

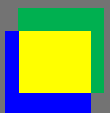
December
2019

New Taxiway St Mary's Airport Isles of Scilly

Preliminaries & Performance Specification

Tender Issue

Revision C (09.01.2020)



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Prepared for:

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TR21 0NG

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Revision	Author/Revision Detail	Verified by	Date
*	W.Sherlock / First Issue	DH	10.12.2019
A	W.Sherlock / Update to pg. 52.	WS	11.12.2019
B	W.Sherlock / Option 2 plus updates throughout	DH	23.12.2019
C	W Sherlock / Redact Option 1	-	09.01.2019





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A

NEC3 Engineering and Construction Contract (EEC) Short Contract



A10 PROJECT PARTICULARS

110 THE PROJECT

- Name: New Taxiway, St Mary's Airport
- Nature: Construct a new taxiway between runway 09 and stand 6.
- Location: South of Terminal, St. Mary's Airport, St. Mary's, Isles of Scilly, TR21 0NG
- Length of contract: TBC.

120 EMPLOYER (CLIENT)

- Name: Air Traffic Services .
- Address: Air Traffic Services, St. Mary's Airport, St. Mary's, Isles of Scilly, TR21 0NG
- Contact: Russ Schild.
- Telephone: +44 (0)1720 424 335.
- E-mail: Russ.Schild@scilly.gov.uk

130 CONTRACTOR

- Name: TBC.
- Address: TBC.
- Contact: TBC.
- Telephone: TBC.
- E-mail: TBC.

150 CONSULTANTS

- Name: pdp Green Consulting.
- Address: Calenick House, Truro Technology Park, Heron Way, Newham, Truro, Cornwall, TR1 2XN.
- Contact: David Hollingsworth.
- Telephone: 01872 265400.
- E-mail: davidhollingsworth@pdpgreen.co.uk



A11 TENDER AND CONTRACT DOCUMENTS

110 TENDER DOCUMENTS

- The tender documents are:
 - The Specification comprising Preliminaries and Reference NBS Specification.
 - The following drawings:

Option 2

4000	Location Plan – Option 2
4010	Proposed Site Compound – Option 2
3050	Proposed Taxiway & Setting out – Option 2
4100	Site Investigation Plan – Option 2
4200	Proposed Taxiway – Centre Line Section
4210	Proposed Taxiway – Section 1 (0m)
4220	Proposed Taxiway – Section 2 (10m)
4230	Proposed Taxiway – Section 3 (20m)
4240	Proposed Taxiway – Section 4 (30m)
4250	Proposed Taxiway – Section 5 (40m)

Drawing Statuses: For Approval

Risk Register (Appendix D)

Contractor Competence Questionnaire (Appendix F)

120 CONTRACT DRAWINGS

- The Contract Drawings: The same as the tender drawings.

160 PRECONSTRUCTION INFORMATION

- Format: The Preconstruction information is described in these preliminaries in Section A34. It refers to information given elsewhere in the preliminaries and other tender documents



A12 THE SITE/ EXISTING BUILDINGS

- 110 THE SITE
 - Description: Compound is located southwest of airport terminal, St. Mary's Airport, St. Mary's, Isles of Scilly, TR21 0NG
- 120 EXISTING BUILDINGS ON/ ADJACENT TO THE SITE
 - Description: The airport terminal due north of the proposed taxiway.
- 140 EXISTING UTILITIES AND SERVICES
 - Drawings: (Information shown is indicative only): None.
 - Other information: The Principal Contractor is responsible for locating, identifying and managing all services affected by the works for the duration of the project.
- 160A SOILS AND GROUND WATER
 - To be determined by the Principal Contractor
- 170A SITE INVESTIGATION
 - To be determined by the Principal Contractor. Principal Contractor to satisfy themselves that their proposed working method is appropriate for soil/ground conditions on site and surrounding area affected by the works.
- 180 HEALTH AND SAFETY FILE
 - Availability for inspection: The Health and Safety File for the site/ building may be seen by appointment during normal office hours at: Selwood Housing offices.
 - Other documents: None.
 - Arrangements for inspection: Direct with the employer.
- 200 ACCESS TO THE SITE
 - Description: As per "Proposed Site Compound" Drawings.
 - Limitations: Located to limit interference to airport operations
- 210 PARKING
 - Restrictions on parking of the Contractor's and employees' vehicles: As road markings permit, but do not block routes for emergency services.
- 220 USE OF THE SITE
 - General: Do not use the site for any purpose other than carrying out the Works.
 - Limitations: To abide by airport procedures.
- 230 SURROUNDING LAND/ BUILDING USES
 - General: Adjacent or nearby uses or activities are as follows:
 - An operational Airport



240 HEALTH AND SAFETY HAZARDS

- General: The nature and condition of the site/ building cannot be fully and certainly ascertained before it is opened up. However, the following hazards are or may be present:
 - Risk Register
- Information: The accuracy and sufficiency of this information is not guaranteed. Ascertain if any additional information is required to ensure the safety of all persons and the Works.
- Site staff: Draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.

250 SITE VISIT

- Assessment: Ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Works.
- Arrangements for visit: To be agreed direct with the Employer



A13 DESCRIPTION OF THE WORK

110 PREPARATORY WORK BY OTHERS

- Works: Carried out under a separate contract and completed before the start of work on site for this Contract.
- Description: None.

120 THE WORKS

- Description: The airport requires a new ground taxiway from runway 09 to the apron alongside the terminal to accommodate the following helicopter, Leonardo AW139. Figure 1 shows Option 2.
- Option 2 to be priced.
- Due to the nature and location of the site at St. Mary's Airport the design approach is based on limiting the requirement for importing substantial quantities of material to the island. For this reason, a plastic reinforced grass paving system has been proposed. These systems rely solely on the ground condition being capable of withstanding the design loading profiles from the critical aircraft.

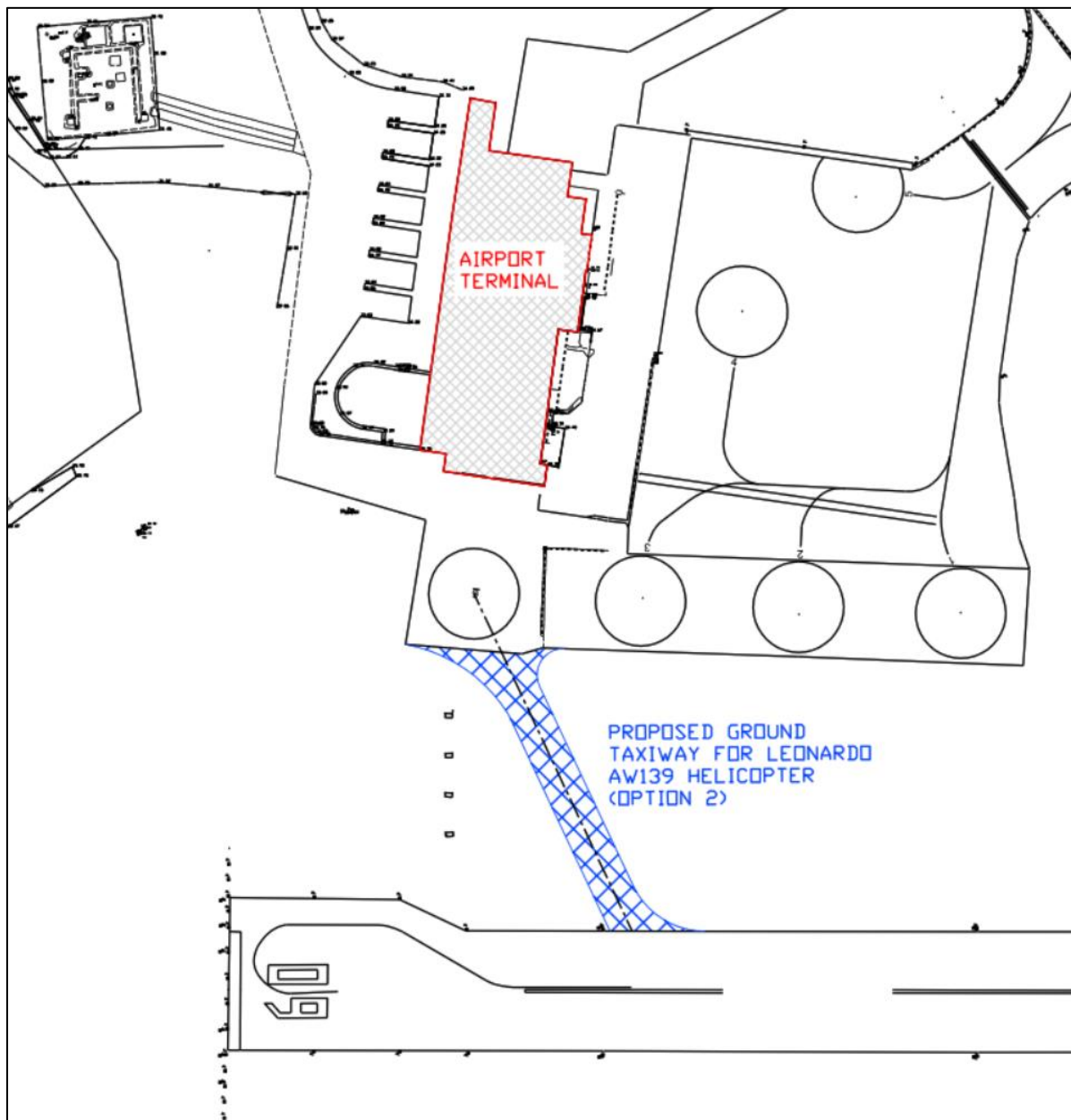


Figure 1: Option 2 - Proposed extent of new ground taxiway based on "ICAO Annex 14 Volume II Heliport"



A20 NEC3 ENGINEERING AND CONSTRUCTION SHORT CONTRACT

NEC3 ENGINEERING AND CONSTRUCTION SHORT CONTRACT

- The Conditions of Contract: The core clauses, conditions and secondary Options indicated, for the NEC3 Engineering and Construction Short Contract (April 2013).
- Housing Grants Construction and Regeneration Act 1996, as amended by the Local Democracy, Economic Development and Construction Act 2009: does not apply.
- Requirement: Allow for the obligations, liabilities and services described.

CONTRACT DATA

THE EMPLOYER

- See clause A10/120.

THE WORKS

- The Works: Summarised in clause A13/120 and defined in the description, drawings and specifications of the Works Information.

THE SITE

- The site: Described in clause A12/110 and detailed in Site Information.

STARTING DATE

- The starting date is: TBC.

COMPLETION DATE

- The completion date is: TBC.

PERIOD FOR REPLY

- The period for reply is: 48 hours.

DEFECTS DATE

- The defects date is: 52 weeks after completion.

DEFECTS CORRECTION PERIOD

- The defects correction period is: one weeks.

DELAY DAMAGES

- The delay damages are: £150/day

ASSESSMENT DAY

- The assessment day is the: last Thursday of each month.

RETENTION

- The retention is: 5%

ADJUDICATOR

- The Adjudicator is:
Name: Institution of Civil Engineers
Address: One Great George Street, Westminster, London, SW1P 3AA
Tel: 02072 227722
Email: TBC



INTEREST ON LATE PAYMENT

- The interest on late payment is 0.5% per complete week of delay.

LIMITATION OF LIABILITY

- The Contractor is not liable to the Employer for loss of or damage to the Employer's property in excess of: £5,000,000 for any one event.

INSURANCE

- The Employer provides this insurance:
- None.

INSURANCE COVER

- The minimum amount of cover for the third insurance stated in the Insurance Table is: £2,000,000.
- The minimum amount of cover for the fourth insurance stated in the Insurance Table is: £2,000,000.

ADJUDICATOR NOMINATING BODY

- The body is: The Institution of Civil Engineers.

TRIBUNAL

- The tribunal is: Arbitration.

ARBITRATION

- If the tribunal is arbitration, the arbitration procedure is: The Institution of Civil Engineers Arbitration Procedure.

ADDITIONAL CONDITIONS

- Contractor's design: Undertake and accept full responsibility for the design of the following parts of the Works: Paving design. See performance specification on page 54.
 - Design liability: Warrant that the parts of the Works are N/A.
 - Drawings and supporting documentation: Submit with tender.
- Additional conditions are: Pollution insurance cover £2,000,000.

CLIENT

- The Client: The Employer defined in clause A10/120.



A30 TENDERING/ SUBLETTING/ SUPPLY

MAIN CONTRACT TENDERING

- 110 SCOPE
 - General: These conditions are supplementary to those stated in the Invitation to Tender and on the form of tender (NEC3).
- 110A SCOPE
 - General: These conditions are supplementary to those stated in the Invitation to Tender and in the Invitation to Tender.
- 145 TENDERING PROCEDURE
 - General: In accordance with NBS Guide to Tendering for Construction Projects.
 - Errors: Alternative 2 is to apply.
- 160 EXCLUSIONS
 - Inability to tender: Immediately inform if any parts of the work as defined in the tender documents cannot be tendered.
 - Relevant parts of the work: Define those parts, stating reasons for the inability to tender.
- 170 ACCEPTANCE OF TENDER
 - Acceptance: No guarantee is offered that any tender will be recommended for acceptance or be accepted, or that reasons for non acceptance will be given.
 - Costs: No liability is accepted for any cost incurred in the preparation of any tender.
- 190 PERIOD OF VALIDITY
 - Period: After submission or lodgment, keep tender open for consideration (unless previously withdrawn) for not less than 12 weeks.
 - Date for possession/ commencement: See section A20.

PRICING/ SUBMISSION OF DOCUMENTS

- 210 PRELIMINARIES IN THE SPECIFICATION
 - The Preliminaries/ General conditions sections must not be relied on as complying with SMM7/ NRM2.
- 220 PRICING OF PRELIMINARIES
 - Charges: When pricing Preliminaries, identify separately for each item where, for the purpose of valuing the work, the charge for that item is considered to be:
 - Fixed: (i.e. where the charge for the item does not depend on duration).
 - Time related: (i.e. where the charge for the item is dependent on duration).
- 250 PRICED DOCUMENTS
 - Alterations: Do not alter or qualify the priced documents without written consent. Tenders containing unauthorised alterations or qualifications may be rejected.
 - Measurements: Where not stated, ascertain from the drawings.
 - Deemed included: Costs relating to items, which are not priced, will be deemed to have been included elsewhere in the tender.
 - Submit: With tender.



- 310 TENDER
- General: Tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the Works.
- 440 SCHEDULE OF RATES
- Content: Provide rates for all significant items of work including at least the following:
 - Labour (all levels)
 - Plant.
 - Fully priced copy: Submit with the tender.
- 480 PROGRAMME
- Programme of work: Prepare a summary showing the sequence and timing of the principal parts of the Works and periods for planning and design. Itemize any work which is excluded.
 - Submit: With tender.
- 500 TENDER STAGE METHOD STATEMENTS
- Method statements: Prepare, describing how and when the following is to be carried out:
 - Aspects relating to:
 - Health & Safety
 - Environmental Management.
 - Statements: Submit with the tender.
- 510 ALTERNATIVE METHOD TENDERS
- General: In addition to and at the same time as tendering for the Works as defined in the tender documents, alternative methods of construction/ installation may be submitted for consideration. Alternatives, which would involve significant changes to other work, may not be considered.
 - Alternative tenders: Such alternatives will be deemed to be alternative tenders and each must include a complete and precise statement of the effects on cost and programme.
 - Safety method statement: Carry out a health and safety risk assessment for each alternative and where appropriate provide a safety method statement suitable for incorporation in the Health and Safety Plan.
 - Full technical data: Submit for each alternative together with details of any consequential amendments to the design and/ or construction of other parts of the Works.
 - Submit: With tender.
- 530 SUBSTITUTE PRODUCTS
- Details: If products of different manufacture to those specified are proposed, submit details with the tender giving reasons for each proposed substitution. Substitutions, which have not been notified at tender stage, may not be considered.
 - Compliance: Substitutions accepted will be subject to verification by C.A.



550 HEALTH AND SAFETY INFORMATION

- Content: Describe the organisation and resources to safeguard the health and safety of operatives, including those of subcontractors, and of any person whom the Works may affect.
- Include:
 - A copy of the health and safety policy document, including risk assessment procedures.
 - Accident and sickness records for the past five years.
 - Records of previous Health and Safety Executive enforcement action.
 - Records of training and training policy.
 - The number and type of staff responsible for health and safety on this project with details of their qualifications and duties.
- Submit: With the Tender .

570 OUTLINE CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

- Content: Submit the following information within one week of request:
 - Method statements on how risks from hazards identified in the pre-construction information and other hazards identified by the contractor will be addressed.
 - Details of the management structure and responsibilities.
 - Arrangements for issuing health and safety directions.
 - Procedures for informing other contractors and employees of health and safety hazards.
 - Selection procedures for ensuring competency of other contractors, the self-employed and designers.
 - Procedures for communications between the project team, other contractors and site operatives.
 - Arrangements for cooperation and coordination between contractors.
 - Procedures for carrying out risk assessment and for managing and controlling the risk.
 - Emergency procedures including those for fire prevention and escape.
 - Arrangements for ensuring that all accidents, illness and dangerous occurrences are recorded.
 - Arrangements for welfare facilities.
 - Procedures for ensuring that all persons on site have received relevant health and safety information and training.
 - Arrangements for consulting with and taking the views of people on site.
 - Arrangements for preparing site rules and drawing them to the attention of those affected and ensuring their compliance.
 - Monitoring procedures to ensure compliance with site rules, selection and management procedures, health and safety standards and statutory requirements.
 - Review procedures to obtain feedback.

590 SITE WASTE MANAGEMENT PLAN

- Person responsible for developing the Plan: The Contractor.
- Content: Include details of:
 - Principal Contractor for the purposes of the plan
 - Location of the site.
 - Description of the project.
 - Estimated project cost.
 - Types and quantities of waste that will be generated.
 - Resource management options for these wastes including proposals for minimization/ reuse/ recycling.
 - The use of appropriate and licensed waste management contractors.
 - Record keeping procedures.
 - Waste auditing protocols.
- Additional requirements: None.
- Submit with tender



A31 PROVISION, CONTENT AND USE OF DOCUMENTS

DEFINITIONS AND INTERPRETATIONS

- 110 DEFINITIONS
- Meaning: Terms, derived terms and synonyms used in the preliminaries/ general conditions and specification are as stated therein or in the appropriate British Standard or British Standard glossary.
- 120 COMMUNICATION
- Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or obtain information, consent or instructions, or make arrangements.
 - Format: In writing to the person named in clause A10/140 unless specified otherwise.
 - Response: Do not proceed until response has been received.
- 130 PRODUCTS
- Definition: Materials, both manufactured and naturally occurring, and goods, including components, equipment and accessories, intended for the permanent incorporation in the Works.
 - Includes: Goods, plant, materials, site materials and things for incorporation into the Works.
- 135 SITE EQUIPMENT
- Definition: Apparatus, appliances, machinery, vehicles or things of whatsoever nature required in or about the construction for the execution and completion of the Works but not materials or other things intended to form or forming part of the Permanent Works.
 - Includes: Construction appliances, vehicles, consumables, tools, temporary works, scaffolding, cabins and other site facilities.
 - Excludes: Products and equipment or anything intended to form or forming part of the permanent works.
- 145A CONTRACTOR'S CHOICE
- Meaning: Selection delegated to the Contractor and liability.
- 150 CONTRACTOR'S DESIGN
- Meaning: Design to be carried out or completed by the Contractor and supported by appropriate contractual arrangements, to correspond with specified requirements.
- 155 SUBMIT PROPOSALS
- Meaning: Submit information in response to specified requirements.



160 TERMS USED IN SPECIFICATION

- Remove: Disconnect, dismantle as necessary and take out the designated products or work and associated accessories, fixings, supports, linings and bedding materials. Dispose of unwanted materials. Excludes taking out and disposing of associated pipework, wiring, ductwork or other services.
- Fix: Receive, unload, handle, store, protect, place and fasten in position and disposal of waste and surplus packaging including all labour, materials and site equipment for that purpose.
- Supply and fix: As above, but including supply of products to be fixed. All products to be supplied and fixed unless stated otherwise.
- Keep for reuse: Do not damage designated products or work. Clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer/ Purchaser or for use in the Works as instructed.
- Make good: Execute local remedial work to designated work. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Replace: Supply and fix new products matching those removed. Execute work to match original new state of that removed.
- Repair: Execute remedial work to designated products. Make secure, sound and neat. Excludes redecoration and/ or replacement.
- Refix: Fix removed products.
- Ease: Adjust moving parts of designated products or work to achieve free movement and good fit in open and closed positions.
- Match existing: Provide products and work of the same appearance and features as the original, excluding ageing and weathering. Make joints between existing and new work as inconspicuous as possible.
- System: Equipment, accessories, controls, supports and ancillary items, including installation, necessary for that section of the work to function.

170 MANUFACTURER AND PRODUCT REFERENCE

- Definition: When used in this combination:
 - Manufacturer: the person or legal entity under whose name or trademark the particular product, component or system is marketed
 - Product reference: the proprietary brand name and/ or identifier by which the particular product, component or system is described.
- Currency: References are to the particular product as specified in the manufacturer's technical literature current on the date of the invitation to tender.

200 SUBSTITUTION OF PRODUCTS

- Products: If an alternative product to that specified is proposed, obtain approval before ordering the product.
- Reasons: Submit reasons for the proposed substitution.
- Documentation: Submit relevant information, including:
 - manufacturer and product reference;
 - cost;
 - availability;
 - relevant standards;
 - performance;
 - function;
 - compatibility of accessories;
 - proposed revisions to drawings and specification;
 - compatibility with adjacent work;
 - appearance;
 - copy of warranty/ guarantee.
- Alterations to adjacent work: If needed, advise scope, nature and cost.
- Manufacturers' guarantees: If substitution is accepted, submit before ordering products.



210 CROSS REFERENCES

- Accuracy: Check remainder of the annotation or item description against the terminology used in the section or clause referred to.
- Related terminology: Where a numerical cross-reference is not given the relevant sections and clauses of the specification will apply.
- Relevant clauses: Clauses in the referred to specification section dealing with general matters, ancillary products and execution also apply.
- Discrepancy or ambiguity: Before proceeding, obtain clarification or instructions.

220 REFERENCED DOCUMENTS

- Conflicts: Specification prevails over referenced documents.

230 EQUIVALENT PRODUCTS

- Inadvertent omission: Wherever products are specified by proprietary name the phrase 'or equivalent' is to be deemed included.

240 SUBSTITUTION OF STANDARDS

- Specification to British Standard or European Standard: Substitution may be proposed complying with a grade or category within a national standard of another Member State of the European Community or an international standard recognised in the UK.
- Before ordering: Submit notification of all such substitutions.
- Documentary evidence: Submit for verification when requested as detailed in clause A31/200. Any submitted foreign language documents must be accompanied by certified translations into English.

250 CURRENCY OF DOCUMENTS AND INFORMATION

- Currency: References to published documents are to the editions, including amendments and revisions, current on the date of the Invitation to Tender.

260 SIZES

- General dimensions: Products are specified by their co-ordinating sizes.
- Timber: Cross section dimensions shown on drawings are:
 - Target sizes as defined in BS EN 336 for structural softwood and hardwood sections.
 - Finished sizes for non-structural softwood or hardwood sawn and further processed sections.

DOCUMENTS PROVIDED ON BEHALF OF EMPLOYER

410 ADDITIONAL COPIES OF DRAWINGS/ DOCUMENTS

- Copies: Two of each contract drawing and contract document will be issued free of charge (not counting any certified copies).
- Additional copies: Issued on request and charged to the Contractor.

440 DIMENSIONS

- Scaled dimensions: Do not rely on.

460 THE SPECIFICATION

- Coordination: All sections must be read in conjunction with Main Contract Preliminaries/ General conditions.



DOCUMENTS PROVIDED BY CONTRACTOR/ SUBCONTRACTORS/ SUPPLIERS

- 510 DESIGN AND PRODUCTION INFORMATION
- General: Complete the design and detailing of parts of the Works as specified.
 - Provide:
 - Production information based on the drawings, specification and other information.
 - Liaison to ensure coordination of the work with related building elements and services.
 - Master programme: Make reasonable allowance for completing design/ production information, submission (including information relevant to the CDM Regulations), comment, inspection, amendment, resubmission and reinspection.
 - Design/ production information: Submit two copies, one can be returned with comments. Ensure that any necessary amendments are made without delay.
 - Contractor's changes to Employer's Requirements: Support request for substitution or change with all relevant information.
 - Employer's amendments to Employer's Requirements: If considered to involve a change, which has not already been acknowledged as a change, notify without delay (maximum period 7 days), and do not proceed until instructed. Claims for extra cost, if made after it has been carried out, may not be allowed.
 - Final version of design/ production information: Submit two copies.
- 610 PRODUCTION INFORMATION
- Contractor/ Domestic subcontractor provide: details of changes to contract data.
 - Submit:
 - For comment and make any necessary amendments.
 - Sufficient copies of final version for distribution to all affected parties.
- 620 AS BUILT DRAWINGS AND INFORMATION
- Contractor designed work: Provide drawings/ information:
 - Principal Contractor to provide drawings in AutoCAD (dwg.) and PDF format of all changes to contract documentation as specified.
 - Submit: At least two weeks before date for completion.
- 630 TECHNICAL LITERATURE
- Information: Keep on site for reference by all supervisory personnel:
 - Manufacturers' current literature relating to all products to be used in the Works.
 - Relevant British, EN or ISO Standards.
- 640 MAINTENANCE INSTRUCTIONS AND GUARANTEES
- Components and equipment: Obtain or retain copies, register with manufacturer and hand over on or before completion of the Works.
 - Information location: In Building Manual.
 - Emergency call out services: Provide telephone numbers for use after completion. Extent of cover: twenty four hours seven days a week



A32 MANAGEMENT OF THE WORKS

GENERALLY

110 SUPERVISION

- General: Accept responsibility for coordination, supervision and administration of the Works, including subcontracts.
- Coordination: Arrange and monitor a programme with each subcontractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for coordination of the work.

120 INSURANCE

- Documentary evidence: Before starting work on site submit details, and/ or policies and receipts for the insurances required by the Conditions of Contract.

130 INSURANCE CLAIMS

- Notice: If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works, immediately give notice to the Employer, the person named in clause A10/140 and the Insurers.
- Failure to notify: Indemnify the Employer against any loss, which may be caused by failure to give such notice.

140 CLIMATIC CONDITIONS

- Information: Record accurately and retain:
 - Daily maximum and minimum air temperatures (including overnight).
 - Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

PROGRAMME/ PROGRESS

210 PROGRAMME

- Master programme: Immediately when requested and before starting work on site submit in an approved form a master programme for the Works, which must include details of:
 - Work stages or elements of the construction as appropriate for the Works.
 - Design and production information provided by the Contractor/ Subcontractors/ Suppliers, including inspection and checking (see Section A31).
 - Planning and mobilisation by the Contractor.
 - Earliest and latest start and finish dates for each activity and identify all critical activities.
 - Running in, adjustment, commissioning and testing of all engineering services and installations.
 - Work by or on behalf of the Employer (see section A50) the nature and scope of which, the relationship with preceding and following work and any relevant limitations, are suitably defined in the Contract Documents.
- Exclusions: Where and to the extent that the programme implications for work which is not so defined are impossible to assess the Contractor should exclude it and confirm this when submitting the programme.
- Submit one copy.

210A Hours of work – Night time / out of operational hours / weekday working (client to confirm)

240 COMMENCEMENT OF WORK

- Notice: Before the proposed date for commencement of work on site give minimum notice of one week.



250 MONITORING

- Progress: Record on a copy of the programme kept on site.
- Avoiding delays: If any circumstances arise which may affect the progress of the Works submit proposals or take other action as appropriate to minimize any delay and to recover any lost time.
- Weekly completion forecast: Submit on the last working day.
- Key Performance Indicators:
 - Record progress against each of the KPIs. If performance against KPI falls short of target, submit proposals for remediation. **KPI's to be agreed.**

255 NOTIFICATION OF COMPENSATION EVENT

- Content: Notwithstanding the Contractor's obligations under the Contract written notice must also be given of all other causes which apply concurrently.

260 SITE MEETINGS

- General: Site meetings will be held to review progress and other matters arising from administration of the Contract.
- Frequency: Every week – programme TBC
- Location: On Site – Airport Terminal
- Accommodation: Ensure availability at the time of such meetings.
- Attendees: Attend meetings and inform subcontractors and suppliers when their presence is required. Notify client and designers.
- Chairperson (who will also take and distribute minutes): Contract Administrator .

CONTROL OF COST

420 REMOVAL/ REPLACEMENT OF EXISTING WORK

- Extent and location: Agree before commencement.
- Execution: Carry out in ways that minimize the extent of work.

430 QUOTATIONS FOR PROPOSED INSTRUCTIONS OR COMPENSATION EVENTS

- Include:
 - A detailed breakdown of the cost including any allowance for direct loss and expense.
 - Details of any additional resources required.
 - Details of any adjustments to be made to the programme for the Works.
 - Any other information as is reasonably necessary to fully assess the implications of issuing such an instruction.
- Inability to comply: Inform immediately if it is not possible to comply with any of the above requirements.

440 MEASUREMENT

- Covered work: Give notice before covering work required to be measured.



A33 QUALITY STANDARDS/ CONTROL

STANDARDS OF PRODUCTS AND EXECUTIONS

110 INCOMPLETE DOCUMENTATION

- General: Where and to the extent that products or work are not fully documented, they are to be:
 - Of a kind and standard appropriate to the nature and character of that part of the Works where they will be used.
 - Suitable for the purposes stated or reasonably to be inferred from the project documents. Contract documents: Omissions or errors in description and/ or quantity shall not vitiate the Contract nor release the Contractor from any obligations or liabilities under the Contract.

120 WORKMANSHIP SKILLS

- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

130 QUALITY OF PRODUCTS

- Generally: New. (Proposals for recycled products may be considered).
- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works: Consistent kind, size, quality and overall appearance.
- Tolerances: Where critical, measure a sufficient quantity to determine compliance.
- Deterioration: Prevent. Order in suitable quantities to a programme and use in appropriate sequence.

135 QUALITY OF EXECUTION

- Generally: Fix, apply, install or lay products securely, accurately, plumb, neatly and in alignment.
- Colour batching: Do not use different colour batches where they can be seen together.
- Dimensions: Check on-site dimensions.
- Finished work: Not defective, e.g. not damaged, disfigured, dirty, faulty, or out of tolerance.
- Location and fixing of products: Adjust joints open to view so they are even and regular.

140 COMPLIANCE

- Compliance with proprietary specifications: Retain on site evidence that the proprietary product specified has been supplied.
- Compliance with performance specifications: Submit evidence of compliance, including test reports indicating:
 - Properties tested.
 - Pass/ fail criteria.
 - Test methods and procedures.
 - Test results.
 - Identity of testing agency.
 - Test dates and times.
 - Identities of witnesses.
 - Analysis of results.



150 INSPECTIONS

- Products and executions: Inspection or any other action must not be taken as approval unless confirmed in writing referring to:
 - Date of inspection.
 - Part of the work inspected.
 - Respects or characteristics which are approved.
 - Extent and purpose of the approval.
 - Any associated conditions.

160 RELATED WORK

- Details: Provide all trades with necessary details of related types of work. Before starting each new type or section of work ensure previous related work is:
 - Appropriately complete.
 - In accordance with the project documents.
 - To a suitable standard.
 - In a suitable condition to receive the new work.
- Preparatory work: Ensure all necessary preparatory work has been carried out.

170 MANUFACTURER'S RECOMMENDATIONS/INSTRUCTIONS

- General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
- Changes to recommendations or instructions: Submit details.
- Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.
- Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

180 WATER FOR THE WORKS

- Mains supply: Clean and uncontaminated.
- Other: Do not use until:
 - Evidence of suitability is provided.
 - Tested to BS EN 1008 if instructed.

SAMPLES/ APPROVALS

210 SAMPLES

- Products or executions: Comply with all other specification requirements and in respect of the stated or implied characteristics either:
 - To an express approval.
 - To match a sample expressly approved as a standard for the purpose.

220 APPROVAL OF PRODUCTS

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to a sample of the product and not to the product as used in the Works. Do not confirm orders or use the product until approval of the sample has been obtained.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.



- 230 APPROVAL OF EXECUTION
- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
 - Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
 - Complying sample: Retain in good, clean condition on site. Remove when no longer required.
- 320 SETTING OUT
- General: Submit details of methods and equipment to be used in setting out the Works.
 - Levels and dimensions: Check and record the results on a copy of drawings. Notify discrepancies and obtain instructions before proceeding.
 - Inform: When complete and before commencing construction.
- 330 APPEARANCE AND FIT
- Tolerances and dimensions: If likely to be critical to execution or difficult to achieve, as early as possible either:
 - Submit proposals; or
 - Arrange for inspection of appearance of relevant aspects of partially finished work.
 - General tolerances (maximum): To BS 5606, tables 1 and 2.
- 340 CRITICAL DIMENSIONS
- Critical dimensions: Set out and construct the Works to ensure compliance with the tolerances stated.
 - Location: Detailed on drawings provided.
- 360 RECORD DRAWINGS
- Site setting out drawing: Record details of all grid lines, setting-out stations, benchmarks and profiles. Retain on site throughout the Contract and hand over on completion.
- 410 SERVICES REGULATIONS
- New or existing services: Comply with the Byelaws or Regulations of the relevant Statutory Authority.
- 420 WATER REGULATIONS/BYELAWS NOTIFICATION
- Requirements: Notify Water Undertaker of any work carried out to or which affects new or existing services and submit any required plans, diagrams and details.
 - Consent: Allow adequate time to receive Undertaker's consent before starting work. Inform immediately if consent is withheld or is granted subject to significant conditions.
- 430 WATER REGULATIONS/BYELAWS CONTRACTOR'S CERTIFICATE
- On completion of the work: Submit (copy where also required to the Water Undertaker) a certificate including:
 - The address of the premises.
 - A brief description of the new installation and/ or work carried out to an existing installation.
 - The Contractor's name and address.
 - A statement that the installation complies with the relevant Water Regulations or Byelaws.
 - The name and signature of the individual responsible for checking compliance.
 - The date on which the installation was checked.



- 435 ELECTRICAL INSTALLATION CERTIFICATE
- Submit: When relevant electrical work is completed.
 - Original certificate: To be lodged in the Building Manual.
- 445 SERVICE RUNS
- General: Provide adequate space and support for services, including unobstructed routes and fixings.
 - Ducts, chases and holes: Form during construction rather than cut.
 - Coordination with other works: Submit details of locations, types/ methods of fixing of services to fabric and identification of runs and fittings.
- 450 MECHANICAL AND ELECTRICAL SERVICES
- Final tests and commissioning: Carry out so that services are in full working order at completion of the Works.
 - Building Regulations notice: Copy to be lodged in the Building Manual.
- 510 SUPERVISION
- General: In addition to the constant management and supervision of the Works provided by the Contractor's person in charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.
 - Evidence: Submit, including details of the person proposed, their relevant skills training and knowledge; practical experience; qualifications; membership or registration with professional bodies; employment history, work related assessments and management structure.
 - Submittal date: Minimum of two weeks before task.
 - Replacement: Give maximum possible notice before changing person in charge or site agent.
- 530 OVERTIME WORKING
- Notice: Prior to overtime being worked, submit details of times, types and locations of work to be done.
 - Minimum period of notice: Three days.
 - Concealed work: If executed during overtime for which notice has not been given, it may be required to be opened up for inspection and reinstated at the Contractor's expense.
- 540 DEFECTS IN EXISTING WORK
- Undocumented defects: When discovered, immediately give notice. Do not proceed with affected related work until response has been received.
 - Documented remedial work: Do not execute work which may:
 - Hinder access to defective products or work; or
 - Be rendered abortive by remedial work.
- 550 ACCESS FOR INSPECTION
- Removal: Before removing scaffolding or other facilities for access, give notice of not less than three days.
- 560 TESTS AND INSPECTIONS
- Timing: Agree and record dates and times of tests and inspections to enable all affected parties to be represented.
 - Confirmation: One working day prior to each such test or inspection. If sample or test is not ready, agree a new date and time.
 - Records: Submit a copy of test certificates and retain copies on site.



- 610 PROPOSALS FOR RECTIFICATION OF DEFECTIVE PRODUCTS/ EXECUTIONS
- Proposals: Immediately any execution or product is known, or appears, to be not in accordance with the Contract, submit proposals for opening up, inspection, testing, making good, adjustment of the Contract Sum, or removal and re-execution.
 - Acceptability: Such proposals may be unacceptable and contrary instructions may be issued.
- 710 WORK BEFORE COMPLETION
- General: Make good all damage consequent upon the Works.
Temporary markings, coverings and protective wrappings: Remove unless otherwise instructed.
 - Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.
 - Cleaning materials and methods: As recommended by manufacturers of products being cleaned, and must not damage or disfigure other materials or construction.
 - COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are used only as recommended by their manufacturers.
 - Minor faults: Touch up in newly painted work, carefully matching colour and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.
 - Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and efficient operation, including doors, windows, drawers, ironmongery, appliances, valves and controls.
- 720 SECURITY AT COMPLETION
- General: Leave the Works secure with, where appropriate, all accesses closed and locked.
 - Keys: Account for and adequately label all keys and hand over together with an itemized schedule, retaining duplicate schedule signed as a receipt.
- 730 MAKING GOOD DEFECTS
- Remedial work: Arrange access with Employer.
 - Rectification: Give reasonable notice for access to the various parts of the Works.
 - Completion: Notify when remedial works have



A34 SECURITY/ SAFETY/ PROTECTION

SECURITY, HEALTH AND SAFETY

- 110 PRECONSTRUCTION INFORMATION
- Location: Integral with the project Preliminaries, including but not restricted to the following sections:
 - Description of project: Sections A10 and A11.
 - Client's consideration and management requirements: Sections A12, A13 and A36.
 - Environmental restrictions and on-site risks: Section A12, A35 and A34.
 - Significant design and construction hazards: Section A34.
 - The Health and Safety File: Section A37.
- 120 EXECUTION HAZARDS
- Common hazards: Not listed. Control by good management and site practice.
 - Significant hazards: The design of the project includes the following:
 - Hazard: Refer to Pre-Construction Information Pack.
 - Precautions assumed: Traffic restrictions and signage in accordance with best practised, Electrical Distribution Network Operators (DNO) standards, Method statements in place to work with raw sewage.
 - Specification reference: None.
 - Drawing reference: None.
- 130 PRODUCT HAZARDS
- Hazardous substances: Site personnel levels must not exceed occupational exposure standards and maximum exposure limits stated in the current version of HSE document EH40: Workplace Exposure Limits.
 - Common hazards: Not listed. Control by good management and site practice.
 - Significant hazards: Specified construction materials include the following:
 - Hazard: None.
 - Material: None.
 - Specification reference: None.
- 140 CONSTRUCTION PHASE HEALTH AND SAFETY PLAN
- Submission: Present to the Employer/ Client no later than two weeks before commencing on site.
 - Confirmation: Do not start construction work until the Employer has confirmed in writing that the Construction Phase Health and Safety Plan includes the procedures and arrangements required by the CDM Regulations.
 - Content: Develop the plan from and draw on the Outline Construction Phase Health and Safety Plan, clause A30/570, and the Pre-tender Health and Safety Plan/ Preconstruction information.
- 150 SECURITY
- Protection: Safeguard the site, the Works, products, materials, and any existing buildings affected by the Works from damage and theft.
 - Access: Take all reasonable precautions to prevent unauthorized access to the site, the Works and adjoining property.
 - Special requirements: Ensure site is appropriately secured for location in residential area .



- 160 STABILITY
- Responsibility: Maintain the stability and structural integrity of the Works and adjacent structures during the Contract.
 - Design loads: Obtain details, support as necessary and prevent overloading.
- 170 OCCUPIED PREMISES
- Extent: Existing buildings will be occupied and/ or used during the Contract as follows: Residential dwellings.
 - Works: Carry out without undue inconvenience and nuisance and without danger to occupants and users.
 - Overtime: If compliance with this clause requires certain operations to be carried out during overtime, and such overtime is not required for any other reason, the extra cost will be allowed, provided that such overtime is authorized in advance.
- 200 MOBILE TELEPHONES AND PORTABLE ELECTRONIC EQUIPMENT
- Restrictions on use:
 - None.
- 210 SAFETY PROVISIONS FOR SITE VISITS
- Safety: Submit details in advance of safety provisions and procedures (including those relating to materials, which may be deleterious), which will require their compliance when visiting the site.
 - Protective clothing and/ or equipment: Provide and maintain on site for visitors to the site.
- PROTECT AGAINST THE FOLLOWING**
- 330 NOISE AND VIBRATION
- Standard: Comply with the recommendations of BS 5228-1, in particular clause 7.3, to minimize noise levels during the execution of the Works.
 - Noise levels from the Works: Maximum level: 65 dB(A) when measured from outside the compound area.
 - Equipment: Fit compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
 - Restrictions: Do not use:
 - Percussion tools and other noisy appliances without consent during the hours of 18:00 - 09:00.
 - Radios or other audio equipment or permit employees to use in ways or at times that may cause nuisance.
- 340 POLLUTION
- Prevention: Protect the site, the Works and the general environment including the atmosphere, land, streams and waterways against pollution.
 - Contamination: If pollution occurs inform immediately, including to the appropriate Authorities and provide relevant information.
- 350 PESTICIDES
- Use: Not permitted.
- 360 NUISANCE
- Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes.
 - Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.



- 370 ASBESTOS CONTAINING MATERIALS
 - Duty: Report immediately any suspected materials discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe removal or encapsulation.
- 371 DANGEROUS OR HAZARDOUS SUBSTANCES
 - Duty: Report immediately suspected materials discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe removal or remediation.
- 380 FIRE PREVENTION
 - Duty: Prevent personal injury or death, and damage to the Works or other property from fire.
 - Standard: Comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by Construction Industry Publications and The Fire Protection Association (The 'Joint Fire Code').
- 390 SMOKING ON SITE
 - Smoking on site: Not permitted.
- 400 BURNING ON SITE
 - Burning on site: Not permitted.
- 410 MOISTURE
 - Wetness or dampness: Prevent, where this may cause damage to the Works.
 - Drying out: Control humidity and the application of heat to prevent:
 - Blistering and failure of adhesion.
 - Damage due to trapped moisture.
 - Excessive movement.
- 430 WASTE
 - Includes: Rubbish, debris, spoil, surplus material, containers and packaging.
 - General: Minimize production. Prevent accumulations. Keep the site and Works clean and tidy.
 - Handling: Collect and store in suitable containers. Remove frequently and dispose off site in a safe and competent manner:
 - Non-hazardous material: In a manner approved by the Waste Regulation Authority.
 - Hazardous material: As directed by the Waste Regulation Authority and in accordance with relevant regulations.
 - Recyclable material: Sort and dispose at a Materials Recycling Facility approved by the Waste Regulation Authority.
 - Voids and cavities in the construction: Remove rubbish, dirt and residues before closing in.
 - Waste transfer documentation: Retain on site.
- 440 ELECTROMAGNETIC INTERFERENCE
 - Duty: Prevent excessive electromagnetic disturbance to apparatus outside the site.
- 450 LASER EQUIPMENT
 - Construction laser equipment: Install, use and store in accordance with BS EN 60825-1 and the manufacturer's instructions.
 - Class 1 or Class 2 laser equipment: Ensure laser beam is not set at eye level and is terminated at the end of its useful path.
 - Class 3A and Class 3B laser equipment: Do not use without approval and subject to submission of a method statement on its safe use.



460 POWDER ACTUATED FIXING SYSTEMS

- Use: Not permitted.

470 INVASIVE SPECIES

- General: Prevent the spread of species (e.g. plants or animals) that may adversely affect the site or Works economically, environmentally or ecologically.
- Special precautions: None.
- Duty: Report immediately any suspected invasive species discovered during execution of the Works.
 - Do not disturb.
 - Agree methods for safe eradication or removal.

PROTECT THE FOLLOWING

510 EXISTING SERVICES

- Confirmation: Notify all service authorities, statutory undertakers and/ or adjacent owners of proposed works not less than one week before commencing site operations.
- Identification: Before starting work, check and mark positions of utilities/ services. Where positions are not shown on drawings obtain relevant details from service authorities, statutory undertakers or other owners.
- Work adjacent to services:
 - Comply with service authority's/ statutory undertaker's recommendations.
 - Adequately protect, and prevent damage to services: Do not interfere with their operation without consent of service authorities/ statutory undertakers or other owners.
- Identifying services:
 - Below ground: Use signboards, giving type and depth;
 - Overhead: Use headroom markers.
- Damage to services: If any results from execution of the Works:
 - Immediately give notice and notify appropriate service authority/ statutory undertaker.
 - Make arrangements for the work to be made good without delay to the satisfaction of service authority/ statutory undertaker or other owner as appropriate.
 - Any measures taken to deal with an emergency will not affect the extent of the Contractor's liability.
- Marker tapes or protective covers: Replace, if disturbed during site operations, to service authority's/ statutory undertakers recommendations.

520 ROADS AND FOOTPATHS

- Duty: Maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.
- Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner.

530 EXISTING TOPSOIL/ SUBSOIL

- Duty: Prevent over compaction of existing topsoil and subsoil in those areas which may be damaged by construction traffic, parking of vehicles, temporary site accommodation or storage of materials and which will require reinstatement prior to completion of the Works.
- Protection: Before starting work submit proposals for protective measures.

540 RETAINED TREES/ SHRUBS/ GRASSED AREAS

- Protection: Preserve and prevent damage, except those not required.
- Replacement: Mature trees and shrubs if uprooted, destroyed, or damaged beyond reasonable chance of survival in their original shape, as a consequence of the Contractor's negligence, must be replaced with those of a similar type and age at the Contractor's expense.



550 RETAINED TREES

- Protected area: Unless agreed otherwise do not:
 - Dump spoil or rubbish, excavate or disturb topsoil, park vehicles or plant, store materials or place temporary accommodation within an area which is the larger of the branch spread of the tree or an area with a radius of half the tree's height, measured from the trunk.
 - Sever roots exceeding 25 mm in diameter. If unintentionally severed give notice and seek advice.
 - Change level of ground within an area 3 m beyond branch spread.

555 WILDLIFE SPECIES AND HABITATS

- General: Safeguard the following: All areas outside of the work area.
- Protected habitats and species: Upon discovery immediately advise. Do not proceed until instruction is received.
- Education: Ensure employees and visitors to the site receive suitable instruction and awareness training.

560 EXISTING FEATURES

- Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features, which are to remain in position during execution of the Works.
- Special requirements: None.

570 EXISTING WORK

- Protection: Prevent damage to existing work, structures or other property during the course of the work.
- Removal: Minimum amount necessary.
- Replacement work: To match existing.

620 ADJOINING PROPERTY

- Permission: Obtain as necessary from owners if requiring to erect scaffolding on or otherwise use adjoining property.

625 ADJOINING PROPERTY RESTRICTIONS

- Precautions:
 - Prevent trespass of workpeople and take precautions to prevent damage to adjoining property.
 - Pay all charges.
 - Remove and make good on completion or when directed.
- Damage: Bear cost of repairing damage arising from execution of the Works.

630 EXISTING STRUCTURES

- Duty: Check proposed methods of work for effects on adjacent structures inside and outside the site boundary.
- Supports: During execution of the Works:
 - Provide and maintain all incidental shoring, strutting, needling and other supports as may be necessary to preserve stability of existing structures on the site or adjoining, that may be endangered or affected by the Works.
 - Do not remove until new work is strong enough to support existing structure.
 - Prevent overstraining of completed work when removing supports.
- Adjacent structures: Monitor and immediately report excessive movement.
- Standard: Comply with BS 5975 and BS EN 12812.



640 MATERIALS FOR RECYCLING/ REUSE

- Duty: Sort and prevent damage to stated products or materials, clean off bedding and jointing materials and other contaminants.
- Storage: Stack neatly and protect until required by the Employer or for use in the Works as instructed.



A35 SPECIFIC LIMITATIONS ON METHOD/ SEQUENCE/ TIMING

- 130 METHOD/ SEQUENCE OF WORK
 - Specific Limitations: Include the following in the programme:
 - None.
- 160 USE OR DISPOSAL OF MATERIALS
 - Specific limitations: None.
- 170 WORKING HOURS
 - Specific limitations: Outside airport operational hours.



A36 FACILITIES/ TEMPORARY WORK/ SERVICES

- 110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES
 - Location: Give notice and details of intended siting.
 - Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.
- 210 ROOM FOR MEETINGS
 - Facilities: Provide suitable temporary accommodation for site meetings, adequately heated and lit. The room may be part of the Contractor's own site offices.
 - Furniture and Equipment: Provide table and chairs for up to 6 people.
- 230 TEMPORARY ACCOMMODATION
 - Proposals for temporary accommodation and storage for the Works: Submit two weeks prior to starting on site.
 - Details to be included: Type of accommodation and storage, its siting and the programme for site installation and removal.
- 280 ACCOMMODATION USE/ LOCATION
 - Restrictions:
 - Location To be agreed with Employer .
 - Timing: To be removed upon completion .
- 320 TEMPORARY WORKS
 - Employer's specific requirements: Provide: management of foul flows during construction period including tankering and disposal costs where necessary. Surface water flows should also be managed if connections into the foul networks are established .
- 340 NAME BOARDS/ ADVERTISEMENTS
 - General: Obtain approval, including statutory consents, and provide a temporary name board displaying: Not Permitted
- 410 LIGHTING
 - Finishing work and inspection: Provide temporary lighting, the intensity and direction of which closely resembles that delivered by the permanent installation.



420A LIGHTING AND POWER

- Supply: Principal Contractor to apply to and arrange connection to the Distribution Network Operator (DNO) network
Note: It is the responsibility of the Principal Contractor to make all necessary applications to the DNO to ensure an electrical supply to site is provided during the construction works and for the operation of the plant after the completion of the works. Principal Contractor to liaise with Employer to make applications:
 - Metering: Metered by the Contractor and charged to the Contractor .
 - Point of supply: Submit Proposals.
 - Available capacity: TBC by DNO.
 - Frequency: 50 Hz.
 - Phase: To suit plant requirements.
 - Current: Alternating.
- Continuity: No responsibility will be accepted for the consequences of failure or restriction in supply.

430A WATER

- Supply: The Principal Contractor will be responsible for providing a water supply to site for the duration of the works:
 - Metering: Metered by the Contractor and charged to the Contractor .
 - Source: Principal Contractor to submit proposals.
 - Location of supply point: TBC.
 - Conditions/ Restrictions: do not discharge water without EA consent.
- Continuity: No responsibility will be accepted for the consequences of failure or restriction in supply.

440 TELEPHONES

- Temporary on site telephone: Provide as soon as practicable after the Date of Possession for joint use by the Contractor, Subcontractors and those acting on behalf of the Employer.
- Response: Make arrangements (e.g. an external bell) to ensure that incoming calls are answered promptly.
- Employer's call charges: Allow for the cost of a modest number of calls made by those acting on behalf of the Employer.

520 USE OF PERMANENT HEATING SYSTEM

- Permanent heating installation: May be used for drying out the Works/ services and controlling temperature and humidity levels.
- Installation: If used:
 - Take responsibility for operation, maintenance and remedial work.
 - Arrange supervision by and indemnification of the appropriate Subcontractors.
 - Pay costs arising.

540 METER READINGS

- Charges for service supplies: Where to be apportioned ensure that:
 - Meter readings are taken by relevant authority at possession and/ or completion as appropriate.
 - Copies of readings are supplied to interested parties.

550 THERMOMETERS

- General: Provide on site and maintain in accurate condition a maximum and minimum thermometer for measuring atmospheric shade temperature, in an approved location.



570 PERSONAL PROTECTIVE EQUIPMENT

- General: Provide for the sole use of those acting on behalf of the Employer/ Client, in sizes to be specified:
 - Safety helmets to BS EN 397, neither damaged nor time expired. Number required: 2.
 - High visibility waistcoats to BS EN ISO 20471 Class 2. Number required: 2.
 - Safety boots with steel insole and toecap to BS EN ISO 20345. Pairs required: 2.
 - Disposable respirators to BS EN 149.FFP1S.
 - Eye protection to BS EN 166.
 - Ear protection - muffs to BS EN 352-1, plugs to BS EN 352-2
 - Hand protection - to BS EN 388, 407, 420 or 511 as appropriate.



C **Demolition/ Alteration/ Renovation**

C11 Site Investigation

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS

110 EXTENT OF INVESTIGATION

- Location: To extent of breaking out/excavations required (building and hardstanding).
- Scope:
 - Desk study: Not required.
 - Exploratory holes: As required to undertake 'standard' testing for hydrocarbons. Principal Contractor to carry out contaminated land survey prior to construction to ascertain if there are any health and safety issues arising due to potential hydrocarbons leaking from aircrafts and airport vehicles.
- Geophysical tests: As required.
- Instrumentation: As required.
- Reports:
 - Type: Factual.
 - Other requirements: Submit recommendations for remedial work.
- Objectives:
 1. To ascertain safe working environment for construction phase,
 2. To ascertain disposal costs of contaminated land for inclusion in the risk register.

112 MONITORING OF GROUND CONDITIONS DURING CONSTRUCTION

- Purpose: To identify differences between actual ground conditions and those assumed in design.
- Assumed ground conditions: As geotechnical report.
- Inspect and record: Sequence and soil types revealed in sides of excavations and nature of soil in formations.
- Other requirements: None.
- Actions: Report ground conditions revealed. If these differ from conditions assumed, await instructions before constructing ground supported/ supporting structures.

115 GEOTECHNICAL ADVISER

- Name: Submit proposals if required
- Address:
- Telephone:

125 GEOLOGY AND GROUND CONDITIONS

- Source: Dynamic Cone Penetration testing carried out by PDP Green Consulting.
 - Summary: Refer Appendix AReport: Copy included with contract documentation.
- Disclaimer: Information has been inferred from sources listed, but no assurance is given regarding its accuracy.

150 PUBLIC SAFETY

- Protection of the public and occupiers of adjoining property: Erect temporary fences, hoardings, footpaths, warning lights, etc. before starting work.
- Means of escape from adjoining property in the event of fire: Maintain for the duration of the Works.
- Specific hazards which may be encountered: None known.



- 160 SITE SAFETY
 - Excavations and boreholes: Support sides and keep free from ground and surface water.
 - Protection: Submit proposals.
- 180 COMPETENCE
 - Skill and experience: Appropriate for the type of work.
 - Evidence: Submit prior to commencement.



C20 Demolition

To be read with Preliminaries/General conditions

130 GROUNDWORKS

- Old foundations, slabs and the like: Break out in locations and to the extents stated.
- Contaminated material: Remove, and carry out remediation required by the Enforcing Authority.
- Regrade area of taxi-route to form even surface, remove depressions and protrusions by cut/fill. Fill areas to be compacted in accordance with relevant specification clauses.

140 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

SERVICES AFFECTED BY DECONSTRUCTION/ DEMOLITION

210 SERVICES REGULATIONS

- Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.

220 LOCATION OF SERVICES

- Services affected by deconstruction/ demolition work: Locate and mark positions.
- Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
 - Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

230 SERVICES DISCONNECTION ARRANGED BY CONTRACTOR

- General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to starting deconstruction/ demolition.

240 DISCONNECTION OF DRAINS

- General: Locate, disconnect and seal disused foul and surface water drains.
- Sealing: Permanent, and within the site.

260 SERVICE BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the site on which the deconstruction/ demolition is taking place and to adjoining sites/ properties.
- Minimum notice to adjoining owners and all affected occupiers: 72 hours, if shutdown is necessary during changeover.

270 SERVICES TO BE RETAINED

- Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
- Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.



DECONSTRUCTION/ DEMOLITION WORK

- 310 WORKMANSHIP
- Standard: Demolish structures in accordance with BS 6187.
 - Operatives:
 - Appropriately skilled and experienced for the type of work.
 - Holding, or in training to obtain, relevant CITB Certificates of Competence.
 - Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.
- 320 GAS OR VAPOUR RISKS
- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
- 330 DUST CONTROL
- General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
 - Lead dust: Submit method statement for control, containment and clean-up regimes.
- 340 HEALTH HAZARDS
- Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.
- 380 DANGEROUS OPENINGS
- General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
 - Access: Prevent access by unauthorized persons.
- 391 ASBESTOS-CONTAINING MATERIALS – UNKNOWN OCCURRENCES
- Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
 - Removal: Submit statutory risk assessments and details of proposed methods for safe removal.
- 410 UNFORESEEN HAZARDS
- Discovery: Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
 - Removal: Submit details of proposed methods for filling, removal, etc.

MATERIALS ARISING

- 510 CONTRACTOR'S PROPERTY
- Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
 - Action: Remove from site as work proceeds where not to be reused or recycled for site use.
- 520 RECYCLED MATERIALS
- Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
 - Evidence of compliance: Submit full details and supporting documentation.
 - Verification: Allow adequate time in programme for verification of compliance.

D Groundwork

D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

- 110 SITE INVESTIGATION
- Report: See dynamic cone penetration resulting in Appendix A and 3000 series PDP Green drawings.
- 145 VARIATIONS IN GROUND WATER LEVEL
- Give notice: If levels encountered are significantly different from levels in the site investigation report or previously measured.
- 150 EXISTING SERVICES, FEATURES AND STRUCTURES
- Services: See section A12 for locations.
 - Site features to be retained: See section A12 for details.
 - Structures: See section A34 for details of protection.

CLEARANCE/EXCAVATING

- 168 SITE CLEARANCE
- Timing: Before topsoil stripping, if any.
 - General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
 - Treatment: Apply a suitable residual herbicide to areas to receive gravel surfacing.
- 240 ADJACENT EXCAVATIONS
- Requirement: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto, must be completed before the higher excavation is made.
 - Angle of line below horizontal: 45° for stable soils or 30° for wet clays. Engineer's approval required..
 - Backfill material: Otherwise compacted general filling as clause 626.
- 242 EXCAVATIONS ADJACENT TO EXISTING BACKFILLED TRENCHES
- Proximity: When width of undisturbed ground between the two excavations will be less than 1m.
 - Action: Assume that the ground between the trenches is unstable and provide side support accordingly.



- 245 EXCAVATIONS ADJACENT TO EXISTING FOUNDATIONS - CONTRACTOR'S DESIGN
- Prior to commencing excavation: Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
 - Submit proposals: For ensuring the safety of the existing foundations if the formation level for the new excavation will be below the formation level of the existing foundation.
 - Backfill material to new excavation: As clause 626.
- 248 BACKFILL TO EXCAVATIONS LOWER THAN FOUNDATION FORMATION LEVEL
- Critical level:
 - Distance between near faces of foundation and lower excavation less than 1 m: 150 mm above foundation formation level.
 - Otherwise: 150 mm above the level at which a line drawn from the corner of the foundation formation nearest the excavation at an angle below the horizontal of 30° cuts the near face of the lower excavation.
 - Backfill material:
 - Below critical level: Lean mix concrete.
 - Above critical level: Compacted general filling as clause 626.
- 250 PERMISSIBLE DEVIATIONS FROM FORMATION LEVELS
- Beneath mass concrete foundations: ± 25 mm.
 - Beneath ground bearing slabs and r.c. foundations: ± 15 mm.
 - Embankments and cuttings: ± 50 mm.
 - Ground abutting external walls: ± 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.
- 255 ACCURACY - LINEAR DIMENSIONS
- Permissible deviations from linear dimensions generally: ± 5 mm .
- 260 INSPECTING FORMATIONS
- Give notice: Make advance arrangements for inspection of formations for
 - foundations and filling formations;
 - service trenches; and
 - roads and pavings.
 - Notice (minimum): 5 days.
 - Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels.
 - Loose material: Remove.
 - Seal: Within 4 hours of inspection, seal formations with specified granular material on Drawings.
- 265 INSPECTING FORMATIONS IN SAND AND GRAVEL
- Notice for inspection (minimum): 5 days.
 - Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels and mechanically compact formation.
 - Seal: Within 4 hours of inspection, seal formations with specified granular material.
- 270 FOUNDATIONS GENERALLY
- Give notice if:
 - A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.
 - The formation contains soft or hard spots or highly variable material.



- 280 TRENCH FILL FOUNDATIONS
- Excavation: Form trench down to formation in one operation.
 - Safety: Prepare formation from ground level.
 - Inspection of formations: Give notice before commencing excavation.
 - Period of notice: Five working days.
 - Shoring: Where inspection of formation is required, provide localised shoring to suit ground conditions.
 - Concrete fill: Place concrete immediately after inspection and no more than four hours after exposing the formation.
- 290 FOUNDATIONS IN MADE UP GROUND
- Depth: Excavate down to a natural formation of undisturbed subsoil.
 - Discrepancy: Give notice if this is greater or less than depth given.
- 310 UNSTABLE GROUND
- Generally: Ensure that the excavation remains stable at all times.
 - Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.
 - Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.
- 330 UNRECORDED FEATURES
- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.
- 335 NEW FOUNDATIONS CROSSING OLD FOUNDATIONS OR WALLS
- Break out: The old foundation/ wall where it crosses the new foundation/ wall:
 - Length of breaking out: Width of the new foundation/ wall plus 500 mm on either side of new foundation.
 - Depth of breaking out: Full depth of existing foundation/ wall.
 - Disturbed/ softened soil: When the formation for the old foundation/ wall is deeper than the formation of the new foundation.
 - Excavate: Soil that has been disturbed and/ or softened on either side of the old wall/foundation, and for 500 mm into undisturbed ground on either side.
 - Step up: The formation for the new foundation as necessary on either side of the old foundation/ wall until the formation is at its design level.
 - Size of steps: As clause 626.
 - Backfilling beneath design formation level: Compacted general filling as clause 626.
- 337 OLD FOUNDATIONS OR WALLS BENEATH NEW GROUND SUPPORTED SLAB
- Break out: The old foundation/ wall to a depth below the slab formation level of at least Full depth of existing foundation/wall.
 - Excavate: Soil that has softened on either side of the old wall/ foundation.
 - Backfill: Obtain instructions if depth of fill will be greater than 600 mm, otherwise backfill with compacted hardcore.



360 EXCESS EXCAVATION

- Excavation taken wider than required:
 - Backfill: With hardcore as clause 710.
- Excavation taken deeper than required:
 - Backfill: Under foundations: Concrete grade GEN1, Under groundbearing slabs: hardcore as clause 710 .

370 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS

- Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
- Minimum depth below finished levels:
 - Grass, ground cover and perennial planting: 500 mm.
 - Shrub planting: 750 mm.
 - Within 2 m of tree planting: 1000 mm.
- Walls and slabs remaining: In every 10 m² of wall or slab, make a drainage hole at least 600 mm diameter.

DISPOSAL OF MATERIALS

410 EXCAVATED TOPSOIL STORAGE

- Storage: Stockpile in temporary storage heaps Locations to be agreed with Client.

415 EXCAVATED TOPSOIL REMOVAL

- General: Remove from site.

420 TOPSOIL STORAGE HEAPS

- Location: To be agreed with client.
- Standard: To BS 3882.
- Height (maximum): 1m.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination.

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary storage heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: To be agreed with Client.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- Remaining material: Remove from site.

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground constructions are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

454 GROUND WATER LEVEL, SPRING OR RUNNING WATER

- Give notice: If it is considered that the excavations are below the water table.
- Springs/ Running water: Give notice immediately if encountered.



- 457 PUMPING
- General: Do not disturb excavated faces or stability of adjacent ground or structures.
 - Pumped water: Discharge without flooding the site or adjoining property.
 - Sumps: Construct clear of excavations. Fill on completion.
 - Locations: Submit proposals for agreement by Client .
- 460 PERMANENT DRAINAGE SYSTEM
- Disposal of water from the excavations through system: Not permitted.
- FILLING
- 500 PROPOSED FILL MATERIALS
- Details: Submit full details of proposed fill materials to demonstrate compliance with Specification and paving system manufacturer requirements, including:
 - Type and source of imported fill.
 - Proposals for processing and reuse of material excavated on site.
 - Test reports as required elsewhere.
 - Timing: At least 21 days before starting filling.
- 510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS
- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.
- 512 LIMITATION OF SULFATE CONTENT IN FILL MATERIALS
- Test specification: To BRE Report 279.
 - Sulfate content: Expressed as SO₃.
 - Water soluble sulfate (maximum): 1500 mg/L in 2:1 water/ soil extract.
 - Total potential sulfate (maximum): 0.6%.
 - Oxidizable sulfides (maximum): No requirement.
 - Certificates of test result: Submit.



- 520 **FROST SUSCEPTIBILITY**
- General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.8.
 - Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
 - Fine grained soil with a plasticity index less than 20%.
 - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - Crushed chalk.
 - Crushed limestone fill with average saturation moisture content in excess of 3%.
 - Burnt colliery shale.
 - Frost-susceptible fill: May only be used:
 - At depths below the finished ground surface greater than: 450 mm.
 - Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
 - Where frost heave will not affect structural elements.
- 525 **TESTING OF SUITABILITY OF FILL MATERIALS BEFORE START OF FILLING**
- Laboratory: UKAS accredited laboratory.
 - Submit report to: Structural engineer (two copies).
 - Timing: 21 days before starting filling.
 - Samples: Deliver to laboratory as required.
 - Additional requirements: None.
 - Tests: As directed.
 - Frequency: Submit with tender proposed rate and frequency of testing to demonstrate continuing compliance of imported or reprocessed fill with specified properties.
- 530 **PLACING FILL**
- Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
 - Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
 - Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.
 - Submit proposals for temporary support necessary to ensure stability during filling.
 - Allow 14 days (minimum) before backfilling against in situ concrete structures.
 - Layers: Place so that only one type of material occurs in each layer.
 - Earthmoving equipment: Vary route to avoid rutting.
- 535 **COMPACTION GENERALLY**
- General: Compact fill not specified to be left loose as soon as possible after placing.
 - After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
 - Defective areas: Remove and recompact to full thickness of layer using new material.
- 610 **COMPACTED FILLING FOR LANDSCAPE AREAS**
- Fill: Material capable of compaction by light earthmoving plant.
 - Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.
- 615 **LOOSE TIP FILLING FOR LANDSCAPE AREAS**
- Filling: Do not firm, consolidate or compact when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.



Q Paving/Planting/Fencing/Site furniture



Q20 Granular sub-bases to roads/ pavings

To be read with Preliminaries/General conditions

- 110A THICKNESSES OF SUB-BASE/ SUBGRADE IMPROVEMENT LAYERS
- Thicknesses: TBC once supplier of paving has been selected. Sub-base and sub-grade improvement to be in accordance with manufactures recommendations.
- 120 CHECKING OF SUBGRADES
- Anticipated subgrade conditions:
 - Soil type: Loam with sand and fine gravel. Intermittent granite cobbles
 - Plasticity index: TBC.
 - CBR (minimum): 2%.
 - Depth below formation level to groundwater table: not encountered during Site Investigation.
 - Subgrade variation: If material appears to vary from anticipated conditions, or if there are extensive soft spots, report condition and await instruction before proceeding.
 - Submit: Results and obtain instructions before proceeding.
- 140 EXCAVATION OF SUBGRADES
- Final excavation to formation or subformation level: Carry out immediately before compaction of subgrade.
 - Soft spots and voids: Give notice.
 - Old drainage and service trenches: Excavate to remove soft or damaged material, then backfill with specified granular sub-base material and compact.
 - Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.
- 145 PREPARATION AND COMPACTION OF SUBGRADES
- Timing: Immediately before placing sub-base.
 - Soft or damaged areas: Excavate and replace with sub-base material, compacted in layers 300 mm (maximum) thick.
 - Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.
- 150 SUBGRADES FOR VEHICULAR AREAS
- Preparation and treatment: To Highways Agency 'Specification for highway works', clauses 616 and 617.
- 180 NOTICE
- Give notice: After preparation and compaction of subgrades and On completion of compaction of sub-base.
 - Period of notice: 5 working days.
- 200 SUBGRADE IMPROVEMENT LAYER (CAPPING)
- Material: To Highways Agency 'Specification for highway works', table 6/1, Class 6F2 or site won material if approved after SI.
 - Standard: Placed and compacted to Highways Agency 'Specification for highway works', table 6/1, clauses 612 and 613.3, 613.8, 613.9, 613.10 and 613.13.



- 210 HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE FOR SUB-BASE
- Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - Recycled aggregate: permitted subject to approval of source by Civil Engineer.
- 211 GRANULAR MATERIAL
- Quality: Of a known suitability for use in sub-bases, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111 or a resistance to fragmentation of LA50 for the Los Angeles test to BS EN 1097-2, and in any one layer only one of the following:
 - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
 - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
 - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
 - Natural gravel.
 - Natural sand.
 - Filling: Spread and levelled in 150 mm maximum layers, each layer thoroughly compacted.
- 220 FROST SUSCEPTIBLE GRANULAR MATERIAL
- Definition (non frost susceptible material): To Highways Agency 'Specification for highway works' clause 801.8.
 - Depth of frost susceptible material below final surface of paving (minimum): 350 mm.
 - Testing: Test materials used if required and supply certificates.
- 225 PLACING OF MATERIAL WITH HIGH SULFATE CONTENT
- Standard: To Highways Agency 'Specification for highway works', clauses 801.2 and 801.3.
 - Separation distance (minimum): 500 mm.
- 230 PLACING GRANULAR MATERIAL GENERALLY
- Preparation: Loose soil, rubbish and standing water removed.
 - Structures, membranes and buried services: Ensure stability and avoid damage.
- 240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS
- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
 - Standard: To Highways Agency 'Specification for highway works' clause 802.
 - At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.
- 310 ACCURACY
- Permissible deviation from required levels, falls and cambers (maximum):
 - Subgrades:
 - Roads and parking areas: +20 -30 mm.
 - Footways and recreation areas: ± 20 mm.
 - Sub-bases:
 - Roads and parking areas: ± 20 mm.
 - Footways and recreation areas: +5 -10 mm.
- 330 COLD WEATHER WORKING
- Frozen materials: Do not use.
 - Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.



340 PROTECTION

- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
- Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q22 ASPHALT ROADS/ PAVINGS

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

- 110A
- **Product:** Perfo S2T system or Groundtrax Cell Pave AP Anchored Paver or equivalent reinforced grass paving system capable of withstanding the design loading profiles for the scheduled helicopter (Leonardo AW139). Design to be in accordance with CAP 168 (or Annex 14 Volume 2 Heliport) and appropriate for use as a pavement for helicopters
 - **Ground Preparation:** In cases of extreme waterlogging, very soft or uneven ground, or where heavy loads and/or frequent traffic are expected, drainage is advisable and ground preparation or foundation will be required. Remove top turf and install sub-base to manufacturer's instructions (between 100-400 mm deep depending on bed rock depths). This should be levelled and compacted. Apply a levelling layer of sand approx. 20 mm deep. Finally, a layer of topsoil of approx. 8-10 cm lightly compacted depth is added (quality grass seed suitable for coastal, exposed sites that withstand heavy use should be mixed in with the topsoil). A permeable geotextile membrane Terram 1000 or similar approved and specified by the product supplier may be used between the bedding layer and sub-base where sub base is uneven. All to be confirmed by supplier of paving system.
 - **Granular Sub Base** (if required):
 - Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803, to be approved by supplier of paving system.
 - Recycled aggregate: permitted subject to approval of source by Civil Engineer.
 - **Load Bearing:** To withstand the loading profiles of the scheduled helicopter (Leonardo AW139) refer to Appendix B for full details. Pavement to be designed for 16 movements of a Leonardo AW139 per day.
 - **Installation:** Refer to manufacturer's instructions. System to be rolled in to provide seamless wheeled transition onto adjacent areas
 - **Performance:** self-anchoring (resist – no additional materials or fixing required, 75% closed surface distributes load & reduces mud build-up. To last 10 years.
 - **Colour:** Black
 - **Durability:** Oil resistant tiles do not rot, UV and frost resistant
 - **Extent of paving:** As per pdp Green drawings 4000 series (Option 2)
 - **Area:** Option 2 = Approximately 330m²
 - **Maximum gradient of ground taxiway:**
 - Longitudinal to taxiway: no greater than 3%
 - Transverse to taxiway: no greater than 2%
 - **Drainage:** ground taxiway and ground taxi-route shall provide rapid drainage



LAYING

310 LAYING GENERALLY

- Preparation: Remove all loose material, rubbish and standing water.
- Adjacent work: Form neat junctions. Do not damage.
- Channels, kerbs, inspection covers etc: Keep clean.
- New paving:
 - Keep traffic free until it has cooled to prevailing atmospheric temperature.
 - Do not allow rollers to stand at any time.
 - Prevent damage.
 - Lines and levels: With regular falls to prevent ponding.
 - Overall texture: Smooth, even and free from dragging, tearing or segregation.
 - State on completion: Clean.



320 ADVERSE WEATHER

- Frozen materials: Do not use.
- Suspend laying:
 - During freezing conditions
 - If the air temperature reaches 0°C, or in calm dry conditions -3°C, on a falling thermometer.
 - Hot rolled asphalt: During periods of continuous or heavy rain or if there is standing water on the base.

330 LEVELS

- Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

COMPLETION

390 DOCUMENTATION

- Standard: BS EN 13108-1 and BS EN 13108-4.
 - Declaration of conformity: Submit.
- Number of copies: to be confirmed.
- Submission: Two weeks prior to date when Contractor expects work to be complete.



Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

SYSTEM OUTLINE

- 110 NATURALLY OCCURRING TOPSOIL SYSTEM FOR LAWNS
- Topsoil: Site sourced topsoil .
 - Ameliorants: Fertilizer to be incorporated into topsoil and apply a suitable translocated nonresidual herbicide as section D20 .
 - Accessories: None.
- 110A NATURALLY OCCURRING TOPSOIL SYSTEM FOR WILDFLOWER MEADOW AREAS
- Topsoil: Site sourced topsoil .
 - Ameliorants: Fertilizer to be incorporated into topsoil and Apply a suitable translocated nonresidual herbicides section D20.
 - Accessories: None.

PRODUCTS

- 300 PREPARATION MATERIALS GENERALLY
- Purity: Free of pests and disease.
 - Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
 - Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
 - Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
 - Objectionable odour: None.
 - Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.
- 315 IMPORTED TOPSOIL TO BS 3882
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
 - Standard: To BS 3882.
 - Classification: Multipurpose.
 - Grade: 0.6-2mm.
 - Source: Contractor's choice.
 - Product reference: Contractor's choice.
- 390 FERTILIZERS TO BE INCORPORATED INTO TOPSOIL AND MANUFACTURED TOPSOIL GROWING MEDIA FOR LAWNS AND MEADOW GRASS
- Type: General fertilizer.
 - Source: Contractor's choice.
 - Product reference: Lawn Fertiliser with N:P:K ratio 5:12:5 and lawn feeder fertilizer with N:P:K 10:9:8.



EXECUTION

- 605 SITE INVESTIGATION
- Report: See section To be Issued when complete.
- 625 SAMPLE LOADS FOR IMPORTED TOPSOIL
- Deliver to site a sample load: of 5 kg.
 - Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - Notice period: 2 days.
- 650 NOTICE
- Give notice before:
 - Setting out.
 - Spreading topsoil.
 - Applying herbicide.
 - Applying fertilizer.
 - Visiting site during maintenance period.
 - Period of notice: One week.
- 655 MECHANICAL TOOLS
- Restrictions: Do not use within 100 mm of tree and plant stems.
- 660 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Areas of thicker topsoil: Excavate locally.
 - Avoid over compaction.
- 665 SUBSOIL SURFACE PREPARATION
- General: Excavate and/ or place fill to required profiles and levels, as section D20.
 - Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
 - Remove from site: Arisings, contaminants and debris and Builders rubble



- 670 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for lawn areas and planting beds.
 - Notice period: 7 days.
- 675 PREPARATION OF UNDISTURBED TOPSOIL
- Standard: In accordance with BS 4428.
 - Grading and cultivation: To suit cultivation operations specified in Q30 and Q31.
 - Hard ground: Break up thoroughly.
 - Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
 - Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
 - Fallow period (minimum): One month.
 - Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.
- 680 SURPLUS TOPSOIL TO BE RETAINED
- Generally: Spread and level on site:
 - Locations: utilise throughout the site to form landscaped areas agreed with the contract administrator.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- 690 TOPSOIL STORAGE HEAPS
- Location: Throughout the site.
 - Height (maximum): 1.0 m.
 - Width (maximum): 5.0 m.
 - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
 - Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.
- 695 CULTIVATION
- Compacted topsoil: Break up to full depth.
 - Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - Depth: 100 mm.
 - Particle size (maximum): 5 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
 - Surface: Leave regular and even.
 - Levels:
 - As Landscaping Drawing;
 - 25 mm above adjoining paving or kerbs; and
 - As section D20.
 - Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 50 mm.
 - Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.
- 700 GRADING OF TOPSOIL
- Topsoil condition: Reasonably dry and workable.
 - Contours: Smooth and flowing, with falls for adequate drainage.
 - Hollows and ridges: Not permitted.
 - Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
 - Give notice: If required levels cannot be achieved by movement of existing soil.



705 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

710 SPREADING TOPSOIL

- Temporary roads/ surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 100 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

720 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 20 mm.
- Below dpc of adjoining buildings: Not less than 150 mm.
- Shrub areas: Higher than adjoining grass areas by 25 mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

805 APPLYING SOIL AMELIORANT TO LAWNS AND MEADOW AREAS

- Type: Agricultural lime.
- Locations: All planting areas.
- Fully incorporate into topsoil to a depth of 150 mm.
- Application: Spread evenly.
 - Timing: Apply prior to cultivation.
 - Rate: 0.3 kg/m².
- Timing: Prior to cultivation.
- Other requirements: None.

p825 APPLYING FERTILIZER TO PROPOSED GRASS AREAS MOVED LAWNS AND WILDFLOWER MEADOW GRASS AREAS.

- Locations: Proposed grassed area, TBC.
- Application: Before final cultivation and three to five days before seeding/ turfing.
- Coverage:
 - Spread evenly, in transverse directions.
 - Rate: 50 g/m².



Q30 Seeding/turfing

GENERAL INFORMATION/REQUIREMENTS

- 115 **SEEDED AND TURFED AREAS**
- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
 - Appearance: A closely knit, continuous ground cover of even density, height and colour.
- 120 **CLIMATIC CONDITIONS**
- General: Carry out the work while soil and weather conditions are suitable.
- 145 **WATERING**
- Quantity: Wet full depth of topsoil.
 - Application: Even and without displacing seed, seedlings or soil.
 - Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.
- 160 **NOTICE**
- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Preparing seed bed.
 - Seeding or turfing.
 - Visiting site during maintenance period.
 - Period of notice: 1 week.
- 170 **SETTING OUT**
- Boundaries: Mark clearly.
 - Delineation: In straight lines or smoothly flowing curves as shown on drawings.

PREPARATION

- 210 **HERBICIDE FOR ALL GRASSED AREAS**
- Type: Suitable for suppressing perennial weeds.
 - Timing: Allow fallow period before cultivation.
 - Duration: As manufacturer's recommendation.
- 280 **FINAL CULTIVATION**
- Timing: After grading and fertilizing.
 - Seed bed: Reduce to fine, firm tilth with good crumb structure.
 - Depth: 25 mm.
 - Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
 - Remove surface stones/earth clods exceeding:
 - General areas: 40 mm.
 - Fine lawn areas: 10 mm.
 - Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.



SEEDING

- 311 GRASS SEED FOR ALL GRASSED AREAS (NON WILDFLOWER)
- Supplier: Submit proposals.
 - Mixture reference:
 - 60% Tall Fescue
 - 20% Cocksfoot
 - 10% Timothy
 - 10% Strong Creeping Red Fescue
 - Application rate: 34-50 g/m².
- 319 QUALITY OF SEED FOR ALL GRASSED AREAS
- Freshness: Produced for the current growing season.
 - Certification: Blue label certified varieties.
 - Standard: EC purity and germination regulations.
 - Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
 - Samples of mixtures: Submit when requested.
- 330 SOWING
- General: Establish good seed contact with the root zone.
 - Method: To suit soil type, proposed usage, location and weather conditions during and after sowing.
 - Distribution: 2 equal sowings at right angles to each other.
- 335 GRASS SOWING SEASON
- Grass seed generally: April to June or August to October.

PROTECTING/CUTTING

- 530 FIRST CUT OF GRASSED AREAS
- Timing: When grass is reasonably dry.
 - Height of initial growth: 75 mm.
 - Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
 - Height of first cut: 40 mm.
 - Mower type: Rotary.
 - Arisings: Remove from site.
- 590 CLEANLINESS
- Soil and arisings: Remove from hard surfaces.
 - General: Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

MAINTENANCE

- 610 FAILURES OF SEEDING/TURFING
- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
 - Defective materials or workmanship: Areas that have failed to thrive.
 - Exclusions: Theft or malicious damage.
 - Method of making good: Recultivation and reseedling/ returfing.
 - Timing of making good: The next suitable planting season.



V90 Electrical systems – Underground Ducting

GENERAL INFORMATION/REQUIREMENTS

Runway light cables to be ducted below new taxiway as per PDP Green drawing 4050. Approximately 10m run.

PRODUCTS

- 30 PRODUCTS GENERALLY
 - Standard: To BS 7671.
 - CE Marking: Required.
- 36 CABLE TRUNKING AND DUCTING
 - Standards: To BS EN 50085-1 and BS EN 50085-2-1.
 - Type: Suitable for location and use.
 - To comply with Doc 9157 Aerodrome Design Manual (Second Edition, 2017) Part 5 – Electrical System
- 36A Ducting to be encase in SP4 concrete as per detail on PDP Green drawing 4050