* design and checking activities, including describing the interfaces between the *Contractor's* designers, the *Contractor's* Design Manager and the Project Engineer; and
  Procedures for design progress monitoring and reporting, design change control and design risk management
- Include design reviews with the *Client*'s SME's, at 40%, 60% and 95% design completion

The *Contractor* identifies innovative or value engineering solutions where possible and propose these to the *Client*.

The *Client* will review and return comments within 15 days.

3.5 Building Information Modelling

The *Contractor* develops the BIM documentation for each scope package and ensures the *Client*'s systems are up to date as described in Appendix A.

The *Contractor* appoints a designated person to undertake the role and responsibilities of Project Information Manager as defined in Appendix A and the EIR. The *Contractor* will provide a CV to demponstrate that the individual has the required skills, knowledge and experience for that role.

At the heart of the IMM requirements is the delivery of projects to Level 2 BIM maturity as documented in PAS 1192-2:2013. TfL has produced an Employer's Information Requirements (EIR) which details as to the who, what, how and when with regards to the generation and management of information.

The *Contractor* delivers a BIM Execution Plan (BEP), as to how they will meet the requirements of the EIR. A TfL template will be provided, the *Client* will accept an alternative format if it achieves the same purpose. This will be discussed and agreed with the *Client* before proceeding.

The *Contractor* will maintain and provide an Master Information Delivery Plan) MIDP, a TfL template will be provided, the *Client* will accept an alternative format if it achieves the same purpose. This will be discussed and agreed with the *Client* before proceeding.
Refer to Appendix A for BIM Specification, Employers Information Requirements (EIR) and the BEP template.

All drawings and CAD models will be transferred to the *Client* via its Deliverables Management tool. The *Client* will give the *Contractor* access to that and assist in its use

3.6 Design Submission Procedures

The *Contractor* is responsible for co-ordination, systems integration and quality control of the *Contractor's* design and its integration with other parts of the *works* whether designed by the *Contractor* or not.

The *Contractor* obtains the acceptance of the *Project Manager* for any changes which arise on the Site and vary the accepted *Contractor's* design, or vary designs prepared by Others and contained in the *Client's* Design Information. Changes to the accepted detail design, are subject to the same approval process as the original design. Any subsequent delay as a result of the change to design, or acceptance of the revised design, is a *Contractor*'s risk. Furthermore, concessions or derogation from Standards, are unlikely to be considered, if arising as a result of poor execution of the design,

The *Contractor* submits the design data, in line with the *Client's* Information Requirements, to the *Project Manager* for acceptance. The *Contractor* makes a presentation for each package of data submitted for review and gives no less than four weeks' notice of the intended submission date.

Unless otherwise agreed between the *Project Manager* and *Contractor*, the *Contractor's* design is submitted every four weeks.

The *Contractor's* design data, submitted for acceptance, comprises of:

Design development:

- Intermediate submissions, including drawings for comment and review, technical reports, surveys, etc. as appropriate, are made by the *Contractor* as the design progresses.

- The components of any interim submission of design data are agreed between the *Contractor* and the *Project Manager*. The *Project Manager* liaises with the *Client's*

designers, asset managers and sponsors as required to undertake reviews of interim design submissions. There is no acceptance/rejection in respect of interim submissions; therefore the *Project Manager's* response is in the form of comments only to assist in the suitable development of the design.

Reasons for not accepting the *Contractor's* design are that it does not:

- Comply with the Scope, applicable law or statutory requirements;
- Comply with the *Client's* standards and design specifications; and
- Integrate and coordinate with the designs of Others where required by the Scope or the instructions of the *Project Manager*

3.7 Local Access / Road Space Requirements and Sequence of Works

The *Contractor* identifies local access and road space requirements for undertaking the works. The *Contractor* is required to take the site constraints & key stakeholders concerns into considerations and should provide a recommendation regarding local access and road space requirements for acceptance by the *Client*.

The *Contractor* is required to liaise and engage with the relevant stakeholders to find the right balance between potential impact to the local traffic and residents / business and benefits on cost and programme based on efficiencies.

This will inform the sequence of works / construction methodologies and subsequently form the basis of the traffic management strategy for the associated works.

The *Contractor* is required to inform and update the relevant stakeholders during Stage one and Stage Two and seek approval from the *Client* on potential changes if necessary as part of the Contract requirements.

The *Contractor* will advise the *Project Manager* before any contact with stakeholders external to TfL.

3.8 Traffic Management Proposal & Diversion Plans (TMAN / PAA / PA)

During Stage One, the *Contractor* develops traffic management proposals and diversion plans based on the access / road space approved in principal, the sequence of works agreed with the Network Performance team, and engages with the relevant key stakeholders for acceptance by the *Client*.

The *Contractor* submits all TMAN applications for approval with the agreed Traffic Management Proposal and Diversion Plans.

The *Contractor* submits the relevant road works permits PAA and PA before the commencement of Stage Two, seeking any approval on potential changes if necessary resulting from stakeholder feedback.

3.9 Design Approvals and Requirements of Others

The *Contractor* obtains and satisfies any necessary authority requirements. It is expected that the *Contractor* will need the following approval / acceptance / agreements (but not limited to) as part of the delivery.

- Approval in Principle (TfL Technical Approval Authority)
- Detailed Design & Design Checks Certificates (TfL Technical Approval Authority and Subject Matter Experts)
- TMAN (TfL Network Performance Team)

- PAA, PA, S61, TTRO, Temp Works (Highways & Local Authority)
- Traffic Management & Diversions (Highways & Local Authority and Key Stakeholders)
- Access Requirements (Highways & Local Authority and Key Stakeholders)

3.10 Client's Requirements

The *Contractor* must comply with the following standards & processes (but not limited to):

- Concept and Detailed design must comply with Design manual for Roads and Bridges (DMRB CD352) and Eurocodes standard.
- Specifications and Testing requirements must comply with Manual of Contract Documents for Highway Works (MCHW) standard.
- Development of designs for acceptance must meet SQA-2022: Requirements for the Development and Acceptance of Proposals for Structures & Tunnels Capital Schemes.
- Design and technical approval submissions must meet PR1477 A1: Technical Approval of Surface and Highways Structures. (note this replaces SQA 2025, where that standard is referred to in specifications or drawings, PR1477 will be used in its place)
- Health and Safety files and Maintenance and Operation Manual information for completed works must meet SQA-2026: Tunnels and Structures H&S Files Records and Maintenance Manuals.
- Vehicles swept path analysis for the development of traffic management arrangement must meet SQA-0680: Vehicles Swept path Analysis.
- Assessment of Road Safety Audit must meet SQA-0170: TfL Road Safety Audit Procedure.
- CG 300 Technical approval of highway structures
- CG430 Maintenance of Road Tunnels

3.11 Risks and Assumptions

The *Contractor* takes ownership of the risk, assumptions,design registers and designers risk assesement from the concept design and is responsible for developing these throughout the course of Stage One and Stage Two. These will be rviewed with the *Client* as required.

3.12 Design Co-ordination

The *Contractor* co-ordinates with Others in preparing the design and is responsible for the co-ordination of design by others (where necessary).

The *Contractor* liaises with the *Client's* Engineering Team, Assets Operation Team and the current Tunnels and Pump Stations maintenance *Contractor* for existing information such as as-built, past surveys, investigations and reports of which to support the delivery of the detailed design.

The *Contractor* is required to liaise with the *Client's* Engineering Team and Assets Operation Team during the development of the design to shape and define the design specifications and performance requirements on the final design proposal.

The *Contractor* liaises with the *Client* and Key Stakeholders in developing the traffic management, diversion routes and access arrangement proposals.

The *Contractor* liaises with the current Tunnels and Pump Stations maintenance *Contractor* for any access requirements during the maintenance closures for site investigations / survey / implementation works and will enable any maintenance activities that the Tunnels and Pump Stations maintenance *Contractor* requires for the duration of the construction phase.

3.12 Access to Information Following Completion

The *Contractor* retains records for a minimum of twelve (12) years after issue of the Defects Certificate and makes available any information requested by the *Client* during this period.

SCOPE

S 400

COMPLETION

S 400 – Completion

4.1 Completion Definition
Completion is as defined in this section of the Scope and/or when the *Project Manager* provides the *Contractor* written confirmation that the whole of the *works* have been completed.

4.2 Stage One
The design will be considered complete when the *Contractor* has received communication via ASITE that the full design package has been approved by the *Project Manager*. The *Contractor* provides the design in packages to ensure a smooth design process. The *Client* requests designs packages are submitted when they are complete, and that the *Contractor* does not wait to submit it as a single package for review.

4.3 Stage Two
The *works* will be considered complete when the *Contractor* has received communication via ASITE that the *Contractor* has done all the work stated in the Scope by the Completion Date and completed any defects that would prevent the *Client* from using the work. For clarity, this is contingent on the handover of a fully operational Asset. This will not be before the *Client* has received: the completed Health & Safety file, as-built documentation, all provision of *Client*-operator training, a satisfactory deep clean and the *Contractor* has attended a snagging meeting and produced a detailed snagging list for all identified defects with their programme for closing out all defects.

The *Contractor* is required (but not limited) to produce the detailed design drawings, design and checks certifications, construction specifications, construction drawings, detailed construction information (such as RAMS, Risk Register & Mitigations), works programme and cost at Detailed Design Stage.

The *Contractor* is required (but not limited) to implement the agreed works as per design; produce all the Health and Safety File and Maintenance Manuals; spares recommendations; produce all checks and documentations for handover; fulfil CDM PC & PD role; rectify all defects and snag and final account on payment.

The *Contractor* gives no less than four weeks notice to the *Client* of the date that the contract (or any stage) will achieve Completion. The *Contractor* formally advises the *Project Manager* through the *Client's* Contract Management System (ASITE) when Completion has been reached for any section or stage of the contract.

All documentation must be submitted as electronic files. Electronic documentation must be submitted both in PDF format and in native file format. Drawing files are to be titled with drawing reference and drawing title. Any electronic report copy in PDF format submitted must be bound with all appendices in one PDF file.

All decommissioned equipment and associated assets will be removed as agreed in the detailed design. The inspection will demonstrate that existing infrastructes if left in a safe and maintainable state by the asset decommissioning and removal..

4.4 Bringing into Use Definition
The *Contractor* gives no less than four weeks' notice to the *Client* of the date that a scope item will achieve completion. The notice will detail whether the new asset, or scope item completed, is proposed to be brought into service and the corresponding current asset decommissioned. No existing asset is to be decomisioned without the authorisation of the *Client.*

4.5 Training

Any operational training required for the *Client* and any Sub*Contractor*s working on behalf of the *Client* will be require to have been completed in full prior to Completion. This will emphasise training and familiarisation for any asset where the operational interface differs from the one replaced.

The *Contractor* provides all maintenance training required for the *Client*'s staff and any sub*Contractor*s working on behalf of the *Client*. All training is completed in full prior to the completion of the works. The duration of the training will be agreed with the *Project Manager* no later than twelve (12) weeks prior to Completion, and the *Contractor* will document that in a Training Plan. A minimum of four (4) weeks notice will be given prior to the training date proposed complete with details of who will be conducting the training.

The *Contractor* ensures that all of the appropriate *Client*'s staff and sub*Contractor*s working on behalf of the *Client* have been provided with a full tour of the *works* following construction completion. The *Contractor* provides the staff with the required operational and maintenance manuals for the tour.

4.5 Asset Data

The *Contractor* updates the *Client's* AMIS (Asset Management Information System) to reflect the delivered scope (The *Client* will give the *Contractor* access to that system). This will include:

- Additions – e.g. new assets created as a result of the *works*
- End -Dates e.g. if an asset is removed from the the network as a result of the *works*
- Modifications – e.g. changes to existing assets as a result of works or correcting errors or omissions in the data

Note that the project will not be considered complete until the *Client* has received confirmation from the *Clients* Data Quality and Strategy team that the quality of asset data uploaded to AMIS meets the *Clients* performance requirements with respect to completeness, timeliness and accuracy. The *Client* will over reasonable advice and support on request by the *Contractor*.

The *Client* will provide Asset Management System Survey & Data Rules. This sets out the general principles and methods for creation, update and de-commissioning of asset data within Transport for London's(TfL's)Asset Management System(AMS). It outlines how Tunnel and Pump Station asset data is structured; how it should be located; what attribution is to captured and what documents should be referenced to enable the maintenance of asset data For the Tunnel equipment reference the following guidance will be used:

- Tunnel_&_Pump_Station_MEC_Asset_Management_System_Survey_&_Data_Rules .pdf
- Tunnels_and_PumpStation_MEC_Meta Model v1.4 - 07-07-22

For the Highways assets, i.e. Carriageway construction layers, the following guidance will be used:

- Highways Asset Meta Model v2.2 06-07-22
- Highway_Asset_Management_System_Survey_&_Data_Rules
- The following MX Loader templates (excel templates) will be used to interface with the *Client*s AIMS system (MAXIMO) and upload data
- Mx Loader Templates Explained_07022022
- DLMXL-SDM440 Asset GIS mxloader (v1.19)

4.6 Final Clean
Prior to Completion the *Contractor* ensures that the Site is clear of all site waste, Equipment, site hoarding and unused Plant and Materials and other items to permit free and unobstructed access by the *Client* and Others and that a "builders' final clean" has been undertaken.

4.7 Security
In advance of the completion of *works* on *Site* the *Contractor's* site security manager liaises with the *Client's* site security manager to ensure that the handover of all security systems / arrangements is completed prior to the completion of *works* and prior to the termination of the security arrangements that have been in place during the construction period.

4.8 Correcting Defects
The *Contractor* informs the *Client* at least four weeks in advance of any proposal to rectify defects. The proposal should aim to utilise routine maintenance closures where possible to minimise disruptions and impacts to the travelling public.
The *Contractor* is responsible to obtain all necessary road works permits and approval from key stakeholders prior to any revisit of site for the correction of any Defects.

4.9 Pre-Completion Arrangements
An Acceptance Inspection of the completed works is required before acceptance of the Declaration of Physical Completion.

The acceptance inspection is undertaken jointly with the *Client's* Sponsor or a representative,, Tunnel Manager, Tunnel Safety Officer, Asset Operations Area Manager (Tunnel, South), *Project Manager*, and *Contractor* in attendance, to identify any snagging and/or outstanding defect correction issues and to agree on corrective actions required before the asset is brought into use and the asset it is replacing is decomissioned and those that can be undertaken during planned maintenance closures. The *Contractor* provides access including traffic management as required to enable this inspection before leaving the site.

The *Contractor* informs the *Client* four weeks before an asset is ready for inspection, the *Client* will submit a snagging list within two weeks of the inspection.
The *Contractor* provides access including traffic management as required to enable this inspection before leaving the site.

4.10 Take Over
The *Contractor* is responsible for statutory inspections, routine preventive maintenance and breakdown maintenance of all items of Plant and Materials which have been installed in the *works* and have not been taken over by the *Client*.

Responsibility for maintenance of new and altered assets passes from the *Contractor* to the *Client*'s maintainer on the date notified by the *Project Manager* under clause 35.3.

SCOPE

S 500

Programme

S 500 – Programme

5.1 Anticipated Dates

The *Client's* target is for the detailed design commission to be completed within 12 months. The key project milestone dates are detailed in the table below.

Milestone	**Anticipated Dates**
Contract Award	Early 2023
Contract Start	Spring 2023
Detailed Design	Spring 2023- Early 2024
Build	Early 2024- Spring 2025 (Dependent on Tunnel Closure Strategy)

The *Contractor* updates the accepted programme against project progress. This programme should:

- Be submitted every 4 weekly showing the critical path; in Microsoft Project, PDF and P6 format
- Show key activities planned for next month;
- Ensure a revised programme for acceptance together with an updated activity schedule;
- Once baselined, include a narrative explaining progress against agreed baseline;
- Show all reviews, activities and actions the *Client* is responsible for;
- Indicate key milestones;
- Incorporate resource allocation;

5.2 Risk and contingency

The *Contractor* provides upon request the programme and estimating documentation to support the *Client's* Quantitative Schedule Risk Assessments (QSRA)

SCOPE

S 600

QUALITY MANAGEMENT

S 600 – Quality management

6.1 Quality Statement

The *Contractor* provides a project specific quality statement within four weeks of contract award that clearly states his intentions to ensure procedures will be established and adhered to by their employees, Sub*Contractor*s and his supply chain to ensure quality is delivered both through the development of the design and construction of the *works*. This includes, but is not limited to, ensuring the *Contractor* enables the required quality standards expected by the *Client* to be delivered, including the management of design development, materials, construction, storage and handling of materials and prefabricated items on the Site or in transit.

6.2 Quality management System

The *Contractor* operates a quality management system complying with ISO 9001:2008 for his performance of the contract. The management, organisation, responsibilities, procedures, processes, resources and programme for the quality management system from design (where applicable) to procurement, construction, completion, testing and commissioning of the works until the defects date is contained in a Contract Quality Plan which is submitted to the *Client* in accordance with the Scope. Any Sub*contractor* appointed by the *Contractor* operates a quality system enabling him to comply with the *Contractor's* quality management system.

The Quality Management System is capable of demonstrating by *Contractor* self-certification that all the requirements of the contract and all relevant standards, regulations etc are being met. Self-certification is the process whereby the *Contractor* can demonstrate that all the requirements of the contract have been fulfilled.

The *Contractor* ensures Sub*Contractor*s and suppliers of any tier also supply a quality presence with adequate resources and appropriate authority to ensure the quality of work on this contract.

The *Client*, the *Project Manager*, the *Supervisor* and any third parties authorised by the *Project Manager*, statutory authorities and statutory undertakers, have the right to conduct audits, inspections and tests of any part of the *works* that are being executed in connection with their assets by the *Contractor* and to observe the execution of these activities.

The *Contractor* contributes to and participates in the identification, discussion and implementation of lessons learned initiatives agreed with the *Project Manager*. The *Contractor* makes available for audit all records necessary to demonstrate that the *works* have been executed in accordance with the contract. The *Contractor* also provides the *Project Manager* with documents that demonstrate that the *works* are progressing in accordance with specified requirements. These documents are provided in a timely manner as the work progresses.

Quality issues are also identified in the *Contractor's* periodic reports which are provided to the *Project Manager*.

The *Contractor's* Inspection and Test Plans (ITP's) provide procedures for witnessing the manufacturing, construction, installation, testing and commissioning of the *works*. The *Contractor* develops, with the *Project Manager*, quality improvement initiatives.

Within 4 weeks of the starting date, the *Contractor* produces a Project Specific Contract Quality Plan (CQP) and submits it to the *Project Manager* for acceptance, the CQP describes how the *Contractor* will meet its quality obligations, i.e. the management, organisation, procedures, processes, resources and programme of the quality management system, from

design through procurement, construction, completion, testing and commissioning of the *works* until the defects date. In the case of the first submission of the CQP the *Project Manager* replies within 4 weeks of the date of submission. The *Contractor* agrees with the *Project Manager* the submittal timings of the CQP to interface with the requirements of the *Client*. Any further revisions, submissions and responses are made within the period for reply.

The *Contractor* updates, and submit to the *Project Manager* for acceptance, the CQP and ITPs as required to ensure they encompass all of the *works*. The *Contractor* ensures the CQP and ITPs have been accepted by the *Project Manager* prior to starting the activities contained within them. Where these documents together adequately address ongoing and imminent works but not the entire scope of the *works*, the *Project Manager* may give limited acceptance to the *Contractor*'s submission in order to allow limited activities to proceed.

6.3 Ordering and Supply of Plant and Materials and Provision of Samples

All materials procured will conform to the TRSs and detailed designs specifications and be subject to inspection with regard to the quality, condition and specification as set out in the *Contractor's* Inspection and Test Plans (ITPs) as agreed with the *Project Manager* prior to delivery to the Site to prevent any inadequate and incorrect materials and/or products being delivered and constructed on the Site. Where required by the *Project Manager*, the *Contractor* arranges visits to the factories where both materials have been procured and where prefabricated items are being formed to enable checking by the Supervisor.
Value for money is a priority, however where possible the most sustainable sourcing of materials will be sought.

All Plant is sourced from reputable sources and maintained to a high standard in accordance with the manufacturer's guidance and frequently inspected whilst in use on the Site. The *Contractor* retains a record of inspections and maintenance log which is retained and available on the Site for review upon request.

6.4 Handling, Storing and Fixing

The *Contractor* ensures that the transportation of all items to the Site must be handled in a safe and secure manor to ensure there is no damage to the items being delivered and no safety hazards are created.

The *Contractor* ensures that all materials are stored in a safe and secure location. It is the *Contractor*'s responsibility to ensure all materials are stored appropriately.

The fixing of materials and prefabricated items is undertaken in line with the manufacturers' instructions, which are included in the Method Statements submitted to the *Project Manager* for acceptance prior to starting these activities on Site. A full risk assessment is undertaken by the *Contractor* and any findings are taken into account. Methods of installations are adapted as required to avoid damage to any items during construction and include the mitigation of any health and safety risks identified.

The safe handling, storage and fixing of materials is the responsibility of the *Contractor* to ensure the materials and prefabricated items are installed in compliance with the design and are undamaged. The *Contractor* ensures that no damage is made to any *Client* or third parties' assets during construction. In the event that any damage is caused to any existing assets the *Contractor* must make safe any potential hazards and advise the *Project Manager*, and any third party where applicable, immediately of the damage and seek advice from the *Client* / third party asset owner as to how the damage is rectified.

The security of all materials stored at the *Contractors* worksite are the responsibility of the *Contractor.* The *Client* bears no responsibility for loss or theft of materials during the construction phase and before final acceptance by the *Client.*

Following construction, if it is proven that items have not been fitted correctly in line with the manufacturer's guidance and applicable legislation the *Contractor* rectifies the situation at the earliest possible time.

6.5 Quality Assurance

Unless otherwise accepted by the *Project Manager*, Plant and Materials forming part of the *works* or temporary works incorporated into the *works* are procured from sources that hold appropriate certification from a United Kingdom Accreditation Service (UKAS) accredited certification body (or one that has mutual recognition with UKAS). The existence of UKAS or similar acceptable accreditation does not relieve the *Contractor* from ensuring the quality of the products.

The *Contractor* makes available certification to demonstrate that Plant and Materials used comply with the relevant legal requirements and standards. For *Contractor* designed parts of the *works* the material quality and traceability requirements are indicated on applicable drawings or materials and workmanship specifications or by reference to appropriate codes of practice.

Verification of the quality and material traceability of each element of the *works* are the responsibility of the *Contractor* and are achieved through checks, tests, inspections, audits and reviews, planned and implemented in accordance with the CQP developed by the *Contractor*.

Subject to the Scope and any changes to it, the *Contractor* warrants that to the extent the *Contractor* either is obliged to specify or approve products or materials for use in the *works* or does so specify or approve, the *Contractor* does not specify, approve or use any products or materials which are generally known within the construction industry to be deleterious at the time of use in the particular circumstances in which they are used, or those identified as potentially hazardous in or not in conformity with:

- the report entitled "Good Practice in the Selection of Construction Materials" (1997, by Tony Sheehan, Ove Arup & Partners, published by the British Council for Offices and the British Property Federation) other than the recommendations for good practice contained in Section 2 of that report
- relevant British or European Standards or Codes of Practice, or
- any publications of the Building Research Establishment related to the specification of products or materials.

If in the performance of his duties under this contract, the *Contractor* becomes aware that they or any others have specified or used, or authorised or approved the specification or use by others of, any such products or materials, the *Contractor* notifies the *Project Manager* in writing immediately. This does not create any additional duty for the *Contractor* to inspect or check the work of others which is not required by this contract.

The *Contractor* obtains from and/or gives to Others all licences, consents, notices and approvals necessary or appropriate to enable him to provide the *works* other than those which the Scope states will be obtained or given by the *Client* or Others. The *Contractor* ensures that, prior to Completion and wherever necessary during the course of the *works*, the conditions and requirements of the licences, consents, notices and approvals, whether obtained by the *Contractor* or the *Client*, are complied with and that the same are renewed whenever necessary or appropriate.

6.6 Reports and Records

The *Contractor* contributes to and participates in the identification, discussion and implementation of lessons learned initiatives agreed with the *Project Manager*. The *Contractor* makes available for audit all records necessary to demonstrate that the *works*

have been executed in accordance with the contract. The *Contractor* also provides the *Project Manager* with documents that demonstrate that the *works* are progressing in accordance with specified requirements. These documents are provided to a schedule agreed with the *Project Manager* as the work progresses.

Quality issues are also identified in the *Contractor's* periodic reports which are provided to the *Project Manager*.

SCOPE

S 700

TESTS AND INSPECTIONS

S 700 – Tests and Inspections

7.1 Tests and Inspections

The *Contractor* identifies and executes investigations, surveys, inspections and testing that are required to inform the design, fabrication and construction. The dimensional accuracy of information stored on Bridgestation or supplied by the *Client* is not guaranteed.
The *Contractor* is required to develop the Inspection and Testing Plan (ITP) / Contract Quality Plan (CQP) in to support the design.
The *Contractor* should consider the following checklist for test and inspection details:

- objective, procedure and standards to be used;
- when they are to be done;
- where they are to be done; who does the tests, and who is in attendance;
- testing and inspection method; the equipment required and who provides it;
- access arrangements;
- information or instructions required to be provided;
- materials, facilities and samples to be provided;
- involvement of specialists;
- acceptable results and deviations,
- where possible definitive, quantifiable criteria will be specified rather than relying on subjective judgement;
- test environment;
- documents to be provided before and after the test;
- whether or not authorisation to proceed to the next stage of the work depends in the test results.

The ITP should describe the tests to be carried out by the *Contractor*, the Supervisor and Others, including those which must be done before Completion. It should state details of materials, facilities and samples to be provided by the *Contractor* and by the *Client* for tests and inspections. The ITP will make reference to the *Clients* Technical Requirement Specifications TRSs and define how the *Contractor* will demonstrate that their deliverable meets the requirements set out in the corresponding TRS, including the outcome of any specific tests stated. The requirement identification reference should be used in the record to easily cross reference the test to the TRS.

Contractor will include additional test and inspection criteria over and above those stated in the Technical Specifications sufficient to demonstrate compliance with the *Client's* Scope, *Client* standards, statutory regulations and engineering good practice.

The *Contractor* ensures that the undertaking of all tests and inspections adhere to the relevant sections of the *works* specification, CQP and ITPs agreed with the *Client's* asset managers and accepted by the *Project Manager*.

Records of all tests, inspections and samples are provided, submitted, updated and retained by the *Contractor*.

7.2 Management of Tests and Inspections

The *Contractor* produces a test and inspection schedule, containing all relevant information, for review and acceptance by the *Client*. This must include testing to be carried out off site (Factory Acceptance Tests) as well as site based inspections and testing.

The *Contractor* ITP will be agreed with the *Project Manager*, the plan will include proposed dates for tests and inspections so that the *Client* can arrange suitable attendance for witnessing by *Client* engineers or maintainers where required.

7.3 Supervisor's Procedures for Inspections and Watching Tests

The *Contractor* submits all proposals for tests to the *Project Manager* who seeks acceptance from the *Client's* appropriate asset manager and Health & Safety Manager prior to granting acceptance for the tests to be undertaken. The *Contractor* arranges the tests for a time suitable so that the *Supervisor* can attend the test. The *Contractor* manages the undertaking of all tests and coordinates any Sub*Contractor*s and suppliers as necessary to ensure that the tests are undertaken safely and appropriately to assess the required level of performance of the material / prefabricated item or Plant.

A minimum of two weeks notice to the *Client* must be given for readiness to conduct off site Factory Acceptance Testing.

SCOPE

S 800

MANAGEMENT OF THE WORKS

S 800 – Management of the *works*

8.1 Management and Staff

The Client has the following directly employed staff for the Contract (either full time or part time):

- Programme Manager
- *Project Manager*
- Lead Sponsor
- Sponsor
- Project Engineer
- Assistant *Project Manager*(s)
- Commercial Team
- Planning / Scheduling Team
- Risk Team
- SHE Team (Health and Safety / Environment)
- Construction Manager
- Quality Officer

The *Contractor* has, as a minimum, the following design and management staff during on the Contract. These roles may not require a full-time member of staff throughout all or part of the design period and thus a person may be able to fulfil more than one role, subject to them having the relevant experience and sufficient time to perform the role. Alternatively, these persons could be a shared resource across projects if the required resource is available to fulfil all the requirements of the position as required throughout the duration.

- *Project Manager*
- Design Manager (to be a Chartered member of a relevant engineering institution as defined in CG300 for a Team Leader)
- Designer(s) approving or AIPs / Project Engineer(s) (to be a Chartered member of a relevant engineering institution as defined in CG300)
- Commercial Team
- Planning Manager / Project Controls manager
- Risk Team
- Health & Safety and Environmental Team
- Construction Manager
- Site Agent(s)
- Site Safety Officer
- Public Liaison and Consents Officer
- Traffic Management Officer
- Quality Assurance Manager
- General Foreman / Supervisor
- Utilities coordinator

The *Contractor* will submit CVs for the roles listed demonstrating their suitability. It will include as a minimum their qualifications (academic and professional) together with recent experience of similar projects both in terms of scope and size. The skills, qualifications and experience will be commensurate with fulfilling the obligations of CD352 and CG300.

The *Contractor* does not remove any key person from the contract for more than twenty-one (21) consecutive days without the prior written consent of the *Project Manager*. Where such key person is absent on sick leave, or other statutory leave (such as jury service / maternity / paternity or adoption leave) or has left the *Contractor's* employment, the *Contractor* proposes a suitable alternative member of staff to fulfil this role over the required period, to the *Project Manager* for acceptance, at the earliest possible time.

8.1.1 Public Liaison Officers

During construction the *Contractor* appoints a Public Liaison Officer (PLO) (one or more) for the scheme. The Public Liaison Officer (PLO) is responsible for liaising with, and building relationships with, local stakeholders that are directly affected by the construction phase – particularly residents, businesses, schools, churches etc – in the immediate vicinity of the *works*. They will visit them frequently when the construction work is intensive.

The PLO builds relationships by regularly visiting premises directly affected by the *works*, to ensure they are aware of what will happen and to assist with anything that can be done to reduce the impact on the premises. The PLO is the public 'face' of the construction and provides a card (with the *Contractor*'s phone number) and invites people to contact them should they have issues or if there is an emergency on site. The PLO does not deal with members of the public/ stakeholders who have an issue with the scheme itself or with TfL in general; they refer them to the *Client*. The PLO is responsible for contacting people to give them advance warning of any disruption from the *works*.

The *Contractor's* PLO holds meetings / workshops with the *Client's* communication teams to discuss and agree on the approach to local businesses / residents engagement and on the public messages / standard line of response on Questions & Answers to works being carried out.

The PLO must be a good communicator, be diplomatic, enthusiastic about taking good care of stakeholders, and have excellent relationship building skills.

The PLO is responsible for the following:

- Identifying, making initial contact with and then maintaining ongoing engagement with local business directly affected by the *works*.
- Maintaining regular contact with targeted stakeholders, including community leaders, those who are most inconvenienced by the *works*, or who were initially strongly opposed or concerned about the construction works.
- Acting as the primary point of contact for all residents, businesses and other local stakeholders and resolving their enquiries about construction (but not the scheme overall).
- Providing input into *Client* prepared letters and communications.
- Take part in *Client* led exhibitions if and when required.
- Organising delivery of letters and leaflets to local premises. The *Client* will provide electronic copies, print and delivery to be arranged by the PLO. Letters will be TfL branded, carrying the Road Modernisation Programme identity.
- Communicating issues quickly to *Client* stakeholder management where they have the potential to become high profile or significant. This includes any verbal or written enquiries from MPs, local councillors, residents' association members, schools and local places of worship.
- Acting as a key information resource for *Client* stakeholder engagement, both in response to questions and by proactively alerting *Client* stakeholder engagement to construction works issues or changes that conflict with what has been communicated publically.
- Taking part in meetings with the *Client's* communication representative and project team to ensure awareness of any issues – both operationally and with communications activity.

- Report back to the *Client* about all engagement activity by completing an engagement tracker; this should record all contact made, including contact details if possible, a summary of what was discussed and any actions.

8.2 Early Warnings

8.2.1 Accountabilities and Responsibilities

The *Project Manager*:

- Defines clear accountability for the management of Early Warnings within the contract and collaborates with the *Contractor* to maintain and process the Early Warning system.
- Prepares a first Early Warning Register and issues it to the *Contractor* within 1 week of the starting date. The *Project Manager* instructs the *Contractor* to attend a first early warning meeting within two weeks of the starting date.
- Revises the Early Warning Register to record the decisions made at each Early Warning meeting and issues the revised Early Warning Register to the *Contractor* within 1 week of the early warning meeting. If a decision needs a change to the scope, the *Project Manager* instructs the change at the same time as the revised Early Warning Register is issued.

The *Contractor*:

- Supports and collaborates with the *Project Manager* in managing the Early Warning process.
- Ensures that the EW process is carried out fully within his teams and ensures that key staff are competent in undertaking EW management.
- Attends periodic EW review meetings in the site office with the *Project Manager*. These are in addition to the EW reduction meetings required by the conditions of contract.
- Supports the *Project Manager* in preparing a joint project risk register which contains all risks within the Risk Register required by the conditions of contract, and any additional risks identified during the periodic risk review meetings.
- Agrees the meeting minutes and an action log following each periodic risk review meeting, risk reduction meeting and any risk workshops within 5 working days of the meeting.
- Ensures that the most critical risks are discussed at the weekly project progress meetings to be arranged by the *Contractor* in the site office.
- Provides periodic reports of the key risks and mitigation actions presented in a format agreed with the *Project Manager*.

8.2.2 Early Warning Review Meetings

The *Contractor* meets with the *Project Manager* not less than once in each four-week period to review the Early Warning Register in accordance with clause 15 of the *conditions of contract*. The *Contractor* provides the appropriate level of representation at the meetings to review and action the identified risks and notified early warnings.

8.3 Cost Management and Estimating

8.3.1 Identification

The *Contractor* carries out risk identification workshops in each stage of design, and in each construction phase with the full involvement of all relevant parties taking into account all useful information (i.e. execution plans, drawings, etc.).
In conjunction with the conditions of contract the *Contractor* identifies any potential changes or newly identified risks to the *Project Manager* at the earliest opportunity.
Risks identified during the periodic risk review meetings are agreed with the *Project Manager* and captured on a Risk Register.

8.3.2 Governance

The *Contractor* at the periodic risk review meetings, jointly reviews the key risks and risk management performance with the *Project Manager*. At this meeting, the *Contractor* and *Client* review any risks and actions required by the relevant risk owner. The parties should communicate any emerging risks that one party is best placed to manage.

8.3.3 Quantified Risk Assessment

The *Contractor* provides assistance to the *Client* in undertaking cost and schedule risk assessments by contributing to the workshops and advising on quantitative assessment of risks as required.

8.3.4 Communication

The *Contractor* makes the *Project Manager* aware of any potentially significant changes to the Project Risk Register including, but not limited to, exposure level, probability, scoring, new emerging risks and general status at the earliest opportunity.

8.3.5 Systems

The *Contractor* either implements Active Risk Manager ("ARM"), or a similar system with the same level of functionality at project level, as its risk management system for preparing and maintaining the Project Risk Register. The system to be used is agreed with the *Project Manager* within four weeks of the starting date. The *Contractor* provides transparency of the Project Risk Register within a format agreed with the *Project Manager* and which can be uploaded onto the *Client's* system

8.4 Project Governance – Pathway Products

The *Contractor* assists the *Client* during the preparation and / or updating of the following TfL, Pathway Stage 4 Detailed Design and Pathway Stage 5 Delivery governance and products (but not limiting to):

- SDR – Scope and Design Review (Buildability)
- Operational & Maintenance Concept
- Project Estimate and Cost Plan
- Project Schedule, Programme and Critical Path
- Stakeholder Engagement and Communications Plan
- Lessons Learned, Innovations and Value Engineering
- Early Warning and Change Control Register

The above list covers some documents and products taken from the TfL Pathway Project Management Plan (PPMP).

8.5 Lessons Learned, Innovation and Value Engineering

The *Contractor* reviews existing and relevant lesson learned to establish, where relevant, appropriate measures which ensure continuous improvement.
The *Contractor* conducts a lesson learned workshop at the end of each TfL Pathway Stage.
The *Contactor* also conducts at least one value engineering workshop during each Stage to capture any potential opportunities and savings.

8.6 Value Engineering

The *Contractor* will ensure value for money throughout the detailed design process. If a better value solution can be achieved through a technical design or construction process that avoids unnecessary costs or disruption, the *Contractor* will inform the *Client* in writing.

The *Client* considers value for money to not only be a reduction of cost. Value for money can also be in the form of reduced tunnel disruption, reduced delivery time or an improvement in the specification of the asset delivered. Whole life cost is also considered as part of the value engineering review.
With regards to the prefered tunnel closure approach (3a) shown in *Appendix B*, the *Contractor* will seek efficiencies to deliver the works either quicker and/ or with less disruption to the tunnel and the surrounding road network.

The *Client* will consider each value for money option presented on its individual merits. Each option will be discussed with the project stakeholders prior to a decision on the option being advised back to the *Contractor.*
The *Contractor* and its designers will lead at least one value engineering workshop exercise. This will be arranged in conjunction with the *Client*.

The workshop will be chaired by the *Contractor* and solutions presented for discussion. The output from the review will be documented with minutes as a log of the exercise.

Additional workshops will be arranged between the *Contractor* and the *Client* if required.

8.7 Engagement with Key Stakeholders on Traffic Management / Diversions

The *Contractor* engages with the relevant network performance team, traffic specialists for Blackwall, North Greenwich and Transport for London and London Buses to discuss the traffic management proposals, associated diversion route, works methodologies and sequence of works as part of the Stage Two.
The *Contractor* develops the Traffic Management plan and the sequence of works with considerations from issues, constraints, concerns raised by key stakeholders and obtain early buy-in and endorsement from the group to ensure permits and approvals will be granted before works commence on site.
The *Contractor* is required to continue to engage and update with the key stakeholders during Stage Two.

8.8 Project Team – Others

8.8.1 Collaboration

The *Contractor* collaboratives with the *Client's* team together as an integrated team to deliver the *works* effectively and efficiently within the agreed budget, programme schedule, milestones, and quality requirements.The following will apply throughout the project delivery by all parties:

- building a collaborative project environment
- inclusive of all supply chains and Others
- ensuring clear understanding of roles and responsibilities
- ensuring integration by undertaking specific and measurable methods of working
- promoting collaborative behaviours
  seeking continuous improvement through effective communication and engagement with all stakeholders.

8.8.2 Communications

The *Contractor* advises the *Project Manager* four weeks in advance of any forthcoming changes in personnel and ensures that a minimum of two weeks handover period is provided

to ensure that the successor is fully aware of the projects and their responsibilities prior to the predecessor leaving the role.
All formal communications, document submissions and works instructions between *Contractor* and *Client* are issued through the contract administration management system e.g., ASITE.
Any formal claims need to be raised as a hard copy document as well as on the contract administration management system.

8.9 Meetings

8.9.1 Progress Meetings

Progress meetings are held four weekly (or more frequently if required) with the *Project Manager*. These progress meetings will review the progress to date and the work expected to commence in the following 4 weeks. The *Contractor* identifies any work packages which have been delayed or are behind schedule and advises of actions to bring the packages back on track and/or reduce the impact on other works packages.

The *Contractor* is responsible for arranging progress meetings and ensuring that suitable accommodation is provided with appropriate audio-visual equipment for use in the meeting. The *Contractor* is responsible for producing and distributing the meeting agenda, a set of meeting minutes and an action log for the weekly progress meetings, to be circulated to all invitees within 4 working days of the meeting.

The *Contractor* ensures attendance at the four weekly or fortnightly progress meeting will include the *Contractor's Project Manager*, *Design Manager*, planner as well as appropriate and commercial staff.

8.9.2 Programme Review Meetings

The *Client* undertakes a programme review which is in the form of Advance Project Thinking (APT). This will be conducted as a joint effort between the *Client's* Planner and *Contractor's* Planner.
The purpose of the programme review meeting will be to monitor in detail the programme and look at progress through a "buffer chart" which tracks the critical

path and shows either positive or negative progress against planned progress (net buffer). The meetings will also allocate actions, responsibility and close out dates which monitors each party input towards the programme.

8.9.3 Commercial Review Meetings
The purpose of this meeting is to review all applications for payments, financial and contractual matters including Early Warning Notifications (EWNs), Compensation Events (CEs) and *Project Manager's* instructions (PMIs) to enable ongoing management and control of the project costs.

8.9.4 Performance Review Meetings

The purpose of this meeting is to review and assess the performance of the *Contractor* through an agreed set of Key Performance Indicators (KPIs). The KPIs will be set jointly with the *Client* and *Contractor* in the first meeting.

This meeting is intended to facilitate the smooth running of the project and to ensure that there is a forum to quickly resolve issues above the Project Team if they are taking too long to resolve and hindering progress.

KPIs will be on the following strategic themes:

- Health, Safety & Environment
- Quality
- Value
- Delivery
- Collaboration

8.9.5 Other Meetings

The *Contractor* arranges and attend further meetings as required to discuss any matters that need to be discussed outside the four weekly or fortnightly progress meeting.

The *Contractor* is required to set up and facilitate regular progress update meetings and workshops to update the progress with the relevant network performance team, traffic specialists from Blackwall and North Greenwich Boroughs and Transport for London and London Buses to discuss the traffic management proposals, associated diversion route, works methodologies and sequence of works.

The *Contractor* is required to work collaboratively with the relevant *Client's* teams on the engagement and periodic meetings with the key stakeholders to follow what it is already established on the Communication Strategy, Plan and Program.

8.10 Periodic Progress Report

A full periodic summary report of project progress is submitted to the *Project Manager* every 4 weeks, submission date to be agreed by the *Project Manager*. This report is completed and submitted to the *Project Manager* two working days before the progress meeting. The periodic report contents cover progress to align with the *Client's* reporting periods. The *Contractor* ensures that the contents and format of the report TfL's requirements, which may change over the duration of the Project. The report must include, but is not limited to:

- Details of any matters materially affecting the regular progress of the *works*;
- Summary of progress over the period against the Accepted Programme and inclusion of photographs of the construction to show progress;
- Key activities planned for next month;
- Earned Value Analysis (EVA) report (if required);
- Revised programme for acceptance together with an updated activity schedule.

8.11 Allocation of *Contractor* Staff

The *Contractor* obtains acceptance from the *Project Manager* before any staff resources are allocated to work on the scheme. The *Contractor* issues a request setting out:

- the name, role and rate of staff (proposed for mobilisation);
- proposed mobilisation date;
- planned demobilisation date.

The *Contractor* is not entitled to payment for staff time for any person who has not been approved by the *Project Manager*.

SCOPE

S 900

WORKING WITH THE *CLIENT* AND OTHERS

S 900 – Working with the *Client* and Others

9.1 General

The *Contractor* is required to co-operate with *Others* in obtaining and providing information which they need in connection with the *works*.

9.2 Sharing the Working Areas with the *Client* and Others

The *Contractor* is expected to utilise existing maintenance closures during the Stage One for any remaining site investigations and survey works. The *Contractor* should liaise with the current maintenance *Contractor* to arrange for any access requirements.

Any additional closures or road space requirements during Stage One should be communicated to the *Project Manager* at least 12 weeks in advance and the *Contractor* is responsible for arranging and managing such closures.

The *Contractor* is required to organise and manage the necessary closures or road space requirements for the implementation of the *works* and provide access with *Others* for other works.

The *Contractor* should liaise with the maintenance *Contractor* on handover arrangement as and when the *works* areas are to be opened up to traffic or back to normal operation at the end of the shift or at the end of an activity.

The *works* have a significant interface with *Others* in a variety of locations. These interfaces require the *Contractor* to co-ordinate with *Others*.

The *Contractor* liaises and co-operates with *Others* in obtaining and providing, via the *Project Manager*, information required in connection with the *works* and the works of Others.

The *Contractor* provides access to *Others* within the Working Areas to complete the works in a collaborative manner with *Others*.

The *Contractor* holds and attends co-ordination meetings with *Others* who share the Working Areas. The *Project Manager* is invited to these meetings. The *Contractor* is responsible for all co-ordination and co-operation within the Working Areas.

Certain operations / maintenance works not forming part of the *works* may be carried out within or adjacent to the Site by *Others* under separate arrangements with the *Client*.

In addition, certain parts of the Project may also be carried out by *Others* under separate arrangements with the *Client*.

9.3 Co-operation

The *Contractor* is responsible for the co-ordination of the *works* with the activities of *Others* on the Site in respect of programme and technical interfaces. Failure to demonstrate this within the *Contractor's* programme submitted under Clause 31 and 32 may give grounds for non-acceptance by the *Project Manager*.
The *Contractor* works closely with the following *Others* (but not limited to) during the *works*:

- the *Client's* Assets Ops and Engineering Teams
- the *Client's* Network Performance Team and Permitting Teams, Local Authorities, HS2 Project Coordination Team, O2 to provide and discuss the Traffic Management Proposal

9.4 Traffic Diversion Proposal for Endorsement

The *Contractor*:

- Liaises and co-operates with the *Client's* Communications Team, Travel Demand Management (TDM) team, Public Liaison Officer to provide and discuss plans and proposals to communicate the works with Local Residents, Key Stakeholders, Cllrs engagement, Letter Drops, Variable Message Signs,Marketing etc.
- Liaises and co-operates with Network Rail, National Highways, and Local Authorities to provide further information and plans on Works & Access Agreements, Approvals, Permits etc.
- Liaises and co-operates with London Buses, Emergency Services to provide and discuss on Diversion Route, Potential Impact, Mitigations Strategy etc.

9.5 Co-ordination

The *Contractor* manages the interface with the *Client* and Others by arranging workshops and meetings with the relevant groups for the co-ordination of works and access.

The *Contractor* will hold meetings with the TaPS maintenance team / *Client's* Assets Operations to discuss and plan for other works / essential maintenance works with a view to utilising maintenance closures / traffic management aarrangement to work collaboratively and maximise amount of works on site.

The *Contractor* holds regular meetings / workshops with the *Client's* Network Performance / coordination teams to discuss and agree on the traffic management arrangement for each phase of the *works*, on any changes / amendments / improvements as the result of observations, delays or request from other stakeholders and to develop a contingency plan especially for any ad-hoc issues / incidents on the road network.

9.6 Authorities

9.6.1 Local Authority and Highwyas Authority interface

The *Contractor* obtains the necessary permits, approvals and agreement with
Local authorities and Transport for London (TfL). This includes though not limited to; TMAN Notifications, Road Works Permits (PAA, PA), Section 61, TTRO, TRO.

9.6.2 Local Businesses / Land Owner Interface

The *Contractor* identifies any access requirements to Local Business and Land Owners and is required to notify, liaise and agree the method of working on any element of works that might impact to the operation of Local Businesses and Land Owners or adjacent to their assets.

9.7 Statutory Undertakers

The concept design did not identify and utilities that would be impacted by the works, should utilities be discovered during detailed design or construction then the following applies.

The *Contractor* secures and maintains positive dialogue with statutory undertakers to ensure efficient implementation of any diversionary works and prevents unnecessary delay.
The *Contractor* provides access to statutory undertakers within the Working Areas to complete their works and works in a collaborative manner with the statutory undertakers.
This includes ensuring access is provided to statutory undertakers to undertake emergency works to rectify any damaged services and to provide new connections to premises within the area. The *Contractor* also seeks to accommodate any routine works required by statutory undertakers and highway authorities where practicable to do so within the Site and adjoining

the Site to minimise disruption of the utility works and maximise opportunities for collaboration.

9.7.1 Introduction

Utility Works means the diversion, relocation and/or protection of above or below ground utility apparatus located in the public highway or private land. Utility Works in the public highway will be undertaken using the powers contained in the New Roads & Street Works Act 1991 (NRSWA).

9.7.2 The *Client*'s Responsibilities

The *Client* is responsible for making preliminary enquiries, requesting draft schemes or budget estimates from statutory undertakers as much as possible in relation to schemes prior to the starting date. Where this is not possible, the Scope and Site Information will clearly state the information obtained by the *Client* and the *Contractor* is responsible for all remaining information set out in this Scope.
In discharging its responsibilities, the *Client* will:

- request records from the relevant statutory undertakers;
- undertake non-intrusive surveys (for example ground penetrating radar surveys) if not already available;
- undertake trial pit and trial trench excavations to determine the actual location and extent of services;
- appoint the *Contractor* as the Overseeing Organisation's agent for the *Client* and notify statutory undertakers as such.

The *Client* is responsible for paying statutory undertakers, in accordance with Clause 85 of the NRSWA 1991, the cost of the measures required in relation to the statutory undertaker's apparatus in consequence of the works, or in order to facilitate their execution.
The *Contractor* is not responsible for any payments to statutory undertakers.

9.7.3 The *Contractor*'s Responsibilities

In providing the works the *Contractor*:

- requests records from the relevant statutory undertakers;
- undertakes non-intrusive surveys to confirm location of any apparatus in the vicinity of the works (for example ground penetrating radar surveys) if not already available;
- undertakes trial pit and trial trench excavations to determine the actual location and extent of services;
- identifies any required utility works and agrees them with the relevant statutory undertakers;
- develops with the statutory undertakers details of any utility works for each utility apparatus (including drawings and specifications);
- develops co-ordinated utility works plans with the statutory undertakers;
- plans the implementation of the utility works (if necessary);
- agrees with the statutory undertakers who will implement the utility works on a case by case basis;
- engages *Contractor*s to implement utility works;
- commences and/or completes specific utility works as part of advance and enabling works packages; and
- instructs statutory undertakers to commence and/or complete specific works packages.

In providing the Stage Two works the *Contractor*:

- satisfies himself of the accuracy of the information provided and in particular the location of existing or diverted utility apparatus [if applicable];

- surveys, locates and confirms the details of all utility apparatus in the vicinity of the works or affected by the works, whether within the Site, the Working Areas or on the public highway;
- obtains original or any revised (C2) drawings of statutory undertakers not older than 28 days prior to any excavation works being undertaken. The original drawings supplied by the utility companies indicating the location(s) of their apparatus are held by the *Client* and are available for inspection by the *Contractor*;
- produces records and drawings indicating the location and details of all utility apparatus within the Site and/or the Working Areas or affected by the works;
- immediately notifies the *Project Manager* in the event that uncharted utility apparatus is found and records the location and details on a drawing;
- implements and operates a Permit to Dig process;
- where stated in the Scope, identifies and adequately protects all utility apparatus liable to be exposed or to remain exposed or be affected during delivery of the works;
- does not interfere with the operation of utility apparatus without prior consent from the apparatus owner;
- affords clear and uninhibited access to the utility apparatus owner for any of their apparatus located within the Site and/or the Working Areas or affected by the works;
- complies with the specific procedures/processes prescribed by the Statutory Undertakers when working on or close to their assets;
- identifies any other Utility Works, temporary or permanent, required as a result of Providing the Works including those resulting from occupation of additional Working Areas it proposes to use;
- reports any damage to services immediately to the *Project Manager* through the agreed reporting procedure;
- arranges the temporary site utility supplies other than those identified to be provided by the *Client*;
- is responsible for making good any temporary repairs to the road surface, the footways and kerbing following service and supplies alterations;
- confirms with statutory undertakers the lowering/raising of chamber covers and type of construction to be included in the works;
- is responsible for reseating, replacing and the relocation of service and supply covers where necessary including lowering/raising of chamber walls;
- is required to excavate redundant ducts and demolish redundant chambers as identified;
- communicates and co-ordinates with Others undertaking utility works on behalf of a statutory undertaker; and
- obtains all required consents, liaise with the statutory undertaker, communicates and co-ordinates with Others where the works include the execution of utility works.

As part of the works or works carried out on behalf of statutory undertakers or other relevant parties, temporary reinstatements may be required in order to permit normal use of areas by the public. Temporary reinstatements consist of a minimum standard of 100mm thick sand protection layer (with duct ends or other equipment protected / wrapped with heavy gauge polythene), granular sub-base and a retarded bitumen (also referred to as cut-back) surface course material. All layers are thoroughly compacted to provide a smooth and durable surface. The *Contractor* maintains all temporary works until such time that the permanent diversions are completed.

Notwithstanding the above, if damage is sustained to services and supplies during the works that require repair or if unforeseen services and supplies affecting the works are discovered and require alteration, the *Contractor* makes arrangements with the statutory undertakers and others concerned, for the co-ordination of his work with all work that needs to be done by them or their *Contractor*s, to implement the repairs and/or alterations within the Accepted Programme.

9.7.4 Health and Safety

This section should be read in conjunction with any other relevant sections containing Health and Safety requirements and descriptions for the Works.
Damage to underground and overhead utility apparatus can cause fatal or severe injury and is a particular hazard for construction activities. The *Contractor* ensures that all reasonable precautions are taken to eliminate this hazard. This includes but is not limited to:

- developing a safe system of work including the implementation and operation of a Permit to Dig process;
- providing specific training for all employees to highlight the hazards and danger from utilities apparatus and explain the safe system of work;
- compliance with the requirements of HSG47 – Avoiding Danger from Underground Services; and
- using personnel protective equipment which address the specific hazards posed by utility apparatus, e.g. flame retardant clothing.

9.7.5 Utilities Personnel

The *Contractor* appoints a Utilities Co-ordinator. The *Contractor* submits a staffing plan for all utilities personnel as part of the utilities plan for the works. The Utilities Coordinator:

- is the principal logistics point of contact for utilities related activities;
- produces and implements the utilities plan;
- develops and provides utilities training for all personnel to include induction, tool box talks and specific training for personnel with logistics responsibilities,
- manages all utilities personnel;
- co-ordinates between utilities personnel and the construction teams;
- approves the utilities related elements of the *Contractor's* method statements;
- ensures compliance with utilities legal and contractual requirements;
- liaises with the *Contractor's* procurement personnel to ensure that procurement activities take due cognisance of utility requirements and risks;
- analyses individual utility related incidents and complaints to identify root causes, corrective and preventative actions needed, trends and strategic actions;
- manages logistics monitoring included in the Scope or as required by consents, including analysis and interpretation of monitoring results and actions; and
- produces report information for the utilities part of the progress report and attend the progress meeting to ensure that the utilities plan remains suitable, adequate and effective;

The Utilities Coordinator has the following competencies:

- appropriate experience of utilities management, including site experience on construction projects;
- experience of the NRSWA;
- experience of liaising with and co-ordinating statutory undertakers;
- good knowledge and practical experience of legal requirements and how to comply with them; and
- experience of liaison with stakeholders including local authorities, the police and highways authorities.

9.7.6 Utilities Plan

The *Contractor* develops a plan for managing the utility works or as otherwise agreed with the *Project Manager*. This includes resource requirements, co-ordination of works and other relevant information relating to the works.
The *Contractor* does not commence work on Site until the *Project Manager* has accepted the utilities plan.
The utilities plan includes:

- the management processes and procedures for complying with the legal and contractual requirements and other requirements of the Scope;
- a staffing plan containing the roles and responsibilities including the job title of the nominated person responsible for each task; the role fulfilled by the key person; and a schedule identifying personnel involved in the utility works either employed directly, Sub*Contractor*s, full and part time personnel and the duration of their activity on the contract.
- the process for liaison and communication with *Others*, including other project *Contractor*s and statutory bodies involved in the utility works, where required by the Scope;
- the processes for liaison and communication with Sub*Contractor*s and suppliers of any tier and ensuring compliance with the minimum requirements of the Scope;
- the *Contractor's* programme for training, site inspections, audits and consents submissions relating to the utility works;
- the process for identifying, planning and implementing utility works;
- details of temporary works which may affect utilities, mitigation measures and details of how this will be communicated to the statutory undertakers in order to seek their acceptance;
- details of personnel protective equipment specific to Utility Works and other Health and Safety measures;
- a Permit to Dig procedure;
- details to ensure compliance with NRSWA and the Crossrail Act 2008;
- details of and process for complying with the requirements of *Contractor* Identified Utility Works; and
- details and process for complying with the requirements of utility works implemented by the *Project Manager* or statutory undertaker.

Contact details for the statutory undertakers responsible for each utility apparatus are provided by the *Project Manager*. The *Contractor* ensures the plan is appropriate to all activities included in the works. The *Contractor* trains all employees, including Sub*Contractor*s and suppliers of any tier, with direct or indirect responsibilities under the plan, on the contents of the plan that apply to its work.

The *Contractor* reviews and updates the utilities plan to ensure it reflects the current status of the works and remains suitable, adequate and effective as the works progress:

- following any material change to the status of the works or Site that has an impact on logistics requirements;
- as instructed by the *Project Manager*; and
- as necessary and at least every 3 months, the revised plan is submitted to the *Project Manager* for acceptance.

9.7.7 Utility Works using the New Roads and Street Works Act 1991

Utility works in the public highway are undertaken using the powers contained in the NRSWA and any associated codes of practice including the Department for Infrastructure's Code of Practice – Measures Necessary Where Apparatus is Affected by Major Works (Diversionary Works). Appendix C of this Code of Practice details the process to be followed from identifying utility works to completion of those works. The *Contractor* takes due cognisance of

the time taken to serve notices and implement the Utility Works and/or obtain such consents when planning the works.

9.7.8 *Contractor* Identified Utility Works

If the *Contractor* identifies that further utility works are required, they notify the *Project Manager* of the additional utility works and provide details of the nature and extent of the utility works prior to making contact with the relevant statutory undertaker.
Where the *Contractor* identifies that further utility works are necessary, the *Project Manager* instructs the *Contractor* on who is responsible for implementation of the utility works.
Before commencing any work which is near to, or will / may affect any utility apparatus, and which requires additional utility works, the *Contractor* submits to the *Project Manager* for acceptance:

- a plan and description of the works including the additional utility works; and
- details of any protective measures to be undertaken in respect of the utility apparatus and a specification of those measures.

The *Contractor* does not commence the relevant works until they have received approval from the statutory undertaker and acceptance from the *Project Manager*.
For *Contractor* identified additional utility works, the *Contractor*:

- demonstrates to the *Project Manager* that implementing the utility works is the most cost effective and efficient solution;
- agrees with the *Project Manager* and statutory undertaker that the utility works are required and that the *Contractor's* chosen method of working cannot be altered to avoid the utility works;
- in conjunction with the *Project Manager*, identifies the specific notices and undertakings and assurances required as part of that process;
- incorporates the utility works into the programme which are then submitted for acceptance and ensures that sufficient time is allowed in the programme for serving the relevant notices, obtains the necessary consents, provides the required information to enable those consents to be granted and implement the utility works;
- obtains agreement to the utility works from the statutory undertaker and *Project Manager*; and
- agrees with the statutory undertaker and *Project Manager* who implements the utility works (the *Contractor*, other project *Contractor*s or the statutory undertaker).

If the *Contractor* implements the utility works then the *Contractor*:

- produces a design for the civil engineering scope of the proposed utility works and submits it to the *Project Manager* for acceptance and for approval from the relevant statutory undertaker;
- uses a Sub*Contractor* approved by the statutory undertaker to undertake the utility works;
- develops a detailed implementation plan for the utility works and agrees it with the statutory undertaker and *Project Manager*;
- complies with the specific procedures / processes prescribed by the statutory undertakers when working on or close to their assets;
- ensures the statutory undertaker inspects the utility works as it is implemented;
- obtains signed acceptance from the statutory undertaker's representative that the utility works are to the required standard and will be adopted by the statutory undertaker;
- arranges for the statutory undertaker to implement any connections or disconnections to their network where the statutory undertaker requires that they make their own connections / disconnections; and
- produces as-built records of the utility works including drawings, specifications, inspection and test certificates.

9.7.9 Utility Works Implemented by the *Client* or Statutory Undertaker

If the *Client* or statutory undertaker implements the utility works the *Contractor*:

provides site and welfare facilities as required by the *Project Manager*;

acts as *Principal Contractor* under the CDM Regulations for utility works within the Site or Working Areas for which she/he is identified as *Principal Contractor*.

SCOPE

S 1000

SERVICES AND OTHER THINGS TO BE PROVIDED

S 1000 – Services and other things to be provided

10.1 Facilites/Services provided by *Contractor* (ECC 25.2)

The *Contractor* provides a suitable office location (within 0.5km from the North or South Portal of the Tunnel, with easy access to office and to site) for the purpose of co-location of the project team for the duration of the contract with suitable welfare facilities. The co-located office must be large enough to accommodate at least 10-12 people (with a possibility to increase in size during the construction phase) with a dedicated room where meetings can be held.

The co-located office is so that the project team and suppliers' team (including their supply chain) can work together as an integrated team. Both the *Contractor* and the *Project Manager* promote the ethos of collaborative working and support the integrated team.
Office furniture and information technology (IT) equipment must be provided by the *Contractor*. IT equipment to be agreed.

As a minimum, the co-located office should contain at least four dedicated adjustable desks with adjustable chairs for the *Client* and robust high speed broadband connection (Min 20MB/s on WiFi and/or Ethernet) to the internet with sufficient data capacity to prevent machine functioning at a reduced speed.

A colour Laser MFP (multifunction printer), with standard quality A3 & A4 paper and copying and scanning facilities must be made available for use by the *Client*.

The office must have a meeting facility suitable to host the routine meetings and workshops anticipated for the duration of the contract. Audio-visual equipment such as a large screen monitor / a projector must be provided to enable presentation of project information to all attendees. This meeting room must be the default location for all project meetings.
The purpose of co-location is to allow open interaction between the parties and therefore an open plan arrangement with the co-located parties is essential.

10.2 Facilities/Services provided by *Client* (ECC 25.2)

To assist in the closure and reopening of the tunnel during contract closures, the *Contractor* is to abide by the TaPS maintaining agents closing regime and process. Access the the tunnel (if so required by the *Contractor*) may be available during tunnel maintenance closures, which take place two weekends a month. Access to these closures is entirely at the discretion of the TaPS maintaining agent and undertaken within his CDM control as Principal *Contractor*.

The *Client* will facilitate a system of reporting to the *Contractor* any faults which occur with tunnel assets in the period before the assets have been taken over by the *Client*.

10.3 Access to Premises

In the event that any *Client* premises are made available to the *Contractor* in connection with this contract, the terms of access to and use of the premises are agreed with the *Project Manager* in advance of occupation. The *Contractor*:

- Has the use of such *Client* premises as licensee and does not have any sole or exclusive right to possession or to possession of any particular part of such *Client* premises.
- Vacates such *Client* premises upon the termination or expiry of the contract or at such earlier date as the *Client* may determine.
- Does not exercise any rights in respect of any *Client* premises; and
- Does not damage the *Client* premises or any assets on the *Client* premises.

Nothing in this clause creates the relationship of landlord and tenant in respect of any *Client* premises between the *Contractor* and any part of TfL.

The *Client* is responsible for maintaining the security of *Client* premises in accordance with its standard security requirements. The *Contractor* complies with all of the *Client's* security requirements while on *Client* premises, and ensures that all of the *Contractor*'s employees, Sub*Contractor*s, indirect sub*Contractor*s and persons related to them comply with such requirements. Upon request, the *Client* provides the *Contractor* with details of the *Client's* security procedures.

The *Client* reserves the right under this contract to refuse to admit to any *Client* premises any person who fails to comply with any of the *Client's* policies and standards referred to in this contract.

The *Client* reserves the right under this contract to instruct any personnel to leave any *Client* premises at any time for any reason and such personnel comply with such instructions immediately.

Where the *Contractor* is required to access (with appropriate permission and acceptance of the *Client*) any areas under the control of any of the *Client's* PPP or PFI *Contractor*s, the *Contractor* complies (and ensures that any Sub*Contractor*'s and indirect sub*Contractor*s comply) with all of their rules, regulations and standards.

10.4 Materials Off Site

The *Contractor* provides details of what equipment, plant or materials are to be tested and inspected before delivery to site under Inspection and Testing Plans (ITPs) and the Contract Quality Plan (CQP).

The *Contractor* provides details of what equipment, plant or materials that the *Contractor* should prepare for marking and how this is to be done under ITPs and CQP.

SCOPE

S 1100

HEALTH, SAFETY AND ENVIRONMENTAL

S 1100 – Health and safety and Environmental

11.1 Heath and Safety

The *Contractor* fully supports Transport for London's (TfL) commitment to 'Vision Zero' and eliminating all deaths and serious injuries on London's transport network by 2041. The TfL's *Project Manager's* strategy for delivering this is to implement effective health and safety management systems and behaviours such that *"Everyone Home Safe and Healthy Everyday".*

The *Contractor* fully complies with the Health, Safety and Environmental requirements specified in the Surface Transport Infrastructure Construction Framework Contract.

11.2 Environmental

11.2.1 General

The *Contractor* is reminded of their obligations within Appendix E of the Core Scope about Environmental Management. Not least this includes the requirements to operate a suitably scaled Environmental Management System (EMS) and develop / implement an Environmental Management Plan (EMP) for the Scope of this Call-Off Contract.

11.2.2 Environmental Evaluation

The *Client*, as part of their internal project management processes, has completed an initial Environmental Evaluation of the project to highlight key environmental risks and opportunities. The *Contractor* reviews the Environmental Evaluation and familiarise themselves with the content. Additionally, the *Contractor* implements processes, as part of their design management process, to mitigate any adverse environmental impacts that have been identified within the Environmental Evaluation and to maximise the environmental benefits of any identified opportunities.

11.2.3 Environmental Report

Prior to the conclusion of the detailed design phase, the *Contractor* submits an Environmental Report to the *Client* for their acceptance. The Environmental Report must outline how the *Contractor* as managed the environmental risks and opportunities. It must also set out the measures that have been incorporated into the design proposals to mitigate the threats, and maximise the opportunities.
Where actions need to be carried forward into subsequent stages of the Project's lifecycle, these must be clearly highlighted so that they can be effectively communicated to those responsible for delivering the construction phase, and any delivery partners.
Other design stage deliverables, required either as part of the Core Scope (Appendix E) or this Schedule, may be appended to the Environmental Report.
The *Contractor* makes any changes to the Environmental Report reasonably requested by the *Project Manager* within 7 days of the *Project Manager* requesting the change.

11.2.4 Travel Plan

The requirement within Appendix E (Environmental Management) of the Core Scope about producing a Travel Plan is only required for the construction phase of this call-off contract.

11.2.5 Environmental Targets

As a minimum, the *Contractor* adopts the environmental target listed below and develop designs that will facilitate their achievement.

The *Contractor* proposes additional environmental targets to take account of the identified significant environmental aspects or compliance obligations.

Description	Target
Environmental enforcement/regulatory notices	0
Major environmental incidents	0
Percentage of non-hazardous construction and demolition waste **diverted from landfill** (i.e. reused, recycled and/or recovered)	Refer to yearly targets in table below
Percentage of non-hazardous construction and demolition waste **recycled**	70%
Percentage of non-hazardous excavated materials put to beneficial reuse (i.e. diverted from landfill)	100%
Percentage of the total value of materials incorporated into the *Works* which has content derived from reused or recycled materials	25%

Table 0.1 Environmental Targets

TfL has a target to divert (i.e. reuse, recycle and/or recover) 99% of non-hazardous waste from landfill by 2031. To assist us meet this target, the following yearly targets have been developed.

Year	2021-25	2026-29	2030
Percentage of non-hazardous construction and demolition waste **diverted from landfill**	97%	98%	99%

Table 0.2 Non-hazardous Waste Targets

11.2.6 Environmental Action Plan

The requirement within Appendix E (Environmental Management) of the Core Scope about developing and implementing an Environmental Action Plan is not required for this call-off contract.

11.2.7 Contractor's Environmental Performance Reporting

The requirement within Appendix E (Environmental Management) of the Core Scope about Environmental Performance Reporting only required for the construction phase of this call-off contract.

11.2.8 Sustainable Design and Assessment

The *Contractor* is reminded of their obligations within Appendix E of the Core Scope about Sustainable Design and Assessment. In particular the *Contractor* is reminded of their obligation to identify and incorporate sustainable solutions and reduce whole life carbon.
With regards to Carbon, the *Contractor* puts in place processes to design-out carbon and to demonstrate the reductions in carbon and cost that have been made as a result of the design developments. The *Contractor* is reminded that they may use TfL's Carbon Energy Efficiency Plan (CEEP), but that they may also propose, and, subject to acceptance, use an alternative method for demonstrating the above.

11.2.9 BREEAM and CEEQUAL

The *Client* does not intend that this project will register for / participate in either the BREEAM or CEEQUAL award schemes.

11.2.10 Minimising Noise and Vibration in design

There is the potential for modifications implemented through the project to give rise to changes in noise levels which could potentially impact adversely upon noise sensitive receptors.

When developing the designs the *Contractor* ensures that the impacts from noise and vibration are considered iteratively so that the final solutions do not give rise to levels of noise or vibration that could cause nuisance to local sensitive receptors. In particular, the *Contractor* ensures that residents in the vicinity of the shaft sites are not adversely affected.

The *Contractor* ensures that the assets or systems (including but not limited to Public Address systems) are designed to meet the noise and / or vibration criteria in TfL's Asset Design Guidance (G1323).

The impact of noise from fixed installations upon local noise sensitive receptors will be assessed in accordance with the methodology described in BS4142:2014 (Methods for rating and assessing industrial and commercial sound).

To facilitate this assessment the *Contractor* engages suitably competent acoustic subontractors to undertake an ambient and background noise survey in accordance with the requirements of BS4142:2014. The results of this survey must be submitted in a report for acceptance by the *Client*, and subsequently used in an assessment of potential noise impacts from the operation of the new assets, and, as necessary, to inform an understanding of what mitigation measures may be required to meet the applicable noise standards.

A summary of the *Contractor*'s work to assess noise and vibration impacts must be presented in a Noise and Vibration Summary Report which is submitted to the *Client*, for acceptance, to verify that the requirements stated above have been achieved. The report is prepared by suitably qualified and experienced acoustic professionals.

11.2.11 Non Road Mobile Machinery (NRMM)

Non-road mobile machinery (NRMM) is any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road.

The *Contractor* ensures that all NRMM used to undertake the *Works* 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.

The *Contractor* demonstrates compliance with the NRMM Low Emission Zone by using the GLA's NRMM register to log all applicable NRMM used to undertake the *Works*.

The *Contractor* applies to the GLA for an exemption to the NRMM Low Emission Zone for any NRMM that does not meet the requirements because the machinery is not available or it is not feasible to meet the requirements.

The *Contractor* complies with the progressively tightening standards of the NRMM Low Emission Zone for the duration of the *Works* and any changes to the requirements of the NRMM Low Emission Zone do not constitute a change to the Scope.

In addition to the above, TfL has an aspirational target of using only zero emission construction machinery, including NRMM, from 2025 and operating zero emission

construction sites throughout Greater London by 2030. The *Contractor* endeavours to meet these aspirational targets.
The *Contractor* ensures that all vehicles and NRMM are regularly serviced and switched off when not in use.

SCOPE

S 1300

TITLE

13.0 Title

13.1 Marking

All Plant and Materials and pre-fabricated components for inclusion in the *works* become the property of the *Client* when incorporated in the *works* and accepted in writing by the *Project Manager* as part of the completed works.

The *Client* does not envisage that any advance payments will be made towards the purchase of Plant and Materials, labour and pre-fabricated components for inclusion in the *works*.

13.2 Materials from Excavation and Demolition (ECC 73.2)

All materials, except for those listed below from demolition and excavation are the property of the *Contractor*. The *Contractor* is responsible for the prompt removal and sustainable disposal of these materials from *Site*.

Items that TfL will require following demolition include:

- The *Contractor* provides a list of all assets proposed to be removed as part of the works to the *Project Manager*. The *Project Manager* will respond to that list detailing any items that should be retained and handed over to the *Client* on or prior to completion.

SCOPE

S 1500

ACCOUNTS AND RECORDS

15.0 Accounts and records [Options C and E]

15.1 Documentation on termination

The *Contractor* provides all documentation produced in accordance with the Scope until the date of termination including items which have not yet been submitted to the *Project Manager*. This includes all documentation produced to provide the *Works* by the *Contractor* and their *subContractor*.

The *Contractor* is required to submit all completed / partially completed documents / plans / 3D / 4D models to the *Project Manager*. All documents and models must be provided in editable formats for the *Client* to continue with the *works* as required. All documents must be uploaded by the *Contractor* on to ASITE.

The *Contractor* provides a report stating the *Contractor's* progress at the time of the Contract termination.

SCOPE

S 1600

CLIENT'S WORK SPECIFICATIONS AND DRAWINGS

16.0 *Client's* work specifications and drawings

The design information table below lists the information that constitutes the *Clients* concept design that the *Contractor* will develop through to the competion of TfL Pathway Stage Gate 5 (detailed design and build). The full index of the Client's Design, including design description and revision numbers, is provided in file name, 'Design Information Index Sheet', found in the Client's Design.

Design Information

Design Information		
Reference	Type	Description
ST_PJ530-CST-BAS-XX_XX-RPT-CE-00001.pdf	Document	Soffit Samples Lab Test Report
ST_PJ530-CAP-ELE-XX_XX-ASM-EE-00001.pdf	Document	M&E Outline AIP
ST_PJ530-CST-ZZZ-XX_XX-ASM-EN-0000.xlsx	Document	Designer'ss Environmental Risk Assessments
ST_PJ530-VVB-ZZZ-XX_XX-HSE-HS-00001.docx	Document	Pre-Detailed Design H&S and Environmental Pre-Construction Information
ST_PJ530-CST-BAS-05_06-REG-ZZ-00007.xlsx	Document	Design Hazard Identification and Risk Register
ST_PJ530-CST-BAS-05_06-PLN-CE-00001.docx	Document	Operation and Maintenance Plan for Tunnel
ST_PJ530-CST-BAS-05_06-REG-ZZ-00005.xlsx	Document	Constraints & Dependencies Log
ST_PJ530-CST-MAC-05_06-PLN-TR-00001.pdf to ST_PJ530-CST-MAC-05_06-PLN-TR-000011.pdf	Drawings and Schedule	Traffic Management and Diversion Plans for Design and Build
ST_PJ530-CST-BAS-05_06-REG-ZZ-00004.xlsx	Document	Design Decisions

		Register-Log
ST_PJ530-CST-BAS-05_06-REG-ZZ-00001.xlsx	Document	Gaps and Assumptions Register-Log
Various	Data	GPR raw data bundle
ZRD0042-21-DWG01-B to ZRD0042-21-DWG08-B	Drawings	GPR survey drawings
ST_PJ530-CST-BAS-XX_XX-RPT-CE-00002.pdf	Document	GPR survey report
Lidar Report	Zip File	LIDAR - data and CAD bundle
21059-Blackwall Tunnel Combined.las	Point Cloud Data	LIDAR - Main Tunnel Point Cloud Data
ST_PJ530_CST_BAS_XX_00_LST_IM_00001.dgn	drawing	LIDAR - Main Tunnel CAD (Microstation)
ST_PJ530_CST_BAS_XX_00_LST_IM_00001.dwg	drawing	LIDAR – Main Tunnel CAD (Autodesk)
21059 - Blackwall Tunnel Flythrough – Colour.avi	Video File	LIDAR - Sample Fly Throughs
21059 - Blackwall Tunnel Flythrough – Intensity.avi	Video File	LIDAR - Sample Fly Throughs
ST_PJ530_CST_BAS_XX_B1_LST_IM_00001.dgn	drawing	LIDAR- Sub Tunnel CAD (microstation)
ST_PJ530_CST_BAS_XX_B1_LST_IM_00001.dwg	drawing	LIDAR- Sub Tunnel CAD (Autodesk)
ST_PJ530-CCS-BAS-XX_XX-REQ-EE-00015.doc	Document	Technical Requirements Specification - CCTV
ST_PJ530-CST-BAS-05_06-REQ-CE-00001.pdf	Document	Technical Requirements Specification -

		Cladding
ST_PJ530-CST-BAS-05_06-REQ-CE-00007.docx	Document	Technical Requirements Specification – Concrete Repairs
ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00001.doc	Document	Technical Requirements Specification - Lighting
ST_PJ530-CST-BAS-05_06-REQ-CE-00002.pdf	Document	Technical Requirements Specification - Pavement
ST_PJ530-CCS-TRS-XX_XX-REQ-EE-00016.doc	Document	Technical Requirements Specification - Signage
ST-PJ530-BAS-TRS-XX_XX-RPT-EE-00011.pdf	Document	Investigations Factual and Interpretive Reports - CCTV
ST_PJ530-CST-BAS-05_06-RPT-CE-00007.docx	Document	Investigations Factual and Interpretive Reports - Cladding
ST_PJ530-CST-BAS-05_06-RPT-CE-00006.pdf	Document	Investigations Factual and Interpretive Reports - Civils
ST_PJ530-CAP-ELC-XX_XX-REQ-EE-00004.pdf	Document	Investigations Factual and Interpretive Reports - Lighting
ST_PJ530-CST-BAS-05_06-RPT-CE-00001.pdf	Document	Investigations

		Factual and Interpretive Reports - Pavement
ST-PJ530-CCS-TRS-XX_XX-RPT-EE-00012.pdf	Document	Investigations Factual and Interpretive Reports - Signage
ST_PJ530-CST-BAS-XX_XX-RPT-CE-00003.pdf Rev 1	Document	Concrete Testing results
RPT-BAS-TfL – 0502099 (Rev 01)	Document	Ring Beams Structural capacity validation in the Southbound Blackwall Tunnel
ST_PJ530-CST-BAS-ZZ-DRG-ZZ_tunnel plan layout	Drawing	Pavement
ST_PJ530-CST-BAS-ZZ-DRG-ZZ_tunnel side layout	Drawing	Pavement

Drawings

All drawings relating to this contract are listed in the table below (Drawings). The drawings will be provided via shared access to Sharepoint folders.

Drawings		
Reference	Type	Description
CCTV and Signage Distribution 1 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00250-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 2 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00251-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 3 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00252-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 4 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00253-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 5 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00254-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 6 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00255-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 7 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00256-0001.pdf	Drawing	CCTV and Signage
CCTV and Signage Distribution 8 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00257-0001.pdf	Drawing	CCTV and Signage
Example CCTV Location ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00112-0001.pdf	Drawing	CCTV and Signage
Example LCS Location ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00110-0001.pdf	Drawing	CCTV and Signage
Example Portal LCS Location ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00114-0001.pdf	Drawing	CCTV and Signage
Example Portal VMS Location ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00113-0001.pdf	Drawing	CCTV and Signage
Example VMS Location ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00111-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 1 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00300-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 2 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00301-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 3 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00302-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 4 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00303-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 5 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00304-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 6 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00305-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 7 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00306-0001.pdf	Drawing	CCTV and Signage
Thermal CCTV 8 ST_PJ530-CCS-BAS-XX_ZZ-DRG-EE-00307-0001.pdf	Drawing	CCTV and Signage
Tunnel Cross-section ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00108-0001.pdf	Drawing	CCTV and Signage

Tunnel Entrance Cross-section ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00109-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 1 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00200-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 2 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00201-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 3 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00202-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 4 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00203-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 5 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00204-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 6 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00205-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 7 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00206-0001.pdf	Drawing	CCTV and Signage
Visual CCTV 8 ST_PJ530-CCS-BAS-XX_XX-DRG-EE-00207-0001.pdf	Drawing	CCTV and Signage
ST_PJ530-CST-BAS-05_06-DRG-CE-00047.pdf	Drawing	CCTV Supports
ST_PJ530-CST-BAS-05_06-DRG-CE-00016.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00017.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00018.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00019.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00020.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00021.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00022.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00023.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00024.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00025.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00038.pdf	Drawing	Cladding
ST_PJ530-CST-BAS-05_06-DRG-CE-00012_P01.pdf	Drawing	Concrete Repairs
ST_PJ530-CST-BAS-05_06-DRG-CE-00013_P01.pdf	Drawing	Concrete Repairs
ST_PJ530-CST-BAS-05_06-DRG-CE-00014_P01.pdf	Drawing	Concrete Repairs
ST_PJ530-CAP-ELC-XX_XX-DRG-EE-00001.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-XX_XX-DRG-EE-00002.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00001.pdf	Drawing	Lighting

ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00002.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00003.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00004.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00005.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00006.pdf	Drawings	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00007.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00008.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00009.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00010.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00011.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00023.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00024.pdf	Drawing	Lighting
ST_PJ530-CAP-ELC-ZZ_ZZ-DRG-EE-00025.pdf	Drawing	Lighting
ST_PJ530-CST-BAS-05_06-DRG-CE-00042.pdf	Drawing	Lighting Support and CMS
ST_PJ530-CST-BAS-05_06-DRG-CE-00001_P01.pdf	Drawing	Pavement
ST_PJ530-CST-BAS-05_06-DRG-CE-00002_P01.pdf	Drawing	Pavement
ST_PJ530-CST-BAS-05_06-DRG-CE-00003_P01.pdf	Drawing	Pavement
ST_PJ530-CST-BAS-05_06-DRG-CE-00004_P01.pdf	Drawing	Pavement
ST_PJ530-CST-BAS-05_06-DRG-CE-00044.pdf	Drawing	Signage Supports
ST_PJ530-CST-BAS-05_06-DRG-CE-00045.pdf	Drawing	Signage Supports
ST_PJ530-CST-BAS-05_06-DRG-CE-00046.pdf	Drawing	Signage Supports

Appendix A

S1700

Building Information Modelling - BIM

17.0 *Appendix A* - Building Information Modelling - BIM

17.1 Terms and Definitions

The following are terms used in this Appendix:

BIM Execution Plan (BEP): A plan, provided by the *Contractor* and accepted by the *Project Manager*, detailing how the *Contractor* complies with requirements as set out in the Concept Design Specification, IM&M section.

Common Data Environment (CDE): The agreed solution for the production, use and management of Model File(s), Composite Model(s), Non-Graphical Data, Document Definition(s) and Document Rendition(s), set out in the SMP, BEP and MIDP(s).

Composite Model: Computer Aided Design (CAD) file(s) displaying one or more Model Files (attached as references), for the purpose of performing coordination activities and / or compiling Document Definitions.

Documentation: Native Files and / or Data Files and / or Document Renditions.
Document Definition: Data file produced, containing a view of the Non-Graphical Data and / or Model File(s) and / or Composite Model(s), to derive meaning for a specific purpose.

Document Rendition: A data file in an immutable format, derived from a Document Definition.

Client's Information Requirements (EIR): Sets out the standards to be used and required details relating to the data and information about the *Client's* engineered asset's physical and functional characteristics, how these will be captured, produced, generated, utilised and managed by its suppliers.

Handover Information: Model File(s), Composite Model(s), Non-Graphical Data, Document Definition(s) and Document Rendition(s) which have been agreed between the Parties to be produced, updated, maintained and delivered as set out in the MIDP(s) until completion of the Contract.

Information Requirements: The document(s) setting out the way in which Models will be produced, delivered and used on the Project, including any processes, protocols and procedures.

Master Information Delivery Plan (MIDP): A forward looking schedule of the Model File(s), Composite Model(s), Non-Graphical Data, Document Definition(s) and Document Rendition(s) which are to be produced, updated, maintained and delivered as Production Information.

Model File: Computer Aided Design (CAD) file(s) containing shape(s) with defined origin, orientation and dimensions, communicating the physical characteristics of the works. A Model File may also include Non-Graphical Data, associated to the CAD file(s) and / or shape(s), identifying the functional characteristics of the assets.

Native File: Original graphical data and / or non-graphical data file in its default format, as created in the authoring tool.

Non-Graphical Data: Data file containing alphanumeric characters, communicating the physical and functional characteristics of the works.

Production Information: The Model File(s), Composite Model(s), Non-Graphical Data, Document Definition(s) and Document Rendition(s) which have been agreed between the Parties to be produced, updated and maintained in order to complete the Project and be delivered, in accordance with PR1477, during the design and construction stages of the Project, as set out in the Master Information Delivery Plan(s).

Project Data Environment: A system which forms part of the Common Data Environment and is accessible to the Client, the *Contractor*, or any employee, Sub-*Contractor*s or supplier of the *Contractor*, the *Project Manager*, the Supervisor and Others (as applicable). It is used to manage and exchange the master version of all shared Production Information.

17.2 BIM Responsibilities

17.2.1 The *Contractor* appoints a designated person to undertake the role and responsibilities of Project Information Manager as defined in the EIR for the duration of the Contract until the later of:

i. Contract completion; or
ii. All Production Information has been accepted by the *Project Manager*.

17.2.2 The *Client* provides, manages and maintains the Project Data Environment, in accordance with the EIR (as described in clause 17.3.10) and BS1192:2007. The *Client* ensures accessibility to the Project Data Environment to the *Client*, the *Contractor* or any employee, Sub-*Contractor*s or supplier of the *Contractor*, the *Project Manager*, the Supervisor and Others (as applicable) until the requirements of 17.2.4 have been achieved.

17.2.3 The *Contractor* and their Sub-*Contractor*s are responsible for completing, updating and maintaining the MIDP(s) and BEP to be provided by the *Contractor* until the requirements of 17.2.4 have been achieved.

17.2.4 The *Contractor* and his Sub-*Contractor*s produce, update and maintain Production Information in accordance with the accepted MIDP(s) and BEP provided by the *Contractor*, until the later of:

i. Contract completion; or
ii. All Production Information has been accepted by the *Project Manager* in accordance with 17.5.1.

11.2.5 The *Contractor* and its Sub-*Contractor*(s) produce, use, update and manage Production Information through the Common Data Environment (CDE).

11.2.6 The *Contractor* and its Sub-*Contractor*(s) are responsible for and maintain the integrity and compatibility of the Production Information until the requirements of 17.2.4 have been achieved.

17.2.7 The *Contractor* and its Sub-*Contractor*(s) are responsible for the coordination and integration of the design contained within the Model Files and / or included as part of the Non-Graphical Data, across all disciplines, with Others, with existing infrastructure and any adjacent works.

17.2.8 The *Contractor* and its Sub-*Contractor*(s) are responsible for (and provide evidence through internal audits in line with the quality assurance plan to verify that), the Production Information fulfils contractual requirements Non-compliance, identified by the *Contractor*, his Sub-*Contractor*s and / or notified by the *Project Manager*, must be rectified within timescales notified by the *Project Manager*.

17.3 BIM Process- Master Information Delivery Plan (MIDP)

17.3.1 The MIDP(s), to be provided by the *Contractor*, sets out the Production Information which the *Contractor* and his Sub-*Contractor*(s) have agreed with the *Project Manager* to produce, update, maintain and deliver, in order to complete the Contract.

17.3.2 The *Contractor*, in co-operation with his Sub-*Contractor*(s) and the *Project Manager* completes the MIDP(s), to be provided by the *Contractor*. The MIDP(s) provided by the *Contractor* must:

- Provide descriptions of the varying levels of maturity and specify the applicable level for each entry within the MIDP(s) which will be developed at each stage of the Contract;
- Ensure the MIDP(s), provided by the *Contractor*, is aligned with the Accepted Programme; and
- Ensure the level of maturity of the Model File(s) and Non-Graphical Data specified in the MIDP(s) for each stage of the project is to an appropriate level such that the acceptance criteria and requisite level of assurance for the Contract, in accordance with PR1477, can be achieved.
-

17.3.3 The *Contractor*, in co-operation with its Sub-*Contractor*(s) and the *Project Manager* submits the MIDP(s), to be provided by the *Contractor* to the *Project Manager* for acceptance within 2 weeks of the starting date.

17.3.4 The *Project Manager* either accepts the MIDP(s) provided by the *Contractor* or notifies the *Contractor* of the reasons for rejection. Reasons for rejecting MIDP(s) provided by the *Contractor* are:

- The proposed Model Files, Composite Models, Non-Graphical Data, Document Definitions and Document Renditions are not suitable for assurance and will not meet the requirements of the *Client*, the *Contractor*, or any employee, Sub-*Contractor* or supplier of the *Contractor*, the *Project Manager*, the Supervisor and Others (as applicable) at each stage of the Contract;
- Cell values are incomplete or missing; or
- The level of maturity identified for the Model Files and Non-Graphical Data, at each stage of the Contract, is not commensurate with the acceptance criteria and level of assurance required at each stage of the Contract.

Employers Information Requirements (EIR)

17.3.5 The Employers Information Requirements (EIR) provides details relating to the data and information about the *Client*s engineered asset's physical and functional characteristics, how these must be captured, produced, generated, utilised and managed by its suppliers. The EIR sets out standards to be used and identifies key decisions that will need to be made during the project to ensure the engineered solution developed meets project objectives, desired outcomes and benefits.

17.3.6 Updates to the EIR will be managed through the Project Change Control process.

BIM Execution Plan (BEP)

17.3.7 The *Contractor* updates and maintains the BEP.

17.3.8 The BEP provides details, describing how the *Contractor* and his Sub-*Contractor*(s) will:

- Comply with the requirements as set out in the Concept Design Specification, BIM section

- Collaboratively produce, use, update and manage all Production Information, agreed within the MIDP(s) provided by the *Contractor* in accordance with BS1192:2007, this must include (but not be limited to):
- Consistent collaborative processes in relation to production, use and management of information
- Information exchange protocols in relation to how information will be shared and exchanged
- Predefined roles and responsibilities of project team members in relation to the production, use and management of information.
- Provide assurance that Production Information meets the requirements as set out in the Concept Design Specification BIM section, is compliant with Standards and how evidence will be provided to ensure compliance with the BIM Coordination Process, this must include (but not be limited to):
- Managing change control of the Production Information throughout the lifecycle of the project
- Ensuring that the graphical data, non-graphical data and documentation is cross-referenced and aligned as a complete dataset and Production Information is consistent with intended design and / or what was built / installed
- Managing spatial coordination of the graphical data (physical space, operational space and maintenance space)
- Ensure that their staff has the capability and competency to the appropriate level to ensure that Production Information is coordinated, verified and managed in accordance with requirements as set out in the BIM Coordination Process and Standards.

17.3.9 The *Contractor* submits the BEP to the *Project Manager* for acceptance within 2 weeks of the starting date.

17.3.10 The *Project Manager* either accepts the BEP or notifies the *Contractor* of the reasons for rejection. The BEP will be rejected if it does not meet the requirements set out in 11.3.13 .

17.3.11 The *Contractor* and his Sub-*Contractor*(s) do not produce Production Information for the Contract until the MIDP(s) and BEP provided by the *Contractor* have been submitted to the *Project Manager* for acceptance.

17.4 BIM Coordination Process

17.4.1 The *Contractor* t and his Sub-*Contractor*(s) are responsible for (and provide evidence as part of the Production Information, submitted in accordance with 11.5.2 and as requested by the *Project Manager*, to verify that the Contract are fully co-ordinated and integrated across all disciplines, with Others, with existing infrastructure and any adjacent works.

17.4.2 The *Contractor* and his Sub-*Contractor*(s) are responsible for (and provide evidence as part of the Production Information, submitted in accordance with 11.5.2 and as requested by the *Project Manager*, to verify) buildability and maintainability of the Contract. Evidence must include (but not be limited to):

- Physical Space: one or more assets, or components of, do not occupy the same space;
- Construction Tolerances: sufficient space for the installation of assets and their component parts;
- Operational Tolerances: sufficient space for assets to operate, as intended; and

- Maintenance Tolerances: sufficient space for the maintenance of assets and their component parts.

17.4.3 The *Contractor* demonstrates the effectiveness of any value engineering using the Production Information.

17.5 BIM Submission Procedures

17.5.1 The *Contractor* submits to the *Project Manager* for acceptance the Production Information as set out in the accepted MIDP(s) provided by the *Contractor*, in accordance with the Accepted Programme and in the following formats:

- Model File(s), Composite Model(s), Non-Graphical Data and Document Definitions as editable electronic files, in accordance with TfL Standards; and
- Document Renditions in an immutable, read only format (PDF).
-

17.5.2 Unless otherwise agreed between the *Project Manager* and *Contractor*, the period for reply for *Project Manager* acceptance is 2 weeks.

17.5.3 The *Project Manager* either accepts the submission or notifies the *Contractor* of his reasons for rejection. Reasons for rejection are:

- Production Information are not submitted through the CDE, in accordance with 17.2.5.
- Production Information does not comply with Standards.
- Production Information is not developed to an appropriate level of maturity such that the acceptance criteria and requisite level of assurance for the works can be achieved.

17.5.4 There is no acceptance / rejection in respect of interim submissions; therefore, the *Project Manager*'s response will be in the form of comments only.

Appendix B

S1800

Delivery Phase Closure Options

18.0 *Appendix B* – Delivery Phase Closure Options.

Most Disruption. More Time/Cost Efficiency

Option	Working Arrangement	Construction Duration	Implications
Option 1	Full Blockade for Works Duration	14 weeks	Highest efficiency, removes time restrictions allowing Contractor to cater for unknown aspects
Option 2a	4 nights per week plus 2 x 10 day blockades	57 weeks	Inefficient as workforce has to stand down on Monday nights. 10day closures. Will cater for Projected and Worst case only affecting costs.
Option 2b	5 nights per week plus 2 x 10 day blockades	45 weeks	10day closures. Will cater for Projected and Worst case only affecting costs.
Option 3a	4 nights per week plus 9 x weekend blockades	57 weeks	Inefficient as workforce has to stand down on Monday nights. Weekend closures will increase to 19 if Worst case encountered.
Option 3b	5 nights per week plus 9 x weekend blockades	44 weeks	Weekend closures will increase to 19 if Worst case encountered.
Option 3c	Maintenance closures plus 9 x weekend blockades	372 weeks	Non practical option. 8yrs of one weekend a month will not allow benefits. Will increase to 19 weekend closures if worst case encountered
Option 4	Maintenance closures only, no blockades	326 weeks	Non practical option as civil works cannot be completed without weekend closures.

Least Disruption. Logistically challenged for Civil works

Transport for London

Annex 2

Site Information

FOR

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

Call-Off Contract under the tfl_scp_001746d Surface Transport Infrastructure Construction Framework

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Project Reference Number: tfL_scp_002178

Version: Final
Date: April 2023

The following is a list of documents and drawings comprising the Site Information and is accessible via SharePoint

[redacted]

01 Health & Safety File
Blackwall H&S File Final.doc
Blackwall H&S File Final.pdf
Carriageway Slab Reports
60486237-M409-REP-0047-B signed.pdf
Blackwall_Tunnel_Southbound_60486237-M409-REP-0006-B_SB.pdf
Hazardous Materials
R678002 Blackwall SB Tunnel Exit Ramp Retaining Walls.pdf
R678004 Blackwell Tunnel Southbound Reinspection 2021.pdf
R678010 BTNA R7, R8, R9 - R47.pdf
R678032 Gantry 54 NB Weetman Street.pdf
VVB Reports
15-Blackwall Tunnel - Interpretive Report - Tunnel Lighting_Ver1.pdf
16-Blackwall Tunnel - Interpretive Report - Tunnel Lighting Structural Support - REV 4_Ver1_4.pdf
17-Blackwall Tunnel - Interpretive Report - VMS and Wayfinding - REV 4_Ver1_4.pdf
2-Blackwall Tunnel - Interpretive Report - CCTV_Ver1.pdf
System 01 Fire Main
12-1-8. System 1 Fire Main. Rev Z OM.PDF
Master Index.pdf
O&M Manual - 1 Firemain revZ.doc
Red Lined Drawings System 1 Fire Main. Rev Z OM.PDF
02_C1_TY_034_rZ.bak
02_C1_TY_034_rZ.dwg
02_C1_TY_054_rZ.bak
02_C1_TY_054_rZ.dwg
02_C1_TY_076_rZ.bak
02_C1_TY_076_rZ.dwg
02_C1_TY_077_rZ.bak
02_C1_TY_077_rZ.dwg
02_C1_TY_078_rZ.bak
02_C1_TY_078_rZ.dwg
02_C1_TY_079_rZ.bak
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02_C1_TY_084_rZ.dwg
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02_C1_TY_086_rZ.dwg
02_C1_TY_087_rZ.bak
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02_C1_TY_088_rZ.bak
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02_C1_TY_094_rZ.bak
02_C1_TY_094_rZ.dwg
02_C1_TY_095_rZ.bak
02_C1_TY_095_rZ.dwg
02_C1_TY_117_rZ.bak
02_C1_TY_117_rZ.dwg
02_C1_TY_120_rZ.bak
02_C1_TY_120_rZ.dwg
02_C1_TY_121_rZ.bak
02_C1_TY_121_rZ.dwg
02_C1_TY_122_rZ.bak
02_C1_TY_122_rZ.dwg
02_C1_TY_124_rZ.bak
02_C1_TY_124_rZ.dwg
02_C1_TY_152_rZ.bak
02_C1_TY_152_rZ.dwg
02_C1_TY_153_rZ.bak
02_C1_TY_153_rZ.dwg
02_C1_TY_154_rZ.bak
02_C1_TY_154_rZ.dwg
02_C1_TY_157_rZ.bak
02_C1_TY_157_rZ.dwg
02_C1_TY_158_rZ.bak
02_C1_TY_158_rZ.dwg
02_C3_TY_059_rZ.bak
02_C3_TY_059_rZ.dwg
plot.log
02_C1_TY_085_rZ.bak
02_C1_TY_085_rZ.dwg
02_C1_TY_151_rZ.bak
System 02 Gas, Heat & Fire Detection
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03.12.pdf
03.13.pdf
03.14.pdf
03.15.pdf
03.16.pdf
03.17.pdf
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02_C16_TY_235_rZ.dwl2
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02_C17_TY_021_rZ.dwg
02_C3_TY_052_10_rZ.bak
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02_C3_TY_066_rZ.dwg
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02_C3_TY_067_rZ.dwg
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System 21 Cable Testing O&M
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03-C5-PB-022 rev 01.dwg
03-C5-PB-023 rev 01.dwg
03-C5-PB-024 rev 01.dwg
03-C5-PB-025 rev 01.dwg
03-C5-PB-026 rev 01.dwg
03-C5-PB-027 rev 01.dwg
03-C5-PB-028 rev 01.dwg
03-C5-PB-029 rev 01.dwg
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03-C5-PB-031 rev 01.dwg
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03-C5-PB-046 rev 01.dwg
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03-C5-PB-048 rev 01.dwg
03-C5-PB-049 rev 01.dwg
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03-C5-PB-051 rev 01.dwg
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03-C5-PB-054 rev 01.dwg
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03-C5-PB-057 rev 01.dwg
03-C5-PB-058 rev 01.dwg
03-C5-PB-059 rev 01.dwg
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03-C5-PB-062 rev 01.dwg
03-C5-PB-063 rev 01.dwg
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03-C5-PB-065 rev 01.dwg
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03-C5-PB-067 rev 01.dwg
03-C5-PB-068 rev 01.dwg
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03-C5-PB-078 rev 01.dwg
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02-C10-K-001-Z.dwg
02-C10-K-002-Z.dwg
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02-D1-A-015-Z.dwg
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System 25 Handrail
12.8.25. System 25. Handrail. Rev Z O&M.pdf
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System 26 Cladding
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02-C14-EC-03-REV Z.bak
02-C14-EC-03-REV Z.dwg
02-C14-EC-11-REV Z.dwg
02-C14-EC-13-REV Z.bak
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2160-EC-01-A-REV Z.bak
2160-EC-01-A-REV Z.dwg
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System 28 Re-Surfacing
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System 29 Mid River Sump Capacity Increase
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Menu1.dal
Menu1.daw
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Menu2.daw
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System 30 (Not Applicable)
System 31 (Not Applicable)
System 32 New Sump Covers Ironwork & Gullies
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System 33 Lifting Beams & Light Weight Davit
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System 35 Supply & Extract Grills
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System 36 (Not Applicable)
System 37 Rising Main
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Transport for London

Annex 3

The Contractor's Quality Submission

FOR

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

Call-Off Contract under the tfl_scp_001746d Surface Transport Infrastructure Construction Framework

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Project Reference Number: tfL_scp_002178

Version: Final

Date: May 2023

Transport for London

Annex 4

Pricing Information

FOR

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

Call-Off Contract under the tfl_scp_001746d Surface Transport Infrastructure Construction Framework

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Project Reference Number: tfL_scp_002178

Version: Final

Date: May 2023

BLACKWALL TUNNEL SOUTHBOUND, PHASE 1, DETAILED DESIGN AND BUILD

The Pricing Information

CONTENTS

TfL Reference Number: tfl_scp_002178
Blackwall Tunnel Southbound, Phase 1, Detailed Design & Build
Call Off Contract Mini Competition
PREAMBLE

	General
1	Information in this Pricing Schedule is not the Scope or Site Information, the Bidder shall be deemed to have read and familiarised themselves with the Scope and the Site Information.
2	The activities or deliverables identified in this pricing schedule are indicative, the Bidder is to use any activities they believe are required against the Scope, and leave any items which are not so.
3	All rates exclude VAT.
4	Any prices or rate shall comply with the STIC framework.
5	The bidder is responsible for ensuring all tabs, and cells are correctly populated; and for ensuring all calculations within this Pricing Schedule used to identify the Stage 1 and 2 total prices are correct.
6	If the Bidder is unable to complete any section of this Pricing Schedule and/or unable to provide a rate or price for any item or activity, the Bidder is to notify TfL during the tender response period via a tender clarification as soon as reasonably possible.
7	The financial evaluation of the Pricing Schedule will be completed as described in document entitled 'Vol 0 Mini-Competition Request for Blackwall Tunnel Southbound Detailed Design & Build.'
	Summary tabs ("2. Summary" & "2a. Detailed Summary" tabs)
8	The summary tab ("2. Summary") is included to provide summary of the Stage 1 and 2 total prices at various elemental level, these will be automatically calculated from completion of the other tabs.
	Stage 1 - "3a. S1 Design"
9	The Bidder provides a stage one project role, the individuals name and framework grade for all staff in the Bidder's proposed project team for Stage 1.
10	If it is not possible to provide an individuals name for a project team role, the Bidder enters 'TBC'.
11	The Bidder adds extra columns as necessary to include project team roles.
12	The Bidder provides rates for all staff in the project team for Stage 1.
13	The Bidder provides rates (exclusive of fee percentage) for each category of working hours for each individual project team role.
14	All Bidders' expenses are deemed included within the staff rates. This includes but is not limited to travel, accommodation and food and all software costs associated with providing the scope services.
15	Travel time is not chargeable.
16	The positions, names and grades of CVs included in the Contractor's quality submission correspond to the Detailed Design Resource Schedule.
17	Staff "Framework Grade" must match those detailed in the STIC framework.
18	Rates for individual project team roles must not exceed the maximum rates for the framework grades, as stated in the framework agreement.
19	The Bidder enters sub-activities for each core activity and adds additional rows to the schedule to capture all Stage 1 activities. Indicative tasks have been populated into the design activities.
20	For each individual project team role and each sub-activity, the Bidder enters the number of forecast hours in each band of working hours
21	Staff working outside of Core Working hours is approved by the *Project Manager* in writing prior to the work taking place.
22	The total forecast stage one resource cost will be carried forward to the total Stage 1 price within the "2. Summary" tab.
	Stage 1 - "3b. S1 Subcontractor Activities"
23	The Bidder shall provide any anticipated subcontractor activities during Stage 1 in tab "3b. S1 Subcontractor Activities"

24 The Contractor shall add additional rows to tab "3b. S1 Subcontractor Activities" as necessary to include all anticipated subcontractor activities.

25 The total subcontractor activities price will be carried forward to the total Stage 1 price within the "2. Summary" tab.

Stage 1 - "3c. S1 Prelims"

26 The Bidder shall provide any Preliminaries items required to deliver the design activities in tab "3c. S1 Prelims" by completing all necessary columns and rows.

27 The Contractor shall add additional lines to tab "3c. S1 Prelims" as necessary to include all items required.

28 The total Stage 1 prelims price will be carried forward to the total Stage 1 price within the "2. Summary" tab.

Stage 1 Risk Register ("3d. Risk register")

29 The Bidder shall prove a detailed risk register for Stage 1 in tab "3d. S1 Risk Register"

30 The Bidder completes a description of any risk, the likelihood, programme and cost impact, and risk avoidance actions.

31 The Stage 1 risk register is for information only and is **NOT** considered in the financial evaluation of the Pricing Schedule.

Stage 1 Fee ("3e. Fee")

32 The Bidder shall enter the Stage 1 fee percentage into the space provided. This will be carried forward to tab "2. Summary".

Stage 2 ("4a. S2 Activity Schedule")

33 The Preliminaries section of tab "4a. S2 Activity Schedule" will be automatically populated from tab "4b. S2 Prelims"

34 The Bidder shall populate tab "4a. S2 Activity Schedule" to capture the total of the activities to deliver the Scope.

35 The Bidder shall add additional Standard Cost Elements and Subcategories as necessary to include all activities required.

36 The Bidder provides a total price **(exclusive of fee percentage and any risk contingency allowance)** for each activity. The Stage 2 risk register "4d. S2 Risk Register" is used to capture any risk contingency required for a Stage 2 activity.

37 Bidders are required to add the corresponding "programme activity reference id" for each Stage 2 activity captured in "4a. S2 Activity Schedule".

38 The total Stage 2 activity schedule price will be carried forward to the total Stage 2 price within the "2. Summary" tab.

Stage 2 ("4b. S2 Prelims")

39 The Bidder shall provide any Preliminaries items required to deliver the design activities in tab "4b. S2 Prelims" by completing all necessary columns and rows.

40 The Contractor shall add additional lines to tab "4b. S2 Prelims" as necessary to include all items required.

41 The total Stage 2 prelims price will be carried forward to the total Stage 2 price within the "2. Summary" tab.

Stage 2 Risk Register ("4c. S2 Risk Register")

42 The Bidder shall prove a detailed risk register for Stage 2 in tab "4c. S2 Risk Register"

43 The Bidder completes a description of any risk, the likelihood, programme and cost impact, risk avoidance actions and a risk contingency figure.

44 The total Stage 2 risk allowance as contingency figure will be carried forward to the total Stage 2 price within the "2. Summary" tab.

Stage 2 Fee ("4d. Fee")

45 The Contractor shall enter the Stage 2 fee percentage into the space provided. This will be carried forward to tab "2. Summary".

TfL Reference Number: tfl_scp_002178
Blackwall Tunnel Southbound, Phase 1, Detailed Design & Build
Call Off Contract Mini Competition
SUMMARY OF STAGE 1 & 2

		£
Stage 1 - Detailed Design		
	Total Forecast Stage 1 Resource Cost	
	Total Stage 1 Subcontractor Activities Price	
	Total Stage 1 Prelims Price	
	Fee Amount	
Stage 2 - Construction		
	Contractor's Preliminaries	
	Third Parties - Interfaces with other parties	
	Enabling & Temporary Works	
700	Highway - Pavements	
1200	Highways - Traffic signs and road markings	
1700	Highways - Structural Concrete	
1800	Highways - Steelwork	
2000	Highways - Waterproofing	
2500.02	Special structures - electrical	
2500.05	Special structure - communications	
	Risk Contingency	
	Fee Amount	
Contract Total	**Blackwall Tunnel Southbound, Phase 1**	
	Stage 1 - Fee	
	Stage 2 - Fee	

TfL Reference Number: tfl_scp_002178
Blackwall Tunnel Southbound, Phase 1, Detailed Design & Build
Call Off Contract Mini Competition
DETAILED SUMMARY OF STAGE 1 & 2

			£	£
Stage 1 - Detailed Design				
	Detailed Design			
		Mobilisation		
		Planning & Consents		
		Electrical Detailed Design		
		Communication Systems Detailed Design		
		Civils (Structures) Detailed Design		
		Civils (Concrete Road Deck) Detailed Design		
		Civils (Highways) Detailed Design		
		H&S and Environmental Specialist Input		
		BIM		
		Develop Programme & Cost for Stage 2		
		Project Management		
		Interfacing with Others/Third Parties		
	Subcontractor Activities (Stage 1)			
	Contractor's Preliminaries (Stage 1)			
		Materials Handling Plant		
		Craneage		
		Passenger/Goods Hoists		
		General Plant		
		Small Plant & PPE		
		Scaffolding		
		Temporary Works/ Access/Haul Roads		
		Temporary Services		
		Environmental Control		
		Waste Management		
		Logistics		
		Setting Out Control		
		Site Hoardings / Barriers		
		Security & Access Control		
		Site Storage		
		Temporary Accommodation		

		Facilities Management
		Communications
		Temporary Signs
		IT Equipment & running costs
		Other
Stage 2 - Construction		
	Contractor's Preliminaries (Stage 2)	
		Staff
		Materials Handling Plant
		Craneage
		Passenger/Goods Hoists
		General Plant
		Small Plant & PPE
		Scaffolding
		Temporary Works/ Access/Haul Roads
		Temporary Services
		Environmental Control
		Waste Management
		Logistics
		Setting Out Control
		Site Hoardings / Barriers
		Security & Access Control
		Site Storage
		Temporary Accommodation
		Facilities Management
		Communications
		Temporary Signs
		IT Equipment & running costs
		Other
	Third Parties - Interfaces with other parties	
	Enabling & Temporary Works	
		Mobilise Site
		Demolition
		Clear Site
		Services Diversions
		Other
		Hoardings
		Traffic Diversions / control

700	Highway - Pavements	
700.100		Full depth replacement
700.101		Replacement surface course only
1200	Highways - Traffic signs and road markings	
1200.100		Traffic signs and road markings
1700	Highways - Structural Concrete	
1700.100		Structural concrete repairs - top of deck
1700.101		Structural concrete repairs - bottom of deck
1800	Highways - Steelwork	
1800.100		Miscellaneous steelwork - tunnel cladding repairs
2000	Highways - Waterproofing	
2000.100		Waterproofing membrane replacement
2500.02	Special structures - electrical	
2500.02.100		Main Switchgear
2500.02.101		Sub-mains distribution
2500.02.102		Distribution Boards
2500.02.103		Tunnel lighting
2500.02.104		Underpass Lighting
2500.02.105		Emergency lighting
2500.02.106		Low Level Evacuation lighting
2500.02.107		Street Lighting
2500.02.108		Cable Management System for Low Voltage Electrics & Lighting
2500.02.109		Programmable logic controllers
2500.02.110		Uninterruptible power supplies
2500.02.111		Earthing and bonding
2500.02.112		Electro-magnetic compatibility
2500.02.113		Separation and rationalisation of third party cables
2500.02.114		Testing & Commissioning
2500.02.115		BWIC
2500.02.116		Lighting Support Structures
2500.05	Special structure - communications	
2500.02.100		CCTV System
2500.02.101		Tunnel & Portal Variable Messaging System
2500.02.102		Tunnel Lane Control Signs

2500.02.103		Cable Management System for Communication Systems	[redacted]
2500.02.104		Programmable logic controllers	
2500.02.105		Earthing and bonding	
2500.02.106		Operational information systems	
2500.02.107		Testing & Commissioning	
2500.02.108		BWIC	
	Risk Contingency		
		Risk Contingency	
Contract Total	**Blackwall Tunnel Southbound, Phase 1**		

TfL Reference Number tfl_scp_002178

Blackwall Tunnel Southbound, Phase 1, Detailed Design & Build

Call Off Contract Mini Competition

DETAILED DESIGN RESOURCE SCHEDULE

Stage One Resources

Resources	Stage One (Detailed Design) Project Role	Design Manager	Lighting Design lead			Technology Design lead				Concrete Repa ris Design lead	Cat 3 Checker				Cat 3 Checker				Cat 3 Checker		Cat 3 Checker										BIM Lead	Construction Manager	Estimator	Planner							
	Name	[redacted]																																						
	Framework Grade																																							
Rates	Core Working Hours																																							
	Monday to Friday between the hours of 18 00 to 08 00																																							
	Saturday between the hours of 18 00 to Sunday 08 00																																							
	Sunday between the hours of 08 00 to 18 00																																							
	Sunday between the hours of 18 00 to Monday 08 00																																							

Stage One (Detailed Design Activity)

				Total Hours	Total Forcast Cost	Total Forcast Cost
CORE ACTIVITY 1	MOBILISATION					
	Mobil sation	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00	[redacted]		
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 01 Saturday between the hours of 18 00 to Sunday 08 01 Sunday between the hours of 08 00 to 18 01 Sunday between the hours of 18 00 to Monday 08 01			
			Total Hours			
			Total Forcast Price			
CORE ACTIVITY 2	PLANNING & CONSENTS					
	Planning & Consents	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00	[redacted]		
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
			Total Hours			
			Total Forecast Price			
CORE ACTIVITY 3	ELECTRICAL DETAILED DESIGN					
	Electrical Distribution - Substa ns and Switchgear	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00	[redacted]		
	Lighting Design (includ ng staging and any temporary works)	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	PLC / Lighting Control Modifications	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Cable Management System & Supports	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Earth ng & Bond ng / EMC Compliance	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
			Total Hours			
			Total Forecast Price			
CORE ACTIVITY	COMMUNICATION SYSTEMS DETAILED DESIGN					
	CCTV System (Including staging and temporarly works)	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00	[redacted]		
	rtal/Tunnel Variable Messaging System (PVMS & TVM	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Portal / Tunnel Lane Control System (PLCS & TLCS)	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	PLC / NMCS Modifications and Amendments	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Cable Management System & Supports	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Earth ng & Bond ng / EMC Compliance	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Additional Sub-act vity	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
			Total Hours			
			Total Forecast Price			
CORE ACTIVITY 5	CIVILS (STRUCTURES) DETAILED DESIGN					
	Lighting Gantries Bracketry and Supports	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00	[redacted]		
	Var able Messaging Bracketry and Support	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	CCTV Bracketry and Support	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	Lane Control Bracketry and Supports	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00 Sunday between the hours of 08 00 to 18 00 Sunday between the hours of 18 00 to Monday 08 00			
	General Supports and Bracketry	Hours	Core Working Hours Monday to Friday between the hours of 18 00 to 08 00 Saturday between the hours of 18 00 to Sunday 08 00			

			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Cladding Repairs	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	CIVILS (CONCRETE ROAD DECK) DETAILED DESIGN		
CORE ACTIVITY 6	Above Deck Concrete Repairs	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Below Deck Repairs	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Mid R ver Pump Room Manhole Ring and Transverse Beams Repairs	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 20 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Waterproofing	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	CIVILS (HIGHWAY) DETAILED DESIGN		
CORE ACTIVITY 7	Road resurfacing	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Road Drainage	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 20 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Line Marking and Road Signage	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Design requirements (Drainage Stats Suitability H&S)	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	H&S AND ENVIRONMENTAL SPECIALIST INPUT		
CORE ACTIVITY 8	Health and Safety Specialist Input	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Environmental Specialist Input	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	BIM		
CORE ACTIVITY 9	BIM	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	DEVELOP ESTIMATE AND PROGRAMME FOR STAGE 2		
CORE ACTIVITY 10	Development of Stage 2 Programme	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Development of Stage 2 Estimate	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hours
			Total Forecast Price

	PROJECT MANAGEMENT		
CORE ACTIVITY 11	Project Management	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Additional Sub-activity	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
			Total Hour
			Total Forecast Pric

	INTERFACING WITH OTHERS/THIRD PARTIES		
	Designers	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Local Authorities	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00
			Sunday between the hours of 08 00 to 18 00
			Sunday between the hours of 18 00 to Monday 08 00
	Planning Authorities	Hours	Core Working Hours
			Monday to Friday between the hours of 18 00 to 08 00
			Saturday between the hours of 18 00 to Sunday 08 00

			Sunday between the hours of 08 00 to 18 00	[redacted]
			Sunday between the hours of 18 00 to Monday 08 00	
CORE ACTIVITY 12	Fire Brigade and other Emergency Services	Hours	Core Working Hours	
			Monday to Friday between the hours of 18 00 to 08 00	
			Saturday between the hours of 18 00 to Sunday 08 00	
			Sunday between the hours of 08 00 to 18 00	
			Sunday between the hours of 18 00 to Monday 08 00	
	The Mainta ner	Hours	Core Working Hours	
			Monday to Friday between the hours of 18 00 to 08 00	
			Saturday between the hours of 18 00 to Sunday 08 00	
			Sunday between the hours of 08 00 to 18 00	
			Sunday between the hours of 18 00 to Monday 08 00	
	Additional Sub-activity	Hours	Core Working Hours	
			Monday to Friday between the hours of 18 00 to 08 00	
			Saturday between the hours of 18 00 to Sunday 08 00	
			Sunday between the hours of 08 00 to 18 00	
			Sunday between the hours of 18 00 to Monday 08 00	
	Additional Sub-activity	Hours	Core Working Hours	
			Monday to Friday between the hours of 18 00 to 08 00	
			Saturday between the hours of 18 00 to Sunday 08 00	
			Sunday between the hours of 08 00 to 18 00	
			Sunday between the hours of 18 00 to Monday 08 00	
			Total Hours	
			Total Forecast Price	

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Blackwall Tunnel Southbound, Phase 1, Detailed Design & Build
Call Off Contract Mini Competition
SUBCONTRACTOR ACTIVITIES (STAGE 1 / DETAILED DESIGN)

Section	Description	Unit of Quant	Quantity	Rate	Total
STAGE 1 Subcontractor Activities					
Subcontractor Activity A					
Inspection & testing of concrete sub-tunnel (Core activity 6)	Half-cell testing, detailed hammer/visual. Confined space...assume 4 w/e shifts required (1 No for pump room, 3 No for other sub-tunnel areas)	Unit	4		
Subcontractor Activity B					
Civils (Structures)	Carry out pull out test on the existing anchorages for panels, brackets, cable laders etc. Assume 4 w/e (No.of tests to be confirmed)	Unit	4		
Subcontractor Activity C					
Cable routing	Subcontractor input into cable route design for Tunnel lighting	Item	1		
Cable routing	Subcontractor input into cable route design for Underpass lighting	Item	1		
Subcontractor Activity D					
EM EVAC Lighting	For input into cable route design and the installation of the handrail lighting units	Item	1		
Approach lighting	For input into the mounting of the wall mounted lighting units	Item	1		
Subcontractor Activity E					
Technology	Subcontractor input to CCTV Design	Item	1		
Technology	Subcontractor input to TCLS & VMS Design	Item	1		
Panel Survey	Identify & measure missing panels to aid programming for Stage 2	Item	1		

		Total Stage 1 Subcontractor Activities Price			[redacted]

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Call Off Contract Mini Competition
CONTRACTOR'S PRELIMINARIES (STAGE 1 / DETAILED DESIGN)

Section	Description	Unit of Quant	Quantity	Rate	Total
STAGE 1 PRELIMINARIES					
Materials Handling Plant					-
Craneage					-
Passenger/Goods Hoists					-
General Plant					-
Small Plant & PPE					-
Scaffolding					-
Temporary Works/ Access/Haul Roads				[redacted]	
Tunnel Mock up		Item	1		
Temporary Services					-
Environmental Control					-
Waste Management					-
Logistics					-

Setting Out Control					-
Site Hoardings / Barriers					-
Security & Access Control					-
Site Storage					-
Temporary Accommodation				[redacted]	
Welfare Van		Nr	10		
Facilities Management					-
Communications					-
Temporary Signs					-
IT Equipment & running costs					-
Other Subcontractor Costs				[redacted]	
raffic Management & Security for Survey Closures		Nr	10		
			Total Stage 1 Prelims Price		[redacted]

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Stage One Risk Register

Ref	Description	Likelihood (%)	Programme Impact (Low, Medium, or High) and Estimated Duration	Cost Impact (Low Medium, or High) and Estimated Cost	Actions to avoid risk	Bidder Comment
1	*Example 1*	*50%*	*Medium - 2 weeks*	[redacted]	*Risk Avoidance action*	
1	Additional and increased size of concrete repairs t	90%	High (10-12 wks)	[redacted]	Visual surveys and targeted non-destructive concrete testing to be carried out to confirm tunnel and sub-tunnel condition to be carried out at earliest opportunity (during Stage 1 design phase) ahead of the construction phase. Collaborative delivery strategy developed with concrete repair toolkit which will adapt to the increased repair sizes.	
2	Delay in agreeing target cost with TfL	30%	High (4-6 wks)	[redacted]	Design and delivery tracker and programme updated regularly with latest information to give clear visibility to Design, Commercial and Construction Teams to enable allocation of suitable resources to achieve delivery targets. ECI to undertaken with the contractors, construction team to agree collaborative pricing, delivery and construction strategy and ensure safe, effective delivery on site.	
3	Greater duration than anticipated for Technical ap	25%	High (4-6 wks)	[redacted]	Notify TAA estimated submission date of technical approval documents. Advanced discussion with TAA and Cat 3 checkers to ensure their technical requirements are met in the submission. Regular liaison with specialists. Appoint specialist Cat 3 checkers agreed with TfL.	
4	Instability of sub-tunnel deck structure during repa	5%	High (10-12 wks)	[redacted]	Structural analysis to confirm break out limits and sequence. Details to be briefed clearly to Contractor/delivery team in advance to ensure they align concrete repair sequencing and methodology with delivery programme and vehicle routes on site. Concrete repair rules and toolkit developed to dynamically manage change on site. Agree strategy to manage increased or additional repairs encountered outside of break out agreed limits provided in construction drawings.	
5	Existing infrastructure not as record drawings	30%	Low (2 wks)	[redacted]	Carry out site surveys and investigations to verify critical dimensions and details at start of design phase. Determine if further site investigations are required. Allow for changes within concrete repair rules and toolkit to adapt to what's found on site. Update as-built records and BIM model based on what's found on site.	
6	Cladding panels not correctly fastened / loose	40%	Medium (4-6 wks)	[redacted]	Surveys to be carried out to identify any obstructions or defects that may impact on panel installation. Undertake pull out tests to confirm panel frame anchorage system.	

7	Uncharted Service strike / damage	10%	High (10 wks)	[redacted]	Statutory undertakers information to be provided within works information. Contractor to confirm location of statutory undertakers equipment/assets on site prior to excavation. Permit to work system in operation on site to ensure risk is managed at site level.	
8	Assumed activity output not achievable on site	30%	Medium (6-8 wks)	[redacted]	Collaborative approach with Design and Construction Team working to align delivery approach with concrete repair toolkit and rules and optimise safe, achievable and effective outputs within working limits set out within tunnel closures and working windows.	
9	Additional weight to tunnel lining due to temporary	100%	Medium (6-8 wks)	[redacted]	Structural analysis to be carried out on the existing structure to check effects of additional load can be accommodated. Liaise with specialists to ensure suitable fixings for the various tunnel construction materials can be accommodated.	
10	Removal of corroded rebar and provision of new r	10%	Low (2 wks)	[redacted]	Assumption that the reinforcement rebar are in acceptable condition (i.e. less than 20% section loss). No welding permitted in tunnel, therefore allow for lapping bars/couplers where possible. This risk to be added to the project risks with funding and programme mitigations allocated .	
11	Existing Frame anchors / bracketry insufficient	50%	Medium (4-6 wks)	[redacted]	Undertake pull out tests to confirm existing anchorage system. Design to incorporate allowance for redundancy. Ensure all loading (existing and/new) are captured	
12	Location of the lighting Driver Box Enclosures is fu	75%	Low (2 wks)	[redacted]	Review location during initial Design phase with Lighting providers and identify possible alternatives Redesign the location of Driver box enclosures if required due to Cable lengths	
13	Design limitations to containment design	50%	Medium	[redacted]	Confirm in design survey	Current design shows continuous runs of containment, however we believe there to be other assets that may prevent this

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FEE %

Stage 1 - Detailed Design Fee %
[redacted]

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Call Off Contract Mini Competition
STAGE 2 ACTIVITY SCHEDULE

Programme Activity id	Activity Completion Date	E Code	Elemental	SCE Code	Standard Cost Element	Sub Category Code	Sub Category	Total of the Activty
					Contractor Preliminaries			
ST2-PL-1040	2/3/2025						Staff	
							Materials Handling Plant	
ST2-PL-1020	12/17/2024						Craneage	
							Passenger/Goods Hoists	
ST2-PL-1020	12/17/2024						General Plant	
ST2-PL-1020	12/17/2024						Small Plant & PPE	
ST2-PL-1020	12/17/2024						Scaffolding	
ST2-PL-1020	12/17/2024						Temporary Works/ Access/Haul Roads	
ST2-PL-1020	12/17/2024						Temporary Services	
ST2-PL-1020	12/17/2024						Environmental Control	
ST2-PL-1020	12/17/2024						Waste Management	
ST2-PL-1020	12/17/2024						Logistics	
ST2-PL-1020	12/17/2024						Setting Out Control	
ST2-PL-1020	12/17/2024						Site Hoardings / Barriers	
ST2-PL-1020	12/17/2024						Security & Access Control	
ST2-PL-1020	12/17/2024						Site Storage	
ST2-MOB-1030	1/21/2025						Temporary Accommodation	
ST2-MOB-1030	1/21/2025						Facilities Management	
ST2-MOB-1030	1/21/2025						Communications	
ST2-MOB-1030	1/21/2025						Temporary Signs	
ST2-MOB-1030	1/21/2025						IT Equipment & running costs	
							Other	
					Third Parties - Interfaces with other parties			
ST2-PL-1040	2/3/2025						Designers	
ST2-PL-1040	2/3/2025						Client	
ST2-PL-1040	2/3/2025						Local councils	
ST2-PL-1040	2/3/2025						Planning authorities	
ST2-PL-1040	2/3/2025						Fire Brigade & Emergency Services	
ST2-PL-1040	2/3/2025						The maintainer	
			Enabling & Temporary Works					
ST2-MOB-1020	4/5/2024				Mobilise Site			
ST2-MOB-1030	1/21/2025				Demolition			
ST2-MOB-1030	1/21/2025				Clear Site			
ST2-MOB-1020	4/5/2024				Services Diversions			
ST2-MOB-1020	4/5/2024				Other			
ST2-MOB-1020	4/5/2024				Hoardings			
HAO-1090	1/31/2025				Traffic Diversions / control			
		700	Highway - Pavements					
				700.100	Full depth replacement			
CVL-BL5-1010	8/10/2024					700.100.1	Milling surface and base course	
CVL-BL5-1020	8/10/2024					700.100.2	Removal and storage of kerbs	
CVL-BL5-1010	8/10/2024					700.100.3	Disposal of waste and arisings	
CVL-BL5-1060	8/11/2024					700.100.6	Reinstate kerbs	
CVL-S&S-1160	12/18/2024					700.100.7	Movement and expansion joints	
CVL-BL5-1070	8/11/2024					700.100.8	Repairs and remedial works to road drainage and manhole covers, etc	
CVL-BL5-1070	8/11/2024					700.100.9	Base course	
CVL-BL5-1070	8/11/2024					700.100.10	Tack coat	
CVL-BL5-1070	8/11/2024					700.100.10	Surface course	
				700.101	Replacement surface course only			
CVL- BL6-1000	12/9/2024					700.105.1	Milling surface coat	
CVL- BL6-1000	12/9/2024					700.105.2	Disposal of waste and arisings	
CVL- BL6-1000	12/9/2024					700.105.3	Repairs and remedial works to road drainage and manhole covers, etc	
CVL- BL6-1000	12/9/2024					700.105.4	Tack coat	

CVL- BL6-1000	12/9/2024					700.105.5	Surface course
		1200	Highways - Traffic signs and road markings				
				1200.100	Traffic signs and road markings		
						1200.100.1	Remove traffic signs and posts
						1200.100.2	Replace traffic signs
						1200.100.3	Replace road post
						1200.100.4	New road signs
						1200.100.5	New road posts
CVL- BL6-1000	12/9/2024					1200.100.6	Road markings
		1700	Highways - Structural concrete				
				1700.100	Structural concrete repairs - top of deck		
CVL-BL2-1300	6/30/2024					1700.100.1	insitu and pre-cast concrete
				1700.101	Structural concrete repairs - bottom of deck		
STR-1070	8/10/2024					1700.101.1	Spalling repairs to existing in-situ and pre-cast concrete
STR-1220	9/5/2024					1700.101.2	Crack repair to existing in-situ and pre-cast concrete
STR-1310	7/6/2024					1700.101.3	Mid river pump room manhole ring and transverse beams
		1800	Highways - Steelwork				
				1800.100	Miscellaneous steelwork - tunnel cladding repairs		
CLD-1130	9/25/2024					1800.100.1	Repair or replace unistrut support structure and fixings for concrete substrate
CLD-1130	9/25/2024					1800.100.2	Repair or replace unistrut support structure and fixings for tunnel
CLD-1130	9/25/2024					1800.100.3	Top hat fixing
						1800.100.4	Remove, clean and replace cladding panel
CLD-1130	9/25/2024					1800.100.5	Measure, fabricate, paint and fit damaged panel
CLD-1130	9/25/2024					1800.100.5	Measure, fabricate, paint and fit missing panel
		2000	Highways - Waterproofing				
				2000.1	Waterproofing membrane replacement		
CVL-BL5-1030	8/10/2024					2000.100.1	Deck surface preparation
CVL-BL5-1050	8/10/2024					2000.100.2	Waterproof membrane
CVL-BL5-1070	8/11/2024					2001.100.3	Temporary road surface prior to reapplication of road surface
CVL-BL5-1070	8/11/2024					2001.100.4	Repairs and remedial works to road drainage and manhole covers, etc
CVL-BL5-1030	8/10/2024					2001.100.5	Bond coat
		2500.02	Special structures - electrical				
				2500.02.100	Main Switchgear		
LGT-LVC-1060	6/5/2024					2500.02.100.1	LV panels
LGT-LVC-1060	6/5/2024					2500.02.100.2	Mechanical Panels
PR0-1760	2/29/2024					2500.02.100.3	FAT
LGT-TUN-1220	11/19/2024					2500.02.100.4	SAT
LGT-LVC-1060	6/5/2024					2500.02.100.5	Rubber matting to front of all panels
				2500.02.101	Sub-mains distribution		
LGT-TUN-1210	11/8/2024					2500.02.101.1	Cabling
LGT-TUN-1210	11/8/2024					2500.02.101.2	Cleats and supports
LGT-TUN-1220	11/19/2024					2500.02.101.3	Testing
LGT-TUN-1220	11/19/2024					2500.02.101.4	Commissioning
				2500.02.102	Distribution Boards		
LGT-TUN-1220	11/19/2024					2500.02.102.1	Lighting / power dist. boards
LGT-TUN-1220	11/19/2024					2500.02.102.2	Mechanical dist. boards
LGT-TUN-1220	11/19/2024					2500.02.102.3	Testing
LGT-TUN-1220	11/19/2024					2500.02.102.4	Commissioning
				2500.02.103	Tunnel lighting		
LGT-TUN-1200	10/30/2024					2500.02.103.1	Light fittings
LGT-TUN-1210	11/8/2024					2500.02.103.2	Conduit and wiring
LGT-TUN-1220	11/19/2024					2500.02.103.3	Testing
LGT-TUN-1220	11/19/2024					2500.02.103.4	Commissioning
LGT-TUN-1230	12/6/2024					2500.02.103.5	Decommission, isolate and strip out existing
				2500.02.104	Underpass Lighting		
LGT-STR-1110	11/8/2024					2500.02.104.1	Light fittings
LGT-STR-1110	11/8/2024					2500.02.104.2	Conduit and wiring
LGT-STR-1060	10/27/2024					2500.02.104.3	Testing
LGT-STR-1060	10/27/2024					2500.02.104.4	Commissioning
LGT-STR-1070	11/24/2024					2500.02.104.5	Decommission, isolate and strip out existing

				2500.02.105	Emergency lighting			
						2500.02.105.1	Light fittings	
						2500.02.105.2	Conduit and wiring	
						2500.02.105.3	Testing	
						2500.02.105.4	Commissioning	
						2500.02.105.5	Decommission, isolate and strip out existing	
				2500.02.106	Low Level Evacuation lighting			
LGT-EMG-1030	7/5/2024					2500.02.106.1	Light fittings	
LGT-EMG-1020	7/18/2024					2500.02.106.2	Conduit and wiring	
LGT-EMG-1040	11/19/2024					2500.02.106.3	Testing	
LGT-EMG-1040	11/19/2024					2500.02.106.4	Commissioning	
						2500.02.106.5	Decommission, isolate and strip out existing	
				2500.02.107	Street Lighting			
LGT-STR-1040	11/13/2024					2500.02.107.1	Light fittings	
LGT-STR-1040	11/13/2024					2500.02.107.2	Conduit and wiring	
LGT-STR-1040	11/13/2024					2500.02.107.3	Testing	
LGT-STR-1040	11/13/2024					2500.02.107.4	Commissioning	
LGT-STR-1040	11/13/2024					2500.02.107.5	Decommission, isolate and strip out existing	
				2500.02.108	Cable Management System for Low Voltage Electrics & Lighting			
LGT-TUN-1190	10/18/2024					2500.02.108.1	Stainless steel ladder rack, fittings and supports	
LGT-TUN-1190	10/18/2024					2500.02.108.2	Stainless steel MDRF tray, fittings and supports	
LGT-TUN-1190	10/18/2024					2500.02.108.3	Stainless steel Trunking, fittings and supports	
LGT-TUN-1190	10/18/2024					2500.02.108.4	Stainless steel Basket, fittings and supports	
LGT-TUN-1190	10/18/2024					2500.02.108.5	Stainless steel conduit, fittings and supports	
				2500.02.109	Programmable logic controllers			
LGT-TUN-1210	11/08/2024					2500.02.109.1	Sensors and cabling	
LGT-TUN-1210	11/08/2024					2500.02.109.2	Control modules	
LGT-TUN-1210	11/08/2024					2500.02.109.3	Interconnecting cables	
LGT-TUN-1210	11/08/2024					2500.02.109.4	Computer head end and software	
LGT-TUN-1220	11/19/2024					2500.02.109.5	Testing	
LGT-TUN-1220	11/19/2024					2500.02.109.6	Commissioning	
				2500.02.110	Uninterruptible power supplies			
						2500.02.11	Battery modules	
						2500.02.12	Inverters and by-pass	
						2500.02.13	Controls and wiring	
						2500.02.14	Testing	
						2500.02.15	Commissioning	
				2500.02.111	Earthing and bonding			
LGT-TUN-1210	11/8/2024					2500.02.111.1	Green / yellow earth cable	
LGT-TUN-1210	11/8/2024					2500.02.111.2	Earth bars	
LGT-TUN-1210	11/8/2024					2500.02.111.3	Earth lugs	
LGT-TUN-1220	11/19/2024					2500.02.111.4	Testing	
LGT-TUN-1220	11/19/2024					2500.02.111.5	Commissioning	
				2500.02.112	Electro-magnetic compatibility			
LGT-TUN-1210	11/08/2024					2500.02.112.1	Study and report	
LGT-TUN-1210	11/08/2024					2500.02.112.2	Implementation re cable shielding	
LGT-TUN-1220	11/19/2024					2500.02.112.3	Testing	
LGT-TUN-1220	11/19/2024					2500.02.112.4	Commissioning	
				2500.02.113	Separation and rationalisation of third party cables			
						2500.02.113.1	Cable identification	
						2500.02.113.2	Engage with cable stakeholder	
						2500.02.113.3	New containment for separated cables	
						2500.02.113.4	New cable adaptions such as torpedo joints	
						2500.02.113.5	Testing	
						2500.02.113.6	Commissioning	
						2500.02.113.7	Sign off by stake holder	
				2500.02.114	Testing & Commissioning			
LGT-TUN-1220	11/19/2024					2500.02.114.1	Integrated systems test for all systems	

				2500.02.115	BWIC		
LGT-TUN-1190	10/18/2024					2500.02.115.1	Builders work holes and chasing and make good
LGT-TUN-1190	10/18/2024					2500.02.115.2	Firestopping and certification
LGT-TUN-1190	10/18/2024					2500.02.115.3	Structural openings and make good
LGT-TUN-1190	10/18/2024					2500.02.115.4	Plant bases, Panel bases and so on
				2500.02.116	Lighting Support Structures		
						2500.02.116.1	Support structure for road lighting
		2500.05	Special structure - communications				
				2500.05.100	CCTV system		
CCTV-1190	7/31/2024					2500.05.100.1	CCTV cameras and cabling
CCTV-1190	7/31/2024					2500.05.100.2	Head end modifications incl computer screens and software, image storage, joy stick
CCTV-1190	7/31/2024					2500.05.100.3	IT Switches
CCTV-1510	8/11/2024					2500.05.100.4	Testing
CCTV-1510	8/11/2024					2500.05.100.5	Commissioning
CCTV-1420	8/11/2024					2500.05.100.6	Decommission, isolate and strip out existing
				2500.02.101	Tunnel & Portal Variable Messaging System		
SIG-VMS-1030	5/28/2024					2500.05.101.1	Variable Messaging Signs
SIG-VMS-1030	5/28/2024					2500.05.101.2	Bracketry
SIG-VMS-1030	5/28/2024					2500.05.101.3	Conduit and wiring
SIG-VMS-1030	5/28/2024					2500.05.101.4	Testing
SIG-VMS-1030	5/28/2024					2500.05.101.5	Commissioning
SIG-VMS-1030	5/28/2024					2500.05.101.6	Decommission, isolate and strip out existing
				2500.05.102	Tunnel Lane Control Signs		
SIG-LCS-1190	5/30/2024					2500.05.102.1	Tunnel Lance Control Signs
SIG-LCS-1190	5/30/2024					2500.05.102.2	Bracketry
SIG-LCS-1190	5/30/2024					2500.05.102.3	Conduit and wiring
SIG-LCS-1190	5/30/2024					2500.05.102.4	Testing
SIG-LCS-1190	5/30/2024					2500.05.102.5	Commissioning
SIG-LCS-1190	5/30/2024					2500.05.102.6	Decommission, isolate and strip out existing
				2500.05.103	Cable Management System for Communication Systems		
SIG-LCS-1190	5/30/2024					2500.05.103.1	Stainless steel ladder rack, fittings and supports
SIG-LCS-1190	5/30/2024					2500.05.103.2	Stainless steel MDRF tray, fittings and supports
SIG-LCS-1190	5/30/2024					2500.05.103.3	Stainless steel Trunking, fittings and supports
SIG-LCS-1190	5/30/2024					2500.05.103.4	Stainless steel Basket, fittings and supports
SIG-LCS-1190	5/30/2024					2500.05.103.5	Stainless steel conduit, fittings and supports
				2500.05.104	Programmable logic controllers		
SIG-LCS-1190	5/30/2024					2500.02.104.1	Modification works to PLC
SIG-LCS-1190	5/30/2024					2500.02.104.2	Connection to NMCS2
SIG-LCS-1190	5/30/2024					2500.02.104.3	Cabling
SIG-LCS-1190	5/30/2024					2500.02.104.4	Programming
SIG-LCS-1190	5/30/2024					2500.02.104.5	Monitoring
SIG-LCS-1190	5/30/2024					2500.02.104.6	Interfaces with other systems
SIG-LCS-1190	5/30/2024					2500.02.104.7	IT Switches
SIG-LCS-1190	5/30/2024					2500.02.104.8	Testing
SIG-LCS-1190	5/30/2024					2500.02.104.9	Commissioning
				2500.05.105	Earthing and bonding		
CCTV-1510	8/11/2024					2500.02.105.1	Green / yellow earth cable
CCTV-1510	8/11/2024					2500.02.105.2	Earth bars
CCTV-1510	8/11/2024					2500.02.105.3	Earth lugs
CCTV-1510	8/11/2024					2500.02.105.4	Testing
CCTV-1510	8/11/2024					2500.02.105.5	Commissioning
				2500.05.106	Operational information systems		
CCTV-1510	8/11/2024					2500.02.106.1	Operational systems during normal operations
CCTV-1510	8/11/2024					2500.02.106.2	Operational systems during degraded operations
CCTV-1510	8/11/2024					2500.02.106.3	Operational systems during emergency operations
CCTV-1510	8/11/2024					2500.02.106.4	Testing
CCTV-1510	8/11/2024					2500.02.106.5	Commissioning
				2500.05.107	Testing & Commissioning		
CCTV-1510	8/11/2024					2500.02.107.1	Integrated systems test for all systems

								[redacted]
				2500.05.108	BWIC			
SIG-LCS-1190	5/30/2024					2500.02.107.1	Builders work holes and chasing and make good	
SIG-LCS-1190	5/30/2024					2500.02.107.2	Firestopping and certification	
SIG-LCS-1190	5/30/2024					2500.02.107.3	Structural openings and make good	
SIG-LCS-1190	5/30/2024					2500.02.107.4	Plant bases, Panel bases and so on	
							Total Stage 2 Activity Schedule Price	

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CONTRACTOR'S PRELIMINARIES (STAGE 2 / CONSTRUCTION)

Section	Description	Unit of Quant	Quantity	[redacted]
STAGE 2 PRELIMINARIES				
Staff				
Project Director		Weeks	19.2	
Senior Project Manager		Weeks	48	
Sub Agent	Day Working	Weeks	48	
Sub Agent	Night Working	Weeks	42	
Planner		Weeks	17	
Construction Manager	Night Working	Weeks	48	
Commercial Manager		Weeks	10	
Senior Quantity Surveyor		Weeks	48	
Trainee Quantity Surveyor		Weeks	48	
Administrator		Weeks	48	
Public Liaison Manager		Weeks	17	
Quality & Systems Manager		Weeks	8	
Health & Safety Manager		Weeks	17	
Specialist/Expert (including M&E) A		Weeks	17	
BIM Manager		Weeks	9.6	
Construction Manager	Weekend Blockade works	Hrs	240	
Sub Agent	Weekend Blockade works	Hrs	240	
Sub Agent	Weekend Blockade works	Hrs	100	
Materials Handling Plant				
Forklift		Weeks	6	
Craneage				
Passenger/Goods Hoists				
General Plant				
Fuel Storage		Weeks	42	
Small Plant & PPE				
Scaffolding				
Scaffolding Access	North Vent shaft	Sum	1	
Scaffolding Access	South Vent Shaft	Sum	1	
Temporary Works/ Access/Haul Roads				
Site Compound hardstanding	Site clearance, hardstanding & surfacing	Sum	1	
Temporary Services				
Temp Services to Site Compound	Water, Foul, Electric, Broadband Set up	Sum	1	
Temp Services to Site Compound	Water, Foul, Electric, Broadband Running cost	Weeks	42	
Environmental Control				
Waste Management				
Logistics				
Operative Transport		Weeks	84	
Setting Out Control				
Site Hoardings / Barriers				
Site Fencing & Gates		m/wk	16800	
Security & Access Control				
Compound CCTV		Weeks	42	
Security	Security for Tunnel Closures	Shifts	192	
Site Storage				
Site Storage Units		Weeks	42	
Temporary Accommodation				
Temp Site Accommodation		Weeks	84	
Tunnel Welfare		Weeks	126	

					[redacted]
Temp Site Accommodation Transport		Sum	1		
Temp Site Accommodation Staircases		Weeks	84		
Facilities Management					
Temp Accommodation Consumables	Office & Welfare Consumables	Weeks	42		
Temp Accommodation Cleaning		Weeks	42		
Communications					
Temporary Signs					
Temporary Signs		Sum	1		
IT Equipment & running costs					
IT Equipment		Weeks	42		
Other					
				Total Stage 2 Prelims Price	

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Stage Two Risk Register

Ref	Description	Likelihood (%)	Programme Impact (Low, Medium, or High)	Cost Impact (Low Medium, or High)	Actions to avoid risk	Risk Allowance as Contingency	Bidder Comment
1	Delays in construction due to access constraints / cancelled / delayed closures	25%	Low	[redacted]	Ensure programme is followed and access constraints are captured during Stage 1	[redacted]	
2	Increase in material costs	50%	Medium	[redacted]	Market vigorously monitored, and decisions made swiftly to take advantage of cost savings and lock in prices at earliest opportunity		
3	Clash with other construction works or large scale events	25%	Medium	[redacted]	Works to be planned and resourced thoroughly to ensure equipment and resources can optimise safe and effective outputs on site. Liaise with stakeholders in advance of works to ensure all known events are incorporated in the delivery strategy planning. Agree tunnel open and closing strategy with both client and key stakeholders.		
4	Clash with various discipline teams over works areas and activities	25%	Medium	[redacted]	Through ECI, collaborative approach and close liaison between design and construction teams, delivery of the works to be programmed to allow delivery of the needs of all disciplines delivering work in the tunnel. Concrete repair toolkit to be developed with a variety of solutions to adapt to what is found on site.		
5	Instability of sub-tunnel deck structure during repairs	5%	High	[redacted]	Structural analysis to confirm break out limits and sequence. Details to be briefed clearly to Contractor/delivery team in advance to ensure they align concrete repair sequencing and methodology with delivery programme and vehicle routes on site. Concrete repair rules and toolkit developed to dynamically manage change on site. Agree strategy to manage increased or additional repairs encountered outside of break out agreed limits provided in construction drawings.		
6	Delays in waterproofing due to unexpected damage beneath existing kerbed areas	50%	Medium	[redacted]	During Stage 1, we will investigate several sample locations where concrete may be failing around vents.		
7	Interface with existing lighting & technology assets will result in additional fixings required for new Cladding panels	50%	Medium	[redacted]	Surveys during design stage to ascertain key clashes with existing infrastructure & extent of additional fixings required.		
8	Potential to identify additional areas of Concrete repairs required during Stage 1	50%	Medium	[redacted]	Surveys during design stage will identify any additional works required. Regular liaison with Client to confirm any additional works to be included in the updated Price and Programme for Stage 2		

9	Third Party Cables	25%	Low	[redacted]	Surveys during design stage will identify any Third Party Cables. If identified, Liaison with Stakeholders to confirm any additional works to be included in the updated Price and Programme for Stage 2	[redacted]	
10	Additional Time Risk Allowance	50%	Medium	[redacted]	Ensure programme is followed and access constraints are captured during Stage 1		
					Total Stage 2 Risk Allowance as Contingency		

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STAGE 2 FEE %

Stage 2 - Construction Fee %
[redacted]