

Cantilever Balcony Supports - Lot 1 - DOR Blocks - Private Balconies

16 February 2017

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C

Demolition/ Alteration/ Renovation

C10
Site survey

C10 Site survey

To be read with Preliminaries/ General conditions.

SURVEYS

- 115 PRELIMINARY SURVEY On receipt of the order to proceed
- Qualifications of survey author: Contractor's choice.
 - Area to be surveyed: The extended site being in the ownership of the client - e.g., an order for work to Block 2 -9 Bassett Green Court would require a preliminary inspection of the land upon which Blocks 2 -9, 10 - 15, 16 - 25, 26 - 31 and 32 - 41 are situated.
 - Objectives:
 - Visible or suspected hazards: Record general positions/ forms of visible/ suspected hazards, including asbestos containing products, overhead cables and particularly difficult vehicular access, .
 - Designation of areas within/ adjacent to site: Record boundaries/ type of designation within, or adjacent to, the site, including the extent of the estate, vehicular and pedestrian routes and routes necessary to for the access of maintenance plant such as lawn mowers - access to the grounds maintenance contractor is to be maintained through out the works.
 - Protected habitats/ species outside designated areas: Record general positions of sightings or evidence of species including suspected protected European/ UK animal species.
 - Methodology:
 - Specific requirements: Do not use intrusive survey techniques. Avoid disturbing natural features or wildlife.
 - Permissible survey techniques: Contractor's choice.
 - Reference data: The following information is provided: as orders are raised a location plan will be issued for each site to be included in the Contract.
 - Preliminary survey report: Submit.
 - Timing: Submit proposals including the preferred location for site set up and vehicular access at the earliest opportunity.

125 SITE SURVEY TOPOGRAPHIC AND RADAR

- Qualifications of survey author: Contractor's choice.
- Area to be surveyed: In connection with Stage One of the Works, the area of the site applying to the individual block being that occurring below and 1m beyond the area of the balcony and associated stairs and bridges and to include a level survey of the soffit and the upper surface to the balcony and stairs.
- Site datum: Datum point to be determined by Contractor via temporary bench mark.
- Objectives:
 - General: Establish/ record positions, dimensions and levels including pavements, landlord's and tenants fixtures and fittings likely to affect the works and to mark up on site the proposed portion for foundation pads to posts. The levels to the concrete soffit are required to assist in the pre-fabrication design of the new welded steel support framework so that shims are kept to a maximum of 10mm depth. The level survey to the upper surface of the balcony is to ensure that the new roofing system is designed to correct falls to achieve efficient discharge of rainwater into the existing rainwater outlets. The Contractor's roofing specialist is to provide the design for CA approval. The radar survey is required to accurately plot underground services and other obstructions likely to affect the placement of columns. .
 - Features: Record positions, dimensions and levels including
 - the underground rainwater drainage system from all gulleys to the first inspection chamber including cover and invert levels
 - access covers;
 - fences;
 - gates and stiles;
 - gullies;
 - isolated trees; and
 - kerbs
 - Fixtures such as handrails, sheds key boxes etc .
- Methodology: Do not use intrusive survey techniques. Avoid disturbing natural features or wildlife.
 - Permissible survey techniques: Contractor's choice.
- Control points: Establish and record measuring stations/ targets to facilitate future remeasuring.
 - Standards: To BS 5964-1 and -2.
 - Type: Contractor's choice.
- Dimensional accuracy:
 - Angular: Contractor's choice.
 - Horizontal: Contractor's choice.
 - Vertical: Contractor's choice.
- Source data for reference/ verification: The following information is provided: None.
- Site survey report: Submit.
 - Timing: Submit proposals.

COMPLETION

915A DOCUMENTATION - ELECTRONIC - FOR ALL SURVEYS DRAWINGS TO BE AUTOCAD NOTE: THERE ARE NO EXISTING DRAWINGS

- Storage medium: Submit files electronically in DWG and PDF format.
- File naming: By address.

C11
Site investigation

C11 Site investigation

250 TRIAL PITS AND TRENCHES

- Purpose: To determine the presence of asbestos containing materials or other likely obstruction to the construction of the concrete pad foundations to all columns - the trial pits are effectively the excavation necessary to the formation of the pad foundations and are to be formed in advance of the main body of the works so as to provide time for the notification and disposal of asbestos containing material and amendments to the design where found necessary..
- Locations: To the locations identified on the drawings for the placement of concrete pad foundations to support the new steel posts to the front of the balcony or other location determined by the result of the radar survey previously undertaken by the contractor..
- Full depth: As drawings.
- Hand dig: Contractor's choice.
- Minimum trench width: As drawings.
- Minimum base area of pits: As drawings.
- Protection: Contractor's choice.
- Backfill material: Submit proposals.
- Reinstatement: Submit proposals.

C20
Demolition

C20 Demolition

To be read with Preliminaries/General conditions

GENERAL REQUIREMENTS

110 DESK STUDY/ SURVEY

- Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
 - the structure or structures to be deconstructed/ demolished,
 - the site on which the structure or structures stand, and
 - the surrounding area.
- Report and method statements: Submit, describing:
 - Form, condition and details of the structure or structures, the site, and the surrounding area.
Extent: TBC .
 - Type, location and condition of features of historical, archaeological, geological or ecological importance.
 - Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures, or by noise, vibration and/ or dust generated during deconstruction/ demolition.
 - Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
 - Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
 - Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
 - Proposed programme of work, including sequence and methods of deconstruction/ demolition.
 - Details of specific pre-weakening required.
 - Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
 - Arrangements for control of site transport and traffic.
 - Special requirements: None .
- Format of report: TBC depending on proposals .

120 EXTENT OF DECONSTRUCTION/ DEMOLITION

- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to levels indicated or as otherwise shown on the drawings.

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.

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.

250 LIVE FOUL AND SURFACE WATER DRAINS

- Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings:
 - Protect; maintain normal flow during deconstruction/ demolition.
 - Make good any damage arising from deconstruction/ demolition work.
 - Leave clean and in working order at completion of deconstruction/ demolition work.
- Other requirements: None.

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.
- 350 ADJOINING PROPERTY
- Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
 - Defects: Report immediately on discovery.
 - Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
 - Support to foundations: Do not disturb.
- 360 STRUCTURES TO BE RETAINED
- Extent: As drawings.
 - Parts which are to be kept in place: Protect.
 - Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.
- 370 PARTLY DEMOLISHED STRUCTURES
- General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
 - Temporary works: Prevent overloading due to debris.
 - Access: Prevent access by unauthorized persons.
- 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.
- 450 SITE CONDITION AT COMPLETION
- Debris: Clear away and leave the site in a tidy condition.
 - Other requirements: None.

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.

C40

Cleaning masonry/ concrete

C40 Cleaning masonry/ concrete

To be read with Preliminaries/ General conditions.

GENERAL/ PREPARATION

110 SCOPE OF WORK

- Clean off calcium deposits, staining and all paint to soffit & fascia of first floor concrete slab at walkways .

142 REMOVAL OF FITTINGS

- Timing: Before commencement of cleaning work.
- Disturbance to surfaces: Minimize.
- Items for disposal: Electrical conduit, light fittings & clips as per services specification.
- Items to be kept for reuse: None.

160 PROTECTION

- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents, and detritus.
 - Vents and grilles: Seek instructions before sealing up.
- Temporary mechanical fastenings:
 - In masonry: Locate in joints.
 - In other surfaces: Seek instructions.
- Additional protection: Submit proposals .

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

- Disposal: Safely. Obtain approvals from relevant Authority.
- Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
- Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

190 CLEANING GENERALLY

- Operatives: Appropriately trained and experienced for each type of cleaning work.
 - Evidence of training: Submit on request.
- Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
- Detritus: Remove regularly. Dispose of safely.
- Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
- Modifications to cleaning methods and materials: Seek instructions.

215 RECORD OF CLEANING WORKS

- Written report: Record cleaning methods and procedures used for each type of surface and deposit.
 - Content: Relevant attributes of cleaning methods used including:
 - Equipment and settings.
 - Dwell times.
 - Number of applications.
 - Ambient temperatures.
- Additional documentation: None.
- Submission: At completion of cleaning works.

PRODUCTS/ EQUIPMENT

312 SURFACE BIOCIDES

- Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
- Compatibility with surface: Free from staining or other harmful effects.

322 ABRASIVE CLEANING EQUIPMENT

- Manufacturer/ Supplier: Submit proposals.
 - Product reference: Submit proposals.
- Nozzle types: Submit proposals.
- Abrasives: Submit proposals.

APPLICATION

412 REMOVAL OF LOOSELY ADHERED DEPOSITS

- Timing: Before commencement of other cleaning methods.
- Surfaces: Prevent damage, including abrasion.

432 TOOLING

- Tooling of surfaces: Not permitted.

442 ABRASIVE BLOCKS

- Types: Suitable grades of carborundum or gritstone.
- Application: Lubricate with water. Remove detritus.
- Abrasive power tools: Prohibited.

452 ABRASIVES CLEANING

- Surfaces: Minimize abrasion.
 - Ingrained deposits: Seek instructions.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.
- Detritus: Remove with clean water.

472 PRESSURIZED WATER CLEANING

- Surfaces: Prevent damage, including abrasion.
- Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

C42

Repairing/ Renovating/ Conserving concrete

C42 Repairing/ Renovating/ Conserving concrete

To be read with Preliminaries/General conditions.

GENERAL

- 105 INFORMATION REQUIRED WITH TENDER
- Details of repair system including manufacturer and product references; data sheets; third party product certification, methods and products for cleaning surfaces prior to investigation of concrete condition, proposals for reducing noise and vibration, proposals for sequence of repairs..
- 150 CONCRETE REPLACEMENT REPAIRS WALKWAYS
- Location: External floor slab soffits, staircases and exposed areas of beams..
 - Concrete removal:
 - Extent: Loose concrete and severely cracked concrete.
 - Limitations on removal: Up to 50mm beyond sound concrete..
 - Method: Hand or power tools to suit circumstances..
 - Reinforcement replacement:
 - Extent: As directed..
 - Jointing: Tying wire..
 - Reinforcement treatment: In accordance with chosen repair..
 - Concrete replacement: In accordance with chosen repair..
 - Finish: As existing..
 - Other requirements: As directed..
- 155 CRACK REPAIRS WALKWAYS
- Location: External floor slab soffits, staircases, and exposed areas of beams..
 - Crack types/ widths: Up to 9mm..
 - Primary function: Sealing against water and other adverse agents..
 - Grouting material: As chosen repair system..
 - Application method: Pressure injection..
 - Finish: Flush..
 - Other requirements: As directed..

PRODUCTS

- 305 PROPRIETARY REPAIR SYSTEMS
- Products: Compatible and supplied by the same manufacturer as part of a total repair system.
- 310 REPAIR MORTAR
- Type: Concrete reinstatement mortar..
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Renderoc HB or similar approved..
- 315 PROTECTIVE COATING TO REINFORCEMENT
- Type: Zinc rich primer..
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Nitoprime Zinc Rich or similar approved..

- 320 LEVELLING/ SMOOTHING COATS
- Type: Fairing coat..
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Renderoc FC or similar approved..
- 340 CRACK/ VOID SEALING GROUTS
- Type: Resin injection grout..
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Nitofil TH or similar approved..
- 342 JOINT SEALING
- Type: Silicone sealing.
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Hilastic 44 or similar approved. .
- 345 PROTECTIVE COATINGS FOR CONCRETE
- Type: Water based protective coating..
 - Manufacturer: Fosroc or similar approved..
 - Product reference: Dekguard W or similar approved..
 - Colour: To match existing..
- 360 REINFORCEMENT GENERALLY
- Standards:
 - Steel: To BS 4449; BS 4482; BS 4483.
 - Stainless steel: To BS 6744.
 - Strength grades: Subject to site investigation..
 - Cutting and bending: To BS 8666.
 - Suppliers: Firms holding a valid certificate of approval issued under a product certification scheme operated by a third party certification body with appropriate Category 2 accreditation from the United Kingdom Accreditation Service (UKAS).

EXECUTION

- 605 EXECUTION GENERALLY
- Standard: To BS EN 1504-10.
 - Operatives' skill and experience: Appropriate for the types of preparation and application.
 - Evidence: Submit on request.
- 610 QUALITY CONTROL DURING APPLICATION OF REPAIR SYSTEM
- Tests/ Observations: By Engineer and manufacturer..
 - Frequency: On trial samples..
 - Criteria: To ensure ongoing compliance with manufacturer's recommendations..
- 615 QUALITY CONTROL ON COMPLETED HARDENED REPAIR SYSTEM
- Tests/ Observations: By Engineer and manufacturer..
 - Frequency: On trial samples..
 - Criteria: To check for early failure..

- 625 REMOVAL OF FITTINGS/ ATTACHMENTS
- Extent: The area of repair and any fittings/ attachments that could impede or be damaged by access.
 - Removal methods: Minimize damage to concrete/ reinforcement and to fittings/ attachments that are to be retained for reuse.
 - Items for disposal: As directed..
 - Items for refixing after completion of repair work: As directed..
 - Storage: Prevent damage.
 - Other requirements: As directed..
- 630 CLEANING CONCRETE SURFACES
- Extent: To reveal surface condition and aid investigation work. Minimize disruption to concrete surfaces and materials. Leave no harmful residual cleaning agents.
 - Methods: Wire brushing or jet washing..
- 635 TEMPORARY SUPPORTS/ PROPPING
- Standard: To BS 5975.
 - General: Prevent damage and overstressing to any part of structure during repairs.
 - Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.
 - Location/ Extent of propping: Submit proposals.
- 640 EXTENT OF CONCRETE REMOVAL FOR REINFORCEMENT TREATMENT/ REPLACEMENT
- Generally: The minimum necessary to allow treatment/ replacement, and to achieve thorough compaction of replacement material.
 - Edges of retained concrete: No undercutting or feather edges. Maintain edge angle within 90-135° or, where replacement material is spray applied, 110-135°.
 - Cutting: Prevent damage to reinforcement.
 - Removal of carbonated/ contaminated concrete: As directed..
 - Gap to expose full profile of bar: 10 mm..
 - Length of continuous uncorroded reinforcement to be exposed (minimum): 50 mm or, where reinforcement is to be replaced, 50 mm beyond the end of lap or joint.
- 645 CLEANING REINFORCEMENT
- Standard of cleaning: to bright steel in accordance with system manufacturer's recommendations..
- 660 PREPARATION OF CONCRETE SUBSTRATES
- Soundness: Remove loose or otherwise defective material and repair significant cracks and gaps.
 - Preparation:
 - Roughening for key: Scabbling; thorough and even to permit full aggregate interlock..
 - Wetting of substrate: As recommendations replacement material manufacturer..
 - Condition immediately before placing replacement material:
 - Cleanliness: Free from loose material, with no debris, tying wire clippings, and other matter that could adversely affect bond.
 - Surface condition: As recommendations from replacement material manufacturer..

665 FORMWORK FOR RECASTING

- Generally: Accurately and robustly constructed to produce finished concrete to the required dimensions.
 - Formed surfaces: Free from twist and bow.
 - Intersections, lines and angles: Square, plumb and true.
- Joints in forms: Secure forms tight against existing concrete. Prevent loss of grout and formation of steps.

670 GROUTING CRACKS/ VOIDS

- Substrates: Clean. Keep free of detritus.
- Pressure: Minimum necessary to fill cracks completely. Leave no voids and prevent disruption to structure.

675 CURING CONCRETE/ MORTAR

- Requirement: Keep surface layers of concrete/ mortar moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete/ mortar.
 - Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
 - Top surfaces: If covering is removed for finishing operations, replace it immediately afterwards

COMPLETION

715 INSPECTION AND RECORDING OF LOCATION AND EXTENT OF REPAIRS

Locations of proposed repairs are to be inspected and agreed by Engineer prior to commencement of work.

Once broken out repairs are to be inspected, checked and measured by the Engineer prior to filling.

When completed, repairs are to be inspected and approved by the Engineer.

- Repair record forms :
 - Content : Unique repair reference number for cross - referencing to record drawings ; details of repair including dimensions and explanatory sketches ; agreements and special requirements.
 - Copies : Two.
 - Source of record forms : Employer's standard.
- Record drawings : Required.

C90

Alterations - spot items

C90 Alterations - spot items**GENERAL**

110 DESCRIPTIONS

- Location of spot item descriptions: Schedule of work.

120 EMPLOYER'S PROPERTY

- Components and materials arising from alterations that are to remain the property of the Employer: None.
 - Protection: Maintain until items listed above are removed by the Employer or reused in the Works, or until the end of the Contract.
- Special requirements: The temporary metal propping installed at most sites by the Client remains the property of the Client and is to be carefully dismantled and securely stored on site for collection by others when confirmed that it is safe to do so by the Contract Administrator .

130 RECYCLED MATERIALS

- Materials arising from alterations: May 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

D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

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.

155 INITIAL SITE SURVEY AND EXCAVATIONS

It is known that services are present in the ground close to or at the location of the proposed new foundations.

It therefore may be necessary to adjust the position of the foundations to avoid the services and to provide a bridging detail as shown on the drawings.

Contamination may also be present, e.g asbestos.

In the event that asbestos is discovered, the Engineer / Client shall be notified immediately, and this must be dealt with in accordance with all relevant legislation, the Client's relevant procedures, and to the satisfaction of the Client and all other relevant legislative bodies..

To avoid any delays arising from unknown services or asbestos, the contractor will be required to excavate for the foundations at the start of work on each block or area to survey for the presence of services and / or asbestos.

To avoid unecomomical working and temporary backfilling of excavations, the excavations shall be concreted to form the permanent foundations immediately wherever possible.

Where services are located, the foundations shall be repositioned in agreement with the Engineer and ,if necessary, the relevant authorities, using the bridging detail or other detail as necessary.

CLEARANCE/EXCAVATING

164 TREE ROOTS

- Protected area: Do not cut roots within precautionary protection area.
 - Size of area: TBC by arboriculturist..
- Excavation in protected area:
 - Method: By hand..
 - Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
- Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
- Cutting:
 - Make clean smooth cuts with no ragged edges.
 - Pare cut surfaces smooth with a sharp knife.
 - Treatment of cut roots: In accordance with arboriculturists requirements..
- Backfill: As dug material, enriched with fertilizer etc. as directed by arboriculturist..

170 REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

- Identification: Clearly mark trees to be removed.
- Small trees, shrubs and hedges: Cut down
- Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

- 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.
- 260 INSPECTING FORMATIONS
- Give notice: Make advance arrangements for inspection of formations for foundations and filling formations.
 - Notice (minimum): 3 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 concrete.
- 265 INSPECTING FORMATIONS IN SAND AND GRAVEL
- Notice for inspection (minimum): 3 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 concrete.
- 267 INSPECTION OF FORMATIONS IN SHRINKABLE SOILS
- Inspect formation: For signs of conducting and fine moisture absorbing roots.
 - Give notice: If significant quantities of roots are visible in the formation or in the bottom 75 mm of the walls of the excavation.
- 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.
- 276 FOUNDATION BEARING
- Requirement: Foundations are designed to bear on:
 - Safe bearing capacity (minimum): 50 kN/m².
 - Give notice: If the material at the design depth of the foundation does not comply with this description, or contains soft or hard spots or highly variable material.
- 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.

DISPOSAL OF MATERIALS

415 EXCAVATED TOPSOIL REMOVAL

- General: Remove from site.

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary storage heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: All bases. .
 - 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 .

520A FROST SUSCEPTIBILITY

- 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.

E

In situ concrete/Large precast concrete

E05

In situ concrete construction generally

E05 In situ concrete construction generally

To be read with Preliminaries/General conditions.

220A STRUCTURAL DESIGN PROVIDED

- Description: STAIRCASES AND BASES ETC..
- Requirements:
 - Generally: As shown on drawings.
 - Additional requirements: None.
- Production/ execution records: In accordance with the designated code of practice..

221 STRUCTURAL DESIGN PROVIDED

- Standards:
 - Design to BS8110-1 and -2.
 - Drawings to BS EN ISO 4157-1
 - Reinforcement Schedules: to BS8666
- Finished Product: To comply with the requirements of the design standard.
 - Additional Requirements: n/a
- Production / Execution Records : n/a

223 STRUCTURAL DRAWINGS AND SCHEDULES

- Standards:
 - Drawings: To Standard methods of detailing concrete' published by The Institution of Structural Engineers.
 - Reinforcement schedules: To BS 8666.

225 TEMPERATURE RECORDS

- Requirement: Throughout period of concrete construction record:
 - Daily: Maximum and minimum atmospheric shade temperatures.
 - Under adverse temperature conditions: Temperature at commencement and end of placing.
- Equipment: Contractor's choice .
 - Location: In the shade, close to the structure.

235 OPENINGS, INSERTS AND FIXINGS

- Requirement: Collate all information.
- Submit: Details where openings, inserts and fixings can only be accommodated by adjustments to reinforcement.
- Locate reinforcement: To ensure specified minimum cover at openings and inserts and to be clear of fixing positions.

290 ACCURACY OF CONSTRUCTION

- Setting out: To BS 5964-1.
- Geometrical tolerances: To BS EN 13670, Tolerance Class 1.
 - Conflicts: Notwithstanding tolerances specified elsewhere, do not exceed requirements for compliance with the designated code of practice.
 - Substitution of alternative requirements: none.

410 IN SITU CONCRETE CONSTRUCTION - SUPERVISION/ CHECKING

- Standard: To BS EN 13670, Execution Class 1.

- 430 SURFACE CRACKING Visible Concrete
- Method of measurement: graduated magnifying devices, templates and feeler gauges..
 - Critical crack width: 0.3 mm .
 - Action: Should cracks occur that are wider than the critical crack width:
 - Survey: Frequency and extent of such cracks and investigate cause.
 - Report: Findings together with recommendations for rectification.

E10

Mixing/casting/curing in situ concrete

E10 Mixing/casting/curing in situ concrete

To be read with Preliminaries/General conditions.

CONCRETE

101 SPECIFICATION

- Concrete generally: To BS 8500-2.
- Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

105 DESIGNATED CONCRETE MASS CONCRETE FOUNDATIONS

- Designation: GEN3.
- Fibres: Not required..
- Aggregates:
 - Size (maximum): 20 mm..
 - Coarse recycled aggregates: Not permitted..
 - Additional aggregate requirements: None..
- Special requirements for cement/ combinations: None..
- Consistence class: S3..
- Chloride class: Cl 1.0.
- Admixtures: None..
- Additional mix requirements: None.

108 DESIGNATED CONCRETE REINFORCED CONCRETE ABOVE GROUND

- Designation: RC32/40.
- Reinforcement: High Yield Steel strength grade B500B.
- Aggregates:
 - Size (maximum): 20 mm.
 - Coarse recycled aggregates: Not permitted.
 - Additional aggregate requirements: None.
- Special requirements for cement/ combinations: None.
- Consistence class: S3.
- Chloride class: Cl 0.40.
- Admixtures: Concrete producer's choice.
- Additional mix requirements: None.

MATERIALS, BATCHING AND MIXING

215 READY-MIXED CONCRETE

- Production plant: Currently certified by a body accredited by UKAS to BS EN 45011 for product conformity certification of ready-mixed concrete .
- Source of ready-mixed concrete: Obtain from one source if possible . Otherwise, submit proposals .
 - Name and address of depot: Submit before any concrete is delivered .
 - Delivery notes: Retain for inspection .
- Declarations of nonconformity from concrete producer: Notify immediately .

221 INFORMATION ABOUT PROPOSED CONCRETES

- Submit when requested:
 - Details listed in BS 8500-1, clause 5.2.
 - Additional information: None..

225 CHANGES TO SPECIFICATION

- Changes to specification of fresh concrete (outside concrete producer's responsibility): Prohibited.

230 INTERRUPTION OF SUPPLY DURING CONCRETING

- Elements without joints: Where elements are detailed to be cast in a single pour without joints, make prior arrangements for a back-up supply of concrete.
- Elsewhere:
 - Preparation: Manage pour to have a full face, and have materials available to form an emergency construction joint while concrete can still be worked.
 - Before pour is completed: Submit location and details of joint, make proposals for joint preparation.

415 ADMIXTURES

- Calcium chloride and admixtures containing calcium chloride: Do not use .

490 PROPERTIES OF FRESH CONCRETE

- Adjustments to suit construction process: Determine with concrete producer . Maintain conformity to the specification .

PROJECT TESTING/ CERTIFICATION

505 PROJECT TESTING OF CONCRETE - GENERAL

- Testing: To BS 8500-1, Annex B.
 - Nonconformity: Obtain instructions immediately.
- Recording: Maintain complete correlated records including:
 - Concrete designation.
 - Sampling, site tests, and identification numbers of specimens tested in the laboratory.
 - Location of the parts of the structure represented by each sample.
 - Location in the structure of the batch from which each sample is taken.

508 REGULAR PROJECT TESTING OF CONCRETE

- Tests: Compressive strength.
- Sampling:
 - Point: At point of discharge from delivery truck.
 - Rate: 4 Cubes per concrete delivery.
- Other requirements: Cubes for early stage strength testing to be stored under same conditions as concrete in members.

520 TESTING LABORATORY

- Laboratory: Accredited by UKAS or other national equivalent.
 - Name and UKAS reference number: Submit well in advance of making trial mixes or concrete for use in the works.

530 TESTS RESULTS

- Submission of reports: Within one day of completion of each test.
 - Number of copies: Three.
- Reports on site: A complete set, available for inspection.

550 BROKEN CUBES FROM FAILED STRENGTH TESTS

- Nonconformity: Keep separately the pieces of each cube which fail to meet the conformity requirements for individual results.
- Period for keeping cubes: Obtain instructions.

PLACING/ COMPACTING/ CURING AND PROTECTING**610 CONSTRUCTION/ SEQUENCE/ TIMING REQUIREMENTS**

- For RC Staircases. .

620 TEMPERATURE OF CONCRETE

- Application: For RC Staircases..
- Objective: Limit maximum temperature of concrete to minimize cracking during placing, compaction and curing. Take account of:
 - High temperatures and steep temperature gradients: Prevent build-up during first 24 hours after casting. Prevent coincidence of maximum heat gain from cement hydration with high air temperature and/ or solar gain.
 - Rapid changes in temperature: Prevent during the first seven days after casting.
- Proposals for meeting objective: Submit.

630 PREMATURE WATER LOSS

- Requirement: Prevent water loss from concrete laid on absorbent substrates .
 - Underlay: Select from:
 - Polyethylene sheet: 250 micrometres thick .
 - Building paper: To BS 1521, grade B1F .
 - Installation: Lap edges 150 mm .

635 CONSTRUCTION JOINTS NOT PERMITTED

- Location: Not permitted to any concreting works unless agreed with Engineer..

648 ADVERSE TEMPERATURE CONDITIONS

- Requirement: Submit proposals for protecting concrete when predicted ambient temperatures indicate risk of concrete freezing or overheating.

650 SURFACES TO RECEIVE CONCRETE

- Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water .

660 INSPECTION OF SURFACES

- Notice: Give notice to allow inspections of reinforcement and surfaces before each pour of concrete.
 - Period of notice: Obtain instructions.
- Timing of inspections: When reinforcement and formwork are ready for concreting.

670 TRANSPORTING

- General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability . Protect from heavy rain .
- Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content .

680 PLACING

- Records: Maintain for time, date and location of all pours.
- Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
- Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
- Continuity of pours: Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
- Discharging concrete: Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
- Thickness of layers: To suit methods of compaction and achieve efficient amalgamation during compaction.
- Poker vibrators: Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.

690 COMPACTING

- General: Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
 - Areas for particular attention: Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
- Consecutive batches of concrete: Amalgamate without damaging adjacent partly hardened concrete.
- Methods of compaction: To suit consistence class and use of concrete.

720 VIBRATORS

- General: Maintain sufficient numbers and types of vibrator to suit pouring rate, consistency and location of concrete .
- External vibrators: Obtain approval for use .

730 PLASTIC SETTLEMENT

- Settlement cracking: Inspect fresh concrete closely and continuously wherever cracking is likely to occur, including the top of deep sections and at significant changes in the depth of concrete sections .
 - Timing: During the first few hours after placing and whilst concrete is still capable of being fluidized by the vibrator .
- Removal of cracks: Revibrate concrete.

810 CURING GENERALLY

- Requirement: Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.
 - Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
 - Top surfaces: Cover immediately after placing and compacting. If covering is removed for finishing operations, replace it immediately afterwards.
- Surface temperature: Maintain above 5°C throughout the specified curing period or four days, whichever is longer.
- Records: Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep records on site, available for inspection.

811 COVERINGS FOR CURING

- Sheet coverings: Suitable impervious material .
- Curing compounds: Selection criteria:
 - Curing efficiency: Not less than 75% or for surfaces exposed to abrasion 90% .
 - Colouring: Fugitive dye .
 - Application to concrete exposed in the finished work: Readily removable without disfiguring the surface .
 - Application to concrete to receive bonded construction/ finish: No impediment to subsequent bonding .
- Interim covering to top surfaces of concrete: Until surfaces are in a suitable state to receive coverings in direct contact, cover with impervious sheeting held clear of the surface and sealed against draughts at perimeters and junctions .

812 PREVENTING EARLY AGE THERMAL CRACKING

- Deep lifts or large volume pours: Submit proposals for curing to prevent early age thermal cracking, taking account of:
 - Temperature differentials across sections .
 - Coefficient of thermal expansion of the concrete .
 - Strain capacity of the concrete mix (aggregate dependent) .
 - Restraint .

818 CURING PERIODS GENERALLY

- Minimum periods: When not otherwise indicated, to BS EN 13670 Annex F 8.5.

840 PROTECTION

- Prevent damage to concrete, including:
 - Surfaces generally: From rain, indentation and other physical damage .
 - Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration .
 - Immature concrete: From thermal shock, physical shock, overloading, movement and vibration .
 - In cold weather: From entrapment and freezing expansion of water in pockets, etc .

E20

Formwork for in situ concrete

E20 Formwork for in situ concrete

To be read with Preliminaries/ General conditions.

GENERALLY/ PREPARATION

110 LOADINGS

- Requirement: Design and construct formwork to withstand the worst combination of the following:
 - Total weight of formwork, reinforcement and concrete.
 - Construction loads including dynamic effects of placing, compacting and construction traffic.
 - Wind and snow loads.

132 PROPPING

- General: Prevent deflection and damage to the structure. Carry down props to bearings strong enough to provide adequate support throughout concreting operations.
- Method statement: Submit proposals for prop bearings and sequence of propping/ repropping and backpropping.
 - Timing of submission: To be agreed between the permanent works designer and the temporary works coordinator. .

170 WORK BELOW GROUND - FOUNDATIONS

- Casting vertical faces against faces of excavation: Permitted providing the face of the excavation is stable..
 - Requirements: Submit proposals for maintaining stability of excavated faces and preventing contamination of concrete by loose soil.

CONSTRUCTION

310 ACCURACY

- General requirement for formwork: Accurately and robustly constructed to produce finished concrete in the required positions and to the required dimensions.
- Formed surfaces: Free from twist and bow (other than any required cambers).
- Intersections, lines and angles: Square, plumb and true.

315 SUBSTRUCTURE FORMWORK AND UNDERSLAB INSULATION

- Cutting: Neat and accurate to edges, and around penetrations and downstands.
- Laying: Tightly butted and fully supported on firm, even substrate.
- Vertical faces: Stiffen as necessary to act as shutter.
- Formwork/ insulation surfaces: Protect from indentation by spacers and other items.
- Joints in formwork/ insulation and with edge structure and penetrations: Seal to prevent penetration of concrete.
- Concrete placement: Restrain formwork/ insulation against movement.

320 JOINTS IN FORMS

- Requirements including joints in form linings and between forms and completed work:
 - Prevent loss of grout, using seals where necessary.
 - Prevent formation of steps. Secure formwork tight against adjacent concrete.

330 INSERTS, HOLES AND CHASES

- Positions and details:
 - Dimensioned on drawings provided on behalf of the Employer: Do not change without consent.
 - Undimensioned or from other sources: Submit proposals.
- Positioning relative to reinforcement: Give notice of any conflicts well in advance of placing concrete.
- Method of forming: Fix inserts or box out as required. Do not cut hardened concrete without approval.

350 FORM TIES

- Metal associated with form ties/ devices: Prohibited within cover to reinforcement. Compatible with reinforcement metal.

470 RELEASE AGENTS

- Use: All formwork.
- General: Achieve a clean release of forms without disfiguring the concrete surface.
- Product types: Compatible with formwork materials, specified formed finishes and subsequent applied finishes. Use the same product throughout the entire area of any one finish.
- Protection: Prevent contact with reinforcement, hardened concrete, other materials not part of the form face, and permanent forms.

480 SURFACE RETARDERS

- Use: Obtain approval.
- Reinforcement: Prevent contact with retarder.

STRIKING**510 STRIKING FORMWORK**

- Timing: Prevent any disturbance, damage or overloading of the permanent structure.

521 MINIMUM PERIOD FOR RETAINING FORMWORK/ TEMPORARY SUPPORTS IN POSITION

- Concrete strength at time of formwork removal (minimum): 66% of 28 day strength.
- Assumptions: None.
 - Before removing formwork: Submit proposals if assumptions will not be realised.
- Method to be used in assessing early age strength of concrete: Submit proposals.

FORMED FINISHES**610 BASIC FINISH**

- Location: Faces below ground level.
- Finish: Faces fully compacted and cover to reinforcement provided.

620 PLAIN FINISH

- Location: Staircases and Balcony Slabs.
- Finish: Even and dense. Arrange formwork panels in a regular pattern as a feature of the surface.
- Permissible deviation of surfaces:
 - Sudden irregularities (maximum): 3 mm.
 - Gradual irregularities (maximum): 3 mm, when measured from the underside of a 1 m straightedge, placed anywhere on surface.
- Variations in colour:
 - Permitted: Those caused by impermeable formwork linings.
 - Not permitted: Those caused by contamination or grout leakage.
- Surface blemishes:
 - Permitted: Blowholes less than 10 mm in diameter and at an agreed frequency.
 - Not permitted: Voids, honeycombing, segregation and other large defects.
- Formwork tie holes: In a regular pattern and filled with matching mortar.

750 ARRISES, MARGINS AND JUNCTIONS

- Requirements:
As drawings.

E30

Reinforcement for in situ concrete

E30 Reinforcement for in situ concrete

To be read with Preliminaries/ General conditions.

REINFORCEMENT

110 QUALITY ASSURANCE OF REINFORCEMENT

- Standards:
 - Reinforcement: To BS 4449, BS 4482, BS 4483 or BS 6744.
 - Cutting and bending: To BS 8666.
- Source of reinforcement: Companies holding valid certificates of approval for product conformity issued by the UK Certification Authority for Reinforcing Steels (CARES).

140 PLAIN BAR REINFORCEMENT

- Standard: To BS 4482.
- Strength grade: 250.

150 RIBBED BAR REINFORCEMENT

- Standard: To BS 4449.
- Strength grade: B500B.

210 STANDARD FABRIC REINFORCEMENT

- Standard: To BS 4483.
- Strength grade: B500B.

WORKMANSHIP

310 CUTTING AND BENDING REINFORCEMENT

- General: To schedules and to BS 8666.
- Bending on site, including minor adjustments: Obtain instructions.

320 PROTECTION OF REINFORCEMENT

- Dropping from height, mechanical damage and shock loading: Prevent.
- Cleanliness of reinforcement at time of pouring concrete: Free from corrosive pitting, loose mill scale, loose rust and contaminants which may adversely affect the reinforcement, concrete, or bond between the two.

425 LAPS NOT DETAILED ON DRAWINGS

- Laps in bar reinforcement (minimum): 40 x bar diameter.
- Laps in fabric reinforcement (minimum): 32 x mesh bar diameter.
- Laps at corners: Avoid four layer build-up.

451 FIXING REINFORCEMENT

- Standard: To BS 7973-1 and -2.
- Installation: In addition to any spacers and chairs shown on drawings or schedules, provide adequate support, tie securely and maintain the specified cover.
- Tying:
 - Wire type: 16 gauge black annealed. Use stainless steel wire for stainless steel reinforcement.
 - Ends of tying wire: Prevent intrusion into the concrete cover. Remove loose ends.
- Compatibility of metals: Prevent contact between ordinary carbon steel and stainless or galvanized reinforcement.

470 TOLERANCES ON COVER

- Tolerance (maximum): 5mm. .
- Checking specified cover dimensions: Before concreting check that cover dimensions will be achieved.

510 RUST STAINING

- Staining of surfaces of concrete which will be exposed to view in the finished work: Prevent.

F
Masonry

F10
Brick/ block walling

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

- 110 CLAY FACING BRICKWORK ABOVE DPC
- Bricks: To BS EN 771-1.
 - Manufacturer: Submit proposals.
 - Product reference: To match existing.
 - Recycled content: Contractor's choice.
 - Special shapes: None.
 - Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:6 cement:lime:sand.
 - Additional requirements: Coloured mortar to match existing.
 - Bond: To match existing.
 - Joints: Approved.
 - Features: To match existing.
- 170 CALCIUM SILICATE FACING BRICKWORK ABOVE DPC
- Bricks: To BS EN 771-2.
 - Manufacturer: Submit proposals.
 - Product reference: To match existing.
 - Special shapes: None.
 - Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:6 cement:lime:sand.
 - Additional requirements: None.
 - Bond: To match existing.
 - Joints: To match existing.
 - Features: To match existing.
- 215 CONCRETE FACING BRICKWORK ABOVE DPC
- Bricks: To BS EN 771-3.
 - Manufacturer: To be submitted by contractor.
 - Product reference: To be agreed.
 - Configuration: Group 1.
 - Compressive strength:
 - Mean value: Not applicable.
 - Characteristic value: Not applicable.
 - Category: I.
 - Freeze/ Thaw resistance: Not applicable.
 - Recycled content: Contractor's choice.
 - Work sizes (length x width x height): 215 x 100 x 65 mm.
 - Tolerance category: Not applicable.
 - Special shapes: None.
 - Additional requirements: None.
 - Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:6 cement:lime:sand.
 - Additional requirements: None.
 - Bond: To match existing.
 - Joints: Flush.
 - Features: None.

WORKMANSHIP GENERALLY**430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS AND CLAY BLOCKS**

- Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
- Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

440 CONDITIONING OF CONCRETE BRICKS/ BLOCKS

- Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.
- Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.
- Avoidance of suction in concrete bricks/ blocks: Do not wet.
 - Use of water retaining mortar admixture: Submit details.

500 LAYING GENERALLY

- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Clay block joints:
 - Thin layer mortar: Lay blocks on a full bed.
 - Interlocking perpend: Butted.
- Bond where not specified: Half lap stretcher.
- Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

535 HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR

- Quoins and advance work: Rack back.
- Lift height (maximum): 1.2 m above any other part of work at any time.
- Daily lift height (maximum): 1.5 m for any one leaf.

560 COURSING BRICKWORK

- Gauge: Four brick courses including bed joints to 300 mm.

561 COURSING BRICKWORK WITH EXISTING

- Gauge: Line up with existing brick courses.

580 LAYING FROGGED BRICKS

- Single frogged bricks: Frog uppermost.
- Double frogged bricks: Larger frog uppermost.
- Frog cavity: Fill with mortar.

635 JOINTING

- Profile: Consistent in appearance.

665 POINTING TO BRICKWORK ABOVE DPC

- Joint preparation: Remove debris. Dampen surface.
- Mortar: As section Z21.
 - Standard: To BS EN 998-2.
 - Mix: 1:1:6 cement:lime:sand.
 - Additional requirements: Coloured mortar to match existing.
- Profile: Approved.

690 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements: Do not lay bricks/ blocks:
 - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
 - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
 - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK**710 THE TERM FACEWORK**

- Definition: Applicable in this specification to all brick/ block walling finished fair.
 - Painted facework: The only requirement to be waived is that relating to colour.

750 COLOUR CONSISTENCY OF MASONRY UNITS

- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

760 APPEARANCE

- Brick/ block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
 - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
 - Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

780 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

800 TOOTHED BOND

- New and existing facework in same plane: Bond together at every course to achieve continuity.

830 CLEANLINESS

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing with stiff bristled brush.
- Removal of marks and stains: Rubbing not permitted.

F30

**Accessories/ sundry items for brick/ block/ stone
walling**

F30 Accessories/ sundry items for brick/ block/ stone walling

To be read with Preliminaries/ General conditions

- 110 CONCRETE FILL TO BASE OF CAVITY
- Concrete generally: To BS EN 206-1 and BS 8500-2.
 - Designated concrete: GEN 1.
Workability: High.
 - Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
 - Placement: Compact to eliminate voids.
- 120 CLEANLINESS
- Cavity base and faces, ties, insulation and exposed dpcs: Free from mortar and debris.
- 130 PERPEND JOINT WEEP HOLES
- Form: Open perpend joint.
 - Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings. 75 mm above top of cavity fill at base of cavity.
 - Provision: At not greater than 1000 mm centres and not less than two over each opening.
- 132 PERPEND JOINT PLASTICS WEEP HOLES
- Manufacturer: Nearest match .
 - Product reference: Nearest match .
 - Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings. 75 mm above top of cavity fill at base of cavity.
 - Provision: At not greater than 1000 mm centres and not less than two over each opening.
- 160 AIR BRICKS IN EXTERNAL WALLING
- Standard: To BS 493, class 1.
 - Manufacturer: Nearest match .
 - Product reference: Nearest match .
 - Apertures: Nearest match .
 - Work sizes: Nearest match .
 - Material/ Colour: Nearest match .
 - Placement: Built in with no gaps at joints.
- 171 VENTILATION DUCTS IN EXTERNAL WALLING
- Manufacturer: Nearest match .
 - Product reference: Nearest match .
 - Placement: Across cavity, sloping away from inner leaf. Full mortar joints to seal cavity.
 - Protection from water penetration to inner leaf: Where barrier is not integral to duct, form stepped dpc cavity tray with stop ends above duct, extending 150 mm on each side.
- 175 CAVITY VENTILATORS
- Manufacturer: Nearest match .
 - Product reference: Nearest match .
 - Material/ colour: Nearest match .
 - Number and location: To match existing .

INSTALLATION OF DPCS/ CAVITY TRAYS

415 HORIZONTAL DPCS

- Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
- Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.
- Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
- Overall finished joint thickness: As close to normal as practicable.

435 STEPPED DPCS IN EXTERNAL WALLS

- External walls on sloping ground: Install dpcs not less than 150 mm above adjoining finished ground level.

445 SILL DPCS

- Form and placement: In one piece and turned up at back when sill is in contact with inner leaf.

455 COPING/ CAPPING DPCS

- Placement: Bed in one operation to ensure maximum bond between masonry units, mortar and dpc.
- Dpcs crossing cavity: Provide rigid support to prevent sagging.

465 SEALING DPCS GENERALLY

- Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer .

475 SITE FORMED CAVITY TRAYS

- Requirements to prevent downward ingress of water:
 - Profiles: To match those shown on drawings. Firmly secured.
 - Joint treatment: Use unjointed wherever possible, otherwise lap at least 100 mm and seal to produce a free draining and watertight installation.
 - Horizontal cavity trays: Support using cavity closer.
 - Sloping cavity trays: Prevent sagging.
 - Cleanliness: Free from debris and mortar droppings.

485 CAVITY TRAYS OVER OPENINGS AND OTHER CAVITY BRIDGINGS

- Length: To extend not less than 150 mm beyond ends of lintels/ bridgings.

515 DPC/ CAVITY TRAY LEADING EDGE IN FACEWORK - FLUSH

- Treatment at face of masonry: Finish flush and clear of mortar at the following locations: Generally .

560 VERTICAL DPCS GENERALLY

- Form: In one piece wherever possible.
 - Joints: Upper part overlapping lower not less than 100 mm.

570 JAMB DPCS AT OPENINGS

- Joint with cavity tray/ lintel at head: Full underlap.
- Joint with sill/ horizontal dpc at base: Full overlap.
- Projection into cavity: Not less than 25 mm.
- Relationship with frame: In full contact.

- 580 JAMB DPCS TO BUILT IN TIMBER FRAMES
- Fixing: Securely fastened to back of frame.
 - Fasteners: Galvanized clout nails or staples.

G

Structural/Carcassing metal/timber

G10
Structural steel framing

G10 Structural steel framing

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS/ INFORMATION

110A CONTRACTOR'S DESIGN OF JOINTS All Steelwork

- Design concept: Refer to drawings..
- Design responsibility: Design connections and detail steelwork and connections.
 - Other responsibilities: None.
- Structural requirements:
 - Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.
 - Connections: All connections to steelwork to be based on the principles of the details shown on the drawings, but modified as necessary to suit individual circumstances. All steelwork is exposed to view and therefore a high quality of detailing, finishes and workmanship is required to make the steelwork and in particular the joints visually pleasing. All welds are to have a smooth, consistent, regular profile, and are to be continuous around corners etc. All bolt ends are to have plastic caps finished to match the main steelwork..
 - Fixings to foundations and walls: As drawings.
 - Additional requirements: Joints have been designed to minimise movement of the structure, and in particular the balustrades and their components. Where welded joints are shown on the drawings, substitution of other methods of jointing will not be permitted. All steelwork is to be galvanised as below and powder coated as described elsewhere in the drawings and documents.
- Design and production information: As Preliminaries section A31..

113 SURVEY BY CONTRACTOR

Prior to commencement of fabrication drawings for each block, the Contractor shall survey each block to determine the levels and falls of the balcony slabs.

It is intended that the steelwork shall be erected with all handrails and beams level within normal tolerances.

The level of the balcony slabs is known to vary within each block and it is essential that the steelwork fabrication takes account of this.

The principal dimensions are shown on the drawings, but the height of balustrade posts may need to be adjusted to suit the differences in the level of the slab and to maintain a clear height of 1100 mm above the finished floor level at the edge of the slab.

Generally all steelwork has to be set out from a datum point at the lowest point of the slab on each block.

Survey information to comprise CAD drawings in .dwg format to include location plans, plans and levels.

- 115 DESIGN CONSTRAINTS - GENERAL
- Members forming bracing systems or girders of lattice construction: Unless detailed or instructed otherwise, position so that their lines of action intersect at a point.
 - Bolts:
 - Diameter (minimum): 16 mm.
 - Number per connection (minimum): Two, unless otherwise indicated.
 - Other requirements: Choose bolt dimensions to ensure that threads do not occur in shear plane of joint..
 - Punching of bolt holes: Not permitted.
 - Welds: At least 6 mm fillet.
 - Other constraints: See drawings..
- 117 DESIGN CONSTRAINTS - STEELWORK TO BE GALVANIZED
- Steel grades: Do not use steel downgraded from a higher specification.
 - Detail design: Avoid details that will increase the risk of initiating liquid metal assisted cracking (LMAC).
 - Particular restrictions: None.
 - Other requirements:
 - Drill holes for bolts;
 - Grind exposed cut edges and notches; and
 - Seal vent and drainage holes in hollow sections using non - ferrous plugs.
- 123A DRAWINGS AND CALCULATIONS PREPARED BY CONTRACTOR
- Information required: As submission schedule.
 - General arrangement drawings: Submit before preparing calculations. Clearly identify:
 - Individual steel members.
 - Conflicts with other work.
 - Proposed changes to contract drawings.
 - Member and joint calculations: Submit before preparing fabrication drawings.
 - Allow 10 working days for review of drawings and calculations.
- 125 SPECIFICATION STANDARD
- Standard: Comply with latest edition of National Structural Steelwork Specification (NSSS).
 - Additional requirements: None.
 - Document availability: For the duration of the work, at fabrication shop and on site.
 - References to Engineer in NSSS: For the purpose of this contract, interpret such references as being to the person named in section A10 as Consulting Structural Engineer.
 - Exceptions: None.
- 130 GENERAL STEEL SECTIONS AND PLATES Generally
- Standard: To BS EN 10025-2.
 - Grade: S275J0.
 - Options: None.
 - Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.
 - Other requirements: Steel to be galvanised to have a carbon equivalent value not exceeding 0.44.
- 135 HOLLOW STEEL SECTIONS Generally
- Standard: To BS EN 10210-1.
 - Grade: S355J2H.
 - Options: None.
 - Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.
 - Other requirements: Steel to be galvanised to have a carbon equivalent value not exceeding 0.44.

FABRICATION

- 180 NOTIFICATION OF COMMENCEMENT
- Notice: Give notice before fabrication is due to start.
 - Period of notice (minimum): Five working days .
- 195 HARD STAMPING
- Usage: Not permitted except as indicated on drawings.
- 215 HOLLOW SECTIONS
- Insides of sections: Debris and moisture removed before sealing ends and openings.
- 225 STEELWORK TO BE GALVANIZED
- Cutting, drilling and shop welding: Complete before galvanizing.
 - Vent and drain holes: Provide as necessary.
 - Locations: Submit proposals.
 - Sealing: Required, submit proposals .
- 256 SITE WELDING
- Usage: Not Permitted.

BOLT ASSEMBLIES

- 302 NON-PRELOADED BOLT ASSEMBLIES
- Designation: Black bolts to BS 4190, grade 8.8 .
 - Threading: To suit design criteria..
 - Nuts and washers: To suit grade of bolt, as NSSS, clause 2.3.
 - Coating applied by manufacturer: Galvanized.
 - Other requirements: Specialist bolts shall be used where necessary to connect into hollow sections, and shall be galvanised.
- 305 PROPRIETARY ANCHORS
- Manufacturer: Hilti or similar approved..
 - Product reference: HIT-HY-70 and HIT-HY-200 or similar approved..
 - Anchor type: Resin Anchors..
 - Material: Galvanised Carbon steel..
- 370 GALVANIZED COATING TO BOLT ASSEMBLIES
- Standard: To BS 7371-6.
 - Galvanizing: Applied by fastener manufacturer. Passivated and lubricated if no additional coatings are specified. Nuts tapped after galvanizing.
 - Use/location: Generally..
- 390 SEALED HOLLOW SECTIONS
- Holes: Sealed to prevent access of moisture.
 - Method of sealing: Submit proposals..

ERECTION

405A ERECTION METHOD STATEMENT

- To be submitted at least 14 days before erection of steelwork, including the provision of drawings if required.
Details to include : -
 - Method and sequence of erection.
 - Type of craneage/lifting and time required.
 - Calculation of erection stresses where appropriate.
 - Details of any temporary works including fixing details needed for stability during erection prior to the stability being achieved by the permanent works design. These details should include all temporary propping/bracing proposals that are to be utilised during erection.

410 PRE-ERECTION CHECKS

- Scope: At least 7 days before proposed erection start date, check the following:
 - Foundations and other structures to which steelwork will be attached: Accuracy of setting out.
 - Holding down bolts: Position, protruding length, slackness and condition.
- Inaccuracies and defects: Report without delay.
- Permission to commence erection: Obtain.

425 MODIFICATIONS

- Steelwork: Do not modify without approval.
- Temporary fabrication/ erection attachments: Remove and "Make Good" finishes to the original specification.

440 COLUMN BASES

- Levels: Adjust using steel shims or folding wedges no larger than necessary.
- Location of shims/ wedges: Position symmetrically around perimeter of base plate. Do not use a single central pack.
- Give notice: If space beneath any column base is outside specified limits for bedding thickness.
- Accuracy of erection: Check, and correct errors before filling and bedding beneath bases and carrying out other adjacent work.

441 MORTAR FILLING/ BEDDING OF COLUMN BASES

- Bedding thickness range: 25 - 40 mm..
- Bolt pockets: Completely filled with neat cement slurry.
- Spaces beneath base plates: Completely filled as follows:
 - Spaces 0-25 mm deep: Obtain instructions.
 - Spaces 25-50 mm deep: 1:1 cement:sand mortar, just fluid enough to pour. Tamped well as filling proceeds. Provide temporary shuttering as necessary.
 - Spaces 50-80 mm deep: 1:2 cement:sand mortar, just damp, tamped well against properly fixed supports as filling proceeds.
- Cement: Portland cement BS EN 197-1 - CEM I 42.5 or 52.5.
- Sand: To BS EN 12620, grade 0/4 or 0/2 (MP).
- Additives: Non - shrink grout..

443 PROPRIETARY FILLING/ BEDDING OF COLUMN BASES

- Bedding thickness range: 25 - 40mm..
- Preparation: Concrete surfaces scarified to provide a good mechanical key.
 - Bolt pockets and spaces beneath base plates: Completely filled with non - shrink grout..

447 BONDED ANCHORS

- Holes: Clean and free from dust at time of installing anchor.
- Permeable sleeves: Use in conditions where otherwise the loss of bonding agent would be unacceptably high.
- Other requirements: As manufacturers recommendations..

PROTECTIVE COATINGS

521 ALTERNATIVE MANUFACTURERS

- Short list of manufacturers: Obtain coating materials from one only of the following: Contractor's choice.
- Selected manufacturer: Submit details before ordering materials.

550 POST-GALVANIZING INSPECTION

- Inspector: Submit, on request, evidence of training and competence in visual inspection for liquid metal assisted cracking.
- Components for which visual inspection is not required (procedure PGI-0): Not applicable..
- Components requiring additional inspection:
 - Procedure PGI-2A: None..
 - Procedure PGI-2B: None..
- Timing: Before erection of steelwork or application of other coatings.
- Action in event of non compliance:
 - Submit: Full records of all post-galvanising inspections, drawing attention to any erected components that are required to be quarantined.
 - Procedure PGI-3: Carry out on all quarantined components, and submit report.
 - Sites of suspected defects: Remove zinc coating by grinding back to bright metal for a distance of not less than 50 mm around each defect and from a similar area on opposite face of member and inspect.
 - Remedial actions: Submit proposals.

PROTECTIVE COATING SYSTEMS

625 GALVANIZING TO BLAST CLEANED STEEL

- Use/ location: All Steelwork.
- Preparation: Blast cleaning to BS EN ISO 8501-1, preparation grade Sa2½ using chilled angular iron grit grade G24 to give a coarse surface profile, followed by chemical cleaning.
- Galvanizing: To BS EN ISO 1461.
 - Minimum mean coating thickness: 140 micrometres.
- All steelwork to be powder coated in accordance with section Z31.

PREPARATION FOR PAINTING

725 MANUAL CLEANING OF NEW STEELWORK

- Preparation: Remove fins, burrs, sharp edges, weld spatter, loose rust and loose scale.
- Surface finish: Clean but unpolished to BS EN ISO 8501-1, grade St 2.
- Finishing: Thoroughly degrease and clean down. Remove any consequent rusting back to grade St 2. Prime without delay.

760 GALVANIZED FASTENERS

- Treatment: After steelwork erection and before applying site coatings, thoroughly degrease and clean. Etch prime.

PAINTING

810 ENVIRONMENTAL CONDITIONS

- General requirements prior to starting coating work:
 - Surfaces: Unaffected by moisture or frost.
 - Steel temperature: At least 3°C above dew point, with conditions stable or improving, and not high enough to cause blistering or wrinkling of the coating.
 - Relative humidity: Below 85%.

815 COATINGS

- Surfaces to be coated: Clean, dust free and suitably dry. Previous coats to be adequately cured.
- Multiple coats of same material: Use different tints to assist checking of complete coverage.
- Penultimate coat: Colour recommended by paint manufacturer to suit top coat colour.
- Finish required: Smooth and even, of uniform thickness and colour, free from defects.

850 JUNCTIONS WITH CONCRETE

- Exposed steelwork partially embedded or encased in concrete: Apply two coats of bituminous coating locally to the steel/concrete junction.
- Bituminous coating: To BS 6949, type 1, class A..

J

Waterproofing

J31

Liquid applied waterproof roof coatings

J31 Liquid applied waterproof roof coatings

To be read with Preliminaries/ General conditions.

TYPES OF COATING

PRODUCTS

- 315 TIMBER TRIMS
- Quality: Planed, free from wane, pitch pockets, decay and insect attack (except ambrosia beetle damage).
 - Moisture content at time of covering (maximum): 22%.
 - Preservative treatment: As recommended for purpose by waterproof coating manufacturer
- 352 CARRIER MEMBRANE
- Type: As recommended by roof coating manufacturer.
 - Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- 353A WATERPROOF COATING Balcony Walkways
- Type: Cold Applied Liquid Roofing Walkway System is to be to the same or better standard than one of the four generic specification, LAC 1, LAC 2, LAC 3 and LAC 4, attached to these preambles. These are derived from four leading manufacturers and suppliers in the cold applied roofing industry. The Contractor must confirm the generic specification (LAC 1, LAC 2, LAC 3 or LAC 4) that he has allowed for in his tender and submit proof of full compliance with that specification. This element of the bid will be particularly scrutinised when assessing the Quality of the submission..
 - Manufacturer: Agrément certified - minimum 15 year pre-paid manufacturer's insurance backed guarantee for workmanship and materials. The specialist manufacturer will be expected to prepare a particular specification for each address that -
 - Is suitable for use on a fire escape balcony and meets the requirement of the Building Regulations in this respect
 - Is installed by one of the manufacturer's quality approved suppliers
 - Is regularly inspected by the manufacturer for quality standard and accordance with the specification
 - That fully meets the particular requirements of rainwater discharge and detailing given in section 12 of the Specification
 - That thoroughly excludes rainwater penetration from the concrete balcony slab for a minimum of 15 years and is certified as complete by the manufacturer and evidence of Guarantee is provided to the Client prior to handover of the Works..
 - Product reference: Submit proposals.
 - Primer: To the manufacturer's requirements.
 - Application: To the manufacturer's requirements.
 - Reinforcement: To the manufacturer's requirements.
 - Colour: Dark Grey or other standard range colour to be offered to the Client for selection - see previously completed addresses given in section 1 of the specification.
 - Minimum dry film thickness: The thickness will vary according to the manufacturer's method for achieving the required falls..
 - Surface protection: To the manufacturer's requirements, including quartz granule. typically 5 Kg/m² for 0.7 - 1.22mm aggregate. When dry apply a clear coat sealer.

355 PERIMETER TRIMS

- Type: GRP - to the system manufacturer's recommendations. To include an extended depth to the front of the balcony to extend the full depth of the slab.
- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Colour: Black.
- Size: As required at the sample blocks to be priced in section 1 of the specification.
- Lengths (maximum): 3 m.

357 PIPE COLLARS

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Size: As required.

385A WALKWAY PROTECTIVE COATING

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Width: To fully protect the goings and trafficked walkway surfaces to the balcony.
 - Colour: Grey - As Sample blocks given in Section 1.2 of the specification.
 - Additives: Spar or other aggregate as required by the manufacturer to achieve the appearance and non-slip performance required for such situation.

EXECUTION GENERALLY

410 ADVERSE WEATHER

- Do not apply coatings:
 - In wet conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
 - In high winds (speeds > 7 m/s), unless adequate temporary windbreaks are erected adjacent to working area.
- Unfinished areas of roof: Keep dry.

420 SUITABILITY OF SUBSTRATE

- Substrates generally:
 - Secure, clean, dry, smooth, free from frost, contaminants, loose material, voids, protrusions and organic growths.
 - Compatible with coating system.
- Preliminary work: Complete, including:
 - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
 - Fixing of battens, fillets and anchoring plugs/ strips.
- Moisture content and stability: Must not impair integrity of roof.

EXISTING SUBSTRATES

510 REMOVING EXISTING COVERINGS

- Mechanical stripping: Only expected where necessary to meet the specialist manufacturer's requirements.
- Exposed substrate: Do not damage.

- 515 EXISTING FLASHINGS
- General: Raise flashings to clean surfaces to receive coatings.
 - Timing: Leave raised during coating application and lower only after full curing.
 - Damaged lengths: Replace with new, specified in another section: Abutment details to be formed in accordance with the system manufacturer's requirements and the new system is to be taken up the wall to 150mm above the finished surface level and inserted into the horizontal brick joint to the depth required by the system manufacturer but not less than 10mm.
- 520 PRELIMINARY POWER WASH TO EXISTING COVERINGS
- Timing: Before renewing existing coverings, water jet clean all areas. Allow to dry.
- 525 RENEWING EXISTING SUBSTRATES/ COVERINGS
- Areas to be renewed: Submit proposals.
 - Timing: Remove only sufficient substrates/ coverings, as will be renewed and made weathertight on same day.
- 530 MAKING GOOD EXISTING LIQUID APPLIED WATERPROOF COATINGS
- General: Inspect for adherence and repair defective areas in accordance with proposed coating manufacturer's recommendations.
- 540 MAKING GOOD EXISTING MASTIC ASPHALT COVERING
- Defective areas: Soften and carefully cut out.
 - Hammers, chisels, etc.: Do not use to cut cold mastic asphalt.
 - Substrate: Dry out.
 - Separating membrane: Make good.
 - Mastic asphalt: Patch level with existing surface in two coats, the top coat lapped minimum 75 mm onto existing mastic asphalt and to half its depth.
- 555 MAKING GOOD EXISTING CEMENTITIOUS SLABS/ SCREEDS
- Loose surfaces, sharp edges and projections: Remove.
 - Hollow surfaces, voids and cracks: Fill with cement based repair mortar.
- 560 EXISTING EDGE TRIMS
- Fasteners: Check security. Replace as necessary.
 - Existing coverings: Cut out from edge trim recess sufficient to accommodate coatings.
- 565 EXISTING GUTTERS/ OUTLETS
- Dirt, debris and build up of previous coverings/ coatings: Remove to restore free flow of water.
- 570 EXISTING CRACKS/ GAPS
- General: Rake out, clean and make good with sealants or repair systems recommended by coating manufacturer.
- 575 FINAL POWER WASH TO EXISTING COVERINGS
- General: Water jet clean all areas. Allow to dry.
- 580 STERILIZATION TREATMENT TO EXISTING COVERINGS
- Preliminary work: Complete including making good and cleaning down.
 - Biocidal solution: Apply to all areas previously subject to organic growth. Allow to dry.

660 FIXING PERIMETER TRIMS

- Setting out: 3 mm clear from wall or fascia.
- Fasteners: To manufacturer's requirements.
 - Fixing: 30 mm from ends and at 300 mm (maximum) centres.
- Jointing sleeves: Fixed one side only.
 - GRP: Butt ends.
 - Aluminium: 3 mm gaps between ends.
- Corners pieces: Purpose made.

ROOF WALKWAY COATING SYSTEM

710 ADHESION TESTS

- Requirement: Carry out a trial coating to determine priming requirements and/ or system suitability.
- Nature of test: As recommended by the system manufacturer .
- Test results: Submit and arrange for inspection.

720 APPLYING PRIMERS/ CONDITIONERS

- Coverage per coat (minimum): As recommended by the system manufacturer.
- Surface coverage: Brushed well in to ensure local or full area coverage according to type.
- Coats: Allow to dry before overcoating.

730 LAYING CARRIER MEMBRANE

- Bond: As recommended by the system manufacturer.
- Mechanical fixing: As recommended by the system manufacturer.

740 MOVEMENT JOINTS IN SUBSTRATE

- Debonding tape: Apply over movement joints.
- Reinforcement strip: Apply over debonding tape.
- Bedding: Preliminary coating application.
- Joints: Lap in length.
- Bond: Continuous over whole surface, with no air pockets.
- Condition at completion: Smooth.

750 PRELIMINARY LOCAL REINFORCEMENT

- Reinforcement strip: Apply to junctions at upstands, penetrations and outlets, joints and fixings in discontinuous unit substrates.
 - Bedding: Preliminary coating application.
 - Joints: Lap in length.
 - Bond: Continuous over whole surface, with no air pockets.
 - Condition at completion: Smooth.

760A APPLICATION OF ROOF WALKWAY COATINGS

- Thickness: Monitor by taking wet/ dry film thickness readings.
- Continuity: Maintain full thickness of coatings around angles, junctions and features.
- Rainwater outlets: Form with watertight joints.
- Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems.
- Edge trims: Apply coatings over horizontal leg of trim and into recess.

SURFACING

890 APPLYING WALKWAY PROTECTIVE COATING

- Coverage per coat (minimum): As recommended by the system manufacturer.
- Surface coverage: Even and full.

COMPLETION

910 INSPECTION

- Coating surfaces: Check when cured for discontinuities.
 - Defective areas: Apply another coating.

940 COMPLETION

- Roof areas: Clean.
 - Outlets: Clear.
 - Flashings: Dressed into place.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed coatings: Protect against damage.

L

Windows/Doors/Stairs

L30

Stairs/ ladders/ walkways/ handrails/ balustrades

L30 Stairs/ ladders/ walkways/ handrails/ balustrades

To be read with Preliminaries/ General conditions.

PRELIMINARY INFORMATION/ REQUIREMENTS

- 107 COMPLETION OF DESIGN To Structural Engineer's design
- Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
 - Standard: To Building Regulations (E&W) Approved Document M.
 - Structural requirements: As section B50.
 - Additional requirements: None.
 - Design and production information: As Preliminaries section A31.
 - Timing of submissions: As Preliminaries section A31.
- 130 SITE DIMENSIONS
- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
 - Designated items: Balustrade either supported from new metal beam separate to balcony or from the balcony itself, as per the parameters in the Structural Engineer's typical drawings and the elevation drawings to be issued in relation to each block with the Order.

COMPONENTS

- 270 STAIRS Concrete Precast or Insitu where necessary to replace existing
- Component material, grade, finish as delivered:
 - Treads: Ceramic Tile.
Slip resistance value of integral tread – water wet (minimum): To comply with building regulations .
Slip resistance value of integral nosing – water wet (minimum): To comply with building regulations.
 - Colour of integral nosing: To match existing.
 - Risers: To match existing.
 - Strings: To match existing.
 - Newels: To match existing.
 - Guarding: To match existing.
 - Handrails: To Structural Engineer's drawings and specification.
Lower handrail: Not required.
 - Workmanship:
 - Joinery: N/A.
 - Metalwork: To Structural Engineer's drawings and specification.
 - Other requirements: To Structural Engineer's drawings and specification.

- 550 PURPOSE MADE BALUSTRADES As per Structural Engineer's drawings and specification.
- Component material, grade and finish as delivered:
 - Guarding: Minimum 10 mm toughened glass, Class A to BS 6206 or Decorative High Density Composite Laminate given in Section H above.
 - Handrails: As per Structural Engineer's drawings and specification..
Lower handrail: Not required.
 - Workmanship:
 - Joinery: Not applicable.
 - Metalwork: To section Z11.
 - Other requirements: As per Structural Engineer's drawings and specification. The panels shall also comply with the requirements of BS 6180 and BS 6399 Pts 1 & 2 in respect of structural loadings..
 - Fixing: As per Structural Engineer's drawings and specification.
 - Centres: As per Structural Engineer's drawings and specification.
- 560 PROPRIETARY BALUSTRADES Contractor's choice to match Structural Engineer's design and specification on drawings S001 to S007
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Component material and finish as delivered:
 - Guarding: As per Structural Engineer's drawings and specification..
 - Handrails: As per Structural Engineer's drawings and specification..
Lower handrail: Not required.
 - Other requirements: As per Structural Engineer's drawings and specification and particularly to withstand thermal expansion and contraction.
 - Fixing: As per Structural Engineer's drawings and specification..
 - Centres: As per Structural Engineer's drawings and specification..
- 570 PURPOSE MADE HANDRAILS Contractor's choice to match Structural Engineer's design and specification on drawings S001 to S007
- Component material, grade and finish as delivered:
 - Handrails: As per Structural Engineer's drawings and specification..
 - Brackets: As per Structural Engineer's drawings and specification..
 - Workmanship:
 - Joinery: Not applicable.
 - Metalwork: To section Z11.
 - Other requirements: As per Structural Engineer's drawings and specification S001 to S007 and particularly to withstand thermal expansion and contraction.
 - Fixing: As per Structural Engineer's drawings and specification. The handrails shall also comply with the requirements of BS 6180 and BS 6399 Pts 1 & 2 in respect of structural loadings..
 - Centres: As per Structural Engineer's drawings and specification..
- 580 PROPRIETARY HANDRAILS Contractor's choice to match Structural Engineer's design and specification on drawings S001 to S007
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Component material and finish as delivered:
 - Handrails: As per Structural Engineer's drawings and specification..
 - Brackets: As per Structural Engineer's drawings and specification..
 - Other requirements: As per Structural Engineer's drawings and specification and particularly to withstand thermal expansion and contraction.
 - Fixing: As per Structural Engineer's drawings and specification..
 - Centres: As per Structural Engineer's drawings and specification.

INSTALLATION

620 PRIMING/SEALING/PAINTING

- Surfaces inaccessible after assembly/installation: Before fixing components, apply full protective/decorative treatment/coating system.

630 CORROSION PROTECTION OF DISSIMILAR MATERIALS

- Components/ substrates/ fasteners of dissimilar materials: Isolate using washers/ sleeves or other suitable means to separate materials to avoid corrosion and/ or staining.

640 INSTALLATION GENERALLY

- Fasteners and methods of fixing: To section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
- Applied features (finishes, inserts, nosings and the like): Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as applied feature manufacturer's recommendations before application.

COMPLETION

910 INSPECTION

- Timing: Two weeks after request by Contract Administrator.
- Period of notice (minimum): 5 working days.

M

Surface finishes

M10

Cement based levelling/ wearing screeds

M10 Cement based levelling/ wearing screeds

To be read with Preliminaries/General conditions.

TYPES OF SCREED

- 140 PROPRIETARY POLYMER MODIFIED LEVELLING SCREEDS Suitable for use to build up levels on external walkways including asphalt, sand cement and concrete slab
- Substrate: In situ concrete slab.
 - Screed manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Screed construction: Fully bonded.
 - Thickness:
 - Nominal: As required to form falls required by the specialist roofing manufacturer .
 - Minimum: 6 mm .
 - Maximum: 40 mm .
 - Mix: To screed manufacturer's recommendations.
 - In situ crushing resistance (ISCR) category: A (1 mm maximum indentation).
 - Mass of test weight: 4 kg.
 - Flatness/ Surface regularity class: SR2.
 - Finish: To required standard of roofing manufacturer.
 - To receive: Cold applied;ied roofing system.
 - Other requirements: To be laid to form falls necessary to achieve complete discharge of rainwater from the surface to the the rainwater outlets all as required by teh cold applied roofing system manufacturer.

GENERALLY/ PREPARATION

- 210 SUITABILITY OF SUBSTRATES
- General:
 - Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
 - Sound and free from significant cracks and gaps.
 - Concrete strength: In accordance with BS 8204-1, Table 2.
 - Cleanliness: Remove plaster, debris and dirt.
 - Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.
- 215 SURFACE HARDNESS OF SUBSTRATES TO RECEIVE POLYMER MODIFIED WEARING SCREEDS
- General: Substrates must restrain stresses that occur during setting and hardening of wearing screeds.
 - Test for surface hardness: To BS EN 12504-2 using a rebound hammer with compliance values selected from the following:
- | Screed thickness | Rebound hammer value |
|--------------------|----------------------|
| 15 mm or less | Greater than 25 |
| Greater than 15 mm | Greater than 30 |
- Report: Submit details of areas where substrates surface hardness does not comply with these values.

- 220 PROPRIETARY LEVELLING/ WEARING SCREEDS
- General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.
 - Standard: To BS 8204-3.
- 250 CONDUITS UNDER FLOATING SCREEDS
- Haunching: Before laying insulation for floating screeds, haunch up in 1:4 cement:sand on both sides of conduits.
- 260 FULLY BONDED CONSTRUCTION
- Preparation: Generally in accordance with BS 8204-1.
 - Removing mortar matrix: Shortly before laying screed, expose coarse aggregate over entire area of hardened substrate.
 - Texture of surface: Suitable to accept screed and achieve a full bond over complete area.
 - Bonding coat: Manufacturer's standard.

BATCHING/MIXING

- 302 CEMENTS
- Cement types: In accordance with BS 8204-1, clause 5.1.3.
- 305 AGGREGATES
- Sand: To BS EN 13139.
 - Grading limits: In accordance with BS 8204-1, Table B1.
 - Coarse aggregates for fine concrete levelling screeds:
 - Standard: BS EN 12620.
 - Designation 4/10.
 - Lightweight aggregates: In accordance with BS 8204-1, Annex A.
- 306 PROPRIETARY POLYMER MODIFIED SCREEDS
- Cement types: In accordance with BS 8204-3.
 - Sand: To BS EN 13139:
 - Grading limits: 0/2 mm (MP) category 1.
 - Aggregates: In accordance with BS 8204-3.
- 307 ADMIXTURES
- Standard: In accordance with BS 8204-1, Table 1.
 - Calcium chloride: Do not use in admixtures.
- 310 BATCHING WITH DENSE AGGREGATES
- Mix proportions: Specified by weight.
 - Batching: Select from:
 - Batch by weight.
 - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
- 330 MIXING
- Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
 - Mixing: Mix materials thoroughly to uniform consistence. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
 - Consistency: Use while sufficiently plastic for full compaction.
 - Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

335 IN SITU CRUSHING RESISTANCE (ISCR)

- Standards and category: In accordance with BS 8204-1, table 4.
- Testing of bonded and unbonded screeds: To Annex D.
- Testing of floating levelling screeds: To Annex E.

340 ADVERSE WEATHER

- Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
- Hot weather: Prevent premature setting or drying out.

LAYING

345 LEVEL OF SCREED SURFACES

- Permissible deviation: (allowing for thickness of coverings): To comply with the roofing manufacturer's requirements.

350 SCREEDING TO FALLS

- Minimum screed cover: Maintain at the lowest point.
- Falls: Gradual and consistent.
- Gradient (minimum): To the roofing manufacturer's requirement .

355 FLATNESS/ SURFACE REGULARITY OF FLOOR SCREEDS

- Standard: In accordance with BS 8204-1, Table 5.
- Test: In accordance with BS 8204-1, Annex C.
- Sudden irregularities: Not permitted.

375 COMPACTION OF SCREEDS

- General: Compact thoroughly over entire area.
- Screeds over 50 mm thick: Lay in two layers of approximately equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

382 STAIR SCREEDS

- Construction: Fully bonded to treads, risers and landings.
- Risers: Form using fine finish formwork.
- Wearing screed surfaces: Make good with compatible cement:sand mix. Wood float. When hardened remove laitance.

405 JOINTS IN LEVELLING SCREEDS GENERALLY

- Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
- Daywork joints: Form with vertical edge.

415 BAY JOINTS IN BONDED WEARING SCREEDS

- Bay sizes:
 - Area (maximum): 15 m².
 - Length:breadth ratio (maximum): 3:2.
- Location of bay joints: Submit proposals.

FINISHING/CURING

510 FINISHING GENERALLY

- Timing: Carry out all finishing operations at optimum times in relation to setting and hardening of screed material.
- Prohibited treatments to screed surfaces:
 - Wetting to assist surface working.
 - Sprinkling cement.

530 SMOOTH FLOATED FINISH

- Finish: Even texture with no ridges or steps.

540 TROWELLED FINISH TO LEVELLING SCREEDS

- Floating: To an even texture with no ridges or steps.
- Trowelling: To a uniform, smooth but not polished surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

650 CURING

- General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
- Curing period (minimum): Keep polyethylene sheeting in position for period recommended by screed manufacturer.
- Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.

700 ABRASION TESTING OF WEARING SCREEDS

- Test method: To BS EN 13892-4.

M60
Painting/ clear finishing

M60 Painting/ clear finishing

To be read with Preliminaries/ General conditions.

COATING SYSTEMS**110A EMULSION PAINT TO PREVIOUSLY PAINTED PLASTER SURFACES**

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Surfaces: Internal Stairs Ceilings where previously treated with emulsion paint.
 - Preparation: Ensure surfaces are sound, dry and free from all defective or poorly adhering material, dirt, grease, wax or oil. Scrape back to a firm edge all areas of poorly adhering or defective coatings and rub down to feather broken edges. Wash down with a suitable detergent solution to remove dirt chalking paint, corrosion products and other contaminants. Rinse off with clear water and allow to dry. Rub down paintwork with a suitable abrasive to remove nibs, feather existing paint edges and provide a mechanical key. .
 - Number of coats Two.

130 GLOSS PAINT TO EXTERNAL SOFTWOOD

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Surfaces: Preprimed and sealed.
 - Preparation: Degrease and abrade to provide key.
- Initial coats: As recommended by manufacturer.
 - Number of coats: As recommended by manufacturer.
- Undercoats: As recommended by manufacturer.
 - Number of coats: Two.
- Finishing coats: Full gloss.
 - Number of coats: One.

170 MASONRY COATING TO COCRETE BALCONY SURFACES INCLUDING THE SOFFIT AND TO PREVIOUSLY RENDERED SURFACES IN CONNECTION WITH INTERNAL STAIRWELLS .

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Surfaces: As specified.
 - Preparation: Remove loose and spalled material and wash down.
- Initial coats: Silicon based primer.
 - Number of coats: As Manufacturer's instructions.
- Undercoats: As recommended by manufacturer.
 - Number of coats: One.
- Finishing coats: Silicate masonry paint.
 - Number of coats: Two.

GENERAL**210 COATING MATERIALS**

- Manufacturer: Obtain materials from any of the following:
Dulux.
- Selected manufacturers: Submit names before commencement of any coating work.

215 HANDLING AND STORAGE

- Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
- Materials from more than one batch: Store separately.

280 PROTECTION

- 'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

PREPARATION

400 PREPARATION GENERALLY

- Standard: In accordance with BS 6150.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
- Surface irregularities: Remove.
- Joints, cracks, holes and other depressions: Fill flush with surface, provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Water based stoppers and fillers:
 - Apply before priming unless recommended otherwise by manufacturer.
 - If applied after priming: Patch prime.
- Oil based stoppers and fillers: Apply after priming.
- Doors, opening windows and other moving parts:
 - Ease, if necessary, before coating.
 - Prime resulting bare areas.

420 FIXTURES AND FITTINGS

- Removal: Before commencing work remove: Miscellaneous fixings such as CCTV cameras and hanging baskets .
- Replacement: Refurbishment as necessary, refit when coating is dry.

425 IRONMONGERY

- Removal: Before commencing work remove ironmongery from surfaces to be coated.
- Hinges: Do not remove.
- Replacement: Refurbish as necessary; refit when coating is dry.

430 EXISTING IRONMONGERY

- Refurbishment: Remove old coating marks. Clean and polish.

- 440 PREVIOUSLY COATED SURFACES GENERALLY
- Preparation: In accordance with BS 6150, clause 11.5.
 - Contaminated or hazardous surfaces: Give notice of:
 - Coatings suspected of containing lead.
 - Substrates suspected of containing asbestos or other hazardous materials.
 - Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
 - Significant rot, corrosion or other degradation of substrates.
 - Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
 - Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
 - Alkali affected coatings: Completely remove.
 - Retained coatings:
 - Thoroughly clean to remove dirt, grease and contaminants.
 - Gloss coated surfaces: Provide key.
 - Partly removed coatings:
 - Additional preparatory coats: Apply to restore original coating thicknesses.
 - Junctions: Provide flush surface.
 - Completely stripped surfaces: Prepare as for uncoated surfaces.
- 461 PREVIOUSLY COATED WOOD
- Degraded or weathered surface wood: Take back to provide suitable substrate.
 - Degraded substrate wood: Repair with sound material of same species.
 - Exposed resinous areas and knots: Apply two coats of knotting.
- 471 PREPRIMED WOOD
- Areas of defective primer: Take back to bare timber.
- 481 UNCOATED WOOD
- General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
 - Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
 - Resinous areas and knots: Apply two coats of knotting.
- 490 PREVIOUSLY COATED STEEL
- Defective paintwork: Remove to leave a firm edge and clean bright metal.
 - Sound paintwork: Provide key for subsequent coats.
 - Corrosion and loose scale: Take back to bare metal.
 - Residual rust: Treat with a proprietary removal solution.
 - Bare metal: Apply primer as soon as possible.
 - Remaining areas: Degrease.
- 500 PREPRIMED STEEL
- Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.
- 511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL
- White rust: Remove.
 - Pretreatment: Apply one of the following:
 - 'T wash'/ mordant solution to blacken whole surface.
 - Etching primer recommended by coating system manufacturer.

- 521 UNCOATED STEEL - MANUAL CLEANING
- Oil and grease: Remove.
 - Corrosion, loose scale, welding slag and spatter: Remove.
 - Residual rust: Treat with a proprietary removal solution.
 - Primer: Apply as soon as possible.
- 541 UNCOATED ALUMINIUM/ COPPER/ LEAD
- Surface corrosion: Remove and lightly key surface.
 - Pretreatment: Etching primer if recommended by coating system manufacturer.
- 552 UNCOATED PVC-U
- Dirt and grease: Remove. Do not abrade surface.
- 570 UNCOATED MASONRY/ RENDERING
- Loose and flaking material: Remove.
- 580 UNCOATED PLASTER
- Nibs, trowel marks and plaster splashes: Scrape off.
 - Overtrowelled 'polished' areas: Key lightly.
- 611 WALL COVERINGS
- Retained wall coverings: Check that they are in good condition and well adhered to substrate.
 - Previously covered walls: Wash down to remove paper residues, adhesive and size.
- 622 ORGANIC GROWTHS
- Dead and loose growths and infected coatings: Scrape off and remove from site
 - Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
 - Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.
- 651 EXISTING GUTTERS
- Dirt and debris: Remove from inside of gutters.
 - Defective joints: Clean and seal with suitable jointing material.

APPLICATION

- 711 COATING GENERALLY
- Application standard: In accordance with BS 6150, clause 9.
 - Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
 - Surfaces: Clean and dry at time of application.
 - Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
 - Overpainting: Do not paint over intumescent strips or silicone mastics.
 - Priming coats:
 - Thickness: To suit surface porosity.
 - Application: As soon as possible on same day as preparation is completed.
 - Finish:
 - Even, smooth and of uniform colour.
 - Free from brush marks, sags, runs and other defects.
 - Cut in neatly.
 - Doors, opening windows and other moving parts: Ease before coating and between coats.
- 730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES
- General: Apply coatings to all surfaces of components.

731 SITE COATING OF CONCEALED JOINERY SURFACES

- General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
 - Components: External door frames.
 - Additional coatings: One undercoat.

Q

Paving/Planting/Fencing/Site furniture

Q28

Topsoil and soil ameliorants

Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

SYSTEM OUTLINE

110 NATURALLY OCCURRING TOPSOIL SYSTEM FOR FLOWERING SHRUBS AND GRASSES AREAS

- Topsoil: Imported topsoil to BS 3882.
- Ameliorants: None.
- 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: Within the parameters of 'sandy loam' textural class.
- Source: Contractor's choice.
 - Product reference: Contractor's choice.

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 noncohesive 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.

685 SURPLUS MATERIALS TO BE REMOVED

- Topsoil: Remove from site excess topsoil.
- Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

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 50 mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

Q30

Seeding/ turfing

Q30 Seeding/ turfing

To be read with Preliminaries/General conditions.

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.

146 WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without displacing seed, seedlings or soil.
- Frequency: When instructed.

150 WATER RESTRICTIONS

- Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

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: 2 working days.

PREPARATION**212 SEED BED CLEANING BEFORE SOWING ALL GRASSED AREAS**

- Operations: As seed supplier's recommendations

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: 10 mm .
 - Fine lawn areas: 10 mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

SEEDING**310 GRASS SEED FOR ALL GRASSED AREAS**

- Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent.
- Application rate: 20-35 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: Manually broadcast, raked and rolled.
 - Distribution: 2 equal sowings at right angles to each other.

335 GRASS SOWING SEASON

- Grass seed generally: April to October.

340 PRE-EMERGENT HERBICIDE FOR ALL GRASSED AREAS

- Standard: Pesticide Safety Directorate approved.
- Application rate: In accordance with manufacturer's written recommendation.
 - Timing: Immediately after sowing.

352 EDGES TO SEEDED AREAS ADJACENT TO PLANTING BEDS AND TREE PITS

- Timing: After seeded areas are well established.
- Edges: Clean straight lines or smooth curves.
 - Mulch and soil: Draw back to permit edging.
- Arisings: Remove.
- Completion: Respread soil and mulch.

TURFING**400 CULTIVATED TURF FOR ALL GRASSED AREAS**

- Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
- Properties of soil used for turf production: Submit proposals.

420 DELIVERY AND STORAGE

- Timing: Lay turf with minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
- Frosty weather or waterlogged ground: Do not lift turf.
- Delivery: Arrange to avoid need for excessive stacking.
- Stacking height (maximum): 1 m.
- Dried out or deteriorated turf: Do not use.

428 COMPOST DRESSING FOR TURF

- Type: Sanitized and stabilized compost.
- Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
- Standard: To PAS 100.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 100% passing screen mesh aperture of 5 mm.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Not required.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 2 kg/m².
- Timing: Apply prior to cultivation.

429 DRESSING FOR TURF

- Type: Silica sand.
- Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 2 kg/m².
- Timing: Apply prior to cultivation.

430 TURFING GENERALLY

- Time of year: To be agreed .
- Timing of laying:
 - Spring and summer: within 18 hours of delivery.
 - Autumn and winter: within 24 hours of delivery.
- Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
- Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
- Jointing: Laid with broken joints, well butted up. Do not stretch turf.
- Edges: Whole turfs, trimmed to a true line.
- Adjusting levels: Remove high spots and fill hollows with fine soil.
- Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
- Dressing, brushed well in to completely fill all joints: 35% Finely sifted topsoil, 35% Compost, 30% Sand .
- Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated to the soil below.

CUTTING MAINTENANCE**530 FIRST CUT OF GRASSED AREAS**

- Timing: When grass is reasonably dry.
 - Height of initial growth: 40-75 mm.
- Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 25 mm.
- Mower type: Contractor's choice.
- Arisings: Remove from site.

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 reseeding/ returfing.
- Timing of making good: The next suitable planting season.

620 MAINTAINING GENERAL GRASSED AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
- Maximum height of growth at any time: 25 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 15 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: When instructed.

- 680 MAINTENANCE FERTILIZER FOR ALL GRASSED AREAS EXCEPT WILDFLOWER MEADOWS
- Duration: Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
 - March application: 15:10:10 Spring turf fertilizer at 35 g/m².
 - September application: 5:10:10 Autumn turf fertilizer at 50 g/m².

Z

Building fabric reference specification

Z31

Powder coatings

Z31 Powder coatings

To be read with Preliminaries/ General conditions.

- 120 POWDER COATING MATERIALS
- Manufacturer: Obtain from one only of the following: N/A.
 - Selected manufacturer: Submit details before commencement of powder coating including:
 - Name and contact details.
 - Details of accreditation schemes.
 - Technical data of product including current Agrément certificates.
- 210 WORKING PROCEDURES
- Comply with the follow following standards.
 - Aluminium components: To BS 6496 or BS EN 12206-1.
 - Steel components: To BS EN 13438.
 - Safety standards: To British Coatings Federation 'Code of safe practice - Application of thermosetting powder coatings by electrostatic spraying'.
- 220 POWDER COATING APPLICATORS
- Applicator requirements:
 - Approved by powder coating manufacturer.
 - Currently certified to BS EN ISO 9001.
 - Comply with quality procedures, guarantee conditions, standards and tests required by powder coating manufacturer.
 - Applicator to use only one plant.
 - Selected applicator: Submit details before commencement of powder coating including:
 - Name and contact details.
 - Details of accreditation schemes.
- 225 GUARANTEES
- Powder coating manufacturer and applicator guarantees:
 - Submit sample copies before commencement of powder coating.
 - Submit signed project specific copies on completion of work.
- 310 PRETREATMENT OF ALUMINIUM COMPONENTS
- Condition of components to be pretreated:
 - Free from corrosion and damage.
 - All welding and jointing completed and finish off as specified.
 - Free from impurities including soil, grease, oil.
 - Suitable for and compatible with the pretreatment process.
 - Conversion coating requirements:
 - Chromate system: To BS 6496 or BS EN 12206-1.
 - Chromate-free system: To BS EN 12206-1. Submit details before using.
 - Rinsing requirements: Use demineralized water. Drain and dry.
- 320 PRETREATMENT OF STEEL COMPONENTS
- Condition of components to be pretreated:
 - Free from corrosion and damage.
 - All welding and jointing completed and finish off as specified.
 - Free from impurities including soil, grease, oil.
 - Suitable for and compatible with the pretreatment process.
 - Conversion coating requirements: To BS EN 13438.
 - Rinsing requirements: Use demineralized water. Drain and dry.

- 430 EXTENT OF POWDER COATINGS
- Application: To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed 'significant surfaces' for relevant BS 6496/ BS EN 13438 performance requirements.
- 435 APPLICATION OF POWDER COATINGS
- Surfaces to receive powder coatings: Free from dust or powder deposits.
 - Powder colours: Obtain from one batch of one manufacturer.
 - Commencement of powder coatings: To be continuous from pretreatment.
 - Jig points: Not visible on coated components.
 - Curing: Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer.
 - Stripping and recoating of components: Only acceptable by prior agreement of powder coating manufacturer. Stripping, pretreatment and powder coating are to be in accordance with manufacturer's requirements.
 - Overcoating of components: Not acceptable.
- 440 PERFORMANCE AND APPEARANCE OF POWDER COATINGS
- For aluminium components:
 - Standard: To BS 6496 or BS EN 12206-1.
 - For steel components:
 - Standard: To BS EN 13438.
 - Visual inspection after powder coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.
 - Colour and gloss levels: To conform with approved samples.
- 450 ALUMINIUM ALLOY FABRICATIONS
- Units may be assembled:
 - Before powder coating.
 - From components powder coated after cutting to size.
 - Where approved, from components powder coated before cutting to size.
 - Exposure of uncoated background metal: Not acceptable.
 - Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.
- 460 STEEL FABRICATIONS
- Unit assembly: Wherever practical, before powder coating.
 - Exposure of uncoated background metal: Not acceptable.
 - Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.
- 470 FIXINGS
- Exposed metal fixings: Powder coat together with components, or coat with matching repair paint system applied in accordance with the powder coating manufacturer's recommendations.
- 480 DAMAGED COMPONENTS - REPAIR/ REPLACEMENT
- Before delivery to site: Check all components for damage to powder coatings. Replace damaged components.
 - Site damage: Submit proposals for repair or replacement.

510 PROTECTION

- Powder coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations.
- Protective coverings: Must be:
 - Resistant to weather conditions.
 - Partially removable to suit building in and access to fixing points.
- Protective tapes in contact with powder coatings: Must be:
 - Low tack, self adhesive and light in colour.
 - Applied and removed in accordance with tape and powder coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating.
- Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency.

535 DOCUMENTATION

- Submit the following information for each batch of powder coated components:
 - Supplier.
 - Trade name.
 - Colour.
 - Type of powder.
 - Method of application.
 - Batch and reference number.
 - Statutory requirements.
 - Test certificates.
 - Maintenance instructions.

540 COMPLETION

- Protection: Remove
- Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.