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Arch: OC and C Architects Limited – **Client**: Tipperary County Council



Tipperary Courthouse & Bridewell

Main Works Specification, Tipperary Courthouse & Bridewell

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Conservation, restoration, extension, and change of use of the overall former courthouse and bridewell site to adult education, office and ancillary spaces.

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C20
Demolition

To be read with preliminaries/ general conditions.

5 Desk study/ survey

1. Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
   1.1. the structure or structures to be deconstructed/ demolished,
   1.2. the site on which the structure or structures stand, and
   1.3. the surrounding area.
2. Report and method statements: Submit, describing:
   2.1. Form, condition and details of the structure or structures, the site and the surrounding area.
      2.1.1. Extent: As per demolition drawings.
   2.2. Type, location and condition of features of historical, archaeological, geological or ecological importance.
   2.3. 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.
   2.4. Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
   2.5. Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
   2.6. Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
   2.7. Proposed programme of work, including sequence and methods of deconstruction/ demolition.
   2.8. Details of specific pre-weakening required.
   2.9. Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
   2.10. Arrangements for control of site transport and traffic.
   2.11. Special requirements: Site waste management plan development and proposals Structural calculations in support of method statements Details of services supplied by the Statutory Authority
3. Format of report: PDF, digital format acceptable.

10 Extent of deconstruction/ demolition

1. General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to foundation level. Break up and dig out foundations.

12 General Requirements For Making Good

1. **1.1 PERFORMANCE OBJECTIVE** Make good all work disturbed by the operations of the Contract. "Making good" is defined as the restoration of the building fabric to a sound, durable, and aesthetic condition that aligns seamlessly with the adjacent undisturbed work.
   - **Standard:** Execution to **BS 7913:2013** (Guide to the conservation of historic buildings) and **I.S. EN 13914-1/2**.
   - **BCAR Compliance:** All making good affecting fire compartment lines must be certified by the Installer and coordinated with the Fire Strategy Drawings.

1.2 EXTENT OF WORK Where new work abuts or penetrates existing work, the new work must match the existing in:

- **Material:** (e.g., Lime purity, timber species).
- **Profile/Moulding:** (e.g., Skirting Ogee/Torus profiles, Cornice dentils).
- **Texture/Finish:** (e.g., Stucco float finish, French polish).
- **Colour:** To be determined via sample panels.

1.3 BENCHMARK SAMPLES Do not commence "making good" works until a sample area (minimum 1m²) has been prepared for the Architect's inspection.

- **Hold Point:** Work may not proceed until written approval of the sample is issued by the Architect.

2.0 MAKING GOOD: PLASTERWORK & RENDERS

2.1 HISTORIC MASONRY SUBSTRATES (BREATHABLE) Strictly Prohibited: Use of Ordinary Portland Cement (OPC), Gypsum Bonding, or PVA bonding agents on historic solid masonry walls unless explicitly detailed.

- **Material:** Natural Hydraulic Lime (NHL 2 or NHL 3.5) to **I.S. EN 459-1**, mixed with well-graded sharp sand.
- **Execution:** Cut back disturbed plaster to a sound edge (dovetail cut). Clean masonry substrate and wet down to control suction. Apply plaster in coats (scratch, float, set) allowing carbonation cure between coats.
- **Finish:** Steel trowel or sponge float to match existing adjacent texture exactly.

2.2 CONTEMPORARY SUBSTRATES (NON-HISTORIC)

- **Material:** Gypsum-based renovations plaster or skim coat to **I.S. EN 13279-1**.
- **Preparation:** Apply bonding agent to manufacturer’s instructions. Scrim tape all joints to prevent cracking.

2.3 ORNAMENTAL CORNICES & MOULDINGS

- **Preservation:** Protect existing cornices during demolition works (See Drawing D-001/D-100 series).
- **Repair:** Where cornices are damaged or cut for services:
  - Take a squeeze mould of the existing profile.
  - Run new sections in fibrous plaster to match existing profile.
  - Fix securely to timber grounds; make good joints with casting plaster.

3.0 MAKING GOOD: JOINERY (SKIRTINGS, ARCHITRAVES, FLOORS)

3.1 TIMBER REPAIRS

- **Material:** Timber species to match existing (typically Pitch Pine or Oak in Courthouse contexts). Moisture content to match internal environment (10-12%).
- **Profiles:** Do not use standard builder's merchant profiles. Contractor must survey existing skirtings/architraves and machine new sections to match exact historic profiles.
- **Fixing:** Fix to existing grounds. Where grounds are rotted, replace with pressure-impregnated softwood trimmers.

3.2 FLOOR FINISHES

- **Timber Floors:** Where partitions are removed (See Demolition Plans D-101/D-151), tooth in new timber boards to match existing width, thickness, and grain orientation. Sand flush and seal to match existing.
- **Screeds:** Make good chased concrete floors with polymer-modified cementitious repair mortar to **I.S. EN 1504-3**.

- **4.0 FIRE STOPPING & SERVICE PENETRATIONS**

4.1 MAKING GOOD AROUND SERVICES Where mechanical/electrical services pass through existing walls/floors:

- **Acoustic/Fire Seal:** Pack void solid with mineral wool and seal with intumescent mastic to **I.S. EN 1366-3**.
- **Finish:** Plaster or timber pattresses to be fitted tight to the service drop. "Rough patching" is not acceptable.

13 Groundworks

1. Old foundations, slabs and the like: Break out in locations and to the extents stated.
2. Contaminated material: Remove, and carry out remediation required by the Enforcing Authority.

15 Bench marks

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

20 Features to be retained

1. General: Keep in place and protect the following: All as noted on the Works Requirements and drawings provided. Trees noted on drawings, protect in accordance with BS 5837.

25 Location of services

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

30 Services disconnection arranged by contractor

1. 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.

32 Disconnection of drains

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

35 Live foul and surface water drains

1. Drains and associated manholes, inspection chambers, gullies, vent pipes and fittings
   1.1. Protect and ensure normal flow during deconstruction/ demolition work.

1.2. Make good any damage arising from deconstruction/ demolition work.

1.3. Leave clean and in working order at completion of deconstruction/ demolition work.

2. Other requirements: post completion CCTV survey required for all foul drains, existing and new

45 Services to be retained

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

50 Workmanship

1. Standard: Demolish structures in accordance with BS 6187.
2. Operatives
   2.1. Appropriately skilled and experienced for the type of work.
   2.2. Holding, or in training to obtain, relevant CITB Certificates of Competence.
3. Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

55 Site hazards

1. Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
2. Dust: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
   2.1. Lead dust: Submit method statement for control, containment and clean-up regimes.
3. Site operatives and general public: Protect from health hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

60 Adjoining property

1. Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
2. Defects: Report immediately on discovery.
3. Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
4. Support to foundations: Do not disturb.

65 Structures to be retained

1. Extent: As per demolition drawings & notes therein - particular care to be paid to adjoining properties
2. Parts which are to be kept in place: Protect.
3. Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good. Strip back to agreed boundary or junction line with retained material. Works to be made good on completion.

70 Partly demolished structures

1. General: Leave partly in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
2. Temporary works: Prevent overloading due to debris.
3. Access: Prevent access by unauthorized persons.

71 Dangerous openings

1. General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
2. Access: Prevent access by unauthorized persons.

75 Asbestos-containing materials – known occurrences

1. General: Materials containing asbestos are known to be present in: - for full details of areas please refer to the Asbestos Survey contained in the Contract Document and tender documents .
2. Removal: by a licensed contractor, in accordance with SI No 386 of the SHHW Regulations 2006, (2010), after prior notification to the HSA if required.

   Removals to take pllace prior to all other works onsite, unless such works are required to provide access or for the safety of operatives / safety of the removal sequence.

   A clearance certificate will be reuqired on completion from a licensed contractor/specialist

76 Asbestos-containing materials – unknown occurrences

1. Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
2. Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

78 Unforeseen hazards

1. Discovery: Give notice immediately when hazards, such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
2. Removal: Submit details of proposed methods for filling, removal, etc.

90 Contractor's property

1. Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
2. Action: Remove from site as work proceeds where not to be reused or recycled for site use.

91 Employer's property

1. Components and materials to remain the property of the Employer: Any historical material noted as such in the Works Requirements. Any unknown historic finds. All Works/Materials to be retained and re-used onsite.
2. Protection: Maintain until these items are removed by the Employer or reused in the Works, or until the end of the Contract.
3. Specific limitations: n/a

95 Recycled materials

1. Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. Evidence of compliance: Submit full details and supporting documentation.
   2.1. Verification: Allow adequate time in programme for verification of compliance.

550 Sealing Disused Flues (Ventilated)

1. **Locations:** To all fireplaces indicated on Demolition/Alteration plans and Elevations G-131, G-133, G-138.

2. **Preparation:** Sweep flue continuously from top to bottom to remove all loose soot, bird nests, and debris prior to sealing.
3. **External Termination (The Cap):**
    - **Capping:** Code 5 lead sheet dressed over existing chimney pot.
    - **Ventilation:** Support lead on stainless steel or copper straps to provide a continuous **50mm clear air gap** between the pot rim and the lead. **Do not seal lead flush to pot.**
    - **Protection:** Fit stainless steel mesh (20mm grid) within the air gap to prevent bird entry.

4. **Internal Sealing (The Hearth):**
    - **Plug:** Insert mineral wool batt (breathable) tightly into the flue throat approx. 300mm above the opening. Do not use plastic.
    - **Closure:** Fit 12mm calcium silicate or non-combustible building board recessed into the fireplace opening. Seal perimeter with intumescent mastic.
    - **Trickle Vent:** Supply and fit [Size: e.g., 225x75mm] cast iron or brass louvred air brick into the closure board.

5. **Completion:** Ensure a permanent, unblockable air path exists from the room, through the flue, and out under the lead cap.

Ω End of Section

C40
Cleaning masonry/ concrete

General/ preparation

110 Scope of work

1. Courthouse - n/a .
2. Bridewell - Existing wall facing central courtyard to have all vegetation and plaster removed with surface cleaned down in preparation for new lime plaster finish
3. Landscape and Boundary walls - Walls to have all vegetation removed mechanically.

120 Related repair and remedial works

1. Work to be carried out before cleaning work: Remove any vegetation, all structural repairs / stitching shown on the engineers drawings.
2. Work to be carried out after cleaning work: walls to be sealed as per Clause M40

142 Removal of fittings

1. Timing: Before commencement of cleaning work
2. Disturbance to surfaces: Minimize.
3. Items for disposal: all as indicated on Contract Documents
4. Items to be kept for reuse: all as indicated on Contract Documents

160 Protection

1. Surfaces not designated for cleaning: Prevent damage, including marking and staining.
2. Openings: Prevent ingress of water, cleaning agents, and detritus.
   2.1. Vents and grilles: Seek instructions before sealing up.
3. Temporary mechanical fastenings
   3.1. In masonry: Locate in joints.
   3.2. In other surfaces: Seek instructions.

190 Cleaning generally

1. Timing: Cleaning works to take place before the installation of any fine finishes, flooring, joinery etc. Cleaning will be required early in the construction process.
2. Operatives: Appropriately trained and experienced for each type of cleaning work.
   2.1. Evidence of training: Submit on request.
3. Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
4. Detritus: Remove regularly. Dispose of safely.
5. Monitoring
   5.1. Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
   5.2. Works to be inspected and approved in accordance with the requirements of the local planning authority.
6. Modifications to cleaning methods and materials: Seek instructions.

230 Trial samples

1. Trial sample reference: To exposed area of wall at ground floor

1.1. Surface: Concrete & plaster junctions

1.2. Location/ Size: 1m wide x 2m high

1.3. Type of soiling: Biological growths & general detritus

1.4. Cleaning methods: Pressurized water (pressurized air may be acceptable subject to acceptable samples).

Abrasives required for plaster areas, (ie mechanical abrasives/sandpaper etc)

2. Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

Products/ equipment - Not Used

Application

412 Removal of loosely adhered deposits

1. Timing: Before commencement of other cleaning methods.
2. Surfaces: Prevent damage, including abrasion.
3. Procedure: Carefully remove all surface finishes by mechnical means - ie. hand chisel and bolster. Brush down wall to remove all loose material back to original stonework.

   Using a wire brush, vigorously brush the entire surface of the wall, particularly joints in lime mortar to remove all loose material and to provide a key for new render.

Ω End of Section

C41
Repairing/ renovating/ conserving masonry

Generally/ preparation

110 Scope of work

1. Schedule: Removal of all vegetation from boundary walls generally, isolated repairs to existing stone boundary walls.
2. Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
3. Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs.

115 Raking Out of Joints Currently Pointed with Cement Mortar

1. **Areas**
   Inappropriate cement-based strap pointing shall be carefully raked out to all elevations including base plinth course, (refer to elevations for locations).

   In general, areas of the building where the lime pointing remains (rear facing elevations) is in good condition and does not require raking out except in localised areas at base level, eaves level and around downpipes, (see elevations).

   It will be necessary to remove downpipes etc to facilitate full raking and re-pointing of these areas. Temporary measures shall be put in place to throw water clear away from the building during the removal of downpipes.

   Prior to commencing, trial raking-out panels of cement rich mortar will be carried out. All specified areas will be raked-out to the same standard as the agreed trial panels. Raking-out of the remaining areas will only proceed following approval by the Conservation Architect.
2. **Tools**
   The raking out of joints must be carried out using small manual hand tools (pointed masonry chisels/quirk). The diameter of the part of the chisel which enters the joint is to be less than the width of the joint.

   The limited use of hand held oscillating power tools may be applied to hard cement pointing by chasing a centre line within the joint, taking care to stop short of the stone, allowing the remaining material to be removed by hand. Oscillating power tools (e.g., Fein Multimaster) may be used for **the center of the joint only.**

   Where the use of power tools is proposed the contractor must supply a detailed method statement and a list of named operatives who will carry out the task for approval by the Conservation Architect. The procedure should be carried out by a mason and not a general operative or apprentice.
3. **Raking Out of Joints**
   a) Raking out shall start at the top of the structure/elevation and work down.
   b) Raking out will commence mid-joint and work outward toward the arises/corners.
   c) Joints shall be raked out to a minimum depth of 25 mm or 2 times the width of the joint, whichever is greater.
   d) Removal of pointing using chisels shall be at an oblique angle to the joint face, not directly onto it.
   e) Hard cement pointing shall be drilled with a masonry drills to achieve an initial break.
   f) In some circumstances (only under direction by the conservation architect), the limited use of hand held oscillating power tools may be applied chasing a centre line within the joint, taking care to stop short of the stone, allowing the remaining material to be removed by hand.

g) Extreme caution must be taken not to cut into the masonry or increase the width of the joint.
h) All joints must be squared and not 'V'-shaped to ensure a good contact between the re-pointing mortar and surrounding stone.
i) All debris and dust is to be removed from the raked joints using compressed air or a stiff bristled brush (ferrous metal brushes must not be used under any circumstances).

4. **Protection of Arrises:** The final 5mm of mortar adjacent to the stone arris must be removed by hand using quirks/small chisels to ensure no mechanical damage occurs to the stone edge.
5. **Safety**
   a) Operators shall wear protective clothing to prevent dust from coming in contact with the skin or eyes or from being inhaled.
   b) Area shall remain well ventilated throughout.
   c) Eye wash facilities and emergency shower must be available when handling this product.

116 Repairs to existing stone features

1. **Areas**
   To all existing damaged stone features of the Courthouse and Bridewell (lintels, plinth, cornice, etc.) Refer to drawings for detailed location.
2. **Tools**
   All cutting out of damaged stone shall be performed using manual hand tools (chisels, mallets) or low-vibration pneumatic precision tools. Rotary power tools and angle grinders are strictly prohibited.
3. **Procedures:** Where localized decay is present, the contractor shall "indent" or "piecing-in" new stone. The replacement stone must match the existing Lecarrow Limestone in petrological family, colour, texture, and grain orientation (natural bed).
4. **Execution:** All joints for indents must be cut square and to a minimum depth of 50mm to ensure a mechanical bond. Stone inserts shall be fixed using stainless steel dowels (Grade 316) and bedded in a hydraulic lime:sand mortar mix (1:2.5 NHL 3.5).
5. **Safety:** Operatives must wear appropriate RPE (Respiratory Protective Equipment) to prevent inhalation of silica dust. Wet suppression methods must be used to control dust at the source.

125 Removal of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work: Downpipes
   1.1. Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and describe refixing instructions, where applicable.
   1.2. Storage: Protect against damage, and store until required.
      1.2.1. Storage location: On site
   1.3. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse: Alarm boxes, Luminaires etc.
   2.1. Disposal: Safely
3. Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures.

130 Removal of plant growths from masonry

1. Plants, root systems and associated soil/ debris: Carefully remove from joints, voids and facework.
2. Removal of roots: Where growths cannot be removed completely without disturbing masonry seek instructions.
3. Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.

Workmanship generally

150 Power tools

1. Usage for removal of mortar: Not permitted

160 Protection of masonry units and masonry

1. Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
2. Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

165 Structural stability

1. General: Maintain stability of masonry. Report defects, including signs of movement that are exposed or become apparent during the removal of masonry units.

170 Disturbance to retained masonry

1. Retained masonry in the vicinity of repair works: Disturb as little as possible.
2. Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
3. Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.

180 Workmanship

1. Skill and experience of site operatives: Appropriate for types of work on which they are employed.
    1.1. Documentary evidence: Submit on request.

185 Adverse weather

1. General: Do not use frozen materials or lay masonry units on frozen surfaces.
2. Air temperature: Do not bed masonry units or repoint:
    2.1. In cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
    2.2. In hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
    2.3. In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
3. Temperature of the work: Maintain above freezing until mortar has fully set.
4. Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
5. Hot conditions and drying winds: Prevent masonry from drying out rapidly.
6. New mortar damaged by frost: Rake out and replace.

190 Control samples

1. General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: Sample required for random rubble repair in lime mortar bedding and lime mortar pointing.

Material/ production/ accessories

220 Recording profiles

1. Profiles: Take measurements from existing masonry units, as instructed, to allow accurate matching of replacements.
2. Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.
3. Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

245 Replacement stone units

1. Sizes and profiles: To match existing masonry. Maintain existing joint widths.
2. Sinkings for fixings, joggles and lifting devices: Accurately aligned and positioned in relation to existing masonry.
3. Marking: Mark each block/ dressing clearly and indelibly on a concealed face to indicate the natural bed and position in the finished work.

Dismantling/ rebuilding

310 Dismantling masonry for reuse

1. Masonry units to be reused: Remove carefully and in one piece.
    1.1. Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
    1.2. Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe makings to drawings/ photographs.

320 Rebuilding

1. Description: partial, where needed. Refer to architects drawings.
2. Replacement materials: To match existing
3. Mortar: As section Z21.
    3.1. Standard: Not applicable
    3.2. Mix: 1:3 ready-mixed nonhydraulic lime putty:sand
4. Fixings: To match existing
5. Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate.
6. Joint surfaces: Dampen, as necessary, to control suction.
7. Laying masonry units: On a full bed of mortar; perpend joints filled.
8. Exposed faces: Remove mortar and grout splashes immediately.
9. Joints: To match existing

Replacements and insertions

330 Preparation for replacement masonry

1. Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.
2. Existing metal fixings, frame members, etc.: Report when exposed.
3. Redundant metal fixings: Remove.
4. Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.

340 Replacement of stone

1. Description: To Courthouse, where needed. Refer to architects drawings.
2. Stone: To match existing
3. Bedding depths: To match existing
4. Mortar: As section Z21.
   4.1. Standard: Not applicable
   4.2. Mix: 1:1:5 hydraulic lime: nonhydraulic lime:sand
   4.3. Sand source/ type: Contractor's choice
5. Fixings: To match existing
6. Joints: To match existing

385 Laying replacement masonry units

1. Exposed faces of new material: Keep to agreed face lines.
2. Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.
3. Joint surfaces: Dampen to control suction as necessary.
4. Laying units: On a full bed of mortar, all joints filled.
5. Exposed faces: Keep clear of mortar and grout.

415 Stone pinnings for rubble stonework

1. Material for pinnings: Existing stone salvaged from site, tooled as required to appropriate sizes for use as pinnings.
2. Placing: Tamp pinnings firmly into fresh mortar. Ensure mortar is thoroughly compacted into voids and that levelling and load distribution functions of pinnings are retained.

Tooling/ dressing stone in situ

450 Weathering ledges at joints

1. Locations: Where stones project or are recessed.
2. Requirement: Carefully weather the ledge, to approval.
3. Method: Suitably graded carborundum blocks or tooling as appropriate.

455 Descaling stone

1. Requirement: Carefully remove loose scaling and powdering from stones to the extent agreed.
2. Method: Suitable bristle brushes or carborundum blocks. Do not use wire brushes.

458 Redressing stone

1. Requirement: Carefully dress back stones to the extent agreed.
2. Method: Suitably graded carborundum blocks or tooling as appropriate.

Mortar repairs

510 Preparation for mortar repairs

1. Repair area: Scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints.
2. Decayed masonry: Cut back carefully to a minimum depth of 20 mm to a sound background. Where the depth of removal exceeds 50 mm, seek instructions.

3. Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
4. Top and vertical reveals of repair area: Undercut.

540 Applying mortar

1. Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
2. Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
3. Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
4. Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
5. Protection: Protect completed repairs from adverse weather until mortar has set.

550 Scraped finish to mortar repairs

1. Procedure: Finish final coat of repair mortar proud of existing masonry face. When mortar is set, but not too hard, scrape back to required face line using fine saw blade or other suitable means, to achieve required finish.

Crack repairs/ ties/ reinforcement - Not Used

Grouting rubble filled cores

710 Preparation for grouting

1. Grouting holes: Drill in joints at horizontal and vertical centres to suit coursing and to achieve an effective distribution of grout so that, on completion, all voids in masonry are filled.
2. Maximum height of each grout pour: Regulate to prevent disruption to masonry.
3. Open joints in masonry: Seal with an approved temporary material to prevent leaking of grout. Leave weep holes every two or three courses to assist in flushing out dust and debris, and to prove effectiveness of grouting. Locate temporary seal back from facework to allow for specified repointing. Seek instructions if repointing precedes grouting.

740 Application of grouting

1. Grouting: Continuous operation during each lift. Allow grout to set before commencing subsequent lifts.
2. Monitoring: Monitor grouting carefully and continuously at each delivery point (flow and delivery pressure), and at adjacent/ opposite wall faces, to ensure that there is an effective distribution of grout with no leaking, staining, or disruption to the masonry.
3. Temporary seals: Remove on completion of grouting and leave joints in a suitable condition for repointing.

Pointing/ repointing

810 Preparation for repointing

1. Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of 30mm.
    1.1. Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
2. Raked joints: Remove dust and debris.

820 Pointing

1. Description: Rubble Stonework generally
2. Preparation of joints: raked out to 30mm, (or new joints)
3. Mortar: As section Z21.
   3.1. Standard: BS EN 998-2
   3.2. Mix: 1:½:2½ nonhydraulic lime putty: pozzolanic admixture:sand
   3.3. Sand source/ type: submit proposals
4. Joint profile/ finish: Recessed back from weathered arrises to retain original joint widths. Brushed finish, as clause 860
5. Other requirements: Grout deep voids

840 Pointing with tools/ Irons

1. General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
2. Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

860 Brushed finish to joints

1. Timing: After initial mortar set has taken place remove laitance and excess fines by brushing, to give a coarse texture. Do not compact mortar.

Ω End of Section

C51
Repairing/ renovating/ conserving timber

General

110 Inspection

1. Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings, and described in survey reports and schedules of work.
   1.1. Relevant reports: Refer to Structural Condition Report conducted by David Kelly Partnership in August 2021.
2. Parties involved: Contract administrator, Contractor's representative, Structural engineer
3. Timing: At least 10 days before starting each section of work
4. Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work

130 Opening up

1. Purpose: To reveal previously concealed areas of structure or fabric not recorded during initial surveys.
2. Extent: To be agreed
3. Timing: Give notice before starting opening up.
   3.1. Period of notice: At least two working days
4. Retained building structure/ fabric: Do not damage or destabilize.

150 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
   1.1. The laws governing forest management in the producer country or countries.
   1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with the chain of custody certification scheme requirements:
   2.1. documentary evidence (that has been or can be independently verified) regarding the provenance of all timber supplied; or
   2.2. evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of Custody Certification scheme: Contractor's choice in accordance with UK Government timber procurement policy (UKTPP), i.e. FSC, GiB or PEFC Submit proposals
   3.1. Other evidence: None

Structural repairs/ alterations - Not Used

Products

310 Structural softwood (graded direct to strength class)

1. Description: FOR STRUCTURAL USE GENERALLY
2. Strength class to BS EN 338: refer to engineers/architects drawings
3. Treatment
   3.1. Preservative treatment: Due to the history of **Dry Rot (*Serpula lacrymans*)** identified in the Bridewell/Courthouse, all new structural softwood must be treated.

Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8

Use Class 2 (Internal risk of wetting).

Cut Ends: All cross-cuts, notches, and boreholes made on site must be treated liberally with end-grain preservative (e.g., *Ensele* or equivalent) applied by brush during installation. **"Cut and go" without treatment is strictly prohibited.**

3.1.1. Design service life: 40 years

3.2. Fire-retardant treatment: None required

4. Moisture content (maximum) at time of installation: 12%
5. Other requirements: Wane not permitted

360 Softwood and hardwood for joinery repairs

1. Description: To all existing an retained joinery
2. Species: To match existing
3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
   3.1. Appearance class: Class J40.
4. Treatment: None required
5. Moisture content on delivery: 6-10%

530 Non-ferrous dowels

1. Description: To stone plinth insert at bottom of timber columns of the Courthouse, as per G-303.
2. Material: Silicon Bronze alloy
3. Manufacturer: Submit proposals

550 Stone plinth

1. Description: To all insert at bottom of existing timber columns of the Courthouse, as per G-303.
2. Material: Limestone plinth to match existing. Refer to F21.
3. Finish: Sawn cut.
4. Shape: To be cut as per drawing G-303, to have flush sides with existing timber columns.
5. Placement: Stone plinth to seat on structural concrete slab Bedded on 10mm NHL 3.5 lime mortar. To be set before application of levelling screed.
6. Fixings: **Dowel:** Φ12mm Threaded Silicon Bronze Alloy dowel (Grade C65500), min. 100mm embedment into stone and 150mm into timber column.
   Adhesive: Two-part thixotropic epoxy resin anchor grout.
   Bedding: 3mm lead sheet DPC sandwiched between stone plinth and timber column base, bedded in hydraulic lime putty to accommodate movement.

Execution

600 Workmanship

1. Skill and experience of site operatives: Appropriate for types of work on which they are employed.
   1.1. Documentary evidence: Submit on request.

610 Temporary supports/ propping

1. General: Provide adequate temporary support at each stage of repair work to prevent damage, overstressing or uncontrolled collapse of any part of the structure.

2. Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.

620 Protection of timber and wood components before and during installation

1. Storage: Keep dry, under cover, clear of the ground and with good ventilation. Support sections/ components on regularly spaced, level bearers on a dry, firm base.
2. Handling: Do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.

630 Material samples

1. Representative samples of designated materials: Submit before placing orders.
   1.1. Designated materials: all timber that will be visible on completion

640 Prototypes

1. General: Prepare one of each of the following items and arrange for inspection before starting repetitive fabrication: Stone insert for timber column as per clause 550 and 530.

650 Dimensions generally

1. Site dimensions: Take as necessary before starting fabrication.
   1.1. Discrepancies with drawings: Report without delay and obtain instructions before proceeding.

660 Cross section dimensions of structural softwood and hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
2. Tolerances: The tolerance indicators (T1) and (T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
   2.1. Tolerance class 1 (T1) for sawn surfaces.
   2.2. Tolerance class 2 (T2) for further processed surfaces.

665 Cross section dimensions of non-structural softwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1, clause 6 for sawn sections.

670 Cross section dimensions of non-structural hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-2:
   2.1. Clause 6 for sawn sections.
   2.2. Clause NA.3 for further processed sections.

690 Processing treated timber

1. Cutting and machining: Carry out as much as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
3. Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

710 Reuse of timber sections/ wood components

1. Sections/ components scheduled to be removed but not reused in existing locations: Agree extent of retention for reuse elsewhere in the works.
    1.1. Treatment following removal: as per architects/engineers drawings
    1.2. Storage: Protect against damage, and store until required.
        1.2.1. Storage location: On site
2. Reuse: Adapt sections/ components, as necessary, and install in agreed locations.

720 Temporary removal and reinstatement of fittings/ fixtures

1. Items to be removed, and reinstated on completion of repair work
    1.1. Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and refixing instructions, where applicable.
    1.2. Storage: Protect against damage, and store until required.
        1.2.1. Storage location: On site
    1.3. Reinstatement: Refit in original locations using original installation methods.
2. Items unsuitable or not required for reuse: Obtain instructions regarding disposal.

725 Specialized Salvage – Judge's Stand

1. **Scope of Work:** * Carefully de-nail and remove the existing Judge's Stand timber panelling in its entirety to facilitate the installation of the new floor slab and timber framing as shown on **Drawing G-201** and **G-810**.
2. **Identification and Recording:** * Before removal, every panel, moulding, and trim piece must be tagged with a unique identifier and photographed in place.
    - Create a "Panelling Salvage Map" cross-referencing the tags to their original locations to ensure 1:1 accuracy during reinstatement.

3. **Inspection for Decay (Dry Rot):**
    - Upon removal, the lower 300mm of all panels must be inspected by the Architect for signs of **Dry Rot (Serpula lacrymans)**.
    - If rot is identified, the contractor must immediately follow the eradication procedures in **Section C52** and the repair protocols in **Clause 760/770**.

4. **Repair and Conservation:**
    - **Lower Section Repairs:** Where the base of the panelling is damaged by rot or moisture, the affected timber is to be cut back to 50mm of sound wood per **Clause 760**.
    - **Piecing In:** New timber inserts (matching species/grain) are to be "pieced in" using the methods described in **Clause 770** to restore the panel to its original height.

5. **Storage:**
    - Panels must be stored flat on level bearers in a dry, ventilated, and weather-tight environment on-site as per **Clause 620**.

6. **Reinstatement:**
    - Following the completion of the new floor and the "new timber framing and supports" indicated on **Drawing G-810**, the salvaged and repaired panelling is to be mechanically fixed back into its original configuration.

- Fixings are to be concealed where possible; where visible, use matching timber pellets or wax filler to match the blue paint finish specified in **Drawing G-301/302**.

740 Removal of existing decorative/ protective finish

1. Description: To existing and retained timber galleries, stairs, paneling and other elements as per architects drawings
2. Extent: Remove completely back to bare wood.
3. Method: Submit proposals

   Chemical stripping is the preferred method to avoid mechanical damage to the timber grain. The contractor shall use a pH-neutral, non-caustic "peel-away" system.

   Restrictions: Sand-blasting or high-heat guns are strictly forbidden on historic galleries and paneling.
4. Trial: : A 300x300mm sample area must be stripped and approved by the Conservation Architect before full-scale stripping commences to ensure no fiber-raising or discoloration occurs.

750 Cleaning dirty or stained wood

1. Generally: Scrub with neutral pH soap and clean, warm water.
2. Old varnish: Remove using mixture of turpentine (not turpentine substitute) and acetone in proportions determined by experiment, followed by washing down.

760 Repair of members – cutting out members

1. **Hold Point:** Do not commence cutting or removal of timber until the **Architect** has inspected the area and marked the limit of removal on the physical fabric.

   Propping: Install temporary propping and strutting to **BS 5975** to support all loads (dead and live) prior to severing any structural timber member.

   Protection: Protect all adjacent historic fabric (plasterwork, stone corbels, sash windows) from vibration, debris, and spore contamination during cutting operations.
2. **IDENTIFICATION & REMOVAL OF DEFECTIVE TIMBER**
   - **Fungal Decay (Dry Rot - *Serpula lacrymans*):**
     - Where dry rot is identified (or suspected), cut away all decayed timber plus a safety margin of **500mm** (minimum) beyond the last visible sign of fungal hyphae/mycelium, unless otherwise directed by the Specialist Timber Report.
     - **Quarantine:** Immediately wrap removed timber in heavy-gauge polythene sheeting (minimum 1200 gauge) *before* transporting it through the building. Tape all seams to prevent spore dispersion.
     - **Disposal:** Do not store infected timber on site. Remove to a licensed waste facility immediately.
   - **Fungal Decay (Wet Rot - *Coniophora puteana*):**
     - Cut back to sound, dry timber.
     - Ensure the moisture source has been identified and eliminated (See Clause C45/...) before proceeding with repairs.
   - **Insect Attack (Woodworm/Beetle):**
     - Frass (bore dust) and loose surface material must be removed by vacuum (HEPA filter equipped).

- Cut back only structurally compromised sapwood. Retain heartwood unless structurally failed.

3. **PREPARATION OF REMAINING SUBSTRATE**
    - **Cleaning:** Thoroughly clean the exposed masonry reveals and timber bearings. Remove all loose mortar, plaster, and organic debris.
    - **Sterilization:** Sterilize adjacent masonry walls (where infected by Dry Rot) using a HSE-approved biocide applied strictly in accordance with manufacturer instructions. **Do not saturate historic lime plaster** without prior written approval.
    - **Moisture Content:** Test the remaining "sound" timber moisture content. Do not commence splicing/scarfing repairs until the moisture content of the existing timber is **below 18%**.

4. **JOINT PREPARATION FOR REPAIRS**
    - **Profile:** Cut remaining timber ends to clean, sharp profiles suitable for the specified repair type (e.g., splayed scarf joint, lightning bolt joint, or step joint).
    - **Surface:** All cut faces must be planed smooth. Sawn finishes are **not permitted** at the interface of a structural repair.
5. Extent of timber removal: Cut out full cross section of member where wood is defective or decayed, plus 50 mm of sound wood.
6. Distance from face of support to cut end of existing timber: Obtain instructions if dimension exceeds 250 mm.
7. Joint profile: As per engineers drawings

770 Repair of compression members – piecing in

1. Defective wood: Remove only decayed or defective wood. Finish cut-outs to clean, regular profiles.
2. Timber inserts: Cut accurately to fit. Glue and pin in place. Lie of grain to match as closely as possible that of parent timber.
3. Joint profile: As per engineers drawings

780 Repair of distorted timber members

1. Generally: Repair to shape that member has assumed.

790 Pegs for mortise and tenon joints in structural timber

1. Wood species: Oak.
2. Condition: Dry, preferably oven 'baked' before use.
3. Shape: Round and tapered.
4. Second hand pegs: Do not use.
5. Peg holes: Slightly offset such that when pegs are driven home, sections being joined are pulled together.

800 Condition of dowels to be bonded into timber

1. Condition at time of installation
    1.1. Dowels generally: Free from corrosive pitting, loose mill scale, loose rust and contaminants that may adversely affect dowels, adhesive, or bond between the two.

860 Moisture content checking

1. Procedure: Check moisture content of timber sections with an approved electrical moisture meter.

2. Test results: Keep records of all tests. If moisture content falls outside specified range obtain instructions.

870 Moisture content testing

1. Procedure: Test timber sections with an electrical moisture meter with deep probes. (A meter that has been carefully calibrated against oven drying tests or otherwise guaranteed by an independent testing authority.)
2. Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.
3. Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

Completion

910 Mechanically fastened joints

1. General: Inspect accessible bolted, coach screwed and timber pegged joints and tighten fasteners if necessary.
   1.1. Timing: On Completion and at end of Defects Liability Period or Rectification Period.

Ω End of Section

C52
Fungus/ beetle eradication

Clauses

5 Survey and report

1. Survey generally
   - 1.1. Purpose: To ascertain nature and extent of fungal/ beetle attack. To ascertain sources and extent of any dampness.
   - 1.2. Timing: Before starting eradication work carry out survey and submit survey report.
2. Survey report content
   - 2.1. Description of method of investigation.
   - 2.2. Factors affecting execution of the work: Identify problematic site conditions and restrictions including the presence of bats, barn owls, other protected species or breeding birds.
   - 2.3. Laboratory results identifying attacking organisms. Plan and section drawings or annotated photographs, defining extent of attack.
   - 2.4. Proposals for eradication treatments and procedures, including measures to halt damp penetration and promote drying out.
   - 2.5. Measurements of wood moisture content, with identification of instances above 20%.
   - 2.6. Identification of neighbouring buildings that may be involved in attack.
   - 2.7. Associated work: Nature and extent of repair/ replacement work required to load bearing constructions and to the building fabric in general.
   - 2.8. Other information: Any considered relevant.

15 Drying out of building fabric

1. Drying conditions: Establish as soon as possible.
2. Drying methods: Weatherproof building, remove source of water ingress, introduce mild heating to gradually dry out the fabric

26 Fungal attack

1. Dry rot
   - 1.1. Fruiting bodies: Do not disturb. If heat treatment is not employed, spray with fungicide.
     - 1.1.1. Remove carefully and clean affected surfaces.
   - 1.2. Infected material to be removed: Remove carefully, causing minimum disturbance and damage to adjacent building fabric; dispose of safely at a tip approved by waste regulation authority. Prevent contamination of other parts of the building.
2. Wet rot
   - 2.1. Decayed timber to be removed: Cut out until sound timber is reached.
     - 2.1.1. Disposal of previously treated timber: At a tip approved by a waste regulation authority.

30 Beetle infestation

1. Infected timber: Cut, scrape and trim back to sound timber where heat treatment is not employed. Remove debris immediately and dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.

37 Timber preservatives/ Masonry fungicides generally

1. Products: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.
2. Application: In accordance with statutory conditions of approval given on product labels and manufacturer's recommendations.

47 Timber preservative treatment

1. Description: GENERALLY
2. Manufacturer: Submit proposals
3. Preservative type: Glycol boron formulation Agrément certified retreatment system
4. Tint: Not required
5. Treatment method: Floor voids: Spray
   Roof voids: Spray
   To suit type, scale and location of fungal/ beetle attack
6. Execution: : Work to be carried out by an expert with minimum 5 years' experience in heritage eradication works.

Ω End of Section

D20
Excavating and filling

To be read with preliminaries/ general conditions.

10 Tree roots

1. Protected area: Do not cut roots within precautionary protection area.
   1.1. Size of area: Branch spread of the tree
2. Excavation in protected area
   2.1. Method: By hand
   2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
4. Cutting
   4.1. Make clean smooth cuts with no ragged edges.
   4.2. Pare cut surfaces smooth with a sharp knife.
   4.3. Treatment of cut roots: Not required
5. Backfill: As dug material

12 Site clearance

1. Timing: Before topsoil stripping, if any.
2. General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
3. Treatment: not required

14 Removing small trees, shrubs, hedges and roots

1. Identification: Clearly mark trees to be removed.
2. Small trees, shrubs and hedges
   2.1. Cut down.
   2.2. Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
3. Safety: Comply with Forest Industry Safety Accord safety leaflets.

20 Stripping topsoil

1. General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
2. Depth
   2.1. Remove to an average depth of: 200 mm
   2.2. Give notice where the depth of topsoil is difficult to determine.
3. Handling: Handle topsoil for reuse or sale in accordance with BS 3882.
4. Around trees: Do not remove topsoil from below the spread of trees to be retained.
5. Site storage: Keep separate from excavated sub-soil

23 Excavations adjacent to existing foundations

1. Prior to commencing excavation
   1.1. Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
   1.2. Allow for inspection of trial pits.
   1.3. Allow time for amendment of details if required.

1.3.1. Time period: Five working days

2. Backfill material to new excavation: As clause 60

30 Recorded features

1. Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends
2. Contaminated earth: Remove and disinfect as required by Local Authority.

31 Unrecorded features

1. Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

33 New foundations crossing old foundations or walls

1. Break out: The old foundation/ wall where it crosses the new foundation/ wall:
   1.1. Length of breaking out: Width of the new foundation/ wall, plus 300mm on either side of new foundation.
   1.2. Depth of breaking out: As necessary to permit the construction of the new foundation to its design cross section
2. Disturbed/ softened soil: When the formation for the old foundation/ wall is deeper than the formation of the new foundation.
   2.1. Excavate: Soil that has been disturbed and/ or softened on either side of the old wall/ foundation, and for 200 mm into undisturbed ground on either side.
3. Step up: The formation for the new foundation as necessary on either side of the old foundation/ wall until the formation is at its design level.
   3.1. Size of steps: n/a
4. Backfilling beneath design formation level: refer to structural engineers specification

40 Excavated topsoil removal

1. General: Remove from site.

45 Surplus subsoil

1. Excavated material: Stockpile in temporary storage heaps.
2. Retained material: Spread and level surplus subsoil on site.
   2.1. Locations: to the rear of the site
   2.2. Protected areas: Do not raise soil level within root spread of trees that are to be retained.
3. Remaining material: Remove from site.

50 Hazardous, aggressive or unstable materials

1. Generally: Do not import or use fill materials which would, either in themselves or in combination with other materials or groundwater, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
   1.1. Frozen or containing ice.
   1.2. Organic.
   1.3. Contaminated or noxious.
   1.4. Susceptible to spontaneous combustion.
   1.5. Likely to erode or decay and cause voids.
   1.6. With excessive moisture content, slurry, mud or from marshes or bogs.
   1.7. Clay of liquid limit exceeding 80 and/ or plasticity index exceeding 55.

1.8. Unacceptable, class U2 as defined in the 'Specification for highway works', clause 601.

53 Water

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

55 Placing fill

1. Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
2. Freezing conditions: Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
3. Adjacent structures, membranes and buried services
   3.1. Do not overload, destabilise or damage.
   3.2. Submit proposals for temporary support necessary to ensure stability during filling.
   3.3. Allow 14 days (minimum) before backfilling against in situ concrete structures.
4. Layers: Place so that only one type of material occurs in each layer.
5. Earthmoving equipment: Vary route to avoid rutting.

60 Backfilling around foundations

1. Under oversite concrete and pavings: Hardcore.
2. Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

67 Venting Hardcore layer

1. Fill: Clean granular material, well graded, passing a 75 mm BS sieve but retained on a 20 mm BS sieve. In each layer only one of the following:
   1.1. Crushed hard rock.
   1.2. Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
   1.3. Gravel.
2. Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer, whilst maintaining enough voids to allow efficient venting.

75 Blinding

1. Surfaces to receive sheet overlays or concrete:
2. Blind with
   2.1. Concrete where shown on drawings; or
   2.2. Sand, fine gravel, or other approved fine material applied to fill interstices. Moisten as necessary before final rolling to provide a flat, closed, smooth surface.
3. Sand for blinding: To BS EN 12620, grade 0/4 or 0/2 (MP).
4. Permissible deviation on surface level: 20mm

Ω End of Section

D21
Ground gas collection and venting systems

To be read with preliminaries/ general conditions.

34 Hardcore venting layer

1. Fill: as per engineers details

36 Gas collection header pipework (non-perforated)

1. Manufacturer: Contractor's choice
   1.1. Product reference: Contractor's choice
2. Material: Polypropylene
3. Outside diameter: 110 mm

38 Gas-retardant membranes

1. Manufacturer: Contractor's choice
   1.1. Product reference: Monarflex Reflex Super
2. Material: **Material:** Composite six-layer polyethylene membrane encapsulating an aluminium foil and
   reinforcement grid.
   - **Thickness:** Minimum 0.4mm (1600 gauge).
   - **Tensile Strength:** Tensile strength (minimum): Machine Direction - 710 ; Cross Direction - 640 N/ 50 mm.
   - **Certification:** NSAI Agrément Certificate or equivalent, suitable for Radon & CO2 protection.

   Jointing - Welded using Extrusion or Twinny method OR Monobond 70mm double-sided sealant tape.
   Fitting - Strictly to manufacturers fitting details. Manufacturer to provide on site toolbox workshop prior to starting the membrane works.
3. Purpose:: Damp-proof membrane and performance required for Methane /CO2 ground gases
4. Form:: Composite six-layer polyethylene membrane encapsulating an aluminium foil and reinforcement grid.
   Laps (minimum): 150mm.
5. Physical properties : Thickness (minimum): The membrane has a thickness of 0.4 mm (excluding the
   reinforcement grid) and total product thickness of 0.6 mm (including the reinforcement grid).
6. Accessories::
   - Monarseal MRX (Easi-Flash) Self-adhesive gas membrane;
   - Welded using Extrusion or Twinny method OR Monobond 70mm double-sided sealant tape.
   - Easi-Pour Self-leveling Liquid Radon Sealant
   - Read with F30, this details the Radon DPC's to be used as part of the system.
   - Read with J40, this details the Radon System and accessories to be used as part of
   - the system

40 Plastics depressurization sumps

1. Manufacturer: Contractor's choice

1.1. Product reference: Contractor's choice

2. Material: Polypropylene
3. Shape: Circular
4. Size: 380 mm diameter
5. Sump height: n/a

60 Installing plastics depressurization sumps

1. Position: as per drawings G-105
2. Area served (maximum): 250 m²
3. Base
   3.1. Material: Compacted hardcore
   3.2. Thickness: refer to engineers details
4. Blinding
   4.1. Material: Sand
   4.2. Thickness: min 50mm

70 Laying gas-retardant membrane

1. Base: Hardcore venting layer
2. Jointing: Gastight, welded joints
3. Fitting: Cut neatly around existing walls, other obstructions and service penetrations. Make seals gas tight.

   Ensure adewuate seal to gas resistant DPC and/or existing wall with joints lapped and sealed as per G-200 series details

100 Radon Detection And Measurement (Post-Construction)

1. **General Requirement:** Provide post-construction radon monitoring to verify the integrity of ground gas protection measures following renovation works.
2. **Standards:** * **I.S. EN 17025:** General requirements for the competence of testing and calibration laboratories.
   - **EPA Guidelines:** "Radon in Workplaces" and "Technical Guidance Document C" (Site Preparation and Resistance to Moisture).
3. **Measurement Service:** The testing must be conducted by a **Radon Measurement Service** currently registered on the **EPA (Environmental Protection Agency)** list of approved services.
4. **Equipment:**
   - **Type:** Passive alpha-track detectors.
   - **Housing:** Circular, tamper-resistant units.
   - **Packaging:** Supplied in sealed, gas-tight foil bags; do not open until the moment of installation.
5. **Placement Protocol:**
   - **Quantity:** 1 no. detector per room for all ground-floor spaces.
   - **Specific Locations:** Include all teaching spaces including courtrooms, judge's chambers, treatment rooms, plant rooms, and staff kitchenettes.
   - **Mounting:** Position between **1.0m and 2.0m** above floor level. Avoid placement near internal partitions, windows, doors, or direct heat sources (radiators/notices).
6. **Duration of Test:**
   - Detectors must remain in situ for a minimum continuous period of **90 days** (3 months) to account for diurnal and seasonal variations.

- Testing must occur while the building is in its "normal" operational state (i.e., heating and ventilation systems commissioned and running).

7. **Reporting & BCAR:**
    - Upon completion of the 90-day period, return detectors to the EPA-registered laboratory using the provided tracked packaging.
    - **Submission:** Provide the formal **Laboratory Test Report** to the **Assigned Certifier**.
    - **Validation:** If results exceed the National Reference Level of **300 Bq/m³**, the Contractor shall be liable for the investigation of leaks in the radon membrane/sump system installed under this section.

Ω End of Section

E05
In situ concrete construction generally

To be read with preliminaries/general conditions.

290 Accuracy of construction

1. Setting out: To BS 5964-1.
2. Geometrical tolerances: To BS 5606
   2.1. Conflicts: Notwithstanding tolerances specified elsewhere, do not exceed requirements for compliance with the designated code of practice.
   2.2. Substitution of alternative requirements: None

300 Levels of structural concrete floors

1. Tolerances (maximum):
2. Level of floor: As Preliminaries section A33
3. Steps in floor level: ±2 mm

Ω End of Section

E10
Mixing/ casting/ curing in situ concrete

Clauses

15 Specification

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

35 Substitution of standardized prescribed for designated concrete

1. General: Conform to BS 8500-2, clause 9.
2. Substitution: In accordance with BS 8500-1, Table A.14.
   2.1. Proposals: Submit for each substitution, stating reasons.
3. Site mixing: Conform to BS 8000-2.1, subsections 2, 3 and 4.
   3.1. Restrictions: Maximum pour size of $1m^3$

45 Properties of fresh concrete

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

50 Premature water loss

1. Requirement: Prevent water loss from concrete laid on absorbent substrates.
   1.1. Underlay: Polyethylene sheet 250 micrometres thick.
   1.2. Installation: Lap edges 150 mm.

60 Placing and compacting

1. Surfaces to receive concrete: Clean, with no debris, tying wire clippings, fastenings or free water.
2. Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
3. Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum). Do not place against frozen or frost covered surfaces.
4. Compaction: Fully compact to full depth to remove entrapped air especially around reinforcement, cast-in accessories, into corners of formwork and at joints. Continue until air bubbles cease to appear on the top surface.
   4.1. Methods of compaction: To suit consistence class and use of concrete.

70 Curing and protecting

1. Evaporation from surfaces of concrete: Prevent throughout curing period.
   1.1. Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
   1.2. Top surfaces: Cover immediately after placing and compacting. Replace cover immediately after any finishing operations.
2. Curing periods
   2.1. Surfaces which in the finished building will be exposed to the elements, and wearing surfaces of floors and pavements: 10 days (minimum).
   2.2. Other structural concrete surfaces: 5 days (minimum).
3. Protection: Protect concrete from shock, indentation and physical damage.

Ω End of Section

E20
Formwork for in situ concrete

Clauses

70 Formwork

1. General: Accurately and robustly constructed to produce finished concrete to the required dimensions.
2. Formed surfaces: Free from twist and bow with intersections, lines and angles square, plumb and true.
3. Joints between forms and completed work: Prevent loss of grout and formation of steps.
4. Holes and chases: Form with inserts or box out as required.

Ω End of Section

E41
Worked finishes to in situ concrete

Clauses

10 Finishing

1. Timing: Carry out at optimum times in relation to setting and hardening of concrete.
2. Prohibited treatments to surfaces
   - 2.1. Wetting to assist surface working.
   - 2.2. Sprinkling cement.

20 Smooth floated finish

1. Surface on completion: Even, with no ridges or steps.

Ω End of Section

F10
Brick/ block walling

Clauses

36 Concrete common blockwork

1. Description: To all new concrete blockwork walls, refer also to engineers drawings
2. Blocks: To BS EN 771-3.
   - 2.1. Manufacturer: Submit proposals
   - 2.2. Product reference: Submit proposals
   - 2.3. Configuration: Group 1
   - 2.4. Compressive strength: 7.5 N/mm²
   - 2.5. Category: I
   - 2.6. Freeze/ thaw resistance: Suitable for exposed external use below dpc
   - 2.7. Thermal properties: N/A, (see below for thermal blockwork)
   - 2.8. Recycled content: Submit proposals
   - 2.9. Work sizes (length x width x height): 440 x 100 x 215 mm
     - 2.9.1. Tolerance category: D2
   - 2.10. Special shapes: n/a to be cut and dressed onsite as required.
   - 2.11. Additional requirements: n/a
3. Mortar: As section Z21.
   - 3.1. Standard: To BS EN 998-2
   - 3.2. Mix: refer to engineers details
4. Bond: Half lap stretcher

37 Autoclaved aerated concrete (AAC) common blockwork

1. Description: Aerated blockwork at base of walls to prevent cold bridging - refer to G-200 series details for locations
2. Blocks: To BS EN 771-4.
   - 2.1. Manufacturer: Submit proposals
     - 2.1.1. Product reference: Submit proposals
   - 2.2. Configuration: Solid
   - 2.3. Mean compressive strength (minimum): 7.0 N/mm²
     - 2.3.1. Category: I
   - 2.4. Thermal conductivity (maximum): ≤ 0.17 W/mK (or as required to achieve Psi-values in DEAP assessment).
   - 2.5. Recycled content: Submit proposals
   - 2.6. Work sizes (length x width x height): 440 x 100 x 215 mm
     - 2.6.1. Tolerance category: GPLM.
   - 2.7. Special shapes: None, cut onsite
   - 2.8. Additional requirements: None
3. Mortar: As section Z21. Thin-bed proprietary mortar strictly in accordance with manufacturer's instructions (essential to maintain thermal continuity).
   - 3.1. Standard: refer to engineers details
   - 3.2. Mix: refer to engineers details

4. Bond: Half lap stretcher

51 Basic workmanship

1. Bond where not specified: Half lap stretcher.
2. Mortar joints: Fill all vertical joints. Lay bricks, solid and cellular blocks on a full bed.
3. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
4. Clay block joints
   - 4.1. Thin layer mortar: Lay blocks on a full bed.
   - 4.2. Interlocking perpends: Butted.
5. Quoins and advance work: Rack back.
6. Locations for equal levelling of cavity wall leaves
   - 6.1. Every course containing vertical twist type ties or other rigid ties.
   - 6.2. Every third tie course for double triangle/ butterfly ties.
   - 6.3. Courses in which lintels are to be bedded.
7. Lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.2 m above any other part of work at any time.
8. Daily lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.5 m for any one leaf.
9. Lift height (maximum) for walling using thin layer mortar: 1.3 m above any other part of work at any time.

55 Facework

1. Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.
2. Brick/ block selection: Do not use units with damaged faces or arrises.
3. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
4. Coursing brickwork and concrete blockwork: Evenly spaced using gauge rods. To produce satisfactory junctions and joints with built-in elements and components.

60 Alterations/ Extensions

1. Coursing: Line up with existing work.
2. Block bonding new walls to existing: Unless agreed otherwise cut pocket requirements as follows:
   - 2.1. Width: Full thickness of new wall.
   - 2.2. Depth (minimum): 100 mm.
   - 2.3. Vertical spacing: As follows:
   - 2.4. Brick to brick: 4 courses high at 8 course centres.
   - 2.5. Block to block: Every other course.
   - 2.6. Pocket joints: Fully filled with mortar.
3. New and existing facework in the same plane: Bonded together at every course to achieve continuity of bond and coursing.
4. Support of existing work: Fully consolidate joint above inserted lintel or masonry with semidry mortar to support existing structure.

66 Fire stopping

1. Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

Ω End of Section

F21
Natural stone/ ashlar walling/ dressings

Types of walling/ dressings

110 Ashlar

1. Description: New stone plinth and cornice to Courthouse extension (elements to be integrated in block walling as per section F10).
2. Stone: To BS EN 771-6.
   - 2.1. Name (traditional): Lecarrrow Limestone
   - 2.2. Petrological family: Limestone
   - 2.3. Colour: Light grey
   - 2.4. Origin: within Ireland. Submit proposals.
   - 2.5. Finish: Sawn Cut
   - 2.6. Supplier: Contractor's choice
   - 2.7. Unit dimension tolerances: Category D2
   - 2.8. Compressive strength: 110-126 N/mm^2
   - 2.9. Porosity by volume: 66.5 MPa
   - 2.10. Density: 2690 Kg/m^3
   - 2.11. Modulus of elasticity: 751 KN/mm^2
   - 2.12. Flextural strength: 14.7 N/mm^2
   - 2.13. Thermal conductivity: 2.5-3.1 W/mK
   - 2.14. Quality: Free from vents, cracks, large fissures, sand and clay holes, discolouration, or other defects deleterious to durability, structural integrity or appearance. Before delivery to site, season thoroughly, dress and work in accordance with shop drawings prepared by supplier.
3. Mortar: As section Z21.
   - 3.1. Standard: To BS EN 998-2
   - 3.2. Mix –for site-batched and site-mixed mortar, select from: refer to engineers details
   - 3.3. Sand: To BS EN 13139; crushed stone with grading to approval
4. Bond: Half-lap stretcher
5. Joints:
   - 5.1. Width: 3 mm
   - 5.2. Pointing: Contractor's choice

General/ production

250 Cutting and dressing of stone

1. Timing: After seasoning but before delivery to site
2. Accuracy
   - 2.1. Exposed and joint surfaces: Square, true planes free from hollow or rough areas.
   - 2.2. Dimensions: Maintain specified joint widths.
3. Orientation for natural bed of stones: Vertical and at right angles to wall face ('edge-bedded') with the exception of terminal stones.

260 Identification of stone units

1. Marking: Clearly and indelibly on concealed faces to indicate the natural bed and position in the finished work.

Laying and jointing

300 Reference panels

1. General: Complete areas of specified walling types and obtain approval of appearance before proceeding further.
2. Walling type: F10/36
   2.1. Location: Courthouse extension
   2.2. Features: Plinth and cornice

315 Adverse weather

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature
   2.1. Cement-gauged mortars: Do not lay stones at or below 3°C and falling, or below 1°C and rising.
   2.2. Hydraulic lime:sand mortars: Do not lay stones at or below 5°C and falling, or below 3°C and rising.
3. Temperature of walling during curing: Above freezing until mortar hardened.
4. Newly erected walling: Protect at all times from rain and snow, from drying out too rapidly in hot conditions and in drying winds.

325 Laying generally

1. Stone selection: Do not use units with damaged faces or arrises.
2. Accuracy
   2.1. Courses: Level and true to line.
   2.2. Faces, angles and features: Plumb.
   2.3. Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
3. Absorbent stones: Dampen in warm weather to reduce suction. Do no soak.
4. Mortar joints
   4.1. Laying: Full bed of mortar with all joints and voids filled.
   4.2. Temporary distance pieces: Lead or stainless steel. Remove when mortar is sufficiently strong.
   4.3. Appearance: Neat and consistent.
5. Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains not permitted.

330 Walling below ground level

1. Extent of facework below finished level of adjoining ground or external works (minimum): 100-150mm

Ω End of Section

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

To be read with preliminaries/ general conditions.

5 Cavities

1. Concrete fill to base of cavity:
2. Concrete generally: To BS EN 206 and BS 8500-2.
3. Concrete type: as per engineer's drawings and specifications
   3.1. Workability: High.
4. 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.
5. Placement: Compact to eliminate voids.
6. Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

6 Cleanliness

1. Cavity base and faces, ties, insulation and exposed dpcs: Free from mortar and debris.

7 Perpend joint weep holes

1. Form: Open clear perpend joint.
2. Locations: Through outer leaf, immediately above base of cavity, at cavity trays, stepped dpcs and over openings. 75 mm above top of cavity fill at base of cavity.
3. Provision: At not greater than 1000 mm centres and not less than two over openings.

12 Partial fill cavity insulation

1. Insulation: Polyisocyanurate (PIR) foam boards to BS EN 13166
   1.1. Product certification: British Board of Agrément (BBA)
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Recycled content: Contractor's choice
4. Face size: 1200 x 450 mm
5. Thickness (nominal): 100 mm
6. Thermal conductivity: 0.022 W/(m•K)
7. Reaction to fire class: A1
8. Additional requirements: None
9. Placement: Secure against face of inner leaf.
10. Residual cavity: Clear and unobstructed.
11. Joints between boards, at closures and penetrations: No gaps and free from mortar and debris.

19 Cavity ventilators

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Material/ colour: Plastics/ to match adjoining render

25 Cavity wall ties used with partial fill insulation

1. Description: To facades of new extension of the Courthouse, as per G-225.

2. Standard: To BS EN 845-1.
   2.1. Type: 2 (Masonry general purpose)
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Material/ finish: Austenitic stainless steel - material/ coating reference 1 or 3
5. Sizes: 300 mm
6. End types: Symmetrical triangle
7. Embedment length (minimum): 50 mm
8. Movement: Tolerant
9. Additional requirements: None
10. Tie-mounted insulation retaining clips: As recommended by the manufacturer.

33 Fixing ties in masonry cavity walls with partial fill cavity insulation

1. Embedment in mortar beds (minimum): 50 mm.
2. Placement: Sloping downwards towards outer leaf without bending. Drip centred in the cavity and pointing downwards.
3. Spacing: Evenly spaced in non-staggered horizontal and vertical rows:
   3.1. Horizontal centres: 600 mm
   3.2. Vertical centres: 450 mm
4. Provision of additional ties: Within 225 mm of reveals of unbonded openings and at the vertical reveals of unsupported masonry At not more than 300 mm centres vertically.

39 Wall starters/ connectors

1. Manufacturer: Submit proposals
   1.1. Product reference: Submit proposals
2. Standard: To EN 845-1
3. Material/ finish: Austenitic stainless steel - EN 845-1 material/ coating reference 1
4. Sizes: certified for proposed use
5. End type: Asymmetrical deformed plate and flat plate for mortar bedding
6. Sealant to external vertical joint: n/a
   6.1. Colour: n/a
   6.2. Joint preparation and sealant application: n/a

46 Damp-proof course – plastics & Radon proof

1. Standard: To EN 14909
2. Manufacturer: Submit proposals
   2.1. Product reference: Submit proposals
3. Material: Polyethylene
4. Other requirements: to be fully compatible, and sealed to, the radon barrier, complaint with IS 57 and available in up to 900mm wide rolls. Installed according to manufacturers details and as per G-200 series of drawings.

62 Site-formed dpc/ cavity tray junctions/ stop ends

1. Three dimensional changes in shape: Form to provide a free draining and watertight installation.
2. Alternative use of preformed cloaks/ stop ends: Submit proposals.

66 Installation of horizontal dpcs

1. Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
2. Width: At least full width of masonry leaf. Edges of dpc not covered with mortar or projecting into cavity.
3. Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
4. Overall finished joint thickness: As close to normal as practicable.
5. Ground level dpcs joint with damp-proof membrane: Continuous and effectively sealed.
6. Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
7. Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
8. Dpcs crossing cavity: Provide support to prevent sagging.

68 Sealing of dpcs

1. Description: GENERALLY
2. Overlaps and junctions: Seal with as recommended by manufacturer.

72 Installation of gas-resistant dpcs/ cavity trays

1. Joint treatment: Use continuous length wherever possible, otherwise lap at least 150 mm and seal to form gas and watertight installation.
2. Joint with damp-proof membrane: Overlap dpc/ cavity tray not less than 150 mm.

74 Installation of vertical dpcs

1. Form: In one piece wherever possible.
    1.1. Joints: Upper part overlapping lower not less than 100 mm.
2. Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25 mm into cavity and maintain full contact with frames.
3. Fixing of jamb dpcs to back of built-in timber frames: Secure using galvanized clout nails or staples.

75 Installation of site-formed cavity trays

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

81 Sills To existing windows

1. Description: To W00.08 and other existing windows that require a new sill.
2. Standard: To BS 5642-1.
3. Material: Stone to match existing sills
4. Dimensions: As shown on drawings.
5. Finish: To match existing sills

6. Mortar for bedding/ jointing: Cement-gauged as section Z21.
7. Joints: Flush.
8. Bedding one-piece sills: Leave bed joints open except under end bearings and masonry mullions. On completion, point to match adjacent work.

150 Ventilated Chimney Cap

1. **Fabrication:** Supply and fit Code 5 Lead capping sheet dressed over existing chimney pot.

   Ventilation Gap: Lead cap to be raised **50mm** above the pot rim using stainless steel or copper separation straps/legs. Cap must **not** sit flush on the pot.

   Restraint: Straps to be mechanically fixed or wired securely to the pot to withstand wind uplift.

   Bird Protection: Fit stainless steel wire mesh (20mm grid) within the 50mm ventilation void to prevent jackdaw entry.

   Execution: Ensure the lead drip edge extends minimum 75mm down the side of the pot to prevent wind-driven rain ingress.

Ω End of Section

G20
Carpentry/ timber-framing/ first fixing

Clauses

2 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests/ plantations in accordance with:
   1.1. The laws governing forest management in the producer country or countries.
   1.2. International agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
   2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied. or
   2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of Custody Certification scheme: Submit proposals

5 Structural softwood

1. Description: FOR STRUCTURAL USE GENERALLY
2. Grading standard: To the appropriate BS EN 14081-1-compliant standard.
   2.1. Grade: GS to BS 4978
3. Strength class to BS EN 338: C24
4. Treatment: Stained to blend with existing timbers using a dark colour water based wood stain;

   Wallplate to be pressure treated.

   Other Requirements:
   planed all over, and replaced with the existing like for like.

15 Plywood

1. Description: sundry non-structural, non-visible plywood, 18mm wbp. For visible plywood refer to Clause K13
2. Standard: To an approved national standard.
3. Service class to BS EN 1995-1-1: Class 2
4. Use class to BS EN 335: Subclass 3.1
5. Nominal thickness: 18 mm
6. Appearance class to BS EN 635: III
7. Bonding quality to BS EN 314-2: Class 3
8. Finish: Unsanded
9. Treatment: n/a

30 Selection and use of timber

1. Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.

32 Notches, holes and joints in timber

1. Notches and holes: Position in relation to knots or other defects so that the strength of members will not be reduced.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

35 Processing treated timber

1. Cutting and machining: Carry out as much as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
3. Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

40 Moisture content

1. Moisture content of wood and wood-based products at time of installation: Not more than:
    1.1. Covered in generally unheated spaces: 24%.
    1.2. Covered in generally heated spaces: 20%.
    1.3. Internal in continuously heated spaces: 20%.

50 Additional supports

1. Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling-mounted appliances, fixtures, etc. shown on drawings.
2. Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

55 Joists generally

1. Centres: Equal, and not exceeding designed spacing.
2. Bowed joists: Installed with positive camber.
3. End joists: Positioned about 50 mm from masonry walls.
4. Acoustic Insulation between joists::
    - **Material:** Mineral Stone Wool slabs.
    - **Thickness:** 100mm.
    - **Minimum Density:** 45 kg/m³ (Required to meet TGD Part E airborne sound resistance).
    - **Installation:** Friction fitted tightly between joists with no air gaps.

60 Joists on hangers

1. Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
2. Joists: Cut to leave not more than 6 mm gap at each end. Rebated to lie flush with underside of hangers.
3. Fixing to hangers: A nail in every hole.

65 Joist hangers

1. Description: GENERALLY
2. Manufacturer: Contractor's choice
    2.1. Product reference: Contractor's choice
3. Material/ finish: Hot-dip-galvanized steel plate

4. Size: To suit joist, design load and crushing strength of supporting construction.

70 Trimming openings

1. Trimmers and trimming joists: Not less than 25 mm wider than general joists.

95 Strutting to floor joists

1. Type: One of the following:
   1.1. Herringbone strutting: At least 38 x 38 mm softwood, C24 grade, planed all over. Visible on completion, fixings to be concealed and/or neatly filled
   1.2. Solid strutting: At least 38 mm thick softwood and at least three quarters of joist depth.
2. Fixing: Between joists as follows:
   2.1. Joist spans of 2.5 to 4.5 m: One row at centre span.
   2.2. Joist spans over 4.5 m: Two rows equally spaced.
   2.3. Not projecting beyond top and bottom edges of joists.
3. Outer joists: Blocked solidly to perimeter walls.

98 Eaves soffit ventilation

1. Soffit boards: Fixed to leave a continuous ventilation opening not less than 25 mm wide for full length of eaves.
2. Insect mesh: 3-4 mm mesh screen fixed across the opening to prevent large insect entry.

99 Fascias/ barges/ soffits

1. Description: Fascias, generally
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Material: Solid timber
4. Finish: Painted
5. Colour: White
6. Nominal depth: 12mm
7. Edge profile: Square
8. Fixings: 35 mm screws

Ω End of Section

H51
Natural stone slab cladding/ lining/ features

Types of cladding

110 Cladding

1. Description: Stone fins and cladding to North and West elevation of the new-build extension
2. Support structure: Concrete blockwork wall or Steel frame, as per drawings G-200s
3. Stone cladding system:
   - 3.1. Standard: In accordance with BS 8298-2
   - 3.2. Type: Natural stone slabs supported on stainless steel angles and support brackets, secured to structural wall
4. Stone slab
   - 4.1. Standard: To BS EN 1469
   - 4.2. Supplier: Contractor's choice
   - 4.3. Denomination to BS EN 12440
     - 4.3.1. Name (traditional): Lecarrow Limestone
     - 4.3.2. Petrological family: Limestone
   - 4.4. Colour: Light grey
   - 4.5. Quarry: within Ireland. Submit proposals
   - 4.6. Face dimensions, length (l) x width (b): As shown on drawings
   - 4.7. Thickness (d): As shown on drawings
   - 4.8. Finish: Sawn Cut
5. Stone quality: Free from vents, cracks, large fissures, sand and clay holes, discolouration, or other defects deleterious to durability, structural integrity or appearance. Before delivery to site, season thoroughly, dress and work in accordance with shop drawings prepared by supplier
   - 5.1. Porosity by volume: 66.5 MPa
   - 5.2. Density: 2690 Kg/m^3
   - 5.3. Compressive strength: 110-126 N/mm^2
   - 5.4. Modulus of elasticity: 751 kN/mm^2
   - 5.5. Flextural strength: 14.7 N/mm^2
   - 5.6. Thermal conductivity: 2.5-3.1 W/mK
6. Fixings: As determined by clause 207
7. Joints
   - 7.1. Type: Drytacked (fins) and Cement:lime:sand mortar-filled, as clause 585 (cladding elements)

General requirements/ preparatory work

207 Completion of design

1. Description: Stone fins and cladding to North and West elevation of the new-build extension
2. Design responsibility: Complete the detailed design to satisfy specified performance criteria, and coordinate with the detailed design of related and adjacent work
3. Performance requirement: In accordance with BS 8298-2
4. Design requirements: As clause 110, and in accordance with clause 325

5. Thermal Bridging Performance:: **Requirement:** System must achieve a linear thermal transmittance (Ψ-value) of ≤ 0.15 W/mK at corners and junctions.

   Verification: Submit thermal modelling calculations (BRE IP 1/06) demonstrating surface temperatures remain above dew point to prevent condensation (fRsi ≥ 0.75).

Design/ performance requirements

325 Design requirements

1. Design standard: In accordance with BS 8298-2
2. Stone type: As per clause 110
3. Performance characteristics
   - 3.1. Geometric: Measured in accordance with BS EN 13373
   - 3.2. Tolerance on nominal thickness: To BS EN 1469, Table 1
   - 3.3. Flatness deviation: To BS EN 1469, clause 4.1.3
   - 3.4. Length, width and squareness tolerance: To BS EN 1469, Table 8
   - 3.5. Special shapes deviation: To BS EN 1469, clause 4.1.3
   - 3.6. Location of dowel holes: Indicated on engineers drawings and tolerances to BS EN 1469, clause 4.1.6
   - 3.7. Surface finish: Indicated on engineers drawings and to BS EN 1469, clause 4.1.8
4. Physical and mechanical characteristics
   - 4.1. Visual appearance: To BS EN 1469, clause 4.2.3
   - 4.2. Flexural strength: To BS EN 12372
   - 4.3. Resistance to fixings: To BS EN 13364
   - 4.4. Water absorption at atmospheric pressure: To BS EN 13755
   - 4.5. Reaction to fire: To BS EN 13501-1, Class A1
   - 4.6. Water absorption by capillarity: To BS EN 1925
   - 4.7. Durability of flexural strength against freeze thaw: To BS EN 12371
   - 4.8. Resistance to thermal shock: To BS EN 14066
   - 4.9. Resistance to thermal and moisture cycling: To BS EN 16306
   - 4.10. Water vapour permeability: To BS EN ISO 12572 and/ or BS EN ISO 10456
   - 4.11. Direct airborne sound insulation: To BS EN 1936
   - 4.12. Thermal conductivity: To BS EN 1925
5. Verification and declaration of emissions to be carried out, taking account of national provisions in place of use.
6. Impact resistance: In accordance with CWCT TN 75 and TN 76

330 Accuracy of erection

1. Elevation joints widths: Within joint lengths, including in-line continuations across transverse joints, as follows:
   - 1.1. Tolerance: Greatest width not to exceed least width by more than 10%.
2. Evenly distribute, with no sudden changes
3. Offset in elevation: Between nominally in-line edges across transverse joints not to exceed 10 % width of joint.
4. Offset in plan or section: Between flat faces or adjacent panels across joints not to exceed 10 % width of joint.
5. Sealant joints width limitations: To recommendations of sealant manufacturer

6. Finished work: Square, regular, true to line and plane with satisfactory fit at junctions

Testing - Not Used

Fabrication and installation

510 Generally

1. Location of joints: Joints must occur only at positions indicated on final detailed drawings
2. Electrolytic corrosion: Isolate dissimilar metals
3. Prefabrication: Machine-cut and drill products in workshop wherever possible
4. Identification: Mark or tag products. Do not mark surfaces visible in the complete installation
5. Natural bed: Indicate on a non-exposed surface of each stone
6. Cleanliness: Keep facework clean
7. Protection: Isolate and protect each stone with packers or protective coverings for transportation and in construction. Provide temporary protection over whole installation. Ensure that all arises are protective as long as possible, with material that will not mark or stain the stone

550 Installation of interfaces

1. General: Locate flashings, closers, etc. correctly with neat overlaps to cladding to form weatherproof junctions

580 Fixing

1. Torque figures and shim dimensions: Do not exceed fixing manufacturer's recommendations
2. Grouting: Secure fixings in place in cladding and support structure/ background with cement:sand, epoxy or modified polymer mix, as recommended by the stone supplier

   Fixings for Stone Fins:

   - **Primary Restraint:** Stainless Steel (Grade 1.4301/304) restraint brackets with welded dowels.
   - **Dowel Adhesive:** High-strength, two-part polyester or epoxy resin anchor grout (e.g., Hilti HIT or similar). **Cement-based grout is not permitted for fin dowels.**
   - **DPC:** Vertical DPC to be installed between stone fin and backing concrete/blockwork to prevent moisture tracking.

3. External cladding: Do not use mortar spacer dabs. Keep cavity clear of debris
4. Give notice: Before covering up loadbearing fixings

585 Cement:lime:sand mortar jointing

1. General: As section Z21
2. Mix: Cement:lime:sand 1:1:5-6
3. Special requirements: None
4. Preparation: Wet stones thoroughly
5. Laying: Full mortar bed with joints and voids filled
6. Cavities: Clear of mortar
7. Appearance: Neat and consistent
8. Temporary distance spacers: Remove

Ω End of Section

H62
Natural slating

To be read with preliminaries/ general conditions.

3 Roof slating

1. Description: To existing building where alterations are needed.
2. Substrate: Existing roof build-up to remain
3. Pitch: 26° and 28°, as per drawings
4. Underlay: Vapour-permeable underlay to BS EN 13859, Class W1
   - 4.1. Recycled content: Submit proposals
   - 4.2. Direction: Parallel to eaves.
   - 4.3. Head-lap (minimum): 150 mm
5. Counter battens
   - 5.1. Size: To match existing
   - 5.2. Fixing: To match existing
6. Battens
   - 6.1. Size: To match existing
   - 6.2. Fixing: To match existing
7. Slates
   - 7.1. Supplier: Existing slates salvaged from site to be reused. Make up deficit with reclaimed Blue Bangor slates of matching size, thickness, and patina.
   - 7.2. Product reference: Submit proposals
   - 7.3. Type: Blue Bangor
   - 7.4. Size: To match existing coursing. Contractor to conduct slate survey prior to ordering.
   - 7.5. Head-lap (minimum): 150mm
   - 7.6. Fixing: **Nails:** Copper clout nails (3.35mm shank) generally.
     Verges/Eaves: Two fixings per slate.
     Aluminium Interfaces: Ensure isolation strip between copper fixings and new aluminium trims (Drawing G-131) to prevent bimetallic corrosion.
   - 7.7. Accessories: n/a

20 Removing existing slating

1. General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.
2. Undamaged slates: Set aside for reuse.

25 Underlay

1. Handling: Do not tear or puncture.
2. Laying: Maintain consistent tautness.
3. Vertical laps (minimum): 100 mm wide, coinciding with supports.
4. Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
5. Eaves: Where exposed, use an external grade (UV-resistant) underlay or a proprietary eaves support product.
6. Penetrations: Use proprietary underlay seals or cut underlay neatly.
7. Ventilation paths: Do not obstruct.

30 Battens/ Counterbattens

1. Timber: Sawn softwood.
   1.1. Standard: In accordance with BS 5534, Annex D.
   1.2. Moisture content at time of fixing and covering (maximum): 22%.
2. Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
   2.1. Type: Contractor's choice

32 Batten fixing

1. Setting out: Align parallel to ridge in straight horizontal lines to gauge of slates. Align on adjacent areas.
2. Batten length (minimum): Sufficient to span over three supports.
3. Joints in length: Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
4. Additional battens: Provide where unsupported laps in underlay occur between battens.

35 Slate fixing

1. General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
2. Setting out: To true lines and regular appearance. Lay slates with slightly open (maximum 5 mm) butt joints. Align tails.
3. Slate thickness: Consistent in any one course. Lay with thicker end as tail.
4. Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
5. Top course: Head-nail short course to maintain gauge.
6. Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
   6.1. Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
   6.2. Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier’s recommendations.

40 Mortar bedding/ Pointing

1. Mortar: As section Z21.
   1.1. Mix: In accordance with BS 5534, 1:3 cement:sand, with plasticizing admixtures permitted.
2. Weather: Do not use in wet or frosty conditions or when imminent.
3. Appearance: Finish neatly and remove residue.

47 Eaves

1. Ventilation components
   1.1. Manufacturer: Contractor's choice
      1.1.1. Product reference: Contractor's choice
2. Underlay support: Contractor's choice
   2.1. Continuous to prevent water retaining troughs.
3. Gutter: Dress underlay or underlay support tray to form drip into gutter.
4. Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter.

52 Bedded verges with bedded undercloak

1. Underlay: Carry 50 mm onto outer leaf of gable wall and bed on mortar.
2. Undercloak: Slates, sloping towards verge and projecting 38-50 mm beyond face of wall.
   2.1. Bedding: On mortar identical to that used in gable walling.
3. Slating battens: Carry onto undercloak and finish 100 mm from verge edge.
4. Verge slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with flush profile.

53 Bedded verges with nailed undercloak

1. Underlay: Carry over full width of verge.
2. Undercloak: Slates, nail fixed, sloping towards verge and projecting 38-50 mm beyond face of barge board.
3. Slating battens: Carry onto undercloak and finish 100 mm from verge edge.
4. Verge Slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with flush profile.

56 Mitred hips

1. Underlay: Lay courses over hip. Overlaps (minimum) 150 mm.
2. Mitred slates: Cut extra wide slates and fix to form a straight, close mitred junction.
3. Soakers: Interleave and turn down over head of mitred slates.

57 Mortar-bedded and mechanically fixed tile hips

1. Underlay: Lay courses over hip. Overlaps (minimum) 150 mm.
2. Hip tile fixing battens: n/a
3. Roof slates: Cut and fix closely at hip.
4. Hip irons: Galvanized steel in accordance with BS 5534, clause 4.15.4. Fix to hip rafter or hip batten with not less than two zinc coated steel screws.
5. Hip tiles
   5.1. Manufacturer: Submit proposals
      5.1.1. Product reference: Submit proposals
   5.2. Bedding: On mortar, continuous to edges and solid to joints.
   5.3. Fixing: Secure all hip tiles to hip rafters or hip tile fixing battens with self-sealing non-ferrous through fixings.
   5.4. Bottom hip tiles: Shape neatly to align with corner of eaves and fill ends with mortar and slips of tile finished flush.

70 Side abutments

1. Underlay: Turn up not less than 100 mm at abutments.
2. Abutment slates: Cut as necessary. Fix close to abutments.
3. Soakers: Interleave and turn down over head of abutment slates.

71 Top edge abutments

1. Underlay: Turn up not less than 100 mm at abutments.
2. Top slate courses: Fix close to abutments.

75 Dry ventilated tile ridges

1. Underlay: Provide air gap at apex.
2. Dry ridge tiles

2.1. Manufacturer: Submit proposals

2.1.1. Product reference: Submit proposals

3. Ridge terminals

3.1. Manufacturer: Submit proposals

3.1.1. Product reference: Submit proposals

Ω End of Section

H71
Lead sheet fully supported roof coverings/ flashings

To be read with preliminaries/ general conditions.

3 Lead sheet fully supported roof covering

1. Description: To new extension rooflights upstands
2. Covering system: Rolled lead sheet batten roll
3. Fire performance: Not required
4. Insulation: 35 mm PIR/PUR to BS EN 13165
5. Sarking or roof boarding: n/a
6. Membrane: Vapour permeable sheet in accordance with BS EN 13859-1
7. Substrate: Plywood (minimum 18 mm) on rafters
   7.1. Preparation: Not required
8. Sheet underlay: Building paper to BS 1521, Class A1
9. Lead
   9.1. Type: Rolled to BS EN 14783
   9.2. Thickness: 2.50 or 2.65 mm (Code 6)
10. Joints in direction of fall: Welted seams
    10.1. Spacing: Regular, not more than 600 mm
11. Cross joints: Not permitted
12. Accessories: Apply patination oil coating to top surface and underside of lead, and allow to dry before laying

50 Flashings

1. Description: To roof lights or new extension and junction with existing roof of the courthouse.
2. Lead
   2.1. Type: Rolled to BS EN 12588
   2.2. Thickness: 1.75 or 1.80 mm (Code 4) and 2.00 or 2.24 mm (Code 5) as per drawings

   To BS EN 12588. 1. **Code 6:** Required for all pediment flashings, chimney caps, and ridge/hip rolls. 2. **Code 5:** Required for valley gutters and general apron flashings.
3. Dimensions
   3.1. Lengths: Not more than 1500 mm.
4. Fixing: Nail top edge at 150 mm centres and welt edge. Clip bottom edge at laps and 500 mm centres.

60 Materials and workmanship generally

1. Lead production method: Refer to clause H71/3 and H71/50.
2. Identification: Colour marked for thickness/ code, weight and type.
3. Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Training Academy
4. Fabrication and fixing: To provide a secure, free draining and weathertight installation.
5. Marking out: Do not use scribers or other sharp instruments to mark out lead without approval.
6. Solder: Use only where specified.

7. Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
8. Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

62 Lead-welding

1. In situ lead-welding: Not permitted.

75 Timber for use with leadwork

1. Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
2. Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
3. Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

77 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners, and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

78 Fixing lead sheet

1. Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
2. Fixings
    - 2.1. Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
        - 2.1.1. Shank type: Annular ringed, helical threaded or serrated.
        - 2.1.2. Length: Not less than 20 mm or equal to substrate thickness.
    - 2.2. Screws to concrete or masonry substrates: Brass or stainless steel.
        - 2.2.1. Diameter: Not less than 3.35 mm.
        - 2.2.2. Length: Not less than 19 mm.
        - 2.2.3. Washers and plastics plugs: Compatible with screws.

83 Wedge fixing into joints/ chases

1. Joint/ chase: Rake out to a depth of not less than 25 mm.
2. Lead: Dress into joint/ chase.
    - 2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
3. Sealant: Contractor's choice
    - 3.1. Application: As section Z22.

85 Wedge fixing into damp-proof course joints

1. Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm.
2. Lead: Dress into joint.
    - 2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
3. Sealant: Contractor's choice

3.1. Application: As section Z22.

91 Wood-cored roll joints without splash lap

1. Wood core
   1.1. Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
   1.2. Fixing to substrate: Brass or stainless steel countersunk screws at not more than 300 mm centres.
2. Undercloak: Dress half way around core.
3. Copper or stainless steel clips: Fix to core at not more than 450 mm centres. Do not restrict thermal movement of the undercloak.
4. Overcloak: Dress around core with edge welted around ends of clips, finishing 5 mm clear of main surface.

92 Wood-cored roll joints with splash lap

1. Wood core
   1.1. Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
   1.2. Fixing to substrate: Brass or stainless steel screws at 300 mm centres.
2. Undercloak: Dress three quarters around core.
   2.1. Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.
3. Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

98 Welted joints

1. Joint allowance: 50 mm overlap, 25 mm underlap.
2. Copper or stainless steel clips: Fix to substrate at 450 mm centres.
3. Overlap: Welt around underlap and clips and lightly dress down.

99 Patination oil

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Location: To lead covered rooflights.
3. Application: As soon as practical, apply a smear coating to lead, evenly in one direction and in dry conditions.

Ω End of Section

H72
Aluminium strip/ sheet fully supported roof coverings/ flashings

To be read with preliminaries/ general conditions.

3 Aluminium sheet fully supported roof covering

1. Description: To new shelter and plant room roof
2. Covering system: Preformed standing seam sheet
3. Fire performance: Class A1 to BS EN 13501-1.
4. Insulation: High-density mineral wool insulation board to meet acoustic requirements specified in **Section K10**; thickness to achieve U-value of **0.18 W/m²K** (verify against thermal calcs).
5. Sarking or roof boarding: As **K11/210**. 18mm WBP plywood, fixed with countersunk stainless steel fasteners to ensure a flush surface.
6. Membrane: High-performance vapour control layer (VCL) to **Section K32**, fully sealed at perimeters and penetrations.
7. Substrate: Plywood (minimum 18 mm) on ($50 \times 50 \text{ mm}$) treated timber battens forming a ventilated cavity in accordance with **BS 5250**.
    - **7.1 Pitch:** 10° (Note: Any areas falling below 7° to be fitted with internal seam sealant).
    - **7.2 Preparation:** Surfaces to be clean, dry, and free of sharp protrusions.

    7.1. Pitch: 10°
    7.2. Preparation: Make good, as clause 53
8. Sheet underlay: **Structured (spacer) breathable underlay** (e.g., dimpled HDPE mesh) to provide a 5mm drainage/ventilation gap between the aluminium and the plywood.
9. Aluminium
    9.1. Standard: To BS EN 14783
    9.2. Alloy designation: Manufacturer's standard
    9.3. Temper: Manufacturer's standard
    9.4. Finish: **PVDF 2-layer coating** (min 25 microns).
    9.5. Thickness: 0.7 mm
10. Longitudinal joints: Standing seams
    10.1. Spacing: 400 mm
11. Cross joints: Double lock welts
    11.1. Spacing: Regular, not more than 3 m

12 Weathering to

1. Description: To external soffit/flashings of covered entrance to Courthouse extension. Refer to G-200s for details.
2. Sheet underlay: EPDM on Structural underlay
3. Aluminium
    3.1. Alloy designation: EN AW-1050A or manufacturer's standard
    3.2. Temper: H14 or manufacturer's standard
    3.3. Finish:: Polyester powder-coated to RAL 9006 or similar

3.4. Thickness: 3.0 mm

4. Joints: Interlocking pre-formed profiled. Sealed.
   4.1. Spacing: 600mm maximum
5. Edge details: not applicable
6. Fixing: Screwed at regular spacings, max. 600mm centres.

40 Materials and workmanship generally

1. Standards
   1.1. Material: To BS EN 14783
   1.2. Workmanship: Generally to CP 143-15, and in accordance with the FTMRC's 'UK Guide to Fully Supported Metal Roofing and Cladding'.
2. Fabrication and fixing: To provide a free draining and weathertight installation.
3. Measuring, marking, cutting and forming: Prior to assembly wherever possible. Do not use scribers or other sharp instruments without approval.
4. Folding: With presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks.
5. Surface protection: Fully coat surfaces to be embedded in concrete or mortar with high build bitumen-based paint.
6. Sharp metal edges: Remove as work proceeds.
7. Joints: Do not use sealants to attain waterproofing.
8. Finished aluminium work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
   8.1. Protection: Prevent staining, discolouration and damage by subsequent works and avoid bimetallic corrosion.

50 Timber for use with aluminium work

1. Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
2. Moisture content: Not more than 22% at time of covering.
3. Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

52 Laying sheet underlay

1. Handling: Prevent tears and punctures.
2. Laying: Butt jointed onto a dry substrate. Fix edges with aluminium or galvanized steel staples or 20 x 3 mm extra large head clout nails. Do not lay over eaves and drip/ step aluminium underlaps.
3. Ventilation paths: Do not obstruct.
4. Keep dry and cover with aluminium at the earliest opportunity.

53 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

60 Fixings for clips

1. Nails to timber substrates: Aluminium nails to BS 1202-3 for aluminium clips, or stainless steel (austenitic) nails for stainless steel clips.

1.1. Shank type: Annular ringed or helical threaded.

1.2. Head: Flat.

1.3. Length: Not less than 25 mm or equal to substrate thickness.

2. Screws to concrete or masonry substrates: Sherardized or zinc plated steel or aluminium screws to BS EN 14592 for aluminium clips, or stainless steel (austenitic) screws to BS EN 14592 for stainless steel clips.

2.1. Length: Not less than 25 mm.

2.2. Washers and plastic plugs: Compatible with screws.

62 Clips

1. Aluminium or stainless steel (austenitic) clips: Supplied preformed by the strip/ sheet manufacturer/ supplier, or cut and formed in situ as recommended by the strip/ sheet manufacturer/ supplier.
2. Dimensions, number of fixings and provision for movement: As recommended by the strip/ sheet manufacturer/ supplier.

67 Standing seam joints

1. Joint allowances: 45 mm overlap, 35 mm underlap and not less than 5 mm gap for thermal movement. Preformed interlocking profiles are permitted.
2. Clip positions

2.1. Fixed clips: at 300 mm centres

2.2. Sliding clips: at 300 mm centres

3. Forming: Double welt overlap and clips around underlap to form a standing seam 25 mm high of consistent cross section.

80 Double lock welt joints

1. Joint allowances: 90 mm overlap, 60 mm underlap.
2. Underlap: Welt and secure with clips, one per bay.
3. Overlap: Double welt around underlap and clips and dress down.

Ω End of Section

J41
Reinforced bitumen membrane roof coverings

To be read with preliminaries/ general conditions.

10 Reinforced bitumen membrane warm deck roof covering

1. Substrate: Plywood deck, as per drawings G-200s
   1.1. Preparation: Primer
2. Air and vapour control layer: Reinforced bitumen membrane to BS 8747, Class S1P1
3. Insulation: Rigid thermoset insulation core faced on both sides with coated glass tissue facing (0.024W/mK). Insulation to be tapered to allow for a 1:80 min roof slope.
4. Overlay to insulation: Not required
5. Waterproof covering
   5.1. System manufacturer: Submit proposals
   5.2. First layer: Agrément-certified SBS-modified bitumen membrane, polyester-reinforced
      5.2.1. Attachment: Torch-on bonding
   5.3. Intermediate layer: Agrément-certified SBS-modified bitumen membrane, polyester-reinforced
      5.3.1. Attachment: Torch-on bonding
   5.4. Top layer/ capsheet: Agrément-certified SBS-modified bitumen membrane, polyester-reinforced
      5.4.1. Colour: Grey
      5.4.2. Attachment: Torch-on bonding
   5.5. Flashings and detail work: Additional layer of SBS-modified bitumen membrane, mineral-surfaced
6. Surface protection: 80mm deep white / light cream colour rounded river washed pebbbles, 30-50mm
7. Accessories: Drainage outlet to be from same system as roof membrane supplier complete with cowl and overflow
8. Other requirements: Membrane to achieve BROOF (t4)

15 Roofing generally

1. Substrates: Secure, clean, dry, smooth and free from frost, contaminants, voids and protrusions.
2. Preliminary work: Complete including:
   2.1. Grading to correct falls.
   2.2. Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
   2.3. Fixing of battens, fillets and anchoring plugs/ strips.
3. Moisture content and stability of substrate: Must not impair roof integrity.
4. Adverse weather: Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
5. Unfinished areas of roof: Keep dry. Protect edges of laid membrane from wind action.
6. Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free-draining.

26 Thermal insulation

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals

2. Standard: Rigid polyisocyanurate foam (PIR) roofboards to BS 4841-3
   2.1. Reaction to fire: Manufacturer's standard
   2.2. Thermal conductivity (minimum): 0.024 W/mK
   2.3. Thickness: 35mm, 120 mm and 200mm as per drawings.
   2.4. Compressive strength (minimum): Manufacturer's standard
   2.5. Other characteristics: None
3. Edges: Square and Tongued-and-grooved

45 Laying warm deck roof insulation

1. Setting out
   1.1. Long edges: Fully support and run at right angles to Direction of span.
   1.2. End edges: Adequately support.
   1.3. Joints: Butt together.
   1.4. End joints: Stagger.
2. Bedding: Full bed of bonding compound.
3. Mechanical fixing: Not required
4. Protection to exposed edges of insulation: Reduced thickness treated timber batten, outer edge chamfered at changes in level.
5. Completion: Boards must be in good condition, well-fitting and stable.

50 Laying reinforced bitumen membranes generally

1. Pour-and-roll bonding
   1.1. Bonding compound: Hot and fluid when bitumen membranes are laid.
   1.2. Application: Spread evenly so that a small quantity is squeezed out at each edge.
   1.3. Bond: Full over whole surface, with no air pockets.
   1.4. Excess compound at laps
      1.4.1. First and intermediate layers: Spread out.
      1.4.2. Top layer/ capsheet: Remove.
2. Torch-on bonding
   2.1. Bond: Full over whole surface, with no air pockets.
   2.2. Excess compound at laps of top layer/ capsheet: Leave as continuous bead.
3. Laps
   3.1. Direction of laying: Unrolled up the slope.
   3.2. Where practicable, install so that water drains over and not into laps..
   3.3. Side and end laps: As recommended by bitumen membrane manufacturer
   3.4. Head and side laps: Offset.
4. Intermediate and top layer/ capsheet: Fully bond.
5. Successive layers: Apply without delay. Do not trap moisture.
6. Strips of bitumen membrane for 'linear' details: Cut from length of roll.
7. Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free-draining.

70 Skirtings and upstands

1. Angle fillets: 50 x 50 mm triangular section treated timber, nail-fixed
2. Venting first layer of membrane: Stop at angle fillet. Fully bond in bitumen for 300 mm strip around perimeters. Overlap onto upstand with strips of BS 8747, Class S1P1 reinforced bitumen

membrane fully bonded with 75 mm lap onto first layer, except where subsequent two layers are of high-performance polyester-based membrane.

3. Other layers of membrane: Carry in staggered formation up upstand, with each layer fully bonded. Where practicable carry capsheet over top of upstand.
4. Upstands
   - 4.1. At ends of rolls: Form with bitumen membrane carried up without using separate strip.
   - 4.2. Elsewhere: Form with matching strips of bitumen membrane, maintaining laps.
   - 4.3. Additional fixing of bitumen membranes: Not required

Ω End of Section

K10
Gypsum board dry linings/ partitions/ ceilings

To be read with preliminaries/ general conditions.

15 Lining on timber Dry lining of existing masonry walls

1. Description: To bathrooms in existing courthouse and bridewell, refer to G-700s - Wall type 10
2. Substrate: 22x44mm timber battens at max. 400mm c/c
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
   - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 4.2. Fire resistance of complete lining assembly: Not required
5. Linings: 12.5 mm moisture resistant plasterboard
   - 5.1. Fixing: Contractor's choice
6. Finishing: Seamless jointing, prepared for tiling
   - 6.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
7. Accessories: Metal beads/ stops recommended by board manufacturer

15 Lining on timber Fire-rated partitions

1. Description: To fire-rated timber studs partitions, refer to Fire Certificate drawings and G-700s
2. Substrate: Timber studs at 400mm c/c
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
   - 4.1. Location: As per Fire Certificate and architects drawings
   - 4.2. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 4.3. Fire resistance of complete lining assembly: To BS EN 13501-2, REI30 as per documents
5. Linings: 12.5 mm gypsum plasterboard (moisture-resistant in bathrooms and kitchen).
   - 5.1. Fixing: As per manufacturers recommendations to achieve fire rating
6. Finishing: Skim coat plaster and paint as per M60/10.
   - 6.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
7. Accessories: Metal beads/ stops recommended by board manufacturer
8. Other requirements: Fire-stopping around service penetrations as section P12, grounds as required for services.

15 Lining on timber Non-fire rated partitions

1. Description: To new non-fire rated timber studs partitions, refer to G-700s
2. Substrate: Timber studs at 400mm c/c
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
   - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 4.2. Fire resistance of complete lining assembly: Not required
5. Linings: 12.5 mm plasterboard (moisture resistant for bathrooms and kitchen)
   - 5.1. Fixing: As per manufacturers recommendations
6. Finishing: Skim coat plaster and Paint as clause M60/10.
   - 6.1. Primer/ Sealer: As recommended by board manufacturer for vapour control

7. Accessories: Metal beads/ stops recommended by board manufacturer

25 Ceiling lining on timber C.01

1. Description: To all new timber floor plasterboard underside (C.01) as per drawings G-700s.
2. Substrate: Timber joists at 300mm centres.
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
   - 4.1. Location: As per Fire Certificate and architects drawings
   - 4.2. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 4.3. Fire resistance of complete ceiling assembly: To BS EN 13501-2, REI 60 as part of floor build-up
5. Linings: First layer 12.5 mm gypsum plasterboard; 15 mm fireline board
   - 5.1. Fixing: As recommended by manufacturer to achieve fire rating
6. Finishing: Skim coat plaster and Paint as per M60/10
   - 6.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
7. Accessories: Metal beads/ stops recommended by the board manufacturer
8. Other requirements: Fire-stopping around services as section P12, refer to architects drawings.

25 Ceiling lining on timber C.03 and C.05

1. Description: To new non-dropped ceilings (C.03 and C.05) as per G-700s
2. Substrate: 44x35mm timber battens to form service cavity at 400mm centres.
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
   - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 4.2. Fire resistance of complete ceiling assembly: Not required
5. Linings: 12.5mm gypsum plasterboard (moisture resistant for C.05, as per G-700s)
   - 5.1. Fixing: As recommended by manufacturer
6. Finishing: Skim coat plaster and Paint as per M60/10.
   - 6.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
7. Accessories: Metal beads/ stops recommended by the board manufacturer

25 Ceiling lining on timber C.07

1. Description: To new non-dropped ceilings (C.07) as per G-700s
2. Manufacturer: KNAUF or similar
   - 2.1. Product reference: Soundshield or similar
3. Substrate: Existing structure
4. Metal resilient (acoustic) bars: As per manufacturer's recommendations
5. Fire performance
   - 5.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
   - 5.2. Fire resistance of complete ceiling assembly: Not required
6. Linings: 12.5mm Acoustic gypsum plasterboard (density 920 kg/m^3)
   - 6.1. Fixing: As recommended by manufacturer
7. Finishing: Skim coat plaster and Paint as per M60/10.
   - 7.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
8. Accessories: Metal beads/ stops recommended by the board manufacturer

Installation

60 Ceilings

1. Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
2. Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
3. Two layer boarding: Stagger joints between layers.

65 Dry lining generally

1. General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
2. Standard:
3. Gypsum plasterboard to BS EN 520.
4. Gypsum fibre board to BS EN 15283-2.
5. Evidence of compliance: Submit Declaration of Performance (DoP).
6. Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing.
7. Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
8. Two layer boarding: Stagger joints between layers.
9. Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

67 Skim coat plaster finish

1. Plaster type: As recommended by board manufacturer
   1.1. Thickness: 2-3 mm.
2. Joints: Fill and tape except where coincident with metal beads.
3. Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

69 Installing beads/ stops

1. Cutting: Neatly using mitres at return angles.
2. Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
3. Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

70 Additional supports

1. Framing: Accurately position and securely fix to give full support to:
   1.1. Partition heads running parallel with, but offset from main structural supports.
   1.2. Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.
   1.3. Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

75 New wet laid bases

1. Dpcs: Install under full width of partitions/ freestanding wall linings.
   1.1. Material: Bituminous sheet or plastics.

85 Mineral wool insulation

1. Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
2. Services
   2.1. Electrical cables overlaid by insulation: Size accordingly.
   2.2. Ceilings: Cut insulation around electrical fittings, etc.

87 Sealing gaps and air paths

1. Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.
2. Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
   2.1. Gaps greater than 6mm between floor and underside of gypsum board: After sealing, fill with joint compound.

88 Fire-stopping at perimeters of dry lining systems

1. Material: Tightly packed mineral wool or intumescent mastic/ sealant.
2. Application: To perimeter abutments to provide a complete barrier to smoke and flame.

90 Seamless jointing

1. Cut edges of boards: Lightly sand to remove paper burrs.
2. Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
3. Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
4. Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
5. Nail/ screw depressions and minor indents: Fill with jointing compound to give a flush surface.
6. Minor imperfections: Remove by light sanding.

91 Vertical joints

1. Joints: Centre on studs.
   1.1. Partitions: Stagger joints on opposite sides of studs.
   1.2. Two layer boarding: Stagger joints between layers.

92 Horizontal joints

1. Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
2. Two layer boarding: Stagger joints between layers by at least 600 mm.
3. Edges of boards: Support using additional framing.
   3.1. Two layer boarding: Support edges of outer layer.

94 Fixing gypsum board to timber

1. Fixing to timber: Securely at the following centres (maximum):
   1.1. Nails: 150 mm.
   1.2. Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
   1.3. Screws to ceilings: 230 mm.
2. Position of nails/ screws from edges of boards (minimum)
   2.1. Bound edges: 10 mm.

2.2. Cut/ unbound edges: 13 mm.

3. Position of nails/ screws from edges of timber supports (minimum): 6 mm.

Finishing

97 Level of dry lining across joints

1. Sudden irregularities: Not permitted.
2. Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
   2.1. Tapered edge joints
      2.1.1. Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
   2.2. External angles
      2.2.1. Permissible deviation (maximum) for both faces: 4 mm.
   2.3. Internal angles
      2.3.1. Permissible deviation (maximum) for both faces: 5 mm.

98 Repairs to existing gypsum board

1. Performance of repairs must match original specified performances.
2. Filling small areas with broken cores: Cut away paper facing, remove loose core material and fill with jointing compound.
   2.1. Finish: Flush, smooth surface suitable for redecoration.
3. Large patch repairs: Cut out damaged area and form neat hole with rectangular sides. Replace with matching gypsum board.
   3.1. Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of existing and new gypsum board.
   3.2. Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

Ω End of Section

K13
Rigid sheet fine linings and panelling

Types of lining and panelling

105 Wood-based sheets generally

1. Standard: To BS EN 13986.
    1.1. Evidence of compliance: All sheets to be UKCA/ UKNI/ CE marked. Submit Declaration of Performance (DoP).

120 Wood-veneered panel lining A - Non Fire-rated

1. Description: To all timber wall linings (wall types 4, 5, 11), curtain wall interior reveals as per G-300s and to non-dropped timber lined ceilings (C.06) of the Courthouse. Refer to G-700s for details.
2. Substrate: Timber battens, carcassing or studs
3. Battens: Softwood free from decay and active insect attack and with no knots wider than half the width of the section.
    3.1. Finished size: as per drawings
    3.2. Moisture content at time of fixing (maximum): 18%.
    3.3. Spacing (centres): as per drawings
    3.4. Method of fixing: Plugged and screwed at 600 mm centres
4. Panels
    4.1. Core material: Plywood
        4.1.1. Thickness: 18mm, 13 plies
        4.1.2. Flame-retardant impregnation treatment: To BS EN 13501-1, Class B-s3,d2 or better
        4.1.3. Fire resistances of the complete lining assembly: Not required
    4.2. Face veneer: Free from decay and holes.
        4.2.1. Supplier: Contractor's choice
        4.2.2. Wood species: Ash
        4.2.3. Cutting: Quarter-cut
        4.2.4. Arrangement: Slip-matched
    4.3. Backing veneer: As recommended by fabricator.
    4.4. Edge treatment: Veneered strip where visible
    4.5. Fabrication: As section Z10.
        4.5.1. Adhesive: To BS EN 204; Type: To match durability class of core material.
    4.6. Finish (to match approved sample): As per clause M60/18
    4.7. Moisture content at time of fixing: As recommended by fabricator to suit environmental conditions.
5. Installation
    5.1. Method of fixing panels: Submit proposals. Fixings to be concealed where possible. Where not possible fixings to be set out in straight lines, countersunk and filled with a wax filler to match the surface finish of the board. Samples to be carried out in advance and agreed with ER.
    5.2. Joint treatment: 1-2mm expansion gap
6. Included features: Protruded frames. Refer to architect's drawings G-600s for more details.
7. Accessories: Panels to host wayfinding elements as per G-500s and clause N14.

120 Wood-veneered panel lining B - Fire-rated 30min

1. Description: To niche and railings of the new staircore A of Courthouse extension. Refer to G-800s for details.
2. Substrate: Timber battens or steel framing
3. Battens: To niche. Softwood free from decay and active insect attack and with no knots wider than half the width of the section.
   - 3.1. Finished size: as per drawings
   - 3.2. Moisture content at time of fixing (maximum): 18%.
   - 3.3. Spacing (centres): as per drawings
   - 3.4. Method of fixing: Plugged and screwed at 600 mm centres
4. Steel framing: To railings.
   - 4.1. Type: SHS 63.5x63.5mm
   - 4.2. Spacing (centres): max. 600mm c/c
   - 4.3. Method of fixing: as per drawings.
5. Panels
   - 5.1. Core material: Plywood
     - 5.1.1. Thickness: 18mm, 13 plies
     - 5.1.2. Flame-retardant impregnation treatment: To BS EN 13501-1, Class B-s3,d2 or better
     - 5.1.3. Fire resistance of complete lining assembly: To achieve REI30
   - 5.2. Face veneer: Free from decay and holes.
     - 5.2.1. Supplier: Contractor's choice
     - 5.2.2. Wood species: Ash
     - 5.2.3. Cutting: Quarter-cut
     - 5.2.4. Arrangement: Slip-matched
   - 5.3. Backing veneer: As recommended by fabricator.
   - 5.4. Edge treatment: Veneered strip where visible
   - 5.5. Fabrication: As section Z10.
     - 5.5.1. Adhesive: To BS EN 204; Type: To match durability class of core material.
   - 5.6. Finish (to match approved sample): As per clause M60/18
   - 5.7. Moisture content at time of fixing: As recommended by fabricator to suit environmental conditions.
6. Installation
   - 6.1. Method of fixing panels: Submit proposals. Fixings to be concealed where possible. Where not possible fixings to be set out in straight lines, countersunk and filled with a wax filler to match the surface finish of the board. Samples to be carried out in advance and agreed with ER.
   - 6.2. Joint treatment: 1-2mm expansion gap
7. Accessories: Railings to host handrail as per clause L30/20

121 New internal bridge lining - C.07

1. To Courthouse new internal bridge within the Main Deskroom, refer to G-200s.
2. Substrate: Structural steel beams and timber joists, as per engineers drawings and specs
3. Panels - Type 1: As per K13/120A.
   - 3.1. Description: To steel beam encasement as per drawings
4. Panels - Type 2: Engineered wood-veneered panel

4.1. Description: To timber joists underside as per drawings
4.2. Core material: 18mm plywood as per G20/15.
4.3. Fire performance:
4.3.1. Flame retardant impregnationn: To BS EN 13501-1, Class B-s3,d2 or better
4.3.2. Fire resistance: To achieve REI60 as part of floor build-up.
4.4. Face veneer: Engineered wood-veneered sheet
4.4.1. Manufacturer: Contractor's choice
4.4.1.1. Product reference: Submit proposals
4.4.1.2. Requirements: FSC Certified
4.4.2. Thickness: 3mm
4.4.3. Profile: 22mm waves
4.4.4. Finish as delivered: Ash-veneered, uncoated.
4.4.5. Bonding to core panel: With contact adhesive on the back of face veneer and on the core panel. Ensure all surfaces are clean and dry.
4.4.6. Clear finishing: As per M60/18.

5. Installation:
5.1. Method of fixing panels: Submit proposals. Fixings to be concealed where possible. Where not possible fixings to be set out in straight lines, countersunk and filled with a wax filler to match the surface finish of the board. Samples to be carried out in advance and agreed with ER.
5.2. Joint treatment: 1-2mm expansion gap

130 Compact high-pressure laminate panel lining

1. Description: To IPS Panel of Treatment Room (Courthouse) as per G-700s (Wall type 13)
2. Standard: To EN 438-4
3. Substrate: Timber studs
4. Battens: Softwood free from decay and active insect attack and with no knots wider than half the width of the section.
4.1. Finished size: 44x75mm
4.2. Moisture content at time of fixing (maximum): 18%.
4.3. Spacing (centres): 400mm
5. Panels
5.1. Description: Flame-retardant compact laminate
5.1.1. Thickness: 12mm
5.2. Core material: Resin impregnated core layer - white or grey
5.2.1. Flame-retardant impregnation treatment: As per section Z12, Flame-retardant treatment
5.3. Surface finish (both faces): Melamine resin impregnated decorative paper to a matt finish.
5.3.1. Colour : Very light grey to NCS S2000-N.
5.4. Fire performance: Refer to Fire Certificate for details.
5.4.1. Reaction to fire: To EN 13501-1, Class B-s3, d2 or better
5.5. Edge treatment: As per drawings
5.6. Moisture content at time of fixing: As recommended by fabricator to suit environmental conditions.
6. Installation
6.1. Method of fixing panels: Gravity battens top and bottom

6.2. Joint treatment: Close butt jointed

170 Acoustic panel lining

1. Description: To acoustic lining in the Bridewell (Wall type 12) as per G-700s.
2. Substrate: Timber framing
3. Battens: Softwood free from decay and active insect attack and with no knots wider than half the width of the section.
   3.1. Finished size: 22x44mm
   3.2. Moisture content at time of fixing (maximum): 18%.
   3.3. Spacing (centres): 400mm c/c
   3.4. Method of fixing: Fixed to existing masonry walls.
4. Fire performance: refer to Fire Certificate for details.
   4.1. Reaction to fire: To EN 13501-1, Class B-s3, d2 or better
   4.2. Fire resistance of complete lining assembly: Not required
5. Panels
   5.1. Manufacturer: Echojazz, Texfel or similar
      5.1.1. Product reference: Echocoustic, Texfel Echo or similar
   5.2. Type: Solid PET Felt rigid panel
   5.3. Acoustic performance: Grade A or B to EN ISO 11654
   5.4. Thickness: 24 or 25mm
   5.5. Finish: Natural, in 2 different colours as per G-300s.
6. Installation
   6.1. Method of fixing panels: Secret nailed

General requirements

260 Environmental conditions

1. General requirements prior to starting work specified in this section: Building weathertight; wet trades completed and affected areas dried out.
2. Temperature and humidity before, during and after fixing lining/ panelling: Maintained at levels approximating to those which will prevail after building is occupied.

Fabrication/ fixing/ finishing

310 Accuracy of fabrication

1. Site dimensions: Take as necessary before starting fabrication.
   1.1. Discrepancies with drawings: Report without delay and obtain instructions before proceeding.
2. Permissible deviations for panels
   2.1. Length: ±1.5 mm.
   2.2. Width: ±1.5 mm.
   2.3. Squareness (taking the longer of 2 sides at a corner as a baseline and measuring the deviation of the shorter side from the baseline perpendicular): ± 1.5 mm in 1 m.
   2.4. Flatness (of panels with a core thickness of 12 mm and over, as delivered to site): ± 1 mm under a 600 mm straightedge.

320 Laminated timber cores for wood-veneered panels

1. Face grain direction: Perpendicular to specified direction of veneer grain.
   1.1. Alternative arrangement: Panels cross-veneered before applying face veneer.

350 Fixing linings and panelling

1. Setting out: Accurate, true to line and level, free from undulations and lipping, with lines and joints aligned, straight and parallel unless specified otherwise.
2. Movement allowance: Adequate for future moisture and temperature movement of boards.
3. Fixing of panels: Secure, to prevent pulling away, bowing, or other movement during use.
4. Methods of fixing and fasteners: As section Z20 unless specified otherwise.
5. Trims: Wherever possible, to be in unjointed lengths between angles or ends of runs.
   5.1. Running joints: Where unavoidable, submit proposals for location and method of jointing.
   5.2. Angle joints: Mitred, unless specified otherwise.

360 Open joints (joints without cover strips or similar)

1. General: Within a joint (including in-line continuations across transverse joints) greatest width must not exceed the least width by more than: 1mm in 1 metre. 2mm in 2 metres. 3mm in 3 metres.
2. Variations in width: Evenly distributed with no sudden changes. Joints with bevelled edges to be measured to the face arrises.

400 Door frames

1. Hardwood packing between frames and reveals: To give even joints of specified width.
   1.1. Position of packs: Where fixings tighten frame against structure.
2. Positions of frames: Accurate, plumb, level, and aligned.
   2.1. Fixing of frames: Secure, to prevent pulling away, deflection, or other movement during use.
   2.2. Fastener locations: 600 mm maximum centres with at least one fixing 150 mm from each end of jambs and one adjacent to each hanging point.

410 Fire-resisting frames

1. Gaps between frames and supporting construction: Filled as necessary in accordance with requirements for certification and/ or door/ doorset manufacturer's instructions.

480 Clear finishes

1. Nail holes: Filled with stopping coloured to match wood.
2. Prepared surface: Smooth, closed and free from sanding marks.
3. Finish: Smooth free from brush marks, nibs, sags, runs and other defects.

Ω End of Section

K20
Timber board flooring

To be read with preliminaries/ general conditions.

15 Timber board flooring F.03

1. Description: To new timber flooring (F.03) as per G-700s
2. Substrate: 18mm plywood as clause G20/15 on timber joists @300mm centres as per engineers dwgs and specs.
3. Manufacturer/Supplier: Submit proposals
4. Boards
   - 4.1. Standard: To BS EN 14342.
     - 4.1.1. Evidence of compliance: Submit.
   - 4.2. Reaction to fire classification: Class A2fl or better
   - 4.3. Wood species: European Oak
   - 4.4. Quality: To BS EN 13990, Grade A or FAS grade.
   - 4.5. Finished face width (exposed width after fixing): min. 120mm
   - 4.6. Finished thickness: 22 mm
   - 4.7. Edge profile: Square-edged
   - 4.8. Moisture content at time of fixing: 6-10 %
   - 4.9. Finish: Site finished with "raw" or natural hardwax/polyx oil treatment, OSMO Raw or equivalent. Finish applied as per manufacturers recommendations.
5. Fixing: Secret nailed with 60mm mm oval lost head nails
   - 5.1. Fixing centres: In accordance with BS 8201.
6. Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.
7. Other requirements: Boards to be free from decay, through splits and insect attack (including ambrosia beetle damage, unless permitted in the appearance class specified). Planed to a smooth surface free from rippling.

Workmanship

31 Salvaged Timber Flooring F.02 as per G-700s

1. Lifting, Re-laying & Repair of Timber Flooring
   - 1.1. *Area*
     The historic floorboards to the first floor of Courthouse shall be taken up and retained for replacement on new floor. The floorboards to the first floor of Bridewell Female Wing shall be retained in place.
     Refer to the Architect's finishes schedule for locations of replacement flooring.
     Damaged or missing floorboards shall be repaired or replaced during these works.
     Floor boards shall be numbered in sequence to ensure that these are re-laid in the existing arrangement.
   - 1.2. *Removal Procedure*
     a) Each length of board will be marked discretely using pencil or crayon. Numbering will be applied as first row no. 1a, 1b, 1c, etc., second row 2a, 2b, 2c.
     b) Where boards are missing commence lifting in this location. Where floors are complete commence lifting with a relatively short board having at least one end in good condition and not located adjacent a wall.
     c) Using a block of wood to protect the edge of the adjoining board work around the board with a bolster chisel, levering from side to side.

d) Next, lever more vigorously approximately midway along the board moving from one side of the board to the other and then from one end to the middle to the other until the board works free. If the board is extremely decayed or particularly well seated it may be necessary to use a nail punch to drive the existing nails deeper until the board is released.
e) Once one end is free, place a batten beneath the board resting on the adjacent boards. Work this batten gently toward the next set of nails. When the nails have risen proud, remove the batten and allow the board to drop to its original position. Remove the nails with a claw hammer.
f) Particular care must be taken when removing nails at the end of the board as splitting may occur.
g) A pinchbar shall be used to remove the subsequent boards, using a block of wood when levering the crowbar against the exposed joists. Where the boards are very fragile it may be necessary to cut the nails with a hack-saw.
h) Floor-boards shall be stored in an adjacent room (of similar temperature) to avoid warping.
i) All timbers shall be treated with an approved insecticide and preservative treatment.

1.3. *Repair & Replacement Boards*
a) Where decay is visible the area shall be carefully repaired/replaced as necessary using traditional repair techniques. A policy of minimal intervention must be adopted at all times.
b) Treat any areas affected by wood boring insects with an approved insecticide and preservative treatment.
c) Timber from sound boards salvaged from the east wing shall be introduced to replace missing or damaged areas.
d) All replacement timber shall faithfully replicate the original detail and design. A joiner with conservation expertise shall carry out this element of the work.
e) Relay floor board using non-ferrous wood screws though existing fixing holes wherever possible, countersunk and plugged with matching timber.

1.4. *Finishing Boards*
a) Do not sand or abrasively clean old boards.
b) Scrubbing of the boards with water shall be carried out. Care must be taken not to saturate the floor or place excessive pressure on the board when scrubbing.
c) Treat all board with a timber preservative and polish with beeswax.
Prior to commencing, trial finish panels will be satisfactorily carried out in the presence of the Inspecting Authority for approval.

41 Treated timber

1. Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

50 Fixing boards

1. Protection during and after installation: Keep boards dry, clean and undamaged.
2. Boards to be used internally: Do not install until building is weathertight.
3. Moisture content of timber supports at time of fixing boards: 12-14%
4. Fixing: Fix boards securely to each support to give flat, true surface free from undulations, lipping, splits and protruding fasteners.
5. Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
6. Heading joints: Tightly butted, central over supports and at least two boards widths apart on any one support.
7. Edges: Plane off proud edges.
8. Exposed nail heads: Neatly punch below surface.

Ω End of Section

K40
Non-demountable suspended ceilings

To be read with preliminaries/ general conditions.

20 Suspended ceiling systems

1. Description: To all "dropped ceilings" as per G-700s
2. Standard: To BS EN 13964.
   2.1. Evidence of compliance: All ceilings kits to be UKCA/ UKNI/ CE marked. Submit Declaration of Performance (DoP).
3. Ceiling system manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Fire performance
   4.1. Reaction to fire: As per Fire Certificate and G-700s
   4.2. Fire resistance of complete ceiling assembly: **Standard:** To BS EN 13501-2.
   Rating: REI 60 (60 minutes Loadbearing, Integrity, and Insulation).
   System: Boards must be staggered and screw-fixed to manufacturers' data for 60-minute protection.
5. Ceiling
   5.1. Boards: As clause 32
   5.2. Soffit height above finished floor level: As per G-700s
6. Suspension system
   6.1. Grid
      6.1.1. Form: Non-interlocking
      6.1.2. Grid centres: Primary channel at max. 1200m c/c
      Ceiling sections at max. 450mm c/c
      6.1.3. Hanger centres: max. 1200mm c/c
7. Access: Access panels indicated on drawings G-700s
8. Accessories: none
9. Integrated services fittings: not required
10. Other requirements: refer to architect's and engineers drawings

Components

31 Standards

1. Steel panels: To BS EN 10346.
2. Aluminium sheet, strip and plate: To BS EN 485-1 and -2.
3. Aluminium bars, tubes and sections: To relevant parts of BS EN 515, BS EN 573, BS EN 755 and BS EN 12020.

32 Boards C.03

1. Description: To all dropped ceilings type C.03 as per G-700s
2. Type: Gypsum plasterboard
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Recycled content: Submit proposals
5. Thickness: 12.5 mm

6. Sizes: Manufacturer's standard. Cut and assembled to fit room dimensions requirements.
7. Edge profile: Square edged
8. Finish: As M60/10
9. Colour: As M60/10
10. Other requirements: as per architect's drawings

32 Boards C.05

1. Description: To all dropped ceilings type C.05 as per G-700s
2. Type: Gypsum moisture resistant plasterboard
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Recycled content: Submit proposals
5. Thickness: 12.5 mm
6. Sizes: Manufacturer's standard. Cut and assembled to fit room dimensions requirements.
7. Edge profile: Square edged
8. Finish: As M60/10
9. Colour: As M60/10
10. Other requirements: as per architect's drawings

32 Boards C.06

1. Description: To all dropped ceilings type C.06 as per G-700s
2. Type: Ash veneered plywood as per K13/120A
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Recycled content: Not applicable
5. Thickness: 18 mm
6. Sizes: Manufacturer's standard. Cut and assembled to fit room dimensions requirements.
7. Finish: As M60/18
8. Colour: As M60/18
9. Other requirements: as per architect's drawings

Execution

40 Workmanship generally

1. Fixing: Secure. In accordance with manufacturers' recommendations and in accordance with BS EN 13964. Provide additional bracing and stiffening to give a stable ceiling system.
2. Setting out: Accurate. Provide level soffits free from undulations and lipping.
3. Infill and access units, integrated services: Fitted correctly and aligned.
4. Lines and joints: Straight and parallel to walls, unless specified otherwise.
5. Edge infill units size (minimum): Half standard width or length.
6. Corner infill units size (minimum): Half standard width and length.
7. Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes of infill units.
8. Infill joints and exposed suspension members: Straight, aligned and parallel to walls, unless specified otherwise.
9. Suitability of construction: Give notice where building elements and features to which the ceiling systems relate are not square, straight or level.

50 Installing hangers

1. General: Straighten and tension before use.
2. Installation: Install vertical without bends or kinks. Do not allow hangers to press against fittings, services, or insulation covering ducts/ pipes.
3. Obstructions: Where obstructions prevent vertical installation, either brace diagonal hangers against lateral movement, or hang ceiling system on an appropriate rigid sub-grid bridging across obstructions and supported to prevent lateral movement.
4. Extra hangers: Provide as necessary to carry additional loads.
5. Fixing
    5.1. Wire hangers: Tie securely at top and bottom with tight bends to loops to prevent vertical movement.
    5.2. Angle/ Strap hangers: Do not use rivets for top fixing.
6. Spacings: To manufacturer's recommendations

51 Installing perimeter trims

1. Jointing: Neat and accurate, without lipping or twisting.
    1.1. External and internal corners: Mitre joints generally. Overlap joints at internal corners are not acceptable.
    1.2. Intermediate butt joints: Minimize. Use longest available lengths of trim. Align adjacent lengths.
2. Fixing: Fix firmly to perimeter wall, edge battens or other building structure.
    2.1. Fixing centres: 450 mm

52 Installing board-suspended ceiling systems

1. Cut boards: Neat and accurate.
2. Fixing to grid
    2.1. Board edges: Fully support. Screw to grid members. Set heads of screws below surface of boards and fill flush with surface.
    2.2. Boards applied in two or more layers: Stagger joints.
3. Movement joints: Provide as appropriate for the area of ceiling system and/ or to coincide with movement joints in surrounding structure.

53 Openings in ceiling materials

1. General: Neat and accurate. To suit sizes and edge details of fittings. Do not distort ceiling system.

57 Ceiling systems intended for fire protection

1. Junctions of ceiling systems with perimeter abutments and service penetrations: Seal gaps with tightly packed mineral wool or intumescent sealant to prevent penetration of smoke and flame
2. Ceiling system/ Wall junctions: Maintain protective value of ceiling system.
3. Fixings and grounds: Non-combustible.
4. Metal trim: Provide for thermal expansion.
5. Access and access panels: Maintain continuity of fire protection.

65 Integrated services

1. General: Position services accurately, support adequately. Align and level in relation to the ceiling and suspension system. Do not diminish performance of ceiling system.

2. Small fittings: Support with rigid backing boards or other suitable means. Do not damage or distort the ceiling.
   2.1. Reaction to fire rating of additional supporting material: Not less than ceiling material.
3. Services outlets
   3.1. Supported by ceiling system: Provide additional hangers.
   3.2. Independently supported: Provide flanges to support ceiling system.

66 Ceiling-mounted luminaires

1. Support: Independent
   1.1. Ceiling supported luminaires: Modifications and/ or extra support required: To each luminaire.
   1.2. Independently supported luminaires: Suspension adjusted to line and level of ceiling.
2. Surface mounted luminaires: Units installed so that in the event of fire, the designed grid expansion provision is not affected.
3. Modular fluorescent recessed luminaires: Compatible with ceiling module. Extension boxes must not foul ceiling system.
4. Recessed rows of luminaires: Provide flanges for support of grid and infill units, unless mounted above grid flanges. Retain in position with lateral restraint.
5. Fire-protecting/ resisting ceiling systems: Luminaires must not diminish protection integrity of ceiling system.
6. Access: Provide access for maintenance of luminaires.

67 Mechanical services

1. Smoke detectors and PA speakers
   1.1. Ceiling infill units: Scribe and trim to suit.
   1.2. Independent suspension: Not required
   1.3. Flexible connections: Required.

Completion

80 Tools

1. Access tools: At Completion supply one set of the following: operating poles for access panels of appropriate length.

Ω End of Section

L10
Windows/ rooflights/ screens/ louvres

To be read with preliminaries/ general conditions.

5 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
   1.1. The laws governing forest management in the producer country or countries.
   1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
   2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
   2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of custody certification scheme: Contractor's choice in accordance with UK Government timber procurement policy (UKTPP), i.e. FSC, GiB or PEFC
   3.1. Other evidence: None

15 Wood windows

1. Description: To all timber windows, existing and new as per G-600s.
2. Standard: Non-fire and/ or smoke-rated window to BS EN 14351-1 and BS 644
3. Manufacturer: Submit proposals
4. Timber: Generally to BS EN 942. Timber to be kiln dried.
   4.1. Species: Prime grade hardwood
   4.2. Moisture content on delivery: 10-14% (Strict compliance required for heated internal environments).
5. Preservative treatment: Manufacturer's standard
6. Finish as delivered: Primed and painted as per drawings G-600s and as clause M60/14.
7. Thermal performance (U-value maximum): For new windows: 0.9 W/m²K
8. Acoustic performance rating: Not required
9. Fire performance
   9.1. Fire resistance: Not required
   9.2. Reaction to fire: Not required
   9.3. Fire egress: Not applicable
10. Glazing details: For new glazing: Triple Glazed, Argon filled, Low-E soft coat. Insulated glass units to achieve 1.0 W/m²K
    10.1. Beading: Internal
11. Ironmongery/ accessories: To match existing, refer to G-600s
12. Fixing: To match existing
13. Other requirements: Where existing windows are equipped with iron bars (Bridewell), iron bars are to be kept, cleaned and repaired on site as per clause Q40/40.

47 Roof ventilators Automated Opening Vents (AOV)

1. Description: Natural casement automatic smoke control roof ventilators to Courthouse extension, as per G-600s.
2. Manufacturer: COLT or similar
   2.1. Product reference: Firelight 3 or similar
3. Standard: To BS EN 12101-2
4. Type: Glazed with thermally broken base
5. Arrangement: Flap
6. Dimensions:
   6.1. Throat length: Varies. Refer to G-600s
   6.2. Throat width: Varies. Refer to G-600s
   6.3. Height: Manufacturer's standard
7. Mounting: Roof mounted, onto curb.
8. Controls: Single 24V actuator, Chain drive
9. Materials:
   9.1. Frame: Corrosion-resistant EN AW-6063 T6 Aluminium alloy, thermally broken, with stainless steel fiwings.
   9.2. Finish as delivered: Polyester powder-coated to RAL 9006.
   9.3. Glazing: 32mm insulating double glazing
10. Seals: Required, double seals.
    10.1. Air permeability: Class 4 to EN 12207
    10.2. Watertightness: Class 9A to EN 12208
    10.3. Sound insulation : Up to 42 dB Rw.
11. Guards: Not required
12. Accessories/ special features: Aluminium covers to actuators.
13. Typical U-value: 1.0 W/m^2K
14. Fire/ smoke control performance:
    14.1. Initiation: External release signal, refer to M&E engineers specifications.
15. Fixing: Manufacturer's standard

65 Priming/ sealing

1. Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

75 Sealant joints

1. Sealant
   1.1. Description: To all EPDM membrane dressed in external window frames as mentioned in drawings.
   1.2. Manufacturer: Submit proposals
      1.2.1. Product reference: illbruck ME220 EPDM membrane or similar
   1.3. Colour: Black
   1.4. Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

80 Ironmongery

1. Fixing: In accordance with any third party certification conditions applicable. Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
2. Checking/ adjusting/ lubricating: Carry out at completion and ensure correct functioning.

90 Replacement window installation

1. Standard: To BS 8213-4.

Ω End of Section

L20
Doors/ shutters/ hatches

To be read with preliminaries/ general conditions.

10 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
   1.1. The laws governing forest management in the producer country or countries.
   1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
   2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied; or
   2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of custody certification scheme: Contractor's choice in accordance with UK Government timber procurement policy (UKTPP), i.e. FSC, GiB or PEFC
   3.1. Other evidence: None

20 Wood flush doors A - Non Fire-rated

1. Description: To new internal flush doors as per G-600s
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
   2.2. Standard: To EN 14351-2
3. Facings: Hardwood (Ash) veneer
4. Lippings: 10 mm hardwood lippings to long edges, over-veneered
5. Preservative treatment: Not required
6. Finish as delivered: Full factory finish, clear matt sealant
7. Glazing/ infill details: Clear double glazing
   7.1. Manifestation: As per drawings G-600s
   7.2. Beading: Manufacturer's standard
8. Fire performance
   8.1. Fire resistance: Not required
   8.2. Smoke leakage: Not required
   8.3. Reaction to fire: Not required
9. Thermal performance (U-value maximum): Not applicable
10. Other requirements: as per architects schedule

20 Wood flush doors B - Fire-rated

1. Description: To new internal flush doors as per G-600s
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
   2.2. Standard: To EN 14351-2 and EN 16034.
3. Facings: Hardwood (Ash) veneer

4. Lippings: 10 mm hardwood lippings to long edges, over-veneered
5. Preservative treatment: Not required
6. Finish as delivered: Full factory finish, clear matt sealant
7. Glazing/ infill details: Clear double glazing
   7.1. Manifestation: As per drawings G-600s
   7.2. Beading: Manufacturer's standard
8. Fire performance
   8.1. Fire resistance: To BS EN 13501-2, EIW 30S
   8.2. Smoke leakage: Not required
   8.3. Reaction to fire: To BS EN 13501-1, Class B or better
9. Thermal performance (U-value maximum): Not applicable
10. Other requirements: as per architects schedule

25 Wood-panelled doors A - Non Fire-rated

1. Description: To new and existing, internal and external non fire-rated timber doors as per G-600s
2. Manufacturer: Submit proposals
   2.1. Product reference: Submit proposals
   2.2. Standard: To EN 14351 for new doors
3. Wood species: Hardwood
4. Preservative treatment: Not required
5. Finish as delivered: Prepared and primed, to be painted on site as clause M60/14.
6. Glazing/ infill details: Not applicable
7. Fire performance
   7.1. Fire resistance: Not required
   7.2. Smoke leakage: Not required
   7.3. Reaction to fire: Not required
8. Thermal performance (U-value maximum): To new doors: 1.2 W/m²K
9. Other requirements: as per architects schedule

25 Wood-panelled doors B - Fire-rated

1. Description: To new and existing, internal fire-rated timber doors as per G-600s
2. Manufacturer: Submit proposals
   2.1. Product reference: Submit proposals
   2.2. Standard: To EN 14351-2 and EN 16034 for new doors. For existing or reclaimed doors, refer to specifications in clause 7.4 below.
3. Wood species: Hardwood
4. Preservative treatment: Not required
5. Finish as delivered: Prepared and primed, to be painted on site as clause M60/14.
6. Glazing/ infill details: Not applicable
7. Fire performance
   7.1. Fire resistance: To BS EN 13501-2, EIW 30S
   7.2. Smoke leakage: Not required
   7.3. Reaction to fire: To BS EN 13501-1, Class B or better
   7.4. Special treatment of existing doors: **SPECS TO BE INTEGRATED**
8. Thermal performance (U-value maximum): Not applicable

9. Other requirements: As per drawings G-600s.

30 Wood-framed glazed doors A - Non Fire-rated

1. Description: To new external timber-frame glazed door of the Bridewell, as per G-600s
2. Standard: To EN 14351-1
3. Materials: Generally to BS EN 942.
   - 3.1. Species: Hardwood as table NA2
   - 3.2. Appearance Class: J40
4. Panels: Not applicable
5. Assembly
   - 5.1. Adhesive: Thermosetting resin to BS EN 12765, Class C4
   - 5.2. Joinery workmanship: As section Z10.
   - 5.3. Accuracy: To BS 4787-1.
6. Preservative treatment: Organic solvent as section Z12 and WPA Commodity Specification C5; desired service life: 30 years
7. Moisture content on delivery: 9-13%
8. Finish as delivered: Prepared and primed to be painted, as section M60/10
9. Glazing/ infill details: Clear double glazing
   - 9.1. Manifestation: As drawing G-600s.
   - 9.2. Beading: Manufacturer's standard
10. Fire performance
    - 10.1. Fire resistance:

      Not required
    - 10.2. Smoke leakage: Not required
    - 10.3. Reaction to fire: Not required
11. Thermal performance (U-value maximum): 1.2 W/m²K

30 Wood-framed glazed doors B - Fire-rated

1. Description: To new internal timber-frame glazed door in the Courthouse, as per G-600s
2. Standard: To EN 14351-2 and EN 16034
3. Materials: Generally to BS EN 942.
   - 3.1. Species: Hardwood (Ash) as table NA2
   - 3.2. Appearance Class: J10
4. Panels: Not applicable
5. Assembly
   - 5.1. Adhesive: Thermosetting resin to BS EN 12765, Class C4
   - 5.2. Joinery workmanship: As section Z10.
   - 5.3. Accuracy: To BS 4787-1.
6. Preservative treatment: Organic solvent as section Z12 and WPA Commodity Specification C5; desired service life: 30 years
7. Moisture content on delivery: 9-13%
8. Finish as delivered: Sanded and coated, as section M60/18
9. Glazing/ infill details: Clear fire-resisting glazing
   - 9.1. Manifestation: As drawing G-600s.
   - 9.2. Beading: Solid ash. Both sides, internal and external.

10. Fire performance
    10.1. Fire resistance:

    To BS EN 13501-2, EIW 30S
    10.2. Smoke leakage: Not required
    10.3. Reaction to fire: To BS EN 13501-1, Class B or better
11. Thermal performance (U-value maximum): Not required

45 Aluminium Doors

1. Description: To all new external aluminium doors as per G-600s.
2. Manufacturer: Submit proposals
    2.1. Product reference: Submit proposals
    2.2. Standard: To EN 14351-1.
3. Finish as delivered: Polyester powder-coated to RAL 9006.
4. Glazing/ infill details: Clear double glazing
    4.1. Manifestation: As drawing G-600s
    4.2. Beading: Manufacturer's standard
5. Ironmongery: As ironmongery schedule and clause P21
6. Fire performance
    6.1. Fire resistance: Not required
    6.2. Smoke leakage: Not required
    6.3. Reaction to fire: Not required
7. Thermal performance (U-value maximum): 1.2 W/m²K
8. Other requirements: as per architects schedule

46 Cast-iron doors

1. Description: To all Bridewell existing cell doors as per G-600s.
2. General requirements: Doors and all existing ironmongery elements to be repaired, cleaned and repainted in place as per drawings G-600s and clause Q40. Paint requirements as clause M60/12.
3. **Survey:** Before cleaning, inspect all door frames, leaves, and glazing (if applicable) for signs of active "rust-jacking" or section loss. Document the condition of all ironmongery and hinges.

   Hazardous Materials: The contractor must allow for the presence of lead-based primers common in historic Irish steelwork. If any paint is flaking, it must be managed under the "Safety, Health and Welfare at Work (Confined Spaces/Chemical Agents) Regulations" to prevent lead dust inhalation.

   Protection: Ensure all adjacent historic floor finishes and masonry are fully protected with polythene sheeting and absorbent mats before cleaning commences.
4. **Dry Cleaning:** Remove loose dust, spider webs, and surface debris using soft-bristled brushes and vacuum extraction.

   Wet Cleaning: Wash surfaces using a solution of deionized water and a non-ionic, pH-neutral detergent (e.g., 'Vulpex' or equivalent approved). Use lint-free microfibre cloths only.

   Rinsing: Wipe down with clean deionized water and immediately dry with soft cloths to prevent flash-rusting. Do not use power washers or high-pressure hoses.

50 Wood door frames Existing

1. Description: To existing historical door frames and surrounds

2. General requirements: Repair and clean as clause C51. Paint as clause M60/14.

65 Sliding pocket doors

1. Description: To all new sliding pocket doors as per G-600s.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
   2.2. Standard: To EN 14351-2
3. Performance: Acoustic control: min. 24 dB
4. Arrangement: Top hung, Single leaf
5. System: Suitable to flush doors (without jambs and architrave), 35-44mm thick and 105mm stud walls (stud core 75mm thick)
   5.1. Counterframe: Concealed. Galvanised steel reinforced uprights and horizontals to be assembled on site, with interlocking assembly system. Profiles to be predrilled to ease screwing of wall finishes. Includes metal top beam and concealed trims.
   5.2. Running track/Head channel: Manufacturer's standard
   5.3. Runners/Gear Set: For a load-bearing capacity up to 100kg per door leaf.
   5.4. Accessories: Soft close mechanism
6. Door leaf:
   6.1. Width: as per G-600s
   6.2. Height: as per G-600s
   6.3. Thickness: 40mm
   6.4. Construction: Honeycomb-core (20mm cells with 4mm thick MDF covering layers) with fir solid wood perimeter frame. Panel to have with edging.
   6.5. Finish as delivered: Prepared and primed to be painted as clause M60/10.
7. Operation: Manual
8. Ironmongery: As ironmongery schedule and clause P21

66 Acoustic folding partition

1. Description: To Main Courtroom of the Courthouse as per G-615.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Configuration
   3.1. Suspension method: Floor supported, with top guide rail
   3.2. Panels quantity: As per manufacturer's recommendations
   3.3. Pass doors: One pass door, Part M compliant
   3.4. Bunching: Single stack
   3.5. Stacking arrangement: Eccentric fold as per drawings. Single track.
   3.6. Operation: Manual
4. Performance
   4.1. Acoustic control: Up to Rw 50dB, measured in accordance with EN ISO 140-3.
   4.2. Fire performance: Not required
5. Panels dimensions
   5.1. Height: 2295mm
   5.2. Thickness: 80mm
   5.3. Weight: max 45kg/m^2
6. Panels: As delivered

6.1. Construction: Aluminium frame with double skin cladding of particleboards
6.2. Acoustic insulation: Manufacturer's standard
6.3. Finish: High-pressure laminate, RAL - F&B Duster (yellow) or similar
6.4. Edges: Concealed
6.5. Vertical edge trim: RAL - F&B Duster (yellow) or similar
6.6. Vision panel: None
6.7. Cut-outs: None

7. Finishes
7.1. Wall-jamb and abutments: To match panels
7.2. Track: RAL - F&B Duster (yellow) or similar

8. Ironmongery: To manufacturer's standard

70 Fire and smoke resistance

1. Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.
2. Components and assemblies will be marked to the relevant product standard and/ or third party certification rating.

75 Fire-resisting/ smoke control doors/ doorsets

1. Gaps between frames and supporting construction: Filled as necessary in accordance with door/ doorset manufacturer's instructions.

80 Sealant joints

1. Sealant
1.1. Description: To all EPDM membrane dressed in external door frames as mentioned in drawings.
1.2. Manufacturer: Contractor's choice
1.2.1. Product reference: illbruck ME220 EPDM membrane or similar
1.3. Colour: Black
1.4. Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

85 Fixing ironmongery generally

1. Fasteners: Supplied by ironmongery manufacturer.
1.1. Finish/ Corrosion resistance: To match ironmongery.
2. Holes for components: No larger than required for satisfactory fit/ operation.
3. Adjacent surfaces: Undamaged.
4. Moving parts: Adjusted, lubricated and functioning correctly at completion.

Ω End of Section

L30
Stairs/ ladders/ walkways/ handrails/ balustrades

To be read with preliminaries/ general conditions

1 Repairing/renovating/conserving timber stairs

1. Description: To stairs B and C of Courthouse. To stairs B of Bridewell (central building).
2. General requirements (also refer to C51):
    - **Conservation works to be conducted by qualified and experienced joiner. Submit proposals before commencing work.**
    - Preparation: Remove any carpet and clean stairs.
    - After inspection, defective treads, risers and strings to be repaired or replaced according to level of defect. New timber elements as clause C51 and to match existing.
    - Works will include full replacement of the bottom two steps for all stairs mentioned above.
    - After conducting repair work, any existing paint to be removed, all elements to be sanded down and primed for either coating as per M60/18 or painted as per M60/14. Refer to G-300s for colour specifications.
3. Railings and balustrades:
    - Preparation: Clean
    - After inspection, defective elements to be repaired or replaced according to level of defect. New timber elements as clause C51 and to match existing.
    - Works will include add-on railing as per clause L30/50C on landings if existing railing height is not compliant (below 1100mm).
    - After conducting repair work, any existing paint to be removed, all elements to be sanded down and primed for either coating as per M60/18 or painted as per M60/14. Refer to G-300s for colour specifications.

2 Repairing/renovating/conserving stone stairs

1. Description: To stairs A and C of Bridewell.
2. General requirements (also refer to C41):
    - **Conservation works to be conducted by qualified and experienced (min. 10years) metalworker. Submit proposals before commencing work.**
    - Preparation: Ensure all surfaces are clean and dry.
    - **Works will include a load-bearing test. The test will be conducted by an approved contractor and will ensure standards are met.**
    - After inspection and tests, any existing paint is to be removed (stairs A) and surfaces are to be sealed as clause M40/10.
3. **Load Testing:** Before any repair work, the contractor shall engage an independent specialist to perform a structural load test in accordance with **BS EN 1991-1-1**. The test must confirm that the cantilevered stone treads can support a concentrated load of 4.0kN at the furthest extremity of the tread.
4. **Reporting:** A formal certificate of structural adequacy must be issued to the Assigned Certifier before the stairs are cleared for public use.
5. **Consolidation:** If micro-cracking is discovered, the contractor shall utilize low-viscosity epoxy injection or stainless steel "stitching" as directed by the Structural Engineer.
6. **Iron railings and balustrades:**
    - Preparation: General light clean to remove any dust, dirt, decayed paint and/or corrosion.
    - After inspection, defective elements and fixings to be repaired or replaced according to level of defect. New elements to match existing ones.

- Works will include add-on railings as per clause L30/50C on landings as existing railing heights are not compliant (below 1100mm).
- After conducting repair work, all elements to be prepared for paint as per M60/12. Ensure all surfaces are clean and dry before applying paint.

10 Wood stairs New internal assembled timber stairs

1. Description: To judges stand in Main Deskroom of the Courthouse as per G-810
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Components
   3.1. Treads: 22mm Natural Prime Grade European oak, eased edge. Nosing to receive aluminium inserts as per drawings.
   3.2. Risers: 22mm Natural Prime Grade European oak.
   3.3. Strings: 275x20mm Natural Prime Grade European oak.
   3.4. Landing: Included in stairs package
      3.4.1. Structure: Timber frame and joists as per drawings G-810 and clause G-20/5
      3.4.2. Substrate: 18mm plywood as clause G20/15
      3.4.3. Finish: Floorboards as clause K20/15
   3.5. Guarding: Existing Judges Dias wood panelling, reinforced if needed.
   3.6. Handrails: On wall side only as per drawings G-810. Wall-mounted 50mm circular solid ash handrail. Supports to be 15mm brushed stainless steel round bars with round rose.
      3.6.1. Lower handrail: Not required.
4. Moisture content at time of installation: 9-13%.
5. Finish as delivered: Prepared for coating as follows
   5.1. Treads: As clause M60/18
   5.2. Risers: As clause M60/18
   5.3. Strings: As clause M60/18
   5.4. Landing: As clause K20/15
   5.5. Existing wood panelling: As clause M60/14, colour Blue
   5.6. Handrail: As clause M60/14, colour Blue
   5.7. Slip resistance value of integral tread - water wet (minimum): PTV of 40 to BS 7976
   5.8. Slip resistance value of integral nosing - water wet (minimum): PTV of 40 to BS 7976
6. Reaction to fire: Not required
7. Other requirements: Stairs and landing to precisely match the dimensions of existing wood-panelling as per G-810.

15 Timber procurement

1. Timber (including timber for wood-based products): Obtained from well managed forests and/ or plantations in accordance with:
   1.1. The laws governing forest management in the producer country or countries.
   1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
   2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied or

2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.

3. Chain of Custody Certification scheme: In accordance with UK Government Timber procurement policy (UKTPP) i.e. FSC, GiB or PEFC

20 Stairs New external concrete stairs

1. Description: External purpose-built stairs to Courthouse Patio. Refer to G-905 for details
2. Component material, grade, finish as delivered
   2.1. Treads: Cast in-situ concrete steps to bespoke dimensions. Concrete to be honed and sealed with a UV-stable coating to prevent yellowing. Matte finish.
      2.1.1. Slip resistance value of integral tread - water wet (minimum): PTV of 40 to BS 7976
      2.1.2. Slip resistance value of integral nosing - water wet (minimum): PTV of 40 to BS 7976
      2.1.3. Colour of integral nosing: 316 marine Grade stainless steel inserts as per drawings
   2.2. Handrails: On both sides of stairs. Self-standing floor-mounted steel handrail to be 42.5mm CHS, as per drawings. Material to be 316 Grade stainless steel with a brushed/satin finish.
      2.2.1. Fixings: Visible. Submit proposals
3. Workmanship
   3.1. Metalwork: To Section Z11
4. Reaction to fire: Not required
5. Other requirements: Hazard warning strips at top and bottom of stairs as per drawings and clause Q25/70.

20 Stairs New internal assembled steel and timber stairs

1. Description: Internal purpose-built stairs to first floor of the Courthouse extension (Staircore A). Refer to G-800-805 for details.
2. Component material, grade, finish as delivered
   2.1. Treads: Bespoke steel and timber treads as per drawings. Structure to be 10mm folded steel, lining to be 22mm thick solid Prime Grade European Oak boards, finished with "Select and better" grade with natural look hardwax oil finish, OSMO raw or equivalent with anti slip granules added to manufacturers recommendations.
      2.1.1. Slip resistance value of integral tread - water wet (minimum): min PTV of 40 to BS 7976
      2.1.2. Slip resistance value of integral nosing - water wet (minimum): min PTV of 40 to BS 7976
      2.1.3. Colour of integral nosing: Aluminium inserts, silver coloured, as per drawings.
   2.2. Risers: Bespoke steel and timber risers as per drawings. Structure to be 10mm folded steel, lining to be 22mm thick solid Prime Grade European Oak boards, finished with "Select and better" grade with natural look hardwax oil finish, OSMO raw or equivalent with anti slip granules added to manufacturers recommendations.
   2.3. Strings: Sawtooth type. 250x15mm steel flat as per drawings.
   2.4. Guarding: Bespoke steel and timber guardrail as per drawings. Structure to be 63.5 x 63.5 x 3.6mm SHS, finish to be fire-rated 18mm veneered plywood as per K13/120B.
   2.5. Handrails: Bespoke metal handrail to be 42.5mm diameter CHS supported on bespoke wall-mounted handrail brackets as per drawings. Ensemble to be painted as clause M60/14, colour Green.
      2.5.1. Lower handrail: Not required
3. Workmanship
   3.1. Joinery: To Section Z10
   3.2. Metalwork: To Section Z11

4. Reaction to fire: Stair supports to be non-combustible (steel)

50 Purpose-made balustrades External_Bridewell bridges

1. Description: To Bridewell external bridges on first floor as per drawings G-800s.
2. Component material, grade and finish as delivered
   2.1. Guarding: Steel flats as per drawings. Painted as clause M60/12
   2.2. Handrails: Steel 42.5mm circular handrail, welded to balustrade as per drawings. Painted as clause M60/12.
      2.2.1. Lower handrail: Note required
3. Workmanship
   3.1. Metalwork: To section Z11
4. Reaction to fire: Not required
5. Other requirements: None
6. Fixing: Side-fixed to steel
   6.1. Centres: max. 300mm c/c

50 Purpose-made balustrades Internal_Courthouse bridge

1. Description: To new internal bridge and first floor landing of Main Deskroom of the Courthouse. Refer to G-200s for details.
2. Component material, grade and finish as delivered
   2.1. Guarding:
      2.1.1. Structure: Solid ash framing
      2.1.2. Panels/infill:
         - Type 1: Clear single-glazing. Safety glass to be laminated glass, class 1B1 to EN 12600.
         - Type 2: Fire-rated ash-veneered plywood to clause K13/120A.
   2.2. Handrails: Solid ash, coated as clause M60/18
      2.2.1. Lower handrail: Note required
3. Workmanship
   3.1. Joinery: To section Z10
   3.2. Metalwork: To section Z11
4. Reaction to fire: To BS EN 13501-1, Class B or better
5. Other requirements: Refer to architects drawings
6. Fixing:
   6.1. Centres:

50 Purpose-made balustrades Internal_Courthouse extension

1. Description: To landing of first floor of the Courthouse extension as per drawings G-800s.
2. Component material, grade and finish as delivered
   2.1. Guarding: Bespoke steel and timber guardrail as per drawings G-800-805. Structure to be 63.5 x 63.5 x 3.6mm SHS, finish to be fire-rated 18mm veneered plywood as per K13/120B.
   2.2. Handrails: Not required
      2.2.1. Lower handrail: Note required
3. Workmanship
   3.1. Joinery: To section Z10
   3.2. Metalwork: To section Z11

4. Reaction to fire: To BS EN 13501-1, Class B or better
5. Other requirements: Refer to architects drawings
6. Fixing: Fixed to steel floor beam as per details G800-G805.
   6.1. Centres: Max. 400mm c/c

50 Purpose-made balustrades Internal_Guardrail height extensions

1. Description: To all existing guardrails which height does not comply with part M (below 1100mm on landings). Refer to drawing G-840 for details.
2. Component material, grade and finish as delivered
   2.1. Guarding: Grade 316 Stainless steel, satin/brushed finish. Top rail to be 26.9mm CHS. Supports to be 10mm round bars. Elements to be carefully assembled for a clean finish.
3. Workmanship
   3.1. Metalwork: To section Z11
4. Reaction to fire: Not required
5. Other requirements: None
6. Fixing: Submit proposals. Side-fixed to existing cast-iron railings as per drawings.
   6.1. Centres: max. 450mm c/c

75 Priming/ Sealing/ Painting

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

80 Installation generally

1. Fasteners and methods of fixing: To Section Z20.
2. Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
4. Applied features (finishes, inserts, nosings, etc.): 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.

Ω End of Section

L40
General glazing

To be read with preliminaries/ general conditions.

10 Workmanship and positioning generally

1. Glazing
   1.1. Generally: In accordance with BS 6262 series.
   1.2. Integrity: Wind and watertight under all conditions. Make full allowance for deflections and other movements.
2. Glass
   2.1. Standards: Generally to BS 952 and to the relevant parts of:
      2.1.1. BS EN 572 for basic soda lime silicate glass.
      2.1.2. BS EN 1096 for coated glass.
      2.1.3. BS EN 12150-2 for thermally toughened soda lime silicate glass.
      2.1.4. BS EN ISO 12543 for laminated glass.
   2.2. Quality: Free from scratches, bubbles and other defects.
   2.3. Dimensional tolerances: Panes/ sheets to be accurately sized.
   2.4. Material compatibility: Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be compatible. Comply with glazing/ sealant manufacturers' recommendations.
   2.5. Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

20 Removal of glass/ Plastics for reuse

1. Existing glass/ plastics, glazing compound, beads, etc.: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris. Clean glazing, beads and other components that are to be reused.
2. Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.
   2.1. Affected areas: Do not reglaze until instructed.

30 Preparation

1. Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

60 Insulated glass units

1. Description: Generally
2. Manufacturer: Submit proposals
   2.1. Product reference: Submit proposals
3. Standard: BS EN 1279.
4. Thermal performance (centre pane): 1.0 W/m²K
5. Construction
   5.1. Inner pane: low emissivity coatings to room side, inner surface
   5.2. Cavity: argon filled
   5.3. Intermediate pane: Not applicable
   5.4. Cavity: Not applicable
   5.5. Outer pane: clear toughened glass

5.6. Spacer: warm spacer, black in colour

6. Unit thickness: to manufacturers recommendations
7. Other requirements: refer to architects drawings

91 Glass mirrors

1. Description: To Bathrooms
2. Standard: To BS EN 1036.
   2.1. BS EN 1036-2 characteristics: None relevant
3. Mirror material: Float glass, silvered to give maximum reflection, free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions.
   3.1. Thickness: 4 mm
   3.2. Backing: Silvered
   3.3. Edge treatment: Ground edge
4. Background: Plastered masonry, or as per drawings
5. Fixing method: Double-sided self-adhesive pads at 400 mm centres
6. Installation: Fixed accurately and securely without overtightening fasteners, to provide a flat surface giving a distortion free reflection.

95 Window film

1. Description: To timber sash windows in ground floor bathrooms and treatment room. Refer to G-300s.
2. Type: Translucent vinyl privacy film obscuring direct visibility and allowing light transmission. Suitable for bathroom windows.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Size: Bespoke. Film to be cut and fitted on each glass pane, with a recess of 20mm from all edges. Refer to G-600s for details.
5. Colour: White
6. Finish: Matt
7. Fire performance: To BS EN 13501-1, Class B-s1, d0
8. Light transmission: 23%
9. Ultraviolet resistance: 4%
10. Adhesive: Clear, pressure-sensitive
11. Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.
12. Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.
13. Cleaning and maintenance instructions: Submit copies.

96 Manifestation

1. Description: To glazed doors and curtain walls. Refer to G-600s for details.
2. Design: Geometric pattern as drawings
   2.1. Art work: To be prepared by contractor and submitted for approval
      2.1.1. Media: Digital
3. Technique: Applied film, stencil cut vinyl, 10 year guarantee required

Ω End of Section

M10
Cement based levelling/ wearing screeds

To be read with preliminaries/ general conditions.

4 Cement:sand levelling screeds

1. Description: To new ground floor structural slab of the courthouse and extension
2. Substrate: In situ concrete slab
3. Screed construction: Floating, as clause 40
4. Thickness
   4.1. Minimum: 60 mm
5. Mix
   5.1. Proportions (cement:sand): To BS 8204-1
6. Finish: Smooth floated finish, as clause 70
   6.1. To receive: as per architects drawings G-700s
7. Other requirements: Including underfloor heating as per engineers specifications.

5 Gentle Clean and Patch Repair to Existing Screeds

1. **Area: Refer to Architects Drawings for locations.**

1. CONDITION ASSESSMENT & PREPARATION

- Survey: The contractor shall conduct a comprehensive survey of the floor to identify 'boss' (debonded) areas, cracks, and surface friability. All areas of concern are to be marked on a floor plan for review by the Design Certifier.
- Moisture Testing: Measure the moisture content of the screed using a calibrated hygrometer to I.S. EN 13813. Results must be recorded for the Assigned Certifier, particularly if a new floor finish is to be applied.
- Cleaning: Remove all surface contaminants, dust, and loose material using industrial HEPA-filtered vacuum extraction. For localized staining, use a pH-neutral detergent solution and a low-moisture scrubbing technique. Strictly no acid-etching or high-pressure water jetting.

2. CRACK REPAIR

- Fine Cracks (<3mm): Clean out cracks and gravity-feed with a low-viscosity, two-part epoxy or methyl methacrylate (MMA) resin injection system, designed for compatibility with older screeds.
- Movement Cracks: Where cracks are subject to ongoing movement, they must be 'stitched' using stainless steel dowels embedded in resin at 300mm centres, perpendicular to the crack line.

3. PATCH REPAIRS

- Cutting Out: Areas of 'boss' or failed screed are to be cut out to a neat square or rectangular perimeter. Use hand tools where possible to avoid vibrating the surrounding historic fabric. Minimum repair depth to be 10mm or to the depth of the failure.
- Substrate Preparation: Ensure the base is clean and free of laitance. Apply a bonding agent compatible with the repair mortar (e.g., an SBR-enhanced grout or an epoxy bonding bridge).
- Repair Mortar: Use a pre-bagged, shrinkage-compensated, polymer-modified cementitious repair mortar complying with I.S. EN 1504-3 (Class R2 or R3). The repair must be trowelled to a smooth finish, perfectly flush with the surrounding screed level.

4. FINISH AND PROTECTION

- Levelling: If the overall surface remains uneven, apply a high-strength, fibre-reinforced protein-free self-levelling compound (to I.S. EN 13813) in a localized manner, ensuring it is compatible with the vapour permeability of the historic floor.
- Protection: Cover repaired areas with breathable floor protection boards until the screed has reached full cure.

5. DOCUMENTATION & BCAR

- Ancillary Certification: The flooring specialist shall provide an Ancillary Certificate (Form Annex C) confirming the compressive strength (C-class) and wear resistance (AR-class) of the repair materials.
- Testing Logs: Submit records of moisture tests and pull-off tests (if required) to the Assigned Certifier for the project BCMS file.

21 Suitability of substrates

1. General
   1.1. Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
   1.2. Sound and free from significant cracks and gaps.
2. Concrete strength: In accordance with BS 8204-1, Table 2.
3. Cleanliness: Remove plaster, debris and dirt.
4. 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.

40 Floating construction

1. Insulation
   1.1. Type: 30 mm rigid polyisocyanurate (PIR) foam boards to BS EN 13165
   1.2. Installation: Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed.
2. Separating layer
   2.1. Type: Building paper
   2.2. Installation: Lay over insulation and turn up at perimeter abutments. Lap 100 mm at joints.

45 Aggregates and cements

1. Sand: To BS EN 13139.
   1.1. Grading limits: In accordance with BS 8204-1, Table B.1.
2. Coarse aggregates
   2.1. Standard: To BS EN 12620.
   2.2. Lightweight aggregates: In accordance with BS 8204-1, Annex A.
   2.3. Designation 4/10.
3. Cement
   3.1. Cement types: In accordance with BS 8204-1, clause 5.1.3.

47 Admixtures

1. Standards; In accordance with BS 8204-1, Table 1.
2. Calcium chloride: Do not use in admixtures.

50 Mixing

1. Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction..
2. Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
3. Consistency: Use while sufficiently plastic for full compaction.
4. Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

52 Compaction

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

55 Joints in levelling screeds

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

70 Smooth floated finish

1. Finish: Even texture with no ridges or steps.

85 Finishing generally

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

90 Curing

1. 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.
2. Curing period (minimum): As soon as screed has set sufficiently, closely cover with polyethylene sheeting for period recommended by screed manufacturer.
3. 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.

680 Surface sealer to wearing screeds

1. To existing screed in Bridewell. Refer to G-700s for details.
2. Composition: Water-based acrylic
3. Category: Deep-penetrating
4. Colour: Clear
5. Dry film thickness: 50 microns
6. Wet film thickness (minimum): 100 microns
7. Volatile Organic Compound (VOC) level: max. 10g/L.

Ω End of Section

M20
Plastered/ rendered/ roughcast coatings

To be read with preliminaries/ general conditions.

15 Cement:lime:sand roughcast (harling)

1. Description: To Facades of Courthouse extension
2. Substrate: Concrete common blockwork, as section F10
   2.1. Preparation: Not required
3. Mortar: Ready-to-use, retarded mortar or ready-mixed lime:sand
4. Sand: To BS EN 13139.
5. Grading: 0/2 or 0/4 (CP or MP); category 2 fines.
6. Lime: Non-hydraulic to BS EN 459-1, type CL 90S.
7. Undercoats
   7.1. Mix (cement:lime:sand): 1:0.5:4-4.5
   7.2. Thickness (excluding dubbing out and keys): Two coats, overall 10-14 mm
8. Final coat
   8.1. Coarse aggregate: To BS EN 12620.
      8.1.1. Type: Rounded gravel
      8.1.2. Single size: 2/6.3 mm (5 mm)
   8.2. Mix (cement:lime:sand:coarse aggregate): 1:0.5:3:1.5
9. Finish: Roughcast to an even thickness and texture. Scraped finish as clause 97 below.
10. Accessories: none

16 16Cleaning And Repairs To Cement Roughcast Render (Historic Building)

1. **1. PREPARATION AND BIOCIDAL TREATMENT**
   - **Survey:** Carry out a full hammer-tap survey. Mark all areas of delamination. Any areas of cement render that have caused significant decay to the underlying historic masonry must be reported to the Conservation Architect/Design Certifier before removal.
   - **Biocidal Wash:** Apply a biocidal product such as 'Rocryl' or equivalent approved (pH neutral, non-staining). Ensure the product is applied in dry weather and allowed to react for the period specified by the manufacturer to kill deep-seated spores within the roughcast texture.
   - **Cleaning:** Clean using a low-pressure steam system (DOFF or similar). Pressure must not exceed 60 bar at the nozzle to prevent 'plucking' of the cement binder or erosion of the aggregate.

   2. REPAIR OF CEMENT ROUGHCAST

   - **Cutting Out:** Carefully remove boss render. Edges should be cut using hand tools only; do not use disc cutters into the historic substrate.
   - **Substrate Preparation:** Remove all loose dust and salts. If the substrate is historic stone or brick, do not apply a high-suction bonding agent (SBR/PVA). Dampen the substrate with clean water to manage suction naturally.
   - **Repair Mix (Compatibility):** The repair mortar shall be a 'weak' cement-lime-sand mix to match the existing in strength and porosity, avoiding the use of pure OPC which is too brittle for historic fabric.
     - Mix Proportion: 1:2:9 (Cement: Lime: Sand) or 1:1:6 depending on the hardness of the original render, in accordance with S.R. 60 and I.S. EN 13914-1.

- Cement: White Portland Cement (to I.S. EN 197-1) may be required to match the existing tone.
- Aggregate: Match the grading, mineralogy, and color of the original 'dash' or 'roughcast' stone.

- **Application:** The finish must be 'harled' (thrown) onto the background using a wood-handled dashing shovel to ensure the texture matches the surrounding 'throw' pattern.

3. CRACK REPAIRS

- **Stabilization:** Fine cracks are to be 'stitched' if they are active, using stainless steel helical bars (to I.S. EN 845-1) embedded in a lime-modified grout prior to render repairs.

4. DOCUMENTATION & BCAR

- **Ancillary Certification:** The contractor must provide an Ancillary Certificate (Annex C) confirming the mortar mix proportions and that the repair does not trap moisture within the historic wall leaf.
- **Photographic Record:** Detailed 'Before, During, and After' photography must be provided for the Assigned Certifier's 'Building Control Management System' (BCMS) upload.

56A Repairs to Existing Lath & Plaster Ceilings & Cornice

1. To existing lath and plaster ceilings to be retained
2. **Removal of Modern Paint Layers to Retained Areas of Plaster**

   Area
   Areas of modern and failing paint layers to retained sections of sound lime plaster (ceiling & wall) shall be removed to expose the plaster substrate and provide a suitable substrate for painting.

   Procedure
   a) Old layers of paint shall be scraped back to the substrate using a putty knife, plastic scraper or an oscillating tool with rigid scraper blade.
   b) Work the flat edge of the tool across the surface of the wall to remove loosened pieces of paint taking care not to lean too heavily or causing scraping of the surface.
   c) Localised use of fine-grit sandpaper fitted to a rotary or oscillating tool may be required to stubborn areas.
3. **Repair of Cracks & Finishing of Uneven Surfaces to Retained Wall & Ceiling Plaster**
   Cracks in all sections of retained wall plaster shall be repaired and made good.

   Where retained sections of historic plaster are identified as the wall/ceiling finish, these areas shall be made good to achieve an even surface.

   Though it is anticipated that the evening out of surface finish shall be achieved using a proprietary breathable filler the contractor shall also allow for providing a lime finish skim coat to 20% of all retained plaster areas.

   Nb. A plaster specialist with at least 7 years conservation experience must be engaged by the contractor to carry out the following works.

   3.1. *Minor Cracks*
   a) Widen minor cracks slightly with a sharp, pointed tool such as a crack widener or a triangular can opener.
   b) Prior to repair remove dust and any loose debris from the crack using compressed air.
   c) Dampen the surrounding area with lime water.
   d) Fill with a mix of lime putty and fine aggregate (brush application).

   3.2. *Larger Cracks*
   Note that significant structural cracking is recorded in a number of locations and here the

underpinning and stitching of cracks and masonry areas is to be carried out as per the structural engineer's specification.
a) Larger cracks shall be widened to a width of approx. 50mm with mitred sides back to the lath forming a dovetail key.
b) Prior to repair remove dust and any loose debris from the crack using compressed air.
c) Dampen the surrounding area with lime water.
d) Apply repair in coats of no greater than 10mm.

3.3. *Uneven Surfaces*
Though it is anticipated that the evening out of surface finish shall be achieved using a proprietary breathable filler the contractor shall also allow for providing a lime finish skim coat to 20% of all retained plaster areas.

a) All uneven or pockmarked plaster surfaces shall be made good using a proprietary conservation plaster filler which is permeable and compatible for use with lime-based plaster. Product to be agreed with Conservation Consultant prior to use. Apply as per manufacturer's instructions.

4. **Tying Back of Ceiling Plaster**
Nb. Contractor to submit method statements for approval by the Design Team prior to commencement of task.

Area
All areas of retained historic ceiling plaster shall be carefully tied back and secured using plaster washers to timber joists.

Nb. A plaster specialist with at least 7 years conservation experience must be engaged by the contractor to carry out the following works.

Prior to commencing, trial sample panels will be satisfactorily tied back in the presence of the Design Team. All specified areas will be secured to the same standard as the agreed trial panels. Tying of the remaining areas will only proceed following approval by the Design Team.

Procedure
a) A circular chase (c.10mm deep) shall be cut away at 300mm centres, to receive the fixings. The plaster shall be removed using a sharp blade – no impact tools must be used.
b) Tie plaster back to timber joists using stainless steel plaster washers and self-tapping screws.
c) The screws are to be countersunk and the area repaired using casting plaster. Care is required to disturb as little of the surrounding plaster as possible.
d) Allow a number of days following the tying back to allow the ceiling to settle. Cracks and screw holes shall then be filled with casting plaster.

56B New Lath & Plaster Ceilings

1. **Area**
Areas called up for replacement ceiling plaster (lath and plaster) are shown on the architects drawings.

Nb. A plaster specialist with at least 7 years conservation experience must be engaged by the contractor to carry out the following works.

Prior to commencing, trial sample panels (including edge repair) will be satisfactorily repaired in the presence of the Design Team. All specified areas will be repaired to the same standard as the agreed trial panels. Repair of the remaining areas will only proceed following approval by the Design Team.

2. **Preparation of Laths**
a) Remove all damaged plaster until a sound fix has been achieved. Clean around the edges of the opening.
b) Larger areas shall be squared off at the edges as long as this will not result is the loss of a significant areas of sound historic plaster.

c) Re-nail any loose laths.
d) Replace/supplement where necessary with riven oak or chestnut timber laths.
e) Spacing between laths shall be approximately 7mm or the thickness of a lath.
f) All laths shall be sound and securely fixed using stainless steel fixings.
g) Laths shall be well wetted the day before plastering proceeds and again two hours before the work begins.
h) The laths must not be so dry as to rapidly absorb moisture from the plaster.

The plaster shall then be applied in the following three layers, lapping each new layer of plaster over the old plaster so that old and new are evenly joined. This stepping is recommended to produce a strong, invisible patch. The thickness of application will vary according to the depth of the original sections of surviving ceiling plaster.

3. **First Coat**
a) The mix for the dubbing out mortar is to be NHL 3.5 at rate of 1:2.5, with well graded aggregate of less than 10mm with the addition of animal hair.
b) The base coat which is the same mix as the dubbing out coat shall be pressed into the lath and allowed to cure.
c) The thickness of this first coat shall be 10mm.
d) Do not over-wet the surface (if water droplets appear on the surface it is over-wet). Plastering on laths may take longer to dry as there is no suction of moisture into the background.
e) Key the surface with a comb, or with a lath scratcher for plaster on laths, taking care not to score too deeply and ensuring that scratching is across, not in line with the lath.
f) If necessary control the rate of drying out by misting the surface with clean water or lime water, until all shrinkage has stopped and the mortar has hardened sufficiently to receive the second coat.

4. **Floating Coat**
a) The second coat shall be NHL 2 at a rate of 1:2.5 sand with aggregate of less than 3.5 and with the addition of hair.
b) This straightening coat shall not be applied until the first coat is sufficiently hard.
c) Apply with a laying-on trowel to a dampened background.
d) At this stage, if straightening is necessary, fill out irregularities in thin layers and apply the floating coat to the desired line using rules or dabs.
e) The maximum thickness shall be 14mm in one pass.
f) Tighten in as before with a cross grained wood float and key lightly to receive the finish.
g) Any irregularities in the background must be made good at this stage as it will not be possible to straighten the finishing coat due to its thinness.
h) Allow the second coat to harden sufficiently to receive the top/finish coat (approx 3-5 days).

5. **Finishing Coat**
a) Dampen the second coat in preparation for receiving the top/finishing coat.
b) Cracks shall be closed up by scouring the surface with a wooden float using a circular movement and pushing hard to consolidate the coat. This will enforce the bond between the coats and remove the high spots, creating a flatter surface.
c) A fine spray of water shall be applied in preparation for receiving the top/finishing coat.
d) Apply the 2mm top coat (lime putty). Work the top coat up to finish level and finish the surface match finish to adjacent original plaster surface.

6. **Protection & Aftercare of Lime**
a) The area/s must be covered with Hessian and allowed to dry out slowly over a period of three weeks.
b) The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.
c) In hot weather it will be necessary to regularly re-wet the sacking.
d) Lime products must not be used in temperatures of 5 degrees or falling.

56C New Lime Plaster Cornice

1. **Replacement of Missing / Damaged Cornice, Internal**

Nb. Contractor to submit method statements for approval by the Design Team prior to commencement of task.

1.1. *Area*
Missing / seriously damaged sections of cornice shall be replaced to match existing – refer to drawings for locations.

The decorative plaster shall be run in conjunction with the flat plaster work. The contractor will need to work the flat and decorative plaster at the same time in order to make allowances for the varying dimensions and planes of the ceiling.

Nb. A plaster specialist with at least 7 years conservation experience must be engaged by the contractor to carry out the following works.

Prior to commencing, a trial mould will be satisfactorily run in situ in the presence of the Design Team.

2. **Junction with Historic Wall Plaster & Stop Ends**
Prior to commencing, trial sample panels showing junctions with historic plaster and the termination of end details will be satisfactorily plastered in the presence of the Design Team.

3. **Horse**
a) The running moulds for the boarder are to be formed to exactly replicate in design and dimension the existing historic moulding (negative profile).
b) Profiles shall be taken from an intact section of existing moulding.

c) The profile shall be measured 1:1 by use of a rule, calibre scale, bubble level, square and plumb line.
d) A master profile shall be made in cardboard and tested in situ. Adjust any inaccuracies.
e) Make a finish profile in zinc sheeting to match the master profile. A second muffle profile shall be made 10mm smaller than the working profile.
f) The profiles shall be mounted on a wooden housing/horse.
g) Using datum markers the plaster contractor shall set up a temporary rail fixed to the ceiling for the running of the horse.

4. **Procedure**
a) Plaster contractor to set out lines and datum.
b) Appropriate timber carcass or reinforcement to be erected if required.
c) The base coat which is the same mix as the dubbing out coat shall be pressed into the lath and allowed to cure. The thickness of this first coat shall be 8 to 10mm.
d) The second coat shall be NHL 2 at a rate of 1:2.5 sand with aggregate of less than 3.5 and with the addition of hair.
e) The haired plaster is then applied to the backing and the cornice formed using the horsed – up running mould. This shall be allowed to cure.
f) The finish coat is to be gauged lime which shall be applied and moulded to achieve a smooth even finish to the cornice with thickness of 2mm.
g) The thickness of application will vary according to the depth of the original sections of surviving plaster.
h) Allow to cure and repair cracks as these develop.

5. **Protection & Aftercare**
a) The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.
b) Lime products must not be used in temperatures of 5 degrees or falling.

6. **Storage of Lime & Aggregate**
a) Lime products are usually supplied in water-resistant paper bags. If the bags are allowed to get wet they may be irreversibly damaged.
b) Once opened the exposure to air will start to weaken the hydraulic set. As a result any opened part bags left at the end of the day shall be carefully folded over at the top and put into a dry store. In this state the lime will remain useable for a further 2 or 3 days. Thereafter it shall be discarded.
c) All materials (lime/sand/aggregates) are to be stored in a clean, dry environment where there is no risk of contamination or damage.

56D Repairs to Lime Plaster Walls, (internal)

1. **Removal of Modern Paint Layers to Retained Areas of Plaster**

   1.1. *Area*
   Areas of modern and failing paint layers to retained sections of sound lime plaster (wall) shall be removed to expose the plaster substrate and provide a suitable substrate for painting.

2. **Procedure**
   a) Old layers of paint shall be scraped back to the substrate using a putty knife, plastic scraper or an oscillating tool with rigid scraper blade.
   b) Work the flat edge of the tool across the surface of the wall to remove loosened pieces of paint taking care not to lean too heavily or causing scraping of the surface.
   c) Localised use of fine-grit sandpaper fitted to a rotary or oscillating tool may be required to stubborn areas.

3. **Repair of Cracks & Finishing of Uneven Surfaces to Retained Wall & Ceiling Plaster**
   Cracks in all sections of retained wall plaster shall be repaired and made good.

   Where retained sections of historic plaster are identified as the wall/ceiling finish, these areas shall be made good to achieve an even surface.

   Though it is anticipated that the evening out of surface finish shall be achieved using a proprietary breathable filler the contractor shall also allow for providing a lime finish skim coat to 20% of all retained plaster areas.

   Nb. A plaster specialist with at least 7 years conservation experience must be engaged by the contractor to carry out the following works.

   3.1. *Minor Cracks*
   a) Widen minor cracks slightly with a sharp, pointed tool such as a crack widener or a triangular can opener.
   b) Prior to repair remove dust and any loose debris from the crack using compressed air.
   c) Dampen the surrounding area with lime water.
   d) Fill with a mix of lime putty and fine aggregate (brush application).
   e) Ruled ashlar finish to be re-created as existing

   3.2. *Larger Cracks*
   Note that significant structural cracking is recorded in a number of locations and here the underpinning and stitching of cracks and masonry areas is to be carried out as per the structural engineer's specification.
   a) Larger cracks shall be widened to a width of approx 50mm with mitred sides back to the lath forming a dovetail key.
   b) Prior to repair remove dust and any loose debris from the crack using compressed air.
   c) Dampen the surrounding area with lime water.
   d) Apply repair in coats of no greater than 10mm.
   e) Ruled ashlar finish to be re-created as existing

   3.3. *Uneven Surfaces*
   Though it is anticipated that the evening out of surface finish shall be achieved using a proprietary breathable filler the contractor shall also allow for providing a lime finish skim coat to 20% of all retained plaster areas.

   a) All uneven or pockmarked plaster surfaces shall be made good using a proprietary conservation plaster filler which is permeable and compatible for use with lime-based plaster. Product to be agreed with Conservation Consultant prior to use. Apply as per manufacturer's instructions.
   b) Ruled ashlar finish to be re-created as existing

56E New Lime Render to Internal Walls

1. **Re-plastering of Wall Areas in Lime Render**

1.1. *Area*
Areas called up for replacement plaster are shown on the architects drawings.
Well-seasoned and pressure treated timber stop rolls shall be installed to corners as per the existing historic.

1.2. *General requirements*
Prior to commencing, trial sample panels will be satisfactorily plastered in the presence of the Inspecting Authority. All specified areas will be plastered to the same standard as the agreed trial panels. Plastering of the remaining areas will only proceed following approval by the Design Team.

Nb. A plaster specialist with at least 7 years' conservation experience must be engaged by the contractor to carry out the following works.

2. **Protection of Surfaces**
Areas not called up for thrown plaster shall be protected prior to the onset of the works paying particular attention to floors, fireplaces and joinery.

3. **Mixing of Lime Plaster**
a) A conventional cement mixer may be used to prepare the mix.
b) Accurate measuring of material shall always be ensured.
c) Start with an empty mixer.
d) Mix the proprietary lime plaster product and water until the desired consistency has been reached (a rather dry porridge like mix).
e) The mix must be used within two hours and then left to set.

4. **Materials and Mixes for Dubbing Out, Thrown Coat & Flat Plaster**
a) The mix for the dubbing out mortar is to be NHL 3.5 at rate of 1:2.5, with well graded aggregate of less than 10mm with the addition of animal hair.
b) The mix for the first coat, which is also the thrown coat, should NHL 3.5 at a rate of 1:2.5, with aggregate of less than 10mm with the addition of animal hair.
c) The mix for the second thrown coat shall be NHL 2 at a rate of 1:3, with well graded aggregate of less than 10mm with the addition of animal hair.
d) The mix for the evening out coat for flat plastering shall be NHL 2 at a rate of 1:2.5 with a well graded aggregate of particles less than 10mm with the addition of animal hair.
e) The top coat shall be gauged lime putty to agreed samples.

Note: Thickness of application will vary according to the depth of the original plaster. Thickness noted in the application are guidelines and should be adjusted to meld the repair to the original level.

5. **Dubbing Out to Rubble Walls**

a) Dampen but do not wet background (in some cases it may not be necessary to damped the walls).
b) Apply mortar with trowel or float and press home to even out surface.
c) The dubbing coat shall not be straightened.
d) Key the surface, taking care not to score too deeply.
e) Thereafter if necessary control the rate of drying out by misting the surface with clean water or lime water, until all shrinkage has stopped and the mortar has hardened sufficiently to receive the thrown coat.
f) Do not over-wet the surface (if water droplets appear on the surface it is over-wet.
g) This coat shall be given sufficient time to cure (about 1 week, depending on curing conditions).
1.34.6 Application of Thrown Coat
a) The aim of this application is to cover all walls with a layer of plaster.
b) The maximum thickness should be 10-15mm with overall thickness of both thrown coats at 16mm.
c) Ensure that surrounding surfaces are well protected prior to proceeding.
d) Dampen the surface prior to application of the plaster mix.
e) The coat is to be applied by throwing the plaster from a trowel onto the wall surface. This will remove air bubbles from the mix and ensure the best bond between the plaster and the wall.
f) This coat should be allowed to dry for 3-5 days.

g) This coat should be followed with the second thrown coat consisting of a weaker mix.
h) In the case where the application of flat plaster is to follow, the thrown coat should be keyed and allowed to harden sufficiently to receive the next coat (approx. 3-5 days).

6. **Second or Floating Coat to Flat Plaster**
a) This straightening coat should not be applied until the first coat is sufficiently hard.
b) Apply with a laying-on trowel to a dampened background.
c) At this stage, if straightening is necessary, fill out irregularities in thin layers and apply the floating coat to the desired line using rules or dabs.
d) The maximum thickness should be 14mm in one pass.
e) Tighten in as before with a cross grained wood float and key lightly to receive the finish.
f) Any irregularities in the background must be made good at this stage as it will not be possible to straighten the finishing coat due to its thinness.
g) Allow the second coat to harden sufficiently to receive the top/finish coat (approx. 3-5 days).

7. **Finishing Coat**
a) Dampen the second coat in preparation for receiving the top/finishing coat.
b) Cracks should be closed up by scouring the surface with a wooden float using a circular movement and pushing hard to consolidate the coat. This will enforce the bond between the coats and remove the high spots, creating a flatter surface.
c) A fine spray of water should be applied in preparation for receiving the top/finishing coat.
d) Apply the 2mm top coat (lime putty). Work the top coat up to finish level and polish the surface using a plasterer's steel trowel
e) The surface is to be ruled to match the existing "Ruled Ashlar" decorative finish internally using a long metal straight edge and appropriate trowel with rounded edge. Samples are to be produced and agreed in advance as set out above.

8. **Protection & Aftercare of Lime**
a) The area/s must be covered with Hessian and allowed to dry out slowly over a period of three weeks.
b) The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.
c) In hot weather it will be necessary to regularly re-wet the sacking.
d) Lime products must not be used in temperatures of 5 degrees or falling.

56F Cleaning And Repainting To Lime Plaster Walls (Internal)

1. **Area**
Areas called up for cleaning and repainting are shown on the architects drawings.

1. PREPARATION AND CLEANING

- **Surface Condition:** Before commencing, all surfaces must be inspected for signs of salt efflorescence, damp, or friable plaster. Any areas of significant deterioration must be reported to the Design Certifier prior to treatment.
- **Cleaning Method:** Carefully remove surface dust, cobwebs, and loose debris using soft-bristled brushes and HEPA-filtered vacuum extraction.
- **Removal of Contaminants:** Localized greasy deposits or soot shall be removed using vulcanized rubber sponges (dry cleaning) or, where necessary, slightly damp deionized water sponges. Do not saturate the lime substrate.
- **Existing Paint Layers:** Ensure existing paint is sound and compatible with the new breathable system. Any localized flaking of existing breathable paint is to be removed using a light touch with a plastic scraper to avoid scarring the lime putty finish.

2. PAINTING SYSTEM

- Permeability Requirement: The paint system must be highly vapour permeable with an equivalent air layer thickness (S_d value) of less than or equal to 0.02 m to I.S. EN ISO 7783.
- Product Type: Silicate-based mineral paint (to I.S. EN 15824) or premium Claypaint. Standard film-forming acrylic or vinyl emulsions are strictly prohibited.
- Application:

- Primer/Mist Coat: Apply a dilution coat as recommended by the manufacturer to suit the porosity of the lime plaster.
- Finish Coats: Minimum two full coats applied by brush or specialist roller, ensuring even coverage without clogging the texture of the plaster.

3. SPECIALIST REQUIREMENTS

- Specialist Contractor: A contractor/painter with a minimum of 7 years' documented experience in historic building conservation and the application of mineral/lime-based finishes must be engaged.
- Samples: Prepare a 1m x 1m sample area for approval of cleaning efficacy and paint finish/colour by the Architect/Design Certifier before proceeding with the main works.

4. DOCUMENTATION & BCAR

- Ancillary Certification: The specialist contractor shall provide an Ancillary Certificate (Form Annex C) confirming that the cleaning agents and paint systems used are compatible with the lime substrate and meet the vapour permeability requirements specified.
- Data Sheets: Submit full technical data sheets and Environmental Product Declarations (EPDs) to the Assigned Certifier for the project fabric log.

65 Mixing

1. Render mortars (site-made)
   1.1. Batching: By volume using gauge boxes or buckets.
   1.2. Mix proportions: Based on damp sand. Adjust for dry sand.
   1.3. Lime:sand: Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.
2. Mixes: Of uniform consistence and free from lumps.
3. Contamination: Prevent intermixing with other materials.

67 Cold weather

1. General: Do not use frozen materials or apply coatings on frozen or frost bound substrates.
2. Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
3. External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

69 Ready prepared lime putty

1. Type: Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.
   1.1. Maturation: In pits/ containers that allow excess water to drain away.
   1.2. Density of matured lime putty: 1.3-1.4 kg/L.
2. Maturation period before use (minimum): 90 days.
3. Storage: Prevent drying out or wetting. Protect from frost.

71 Suitability of substrates

1. General: Suitable to receive coatings. Sound, free from contamination and loose areas.
2. Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.
3. Tolerances: Permitting specified flatness/ regularity of finished coatings.
4. Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

74 Existing damp affected plaster/ render

1. Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
2. Perished and salt contaminated masonry
   2.1. Mortar joints: Rake out.
   2.2. Masonry units: Submit proposals.
3. Drying out substrates: Establish drying conditions.
4. Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.

76 Removing defective existing plaster

1. Plaster for removal: Loose, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
   1.1. Hollow, detached areas: Remove
2. Stained plaster: Remove
3. Removing defective plaster: Cut back to a square, sound edge.
4. Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.
5. Cracks
   5.1. Fine hairline cracking/ crazing: Leave.
   5.2. Other cracks: Obtain instructions
6. Dust and loose material: Remove from exposed substrates and edges.

78 Removing defective existing render

1. Render for removal: Detached, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
2. Removing defective render: Cut out to regular rectangular areas with straight edges.
   2.1. Horizontal and vertical edges: Square cut or slightly undercut.
   2.2. Bottom edges to external render: Do not undercut.
   2.3. Render with imitation joints: Cut back to joint lines.
3. Cracks (other than hairline cracks): Cut out to a width of 75 mm (minimum).
4. Dust and loose material: Remove from exposed substrates and edges.

87 Application of coatings

1. General: Apply coatings firmly and achieve good adhesion.
2. Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
   2.1. Accuracy: Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
3. Drying out: Prevent excessively rapid or localized drying out.
4. Keying undercoats: Cross scratch plaster coatings and comb render coatings. Do not penetrate undercoat.

93 Curing and drying of render coatings

1. General: Prevent premature setting and uneven drying of each coat.
2. Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water.
   2.1. Curing period (minimum): As render manufacturer's recommendations

3. Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

94 Flatness/ surface regularity

1. Sudden irregularities: Not permitted.
2. Deviation of plaster surface: Measure from underside of a straight edge placed anywhere on surface.
   2.1. Permissible deviation (maximum) for plaster not less than 13 mm thick: 3 mm in any consecutive length of 1800 mm.

97 Render final coat – scraped finish

1. Finish: Scraped to expose aggregate and achieve an even texture.

99 Render final coat – plain floated finish

1. Finish: Even, open texture free from laitance.

Ω End of Section

M40
Stone/ concrete/ quarry/ ceramic tiling/ mosaic

To be read with preliminaries/ general conditions.

5 Tiles to kitchen

1. Description: To tiled walls of kitchens as per G-300s.
2. Tiles: Glazed ceramic wall tiles
   - 2.1. Manufacturer/ Supplier: Contractor's choice
     - 2.1.1. Product reference: Submit proposals
   - 2.2. Colour: Refer to G-300s.
     - 2.2.1. Colour 1 (Courthouse): Pea Green
     - 2.2.2. Colour 2 (Bridewell): Warm Light Grey
   - 2.3. Finish: Satin or Gloss
   - 2.4. Size: 150 x 150 mm
   - 2.5. Thickness: 6.5mm
   - 2.6. Slip potential
   - 2.7. Recycled content: 20% (minimum) to BS EN ISO 14021
   - 2.8. Other requirements: as per architects drawings
3. Background/ Base: Walls : plasterboard as per K10.
   - 3.1. Preparation: Apply suitable primer and joint tape is needed.
4. Intermediate substrate: Not required
5. Bedding
   - 5.1. Walls: Adhesive bed notched trowel and buttering method, as clause 55
   - 5.2. Adhesive to BS EN 12004-1: Contractor’s choice
6. Joint width: 3mm
7. Grout: Silicon grout, White

5 Porcelain tiles flooring F.06a and F.06b

1. Description: To all porcelain tiled flooring (F.06) as per G-700s
2. Tiles: Porcelain floor tiles
   - 2.1. Manufacturer/ Supplier: Submit proposals
     - 2.1.1. Product reference: Submit proposals
   - 2.2. Colour: Refer to G-700s and G-300s.
     - 2.2.1. Colour 1: Grey with a sand undertone
     - 2.2.2. Colour 1: Grey with a blue undertone for a limestone effect
   - 2.3. Finish: Natural/Matt
   - 2.4. Size: 600x600mm
   - 2.5. Thickness: 10mm
   - 2.6. Slip potential
     - 2.6.1. Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2 and -3: 36 wet / 36+ dry
     - 2.6.2. Ramp test class: R10
   - 2.7. Recycled content: 20% (minimum) to BS EN ISO 14021
   - 2.8. Other requirements: as per architects drawings

3. Background/ Base: Screed as per M10
   3.1. Preparation: Ensure surfaces are clean and dry. Apply suitable primer. Let dry before tiling.
4. Intermediate substrate: Not required
5. Bedding
   5.1. Floors: Adhesive bed – buttering method, as clause 60
   5.2. Adhesive to BS EN 12004-1: Contractor's choice
6. Joint width: 5mm
7. Grout: Cement-based, natural colour.
   7.1. Type/ classification: CG2WA
8. Movement joints: 15mm
   8.1. Location: At perimeter of all rooms
9. Accessories: Refer to architects drawings.

5 Tiles to bathrooms F.04

1. Description: To all tiled walls and floors (F.04) as per G-400s and G-700s
2. Tiles: Glazed porcelain floor and wall tiles
   2.1. Manufacturer/ Supplier: Contractor's choice
      2.1.1. Product reference: Submit proposals
   2.2. Colour: White
   2.3. Finish: Matt
   2.4. Size: 150 x 150 mm
   2.5. Thickness: 8mm
   2.6. Slip potential
      2.6.1. Ramp test class: R10
   2.7. Recycled content: 20% (minimum) to BS EN ISO 14021
   2.8. Other requirements: as per architects drawings
3. Background/ Base: Walls : Moisture resistant plasterboard as per K10. Floors : Screed as per M10.
   3.1. Preparation: Walls : Apply suitable primer and joint tape is needed. Floors : Apply suitable primer. Ensure all surfaces are clean and dry before preparation and before tiling.
4. Intermediate substrate: Not required
5. Bedding
   5.1. Walls: Adhesive bed notched trowel and buttering method, as clause 55
   5.2. Floors: Adhesive bed – buttering method, as clause 60
   5.3. Adhesive to BS EN 12004-1: Contractor's choice
6. Joint width: 3mm
7. Grout: Reaction-resin grout, White.
8. Movement joints: Flooring: 10mm
   8.1. Location: At perimeter of all rooms

10 Repairing/renovating/conserving Limestone Flooring

1. **Description**
   Refer to Architects Drawings for locations.

   General requirements
   All Limestone flooring is to be retained. Generally, the flagstones are to be cleaned and cleared of

any existing finish (paint, carpet, etc.) before being sealed as specified below (section 5).
If lifting and re-laying of flagstones appears necessary, notify the architect before commencing work and follow specifications below (section 2,3 and 4).

2. **Lifting of Flagstones**
Note that flagstones are particularly thin and adequate care must be taken to prevent the fracturing of flagstones during salvage/removal.
a) Mortar packing to the joints shall be carefully removed with a hack-saw blade.
b) Gently ease the stone up from its bed using an appropriate tool (using a block of wood when levering against adjacent edges) taking care not damage/chip the flagstones.
c) A second pair of hands shall be required to prevent the stone from fracturing during lifting.
d) In all cases the surrounding stone is to be left undamaged.
d) Flagstones which have cracked into three or more pieces shall be disposed of except where one or more pieces can be cut down to a size of at least 400mm x400mm.
e) Flagstones which have delaminated or which exhibit an excessively uneven surface shall be discarded.
f) All areas of existing bedding mortar shall be cleaned from the underside of the flag and edges prior to re-bedding. Mortar may be removed using a folded nylon scouring pad and water.
g) Flagstones identified as suitable for re-use shall be stored in purpose-built robust crates, according to size and shall be stacked vertically. Stone shall be stored in clean, dry conditions.

3. **Re-laying of Limestone Flooring**

3.1. *Area*
The salvaged limestone flagstones shall be carefully re-laid to designated areas of the ground floor as directed by the architect.

3.2. *Relaying Procedure*
a) The bedding mortar shall be moistened prior to relaying.
b) The position and orientation of the original stone is to be maintained.
c) All areas of existing bedding mortar shall be cleaned from the underside the flag and edges prior to re-bedding. Mortar may be removed using a folded nylon scouring pad and water.
d) The stone shall be laid to an even surface.
e) The stone is to be firmly bedded in the mortar.
f) During placement, no damage is to be caused to the flagstone or that of the adjacent flags.

3.3. *Grouting Procedure*
a) Where butt jointing is unachievable it may be necessary use stainless steel strips of an agreed thickness to obtain an even joint thickness.
b) The mortar shall be a dry mix of 3:1 fine sliver sand: lime NHL3.5.
c) The colour of the mortar shall be agreed on site by the conservation architect.
d) The mortar shall be firmly packed into the joint using fingers (protected by a plastic glove) and then tamped in firmly using a small bristle brush until an even and level surface just below the surface of the stone is attained.
e) The mortar shall be sprinkled lightly with water to achieve a mortar set.
f) Any mortar residue shall be wiped off immediately using a damp cloth and no mortar stains are to be left on the faces of the stones.
g) Once the grout is beginning to set the floor shall be thoroughly cleaned to the Inspecting Authorities approval.
h) Following cleaning all areas of replacement flagstones are to be protected from foot traffic by laying dry Hessian on the floor.
i) All access to the area shall be denied until works are completed and the mortar has gone off (three weeks).
j) Upon completion the floor area shall be protected against foot traffic and soiling.

4. **Protection & Aftercare of Lime**
a) The area/s must be covered with Hessian and allowed to dry out slowly over a period of three weeks.
b) The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.

c) In hot weather it will be necessary to regularly re-wet the sacking.
d) Lime products must not be used in temperatures of 5 degrees or falling.

5. **Finish**
Clear matt waterproof sealant is to be applied to the limestone on completion according to manufacturers instructions to provide a waterproof breathable finish. Dry look, invisible finish required.

15 New backgrounds/ bases

1. Background drying times (minimum)
    1.1. Brick/block walls: six weeks.
    1.2. Rendering: two weeks.
    1.3. Gypsum plaster: four weeks.
2. Base drying times (minimum)
    2.1. Concrete slabs: six weeks.
    2.2. Cement:sand screeds: three weeks.

20 Existing backgrounds/ bases generally

1. Efflorescence, laitance, dirt, loose and defective material: Remove and make good defective areas with materials compatible with background/base and bedding.
2. Deposits of oil, grease and other materials incompatible with the bedding: Remove.
3. Tile, paint and other nonporous surfaces: Clean.
4. Wet backgrounds: Dry before tiling.
5. Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

25 New plaster

1. Plaster: Dry, solidly bedded, free from dust and friable matter.
2. Plaster primer: Apply if recommended by adhesive manufacturer.

30 Fixing generally

1. Colour/ shade: Avoid unintended variations within tiles for use in each area/ room.
    1.1. Variegated tiles: Mix thoroughly.
2. Adhesive: Compatible with background/ base.
3. Cut tiles: Neat and accurate.
4. Fixing: Provide adhesion over entire background/ base and tile backs.
5. Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints.
6. Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles/ mosaics and no gap should be greater than 6 mm, i.e. a tolerance of
7. Surplus bedding material: Clean from joints and face of tiles/ mosaics.

32 Mortar bedding

1. Bedding mix
    1.1. Cement: Portland to BS EN 197-1, type CEM I/42.5.
    1.2. Sand for walls: Fine aggregate to BS EN 13139.
        1.2.1. Grading designation: 0/2 (CP or MP) category 2 fines.
    1.3. Sand for floors: Fine aggregate to BS EN 13139.

2. Grading designation: 0/4 (MP) category 1 fines and between 20-66% passing a 0.5 sieve.
3. Batching: Select from:
   3.1. Batch by weight.
   3.2. 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.
4. Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
5. Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

35 Setting out

1. Joints: True to line, continuous and without steps.
   1.1. Joints on walls: Horizontal, vertical and aligned round corners.
   1.2. Joints in floors: Parallel to main axis of space or specified features.
2. Cut tiles: Minimize number, maximize size and locate unobtrusively.
3. Joints in adjoining floors and walls: Align.
4. Joints in adjoining floors and skirtings: Align.
5. Movement joints: Where locations are not indicated, submit proposals.
6. Setting out of tiles and stone slabs : Submit proposals.

55 Adhesive bed – notched trowel and buttering method to walls

1. Application: By floated coat of adhesive to dry background. Comb surface.
2. Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

60 Adhesive bed – notched trowel and buttering method to floors

1. Application: Floated coat of adhesive to dry base and comb surface.
2. Tiling: Apply coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: Within range allowed by manufacturer.

66 Semidry cement:sand bedding (floors)

1. Mortar bedding mix: 1:3.5-4 cement:sand.
   1.1. Water content: A film of water must not form on surface of bed when fully compacted.
2. Preparation: Dampen base.
3. Laying: Lay suitably small working areas of screeded bed. Compact thoroughly to level.
   3.1. Finished bed thickness (minimum): 25 mm
   3.2. Finished bed thickness (maximum): 70 mm
4. Tiling: Within two hours and before bedding sets, evenly coat backs of tiles with neat cement slurry. Beat tiles firmly into position.

70 Grouting

1. Sequence: Grout when bed/ adhesive has set sufficient to prevent disturbance of tiles.
2. Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
3. Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.

4. Profile: Slightly concave
5. Polishing: When grout is hard, polish tiling with dry cloth.

75 Sealant movement joints

1. Description: GENERALLY, IN TILING TO FLOORS
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor’s choice
3. Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
   3.1. Width: 15mm
4. Sealant:
   4.1. Colour: As Grout
   4.2. Preparation and application: As section Z22.

Ω End of Section

M50
Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting

To be read with preliminaries/ general conditions.

15 Carpet tiling F.08

1. Description: To Courthouse entrance. Refer to G-700.s
2. Base: Power-floated screed as clause M10.
   - 2.1. Preparation: Ensure all surfaces as clean and dry.
3. Fabricated underlay: None
4. Carpet tiles to BS EN 14041 and BS EN 1307
   - 4.1. Evidence of compliance: Submit.
   - 4.2. Reaction to fire classification: Class Cfl or better
   - 4.3. Manufacturer: Contractor's choice
     - 4.3.1. Product reference: Submit proposals
   - 4.4. Type: Cut pile
   - 4.5. Material: 1000g/m^2 Polyamide fibres (ca. 7mm) on PC non-woven backing (ca. 2mm)
   - 4.6. Finish: Tufted.
   - 4.7. BS EN 1307 classification
     - 4.7.1. Levels of use class: 33
     - 4.7.2. Luxury rating class: LC1 or better
     - 4.7.3. Additional performance properties to BS EN 1307: Suitability occasional humid conditions (Dimensional stability and Colour fastness to wet/ dry rubbing). Resistant to fraying.
   - 4.8. Recycled content: 50% (minimum) to BS EN ISO 14021
   - 4.9. Size: 1035x1400mm - thickness to be max.10mm
   - 4.10. Colour/ pattern: Black / no pattern
5. Accessories: Proprietary aluminium frame to all edges
6. Other requirements: None

20 Sheeting F.05

1. Description: To all linoleum flooring (F.05) as per G-700s
2. Base: Screed as clause M10.
   - 2.1. Preparation: Ensure surfaces are clean and dry
3. Flooring roll
   - 3.1. Standard: To BS EN 14041
     - 3.1.1. Evidence of compliance: Submit.
   - 3.2. Reaction to fire classification: Class Cfl
   - 3.3. Material: Linoleum on foam backing to BS EN 686
   - 3.4. Manufacturer: Contractor's choice Forbo or similar
     - 3.4.1. Product reference: Submit proposals. Marmoleum Fresco or similar.
   - 3.5. BS EN ISO 10874 class: 33
   - 3.6. Slip potential
     - 3.6.1. Slip resistance to DIN 51130: R9
     - 3.6.2. Slip resistance to EN 13893: 0.30 or more

3.7. Acoustical impact sound reduction to EN-ISO 717-2: up to 18dB

3.8. Indoor Air Emissions to EN 16516: TVOC at 28 days: < 0.05mg/m^3

3.9. Recycled content: 45% (minimum) to BS EN ISO 14021

3.10. Width: 1900 mm or 2000 mm

3.11. Thickness: 3.5mm

3.12. Colour/ pattern: Light marbled effect. Colour NCS S 2005-G70Y. LRV 48% (to BS 8493).

4. Installation: Follow manufacturer's recommendations

4.1. Underfloor heating: Ensure underfloor heating systems have been found functioning correctly and switched off 48 hours prior to floor covering installation and remains off for at least 48 hours after installation is complete. An alternative heating source can be provided to ensure that the rooms temperature remains constant (18 to 27° C).

5. Adhesive (and primer if recommended by manufacturer): Suitable superior acrylic dispersion, very low VOC-emitting (to EN 13999-2/4) adhesive with a high initial grab. Non-flammable, odour neutral.

6. Seam welding: Hot welding as recommended by manufacturer, with complimentary coloured rod

7. Accessories: Skirtings/upstands as clause M50/80 in Treatment room of Courthouse only (refer to G-417).

8. Finishing: Manufacturer's standard

9. Other requirements: Warranty 10 years. Provide cleaning and maintenance guide to end users.

40 Laying coverings on new wet laid bases

1. Base drying aids: Not used for at least four days prior to moisture content test.

2. Base moisture content test: Carry out in accordance with BS 5325, Annexe A or BS 8203, Annexe A.

3. Commencement of laying coverings: Not until all readings show 75% relative humidity or less.

65 Laying coverings

1. Base/ substrate condition: Rigid, dry, smooth, free from grease, dirt and other contaminants.

2. Use a primer where recommended by adhesive manufacturer. Allow to dry thoroughly.

3. Adhesive: As specified, as recommended by covering manufacturer or, as approved.

4. Conditioning of materials prior to laying: As recommended by manufacturer.

5. Environment: Before, during and after laying, provide adequate ventilation and maintain temperature and humidity approximately at levels which will prevail after building is occupied.

6. Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks, stains, trowel ridges and high spots.

80 Skirtings/Upstands

1. Description: To Courthouse Treatment room. Refer to G-417 for details.

2. Types: Pre-formed PVC and linoleum

3. Size: 100 x 50 x 2400mm

4. Thickness: 2mm

5. Pattern/Colour: To match flooring as clause M50/20

6. Manufacturer: Contractor's choice Forbo or similar

6.1. Product reference: Submit proposals. Marmoform or similar

7. Fixing: Securely bond with mitred corners.

7.1. Corners: Mitre joints.

85 Waste

1. Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

Ω End of Section

M60
Painting/ clear finishing

To be read with preliminaries/ general conditions.

10 Emulsion paint Externally

1. Description: To Courthouse facades
2. Type: 100% water-based, weather resistant, breathable, exterior quality paint for masonry for long-lasting application (up to 15 years).
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Surfaces: Existing render
   4.1. Preparation: Ensure surfaces are clean and dry. Remove all loose and defective coatings. Tape and fill joints where required.
5. Colour: Very light grey to NCS S 1500-N
6. Initial coats: As recommended by manufacturer
7. Undercoats: As recommended by manufacturer
8. Finishing coats: Matte (2%)
   8.1. Number of coats: 1

10 Emulsion paint Internally

1. Description: To new internal plastered surfaces and plasterboard - not to lime based or breathable substrates
2. Type: 100% water-based, washable, Low VOC, Low odour.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Surfaces: plastered masonry and plasterboard
   4.1. Preparation: Ensure surfaces are clean and dry. Remove all loose and defective coatings. Tape and fill joints where required.
5. Colour: Warm white to NCS S0603-Y40R
6. Initial coats: As recommended by manufacturer
7. Undercoats: As recommended by manufacturer
   7.1. Number of coats: 1
8. Finishing coats: Low sheen (7%)
   8.1. Number of coats: 2

11 Breathable Paint to Lime Based Substrates

1. Type: Washable premium breathable lime mineral paint for interior use.
2. Surfaces: New and existing lime based walls and ceilings
3. Preparation: Ensure all surfaces are clean and dry. Remove all loose material. Fill joints and sand where required.
4. Colour: Warm white to NCS S0603-Y40R
5. Coats: Dilute as recommended by manufacturer (if required).
   5.1. To newly plastered surfaces: 3 no. coats
   5.2. To existing surfaces: 2 no. coats

12 Gloss paint

1. Description: To all existing and retained ironwork, including railings, gates, fences and window grids.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Colours: Refer to architects drawings for details and locations
   3.1. Blue 2: To NCS S 5005-B20G
   3.2. Black: To NCS S 9000-N
4. Surfaces: Cleaned, repaired and prepared as clause Q40
5. Initial coats: As recommended by manufacturer
6. Undercoats: As recommended by manufacturer
7. Finishing coats: Full gloss (95% sheen)
   7.1. Number of coats: 2

14 Eggshell/ satin paint

1. Description: To internal & external metalwork, signage, joinery and to existing timber doors, doorframes, surrounds and windows as per architects schedules and drawings.
2. Type: Exterior quality 100% water-based paint. Low VOC-emitting and long-lasting (up to 6 years). Sheen 20%
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Surfaces: Uncoated
   4.1. Preparation: Generally as clause 30, 32 and 35 below.
      4.1.1. New timber elements to be painted: As clause 37
      4.1.2. Existing joinery, timber railings, windows, doors etc.: As clause 41
      4.1.3. New metalwork: As clause 39
5. Colours: Refer to architects drawings for details and location
   5.1. Warm white: To NCS S 0603-Y40R
   5.2. Very Light Grey: To NCS S 2000-N
   5.3. Blue 1: To NCS S 4020-B
   5.4. Blue 2: To NCS S 5005-B20G
   5.5. Green: To NCS S 3020-G30Y
   5.6. Orange/Red: To NCS S 3030-Y60R
   5.7. Pink: To NCS S 3020-R10B
6. Initial coats: As recommended by manufacturer
   6.1. Number of coats: 1
7. Undercoats: As recommended by manufacturer
   7.1. Number of coats: 1
8. Finishing coats
   8.1. Number of coats: 1

18 Special coating Epoxy floor paint

1. Description: To all F.07 surfaces as per G-700s.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice

3. Surfaces: New screed as per clause M10
   3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: As recommended by manufacturer
   4.1. Number of coats: 1
5. Undercoats: As recommended by manufacturer
   5.1. Number of coats: 1
6. Finishing coats: Two part epoxy floor paint in RAL 9006 or equivalent.
   6.1. Number of coats: 1
   6.2. Slip resistance value - water wet (minimum): R9

18 Special coating Timber and Joinery - Ash

1. Description: Internal finish to all Ash wall linings, joinery etc.
2. Manufacturer: OSMO or equivalent
   2.1. Product reference: OSMO "Polyx-oil Tints" or equivalent
3. Surfaces: Internal Solid ash or ash-veneered panels
   3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: "Light grey" or "Honey" colour hardwax/polyx oil
   4.1. Number of coats: 1
5. Undercoats: "Light grey" or "Honey" colour hardwax/polyx oil
   5.1. Number of coats: 1
6. Finishing coats: "Light grey" or "Honey" colour hardwax/polyx oil
   6.1. Number of coats: 1
   6.2. Slip resistance value - water wet (minimum): n/a

18 Special coating Timber and Joinery - Oak or other

1. Description: Internal finish to all new European oak timber floors, timber steps, joinery etc. and to existing timber stairs.
2. Manufacturer: OSMO or equivalent
   2.1. Product reference: OSMO "Polyx-Oil Effect" or equivalent
3. Surfaces: Internal timber, Solid European Oak
   3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: "Raw" or "natural" colour hardwax/polyx oil
   4.1. Number of coats: 1
5. Undercoats: "Raw" or "natural" colour hardwax/polyx oil
   5.1. Number of coats: 1
6. Finishing coats: "Raw" or "natural" colour hardwax/polyx oil
   6.1. Number of coats: 1
   6.2. Slip resistance value - water wet (minimum): PTV to BS 7976 of 40 for flooring and stairs

22 Handling and storage

1. Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
2. Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

28 Protection

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

30 Preparation generally

1. Standard: In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File and CDM Construction Phase Plan where applicable.
3. Risk assessments and method statements for suspected hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
5. Substrates: Sufficiently dry in depth to suit coating.
6. Efflorescence salts, dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
7. Surface irregularities: Provide smooth finish.
8. Organic growths and infected coatings
    8.1. Remove with assistance of biocidal solution.
    8.2. Apply residual effect biocidal solution to inhibit regrowth.
9. Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
10. Dust, particles and residues from preparation: Remove and dispose of safely.
11. Water-based stoppers and fillers
    11.1. Apply before priming unless recommended otherwise by manufacturer.
    11.2. If applied after priming: Patch prime.
12. Doors, opening windows and other moving parts
    12.1. Ease, if necessary, before coating.
    12.2. Prime resulting bare areas.

32 Previously coated surfaces generally

1. Preparation: In accordance with BS 6150.
2. Contaminated or hazardous surfaces: Give notice of:
    2.1. Coatings suspected of containing lead.
    2.2. Substrates suspected of containing asbestos or other hazardous materials.
    2.3. Significant rot, corrosion or other degradation of substrates.
3. Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
5. Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
6. Alkali affected coatings: Completely remove.
7. Retained coatings
    7.1. Thoroughly clean.
    7.2. Gloss-coated surfaces: Provide key.
8. Partly removed coatings
    8.1. Apply additional preparatory coats.

8.2. Junctions: Provide flush surface.

9. Completely stripped surfaces: Prepare as for uncoated surfaces.

35 Fixtures and fittings

1. Risk assessment and method statement for hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
2. Removal: Before commencing work: Ironmongery, cover plates, grilles, wall clocks, and other surface mounted fixtures.
3. Replacement: Refurbish as necessary, refit when coating is dry.

37 Wood preparation

1. General: Provide smooth, even finish with lightly rounded arrises.
2. Degraded or weathered surface wood: Take back surface to provide suitable substrate.
3. Degraded substrate wood: Repair with sound material of same species.
4. Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
5. Resinous areas and knots: Apply two coats of knotting.
6. Defective primer: Take back to bare wood and reprime.

39 Steel preparation

1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.
2. Defective paintwork: Remove to leave a firm edge and clean bright metal.
3. Sound paintwork: Provide key for subsequent coats.
4. Corrosion and loose scale: Take back to bare metal.
5. Residual rust: Treat with a proprietary removal solution.
6. Bare metal: Apply primer as soon as possible.
7. Remaining areas: Degrease.

41 Masonry and rendering preparation

1. Loose and flaking material: Remove.

43 Plaster preparation

1. Nibs, trowel marks and plaster splashes: Scrape off.
2. Overtrowelled 'polished' areas: Provide suitable key.
3. Depressions around fixings: Fill with stopper/ filler.

45 Previously painted window frames

1. Paint encroaching beyond glass sight line: Remove.
2. Loose and defective putty: Remove.
3. Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
4. Finishing
   4.1. Patch prime, reputty, as necessary and allow to harden.
   4.2. Seal and coat as soon as sufficiently hard.

61 Coating generally

1. Application: In accordance with BS 6150,

2. Conditions: Maintain suitable temperature, humidity and air quality.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats: Apply as soon as possible on same day as preparation is completed.
7. Finish
   7.1. Even, smooth and of uniform colour.
   7.2. Free from brush marks, sags, runs and other defects.
   7.3. Cut in neatly.
8. Doors, opening windows and other moving parts: Ease before coating and between coats.

68 Staining wood

1. Primer: Apply, if recommended by stain manufacturer.
2. Application: Apply in flowing coats and brush out excess stain to produce uniform appearance.

69 Varnishing wood

1. First coat: Thin with plant oil-based thinner
   1.1. Brush well in and lay off avoiding aeration.
2. Subsequent coats: Provide light key along the grain between coats.

70 External doors

1. Bottom edges: Prime and coat before hanging.

75 Bead glazing to coated wood

1. Before glazing: Apply first two coats to rebates and beads.

80 Linseed oil putty glazing

1. Setting: Allow putty to set for seven days.
2. Sealing
   2.1. Within a further 14 days, seal with a solvent-borne primer.
   2.2. Fully protect putty with coating system as soon as it is sufficiently hard.
   2.3. Extend finishing coats on to glass up to sight line.

Ω End of Section

N10
General fixtures/ furnishings/ equipment

To be read with preliminaries/ general conditions.

10 Purpose-made A - Storage units and cabinets

1. Description: To all new purpose-made and built-in storage and cabinets (kitchens, Main Deskroom of Courthouse, Activity room of Bridewell). Refer to G-300s and G-600s for details.
2. Manufacturer: Contractor's choice
3. Standard: Not applicable
4. Timber: To BS EN 942.
   - 4.1. Species: Hardwood as Table NA.2
   - 4.2. Appearance class: J10 or better
   - 4.3. Moisture content on delivery: 6–10%
5. Wood-based boards: Refer to drawings for more details
   - 5.1. Plywood: Ash veneer-faced plywood manufactured to an approved national standard, 18 mm thick, Class 1 bonding quality to BS EN 314-2, appearance Class E to BS EN 635-2 with sanded grade surface finish
   - 5.2. Solid timber : 30mm 'Triply' or full length stave panels. Solid natural European Ash, 80 grit sanded grade finish. For use as cabinet doors: very good dimensional stability is required.
6. Finish: Oil as clause M60/18.
7. Metal: Stainless Steel
8. Grade: 316
9. Other materials: n/a
10. Finishes: Timber to be coated as M60/18.
11. Adhesive: Contractor's choice
12. Fixings: Concealed, contractors choice
13. Fasteners: Concealed, contractors choice
14. Joinery workmanship: As section Z10
15. Metalwork workmanship: As section Z11
16. Other requirements: refer to architects drawings

10 Purpose-made B - Solid timber liners

1. Description: To fireplace in room C00.06. Refer to G-300s for details.
2. Manufacturer: Contractor's choice
3. Standard: Not applicable
4. Timber: To BS EN 942.
   - 4.1. Species: Hardwood (Ash) as Table NA.2
   - 4.2. Appearance class: J10 or better
   - 4.3. Moisture content on delivery: 6–10%
5. Finishes: Timber to be coated as M60/18.
6. Fixings: Concealed, contractors choice
7. Fasteners: Concealed, contractors choice
8. Joinery workmanship: As section Z10
9. Other requirements: refer to architects drawings

60 Curtain supports

1. Description: To curtain of shower room in the Courthouse. Refer to G-415.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Type: Concealed ceiling-mounted rail for hand operated curtain
4. Dimensions
   4.1. Recess profile: W 40-51mm x H 25mm
   4.2. Overall length: 2620mm
5. Material: Aluminium
6. Finish/ Colour: Powder-coated to RAL 9016
7. Fixing: Top fixed. Screwed to wood ceiling at max. 500mm centres and min. 100mm from track ends. Recessed fitting, concealed.
8. Operation: Manual
9. Accessories: End stops and En covers. Roller gliders at 10no./m

65 Curtains

1. Description: To shower room of the Courthouse. Refer to G-415.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Standard: To BS 5867-1 and BS 5867-2.
4. Fire performance: Flame retardant
   4.1. Reaction to fire to EN 13773: Class 1
5. Dimensions
   5.1. Width: 2620mm
   5.2. Drop: 2895mm
6. Heading style: Waves 60-80mm
7. Operation: Manual
8. Material
   8.1. Fabric: Polyester, suitable for humid areas.
      8.1.1. Technical caracteristics: 0% openness factor, Weight: 325 g/m2, Thickness: 0.45mm, Glare control: 5. Oeko-Tex Standard 100.
   8.2. Colour/ Pattern: Very light grey / beige
9. Integral accessories: none

70 Blinds A - Blackout

1. Description: To internal blackout blinds in bathrooms. Refer to G-400s.
2. Standard: To BS EN 13120.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Fire performance: Not required
5. Type: Vertical roller, ceiling-mounted.
6. Dimensions: Bespoke. According to drawing G-400s
7. Material: Fixings: Aluminium
   7.1. Finish/ Colour: Powder-coated White to RAL 9010.
8. Material: Blind: Opaque technical fabric

8.1. Caracteristics: Composition: 100% PES with 0% openness factor, lead-free, PVC-free. Oeko-Tex Standard 100 certified. Weight: 346 g/m^2. Thickness: 0.40mm. Glare control: 4

8.2. Reaction to fire to EN 13501-1: Class B-s1, d0

8.3. Finish/Colour: Woven texture. Colour: Warm white/Ivory

9. Operation: Manual, metallic ball chain, silver
10. Operating effort: Class 1 or 2
11. Testing: Not required
12. Mechanism endurance: Class 3 to BS EN 13120
13. Accessories/ Other requirements:
    - Plain bottom hembar, colour/finish to match fixings and to be fabric wrapped.
    - Cable lateral guides as specified in the drawings.
    - Ball-chain safety connector

70 Blinds B - Dimout

1. Description: To internal dimout blinds in classrooms. Refer to G-300s.
2. Standard: To BS EN 13120.
3. Manufacturer: Contractor's choice

   3.1. Product reference: Submit proposals
4. Fire performance: Not required
5. Type: Vertical roller, ceiling-mounted.
6. Dimensions: Bespoke. According to drawing G-300s
7. Material: Fixings: Aluminium

   7.1. Finish/ Colour: Powder-coated White to RAL 9010.
8. Material: Blind: Perforated technical fabric

   8.1. Caracteristics: Composition: 100% Recycled PET with a homogeneous 3% openness factor, lead-free, Oeko-Tex certified. Weight: 176 kg/m^2, Thickness: 0.33mm, Glare control class: 0.

   8.2. Reaction to fire to EN 13501-1: Class B-s1, d0

   8.3. Finish/Colour: Woven texture. Colour: Warm white/Ivory
9. Operation: Manual, metallic ball chain, silver
10. Operating effort: Class 1 or 2
11. Testing: Not required
12. Mechanism endurance: Class 3 to BS EN 13120
13. Accessories/ Other requirements:
    - Plain bottom hembar, colour/finish to match fixings and to be fabric wrapped.
    - Cable lateral guides as specified in the drawings.
    - Ball-chain safety connector

Ω End of Section

N11
Domestic kitchen fittings, furnishings and equipment

To be read with preliminaries/ general conditions

20 Worktops

1. Description: To all kitchen worktops
2. Standard: To BS 6222-3
3. Manufacturer: Contractor's choice
    3.1. Product reference: Submit proposals
4. Material: Natural quartz, light grey/beige in colour with a polished finish
5. Dimensions: as per architects drawings G-300s
6. Exposed edges: Natural quartz
7. Support: Kitchen units
8. Other requirements: Exposed arises to be eased

30 Sinks, taps, traps and wastes

1. Description: To Courthouse kitchen and Bridewell kitchenette
2. Sinks
    2.1. Standard: To BS EN 13310
    2.2. Manufacturer: Contractor's choice
        2.2.1. Product reference: Submit proposals
    2.3. Configuration: As per architects drawings
    2.4. Overall size: As per architects drawings
    2.5. Material: Stainless steel
        2.5.1. Colour and finish: Brushed steel
3. Tap/ chainstay/ overflow holes: One tap hole, centre
4. Taps: Mixer
    4.1. Manufacturer: Contractor's choice
        4.1.1. Product reference: Submit proposals
    4.2. Material: Brushed stainless steel
5. Wastes: Pop up
    5.1. Standard: To BS EN 274-1, BS EN 274-2 and BS EN 274-3
    5.2. Manufacturer: Contractor's choice
        5.2.1. Product reference: Submit proposals
    5.3. Size: To fit sink
    5.4. Material: Brushed stainless steel
    5.5. Tail: Unslotted
6. Traps: Tubular, P-type
    6.1. Standard: To BS EN 274-1, BS EN 274-2 and BS EN 274-3
    6.2. Manufacturer: Contractor's choice
        6.2.1. Product reference: Contractor's choice
    6.3. Size: To fit waste
    6.4. Depth of seal (minimum): 75 mm

7. Accessories: None

Execution

65 Installation generally

1. Fixings and adhesives: As section Z20.
2. Services: As per engineers drawings and specifications

80 Installing sinks, taps and wastes

1. Water supply: According to BS EN 806-2 and BS EN 806-4.
2. Taps
   2.1. Fixing: Secure, watertight seal with the appliance.
   2.2. Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.
3. Wastes
   3.1. Bedding: Waterproof jointing compound.
   3.2. Fixing: With resilient washer between appliance and backnut.

Ω End of Section

N13
Sanitary appliances and fittings

To be read with preliminaries/ general conditions.

70 Installation generally

1. Standards: In accordance with BS 6465-1, -2 and -3.
2. Assembly and fixing: Fix appliances securely to structure, without taking support from pipelines, level and plumb and so that surfaces designed to fall drain as intended.
3. Fasteners: Non-ferrous or stainless steel.
4. Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes, to form watertight joints between appliances and backgrounds (except cisterns) and between appliances and discharge pipes.
5. Supply and discharge pipework: Fix before appliances.
6. Timing: Tiled backgrounds, other than splashbacks, complete before fixing appliances. Do not overstress tiles when fixing appliances.
7. On completion: Components and accessories working correctly with no leaks.
8. Labels and stickers: Remove.

71 Removing sanitary appliances and fittings

1. Extent: Existing installation
   - 1.1. Sanitary appliances: WC pan, Washbasin, Cistern,
     - 1.1.1. Disposal: Remove from site for recycling
   - 1.2. Water supply fittings: Taps, Ballcock, flush valve and siphon,
     - 1.2.1. Disposal: Remove from site for recycling
   - 1.3. Accessories: WC pan seats
     - 1.3.1. Disposal: Remove from site for recycling

Ω End of Section

N14
General internal signage systems

General

120 Inclusive signage systems

1. Description: To all internal wayfinding elements as per G-500s
2. System manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Sign type: as per drawings G-500s
4. Layout and dimensions: as per drawings G-500s
5. Surface: Non-reflective with maximum gloss factor of 15% when tested to BS 2782-5 or BS EN ISO 2813
   5.1. Material: Ash-veneered plywood as clause K13/120A.
6. Lettering
   6.1. Type: 3mm solid acrylic
   6.2. Language: English and Irish
   6.3. Font: Helvetica
   6.4. Colour: Black to standard RAL
   6.5. Size: as per drawings G-500s
7. Characters and symbols: as per drawings G-500s
   7.1. Position: as per drawings G-500s
   7.2. Colour: Black to standard RAL
   7.3. Size: as per drawings G-500s
8. Background colour: n/a
9. Supports/ fixings: Signs to be door- or wall-mounted, screw-fixed.
10. Accessories: Not required

Products - Not Used

Execution

610 Fixing signs generally

1. Installation: Secure, plumb and level.
2. Strength of fasteners: Sufficient to support all live and dead loads.
3. Fasteners and/ or adhesives: As section Z20.
4. Fixings showing on surface of sign: Must not detract from the message being displayed.

620 Fixing signs for the visually impaired

1. Protection of users
   1.1. Fasteners for tactile/ Braille signs must not have sharp edges or protrusions that would cause confusion or injury to users.

Completion

910 Documentation

1. Submit

1.1. Manufacturer's maintenance instructions.

1.2. Guarantees, warranties, test certificates, record schedules and log books.

Ω End of Section

N25
Permanent access and safety equipment

To be read with preliminaries/ general conditions.

10 Personal fall protection equipment

1. Description: Fall restraint system to extension roof - refer to Roofplan drawings.
2. Manufacturer: Submit proposalsSkyway Keeline or similar
   2.1. System reference: Fall restraint system, NB: Not fall arrest.
3. Type: Restraint
4. Anchorage device: Horizontal stainless steel cable
5. Overall system length: 10 linear meters
6. Intermediate support spacing: within manufacturers tested limits
7. Accessories/ Other requirements: 5no. upright posts, including 1no. Corner Brackets 45 degrees, 2no. Corner Brackets 90 degrees and 2no. end brackets with absorber. All equipment required to provide a certified system to be supplied and installed, (ie traveller, tensioner, cable etc). Refer to roof plan for layout.
   Employer to be provided with harness and lanyard prior to completion.
8. Installation: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
9. Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed.

General requirements

50 Safety

1. General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.
2. Finished surfaces and edges of all accessible parts: Regular and smooth.

60 Fixing anchor installation

1. Site drilling or cutting into structure/ fabric: Permitted only in approved locations.
2. Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

70 Marking of anchor devices

1. Provision: Provide on or near each anchor device a label or other clear marking giving:
   1.1. Manufacturer's name and telephone number.
   1.2. Serial number and year of manufacture of device.
   1.3. Maximum number of personnel that may be attached to the device at any one time.
   1.4. Requirements for energy absorbers, ground clearance, etc.
2. Anchor devices intended solely for use with personal protective equipment: Indicate restriction of use by pictogram or other suitable marking on or near the device.

Ω End of Section

N91
External signage and interpretation

Signage outline

120 Bespoke signage system

1. Description: To all site panels as specified below
2. Function: Wayfinding
3. Sign type: As drawings G-500s
4. Products/ integral features: Self-standing panels
5. Materials: Powder-coated steel and acrylic
6. Electrical supplies: External lighting, as engineers dwgs and specs

System performance

205 Design of signage systems

1. Description: Generally
2. Design: Complete detailed design and submit before commencing work.
3. Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature before commencing work.

210 External signage generally

1. Signage systems generally: Complete to BS 559-1:2023, including components, inserts, accessories and fixings necessary to complete the system.
2. External signage: To BS 559-1:2023
3. Content: Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
4. Geometric shapes, colours and layout: To BS ISO 7001:2023.
5. Wind loads: To BS EN 1991-1-4.

230 Accessibility

1. Design standard for disabled users: In accordance with BS 8300-1.
2. Geometric shapes, colours and layout: as per drawings G-500s
   2.1. Font: Helvetica

235 Electrical requirements for illuminated signs

1. Electrical requirements for illumination: To BS 559-1:2023, section 7.

Products

305 Signage products generally

1. Materials: To BS 559.
2. Colorimetric and photometric properties: To BS ISO 3864-4.
3. Fabricated letters: To BS 559, clause 6.6.
4. Fixings: To BS 559, clause 6.11 and section Z12.

Materials

445 Plastics and composite materials

1. Description: LETTERS
2. Standards
   - 2.1. Recycled plastics: To BS EN 15343.
   - 2.2. Recycled plastics - PET: To BS EN 15348.
   - 2.3. Recycled plastics - PVC: To BS EN 15346.
   - 2.4. Recycled plastics - waste: To BS EN 15347.
3. Material: Acrylic
4. Finish: Manufacturer's standard
5. Component thickness: 2-3 mm
6. Perimeters: Not applicable
7. Additional requirements: White in colour

Fabrication

505 Signage samples

1. Sign type: Waymarker post/ bollard
   - 1.1. Action: Submit labelled samples.
     - 1.1.1. Timing: Prior to starting production
   - 1.2. Conformity: Retain samples on site for the duration of the contract, or until instructed to remove them.
   - 1.3. Delivered product: To conform to labelled samples.

580 External sign

1. Description: To Site panels as per G-500s
2. Manufacturer: Contractor's choice
   - 2.1. Product reference: Contractor's choice
3. Material: Steel
   - 3.1. Finish: Polyester powder-coated to achieve a non-reflective surface with maximum gloss factor of 15% when tested to BS 2782-5 or BS EN ISO 2813
   - 3.2. Background colour: Blue to NCS S 5005-B20G
4. Layout and dimensions: As drawing G-500
   - 4.1. Content: As drawing G-500
   - 4.2. Lettering
     - 4.2.1. Manufacturing process: Cut outs, material as clause 445 above
     - 4.2.2. Font: Helvetica (English in bold)
     - 4.2.3. Size: As drawing G-500
     - 4.2.4. Colours: White to standard RAL
     - 4.2.5. Language: English and Irish
   - 4.3. Symbols and graphics: As drawing G-500
     - 4.3.1. Manufacturing process: Cut-outs, material as clause 445 above
     - 4.3.2. Size: Symbols H.50mm, Arrows as per drawings
     - 4.3.3. Colours: White to standard RAL
   - 4.4. Bespoke artwork: Not required

5. Fixing accessories: Panel and baseplate to be bolted to concrete foundation.
6. Additional requirements: LED floor-mounted lights as per drawing G-500s and engineers specifications

Execution/ erection/ installation

610 Fixing signs generally

1. Generally: Where not specified precisely, select methods of jointing and fixing, and types, sizes and spacings of fasteners in compliance with section Z20.
2. Installation: To BS 559-1:2023.
   2.1. Secure, plumb and level.
3. Strength of fasteners: Sufficient to support all live and dead loads.
4. Fasteners and/ or adhesives: As section Z20.
5. Fasteners for external signs: Corrosion-resistant material or with a corrosion-resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
6. Fixings showing on surface of sign: Must not detract from the message being displayed.
7. Temporary support: Do not subject members to non-design loadings.
8. Protection of users
   8.1. Fasteners for signs must not have sharp edges or protrusions that would cause injury to users.
   8.2. Fasteners for tactile/ Braille signs must not have protrusions that would cause confusion to users.

625 Fixing signposts into concrete

1. Description: To Site Panels as per Clause 580
2. Concrete: To BS 8500-2.
3. Mix: Designated concrete not less than GEN 1, or standard prescribed concrete not less than ST2.
   3.1. Admixtures: Submit proposals.
      3.1.1. Prohibited: Calcium chloride, and admixtures containing calcium chloride.
4. Depth of foundations, bedding, haunching: Appropriate to provide adequate support, and to receive overlying soft landscape or paving finishes.
5. Type: Reinforced concrete foundation, as sections E10, E30 and E41
6. Size: 300 x 1000 x 500 mm deep with top 145 mm below finished ground surface
7. Other requirements: None
8. Foundation holes: Neat vertical sides.
9. Components: Accurately positioned and securely supported.
10. Concrete fill: Compact as filling proceeds.
11. Concrete foundations exposed to view: Compact until air bubbles cease to appear on the upper surface, then weather to shed water and trowel smooth.
12. Temporary support: Maintain undisturbed for minimum 48 hours.

660 Site painting and staining

1. Timing: Prepare surfaces and apply finishes as soon as possible after installing components.

675 Electrical and data services

1. Description: GENERALLY

2. Services connection required: As per engineers' drawings and specifications.
3. Coordinate with services trades.

Completion - Not Used

Ω End of Section

P10
Sundry insulation/ proofing work

To be read with preliminaries/ general conditions.

5 Eaves roof ventilators for existing roofs

1. Manufacturer: Submit proposals
   1.1. Product reference: Submit proposals
2. Eaves free air space (minimum): As recommended in BRE Report 262.

10 Loft insulation To existing Courthouse roofspace

1. Manufacturer: Submit proposals
   1.1. Product reference: Submit proposals, Sheepswool Insulation
2. Material: Sheep's wool
   2.1. Recycled content: Not applicable
   2.2. Thickness: 100mm between ceiling joists plus 200mm above joists.
3. Installation requirements
   3.1. Standard: To BS 5803-5
   3.2. Location: between joists and above joists at right angles to same.
   3.3. Insulation widths: Widest practical.
   3.4. Joints: Butted, no gaps.
   3.5. Insulation: Fitted neatly around rafter ends and extended over wall plates.
   3.6. Eaves ventilation: Unobstructed.
   3.7. Service holes: Sealed, debris removed before laying insulation.
   3.8. Water cistern platforms: No insulation underneath

15 Insulation fitted between rafters

1. Description: To new rooves of Courthouse extension
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Material: Rigid polyisocyanurate foam (PIR) to BS EN 14308
   3.1. Facing: Contractor's choice
   3.2. Recycled content: Not applicable
   3.3. Thickness: 120 mm and 150 mm as per drawings, To achieve a U-value of 0.22 W/m²K
4. Installation requirements
   4.1. General: Insulation to be fitted between rafters with no gaps.
   4.2. Joints: Butted, no gaps.
   4.3. Fasteners: Used where necessary to retain insulation and/or prevent slumping.
   4.4. Vapour control facing (if specified): Fit insulation with facing on warm side. Staple overlap (if provided) to underside of rafters; tape joints between adjacent overlaps using vapour impermeable adhesive tape.
   4.5. Air space above insulation: Not required
   4.6. Eaves ventilation: Not required

20 Insulation to loft access hatches

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Material: Sheepswool
   2.1. Recycled content: Not applicable
   2.2. Thickness: 200mm, wrapped in wind-tight membrane used as sarking.
3. Installation requirements
   3.1. Fit: No gaps and securely fixed.
   3.2. Edges of hatch: Seal with an approved compressible draught excluder.

40 Insulation fitted between or to the face of studs

1. Location: To Bathrooms new partitions
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Material: Wood wool to BS EN 13168
   3.1. Facing: Contractor's choice
   3.2. Recycled content: Contractor's choice
   3.3. Thickness: 100 mm and 150 mm as per G-700s.
4. Installation requirements
   4.1. Joints: Butted, no gaps.
   4.2. Fasteners: Use where necessary to retain insulation and/ or prevent slumping.

60 Air and vapour control layer

1. Description: GENERALLY
2. Manufacturer: Contractor's choice
   2.1. Product reference: Pro Clima Intello Plus or similar
3. Material: 1000 gauge virgin polyethylene
4. Minimum vapour resistance: 250 MN s/g
5. Installation requirements
   5.1. Setting out: Joints minimized.
   5.2. Method of fixing: Staples at 250 mm centres maximum along all supports. Membrane not sagging
   5.3. Joints: At supports only, lapped 150 mm minimum.
   5.4. Openings: Membrane fixed to reveals.
   5.5. Joints and edges: Sealed with double sided tape with vapour resistivity not less than the air and vapour control layer.
   5.6. Penetrations: Sealed.
   5.7. Other requirements: Moisture content of timber at time of fixing (maximum): 20%

65 Breather membrane

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Standard: BS EN 13859-1
   2.1. Characteristics: Reaction to fire: To BS EN 13501-1, Class B-s3, d0 or better
3. Installation requirements

3.1. Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate.

3.2. Method of fixing: Stainless steel staples at 300 mm centres on line of horizontal laps into sheathing board

3.3. Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically

3.4. Openings: Membrane fixed to reveals.

3.5. Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior.

3.6. Penetrations: Sealed.

Ω End of Section

P12
Fire-stopping systems

General

10 Fire-stopping to individual services penetrations:

1. Description: Generally
2. Resistance to fire: As clause 17
3. Penetration seal: Contractor's choice
   3.1. Size: To match wall thickness
4. Gap sealer: Intumescent mastic gap sealer, as clause 34
5. Capping sealant: Not required

16 Linear gap sealing

1. Description: In fire-resisting walls
2. Fire resistance: As clause 17
3. Gap width or height (nominal): 10 mm
4. Gap filler: Flexible intumescent gap sealer, as clause 35
5. Capping sealant: Not required

17 Fire performance Floors

1. Description: Generally
2. Resistance to fire: To BS EN 13501-2, EI 60 or better
3. Reaction to fire: To BS EN 13501-1, Class A1
4. Smoke resistance
   4.1. Air leakage rate (maximum): Not applicable

17 Fire performance Walls

1. Description: Generally
2. Resistance to fire: To BS EN 13501-2, EI 30 or better
3. Reaction to fire: To BS EN 13501-1, Class A1
4. Smoke resistance
   4.1. Air leakage rate (maximum): Not applicable

Products

30 Product certification

1. Certification: For products specified generically, submit evidence of compliance with the specification
2. Acceptable evidence: Agrément certificate or Declaration of Performance (DoP) or Listing in CERTIFIRE Register

34 Intumescent mastic

1. Manufacturer: Contractor's choice
   1.1. Product reference: Contractor's choice

35 Flexible intumescent gap sealer

1. Manufacturer: Contractor's choice
   1.1. Product reference: Contractor's choice
2. Strip width: Wider than joint width

40 Mineral wool rigid batts

1. Standard: To BS EN 13162.
2. Surface treatment: Aluminium faced
3. Manufacturer: Contractor's choice
   3.1. Product reference: Submit proposals
4. Recycled content: Submit proposals

43 Pipe collar

1. Type: Concealed intumescent pipe collar
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice

Execution

61 Third-party-certified installer

1. Certification: For the technical competency of the installer of the evidence of compliance with a third-party installation certification scheme
2. Acceptable evidence: FIRAS Installer Certification

62 Workmanship generally

1. Gaps: Seal gaps between building elements and services, to provide fire resistance and resist the passage of smoke
2. Adjacent surfaces: Prevent overrun of sealant or mortar on to finished surfaces

63 Installing flexible intumescent gap sealer

1. Fitting of strips: Compress strips and fit into gap, so that, as they decompress the strips wedge themselves in the void
2. Shrink wrapping: Do not remove
3. Joints
   3.1. Ends of strips: Fit intumescent 'end piece' at both ends of run of stop laminate
   3.2. Joints between strips: Fit two intumescent 'end pieces' at each butt joint

66 Installing mineral wool batts

1. Installing batts: Fit tight into void between the penetrating services and the surrounding construction to form a solid barrier..
   1.1. Brackets: Impale batts on proprietary pressed steel brackets at 500 mm maximum centres and not greater than 250 mm from ends of batts
2. Face of batts: Flush with the surface of wall, floor or soffit
3. Joints between batts: Closed butt joints; seal with fire-resisting sealant
4. Gaps between services and barrier: Seal with fire-resisting sealant

68 Fixing pipe collars

1. Collar fixing: Self-tapping screws
2. Gap around collar: Seal with gap filler and sealant
3. Length of wraps: Not applicable

73 Applying sealants generally

1. Application: As section Z22

Completion

91 Cleaning

1. Masking tapes: Remove
2. Cleaning: Clean off splashes and droppings. Wipe down finishes

Ω End of Section

P20
Unframed isolated trims/ skirtings/ sundry items

To be read with preliminaries/ general conditions.

10 Softwood - Historical skirtings

1. Description: To new moulded historical skirtings. Refer to G-300s.
2. Quality of wood and fixing: To BS EN 942
   2.1. Species: Contractor's choice
   2.2. Class: J20
3. Moisture content at time of fixing: 9 -13%
4. Preservative treatment: Not required
5. Reaction to fire rating: To BS EN 13501-1, Class B
6. Profile: To match existing
   6.1. Finished size: 225x25mm
7. Finish as delivered: Prepared and primed, as section M60/14.
8. Fixing: Concealed, Nailed at 600mm centres

10 Softwood - Modern skirtings

1. Description: To new modern skirtings. Refer to G-300s.
2. Quality of wood and fixing: To BS EN 942
   2.1. Species: Contractor's choice
   2.2. Class: J20
3. Moisture content at time of fixing: 9 -13%
4. Preservative treatment: Not required
5. Reaction to fire rating: To BS EN 13501-1, Class B
6. Profile: Rectangular
   6.1. Finished size: 125x15mm
7. Finish as delivered: Prepared and primed, as section M60/14.
8. Fixing: Concealed, Nailed at 600mm centres

80 Installation generally

1. Joinery workmanship: As section Z10.
2. Metal workmanship: As section Z11.
3. Methods of fixing and fasteners: As section Z20 where not specified.
4. Straight runs: To be in one piece, or in long lengths with as few joints as possible.
5. Running joints: Location and method of forming to be agreed where not detailed.
6. Joints at angles: Mitre, unless shown otherwise
7. Position and level: To be agreed where not detailed.

Ω End of Section

P21
Door/ window ironmongery

To be read with preliminaries/ general conditions.

5 Ironmongery from single proprietary range

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Principal material/ finish: Satin stainless steel, Grade 1.4401 (316) - refer to schedule for more details.
3. Items unavailable within selected range: Submit proposals.

60 Threshold weatherstrip

1. Description: To new external doors
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Type: Domed neoprene in low-profile metal carrier
4. Size: To suit door
5. Material/ finish: Powder-coated aluminium, colour to match doors.

Ω End of Section

Q10
Kerbs/ edgings/ channels/ paving accessories

To be read with preliminaries/ general conditions.

10 Precast concrete Type A

1. Description: To general concrete kerbs as per G-900s.
2. Standard: To BS EN 1340.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Recycled content: Contractor's choice
5. Designations: Flat top
6. Size (width x height x length): 250 x 100 x 915 mm
7. Special shapes: Not required.
8. Finish: As cast
9. Colour: Silver grey
10. Bedding: As drawings G-900s.
11. Joints: Dry, 2 mm gap.
12. Sealant movement joints: Not required
13. Accessories: None

10 Precast concrete Type B

1. Description: To specific concrete kerbs, alongside entrance driveway as per G-900s.
2. Standard: To BS EN 1340.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Recycled content: Contractor's choice
5. Designations: Full Batter
6. Size (width x height x length): 150 x 255 x 915 mm
7. Special shapes: Not required.
8. Finish: As cast
9. Colour: Silver grey
10. Bedding: As drawings G-900s.
11. Joints: Dry, 2 mm gap.
12. Sealant movement joints: Not required
13. Accessories: None

30 Linear slot drainage channel system

1. Manufacturer: Submit proposals Note loading requirements in Works Requirements
   1.1. Product reference: Submit proposals
2. Bore: 100 mm
3. Finish: stainless steel slot visible, body can be polymer
4. Colour: Natural
5. Bedding: Cement mortar
6. Joints: Drain unions as required

7. Accessories: Access covers, Endcaps - closing pieces, Inspection unit channels

32A Stainless Steel Edging Trim

1. **Locations:**
   Edging trims to paving and landscaping areas externally as set out on landscaping drawings.

   Size:
   Min 200mm high, to finish flush/50mm above paving as indicated on G-900 series details.

   Bedding:
   Fixed securely to concrete bedding as indicated to provide restraint to paving / support to planted areas.

   Material:
   316 Satin stainless steel.

32B Asphalt Edging

1. **Locations:**
   Edging trims to paving and asphalt areas externally as set out on landscaping drawings. Refer to G-900s.

   Description:
   7mm thick heavy-duty galvanised steel kerb for delineating hard surfaces, with top rolled edge for safety and 50mm wide edging foot.

   Size:
   Min 100mm high, to finish flush with paving/asphalt surface

   Bedding:
   Subbase (MOT Type 1 or similar) to be of min. 150mm deep and to extend by 150mm either side of the edging, topped with a 10mm layer of dry-mix bedding. Fixings to be spiral landscape stakes through pre-drilled holes at max. 300mm centres.

   Material:
   Galvanised steel

40 Laying kerbs, edgings and channels

1. Standard: To BS 7533-101:2021.
2. Cutting: Neat and accurate and without spalling. Form neat junctions.
   2.1. Long units' (450 mm and over) minimum length after cutting: 300 mm.
   2.2. Short units' minimum length after cutting: The lower of one third of their original length or 50 mm.
3. Bedding of units: Positioned true to line and levelled along top and front faces, in a sand bed on accurately cast foundations or on a race of fresh concrete.
4. Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

41 Concrete for foundations, races and haunching

1. Standard: To BS 8500-2.
2. Designated mix: Not less than GEN0 or Standard mix ST1.
3. Workability: Very low.

42 Cement mortar bedding

1. General: To section Z21.
2. Mix: (Portland cement:sand): 1:3.
   2.1. Portland cement: Class CEM I 42.5 to BS EN 197-1.
   2.2. Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
3. Bed thickness: 12-40 mm.

44 Drainage channel systems

1. Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.
2. Silt and debris: Removed from entire system immediately before handover.
3. Washing and detritus: Safely disposed without discharging into sewers or watercourses.

45 Accuracy

1. Deviations (maximum)
   1.1. Level: ± 6 mm.
   1.2. Horizontal and vertical alignment: 3 mm in 3 m.

50 Tooled mortar joints

1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
   1.1. Joint width: 6 mm.

80 Regularity of paved surfaces

1. Maximum undulation of (non-tactile) paving surface: 3 mm.
   1.1. Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
2. Difference in level between adjacent units (maximum)
   2.1. Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
   2.2. Recessed, filled joints: 2 mm.
      2.2.1. Recess depth (maximum): 5 mm.
   2.3. Unfilled joints: 2 mm.
3. Sudden irregularities: Not permitted.

Ω End of Section

Q22
Asphalt roads/ pavings

Clauses

10 Asphalt concrete paving

1. Description: To all asphalt surfaces as per G-900s.
2. Standard: To BS EN 13108-1
3. Subgrade improvement layer: As per engineer's drawings and specifications
   - 3.1. Compacted thickness: As per engineer's drawings and specifications
4. Geomembrane: Geotextile membrane
   - 4.1. Manufacturer: Contractor's choice
     - 4.1.1. Product reference: Contractor's choice
5. Granular sub-base: As per engineer's drawings and specifications
   - 5.1. Compacted thickness: As per engineer's drawings and specifications
6. Base: As per engineer's drawings and specifications
   - 6.1. Paving grade: As per engineer's drawings and specifications
   - 6.2. Compacted thickness: As per engineer's drawings and specifications
7. Binder course: As per engineer's drawings and specifications
   - 7.1. Paving grade: As per engineer's drawings and specifications
   - 7.2. Compacted thickness: As per engineer's drawings and specifications
8. Surface course: AC 6 dense surf
   - 8.1. Paving grade: 100/150
   - 8.2. Slip/ Skid resistance: PTV to BS 7976-2 of 40 (water) wet
   - 8.3. Compacted thickness: 20-25 mm nominal, 15 mm minimum at any point
9. Reclaimed content
   - 9.1. Standard: To BS EN 13108-8.
   - 9.2. Value (maximum): Surface course 10%, other courses 50%
10. Surface treatment: Seal coat to contractor's choice.

30 Laying generally

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

35 Levels

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

Ω End of Section

Q23
Gravel/ hoggin/ woodchip roads/ pavings

To be read with preliminaries/ general conditions.

10 Blinded gravel

1. Description: To all gravel surfaces as per G-900s
2. Subgrade improvement layer: Not required
3. Geomembrane: Polyethylene/Polypropylene sheet
    3.1. Manufacturer: Contractor's choice
        3.1.1. Product reference: Contractor's choice
4. Granular sub-base: As per engineer's drawings and specifications
    4.1. Compacted thickness: As per engineer's drawings and specifications
5. Blinding to sub-base: Not required
6. Surface course: Angular gravel free from clay, with sufficient grit to enable compaction.
    6.1. Type: Granite gravel
    6.2. Source: Contractor's choice
    6.3. Colour: Silver grey
    6.4. Size: Graded 6-10 mm
    6.5. Compacted thickness: 75 mm
7. Completion: Compact to produce a firm, regular surface, stable in use.

15 Woodchip surfaces

1. Description: Small chip bark mulch to all new tree foot as per G-900s.
2. Granular sub-base: Not required
3. Geomembrane: Geotextile membrane
    3.1. Manufacturer: Contractor's choice
        3.1.1. Product reference: Submit proposals
    3.2. Laying: Lay over sub-base, laps (minimum) 300 mm.
4. Surface course
    4.1. Manufacturer: Contractor's choice
        4.1.1. Product reference: Contractor's choice
    4.2. Type: Wood free from pests, disease, weeds, and any additives.
    4.3. Particle size: Evenly graded, 5-30 mm
    4.4. Dust and fine content (maximum): 5%
    4.5. Wood content (minimum): 95%
    4.6. Thickness after at least 10% settlement and 30 days: 70 mm

32 Laying generally

1. Channels, gullies, etc: Keep clear.
2. Finished surfaces
    2.1. Lines and levels: To prevent ponding.
    2.2. Overall texture: Even.
    2.3. State at completion: Clean.

35 Cold weather working

1. Frozen materials: Do not use.
2. Freezing conditions: Do not lay pavings.
3. Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
4. Other dressings or overlays: As manufacturers' recommendations.

40 Drainage falls

1. Sealed surfaces
   1.1. Falls and cross falls (minimum): 1:40.
   1.2. Camber (minimum): 1:50.
2. Unsealed surfaces (minimum): 1:30.

50 Laying granular surfaces in pedestrian areas and cycle tracks

1. Permissible deviation from required levels, falls and cambers (maximum): ±12 mm.
2. General: Spread and level in 100 mm maximum layers. As soon as possible compact each layer.
3. Dry weather: Lightly water layers during compaction.

Ω End of Section

Q25
Slab/ brick/ sett/ cobble pavings

To be read with preliminaries/ general conditions

11 Laying pavings – general

1. Appearance: Smooth and even with regular joints and accurate to line, level and profile.
2. Falls: To prevent ponding.
3. Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
   3.1. Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
4. Slopes: Lay paving units upwards from the bottom of slopes.
5. Paving units: Free of mortar and sand stains.
6. Cutting: Cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

16 Levels of paving

1. Permissible deviation from specified levels (generally)
   1.1. Generally: ±6 mm.
2. Height of finished paving above features
   2.1. At gullies: +6 to +10 mm.
   2.2. At drainage channels and kerbs: +3 to +6 mm.

18 Regularity of paved surfaces

1. Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
2. Joints between paving units or utility access covers
   2.1. Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5mm max difference in level).
   2.2. Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
   2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

21 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
   4.1. Pedestrian traffic (minimum): 2 days
   4.2. Vehicular traffic (minimum): 7 days
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

36 Natural stone cobble paving system

1. Description: To locations as indicated on architects drawings, G-900

2. Subgrade improvement layer: Type 1 granular material complying with MCHW Vol. 1 Series 800, well compacted.
   2.1. Compacted thickness: 50mm
3. Granular sub-base: Type 1 granular material complying with MCHW Vol. 1 Series 800.
   3.1. Compacted thickness: 200mm
4. Base: 50mm cement based stabilised aggregate. Min. compressive strength of 30N/mm^2.
   4.1. Thickness: 50mm
5. Paving units: As per clause 58.
6. Laying course and jointing: Ready-mixed fine concrete
7. Overall nominal thickness of cobbles and bedding: 125 mm

41 Laying natural stone cobble paving

1. Bedding, laying, jointing and completion: In accordance with BS 7533-101:2021.

58 Natural stone cobbles

1. Description: To all cobble stones pavings.
2. Cobbles: Selected hard smooth, Sawn, Bush hammered natural granite setts
   2.1. Size: 100x100x50mm deep
   2.2. Source: Submit proposals. Silver granite in colour with subtle brown or yellow tones

64 Geotextile sheet

1. Description: - BELOW LAYING COURSE
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Recycled content: 90% (minimum) to BS EN ISO 14021

70 Applied slip resistant

1. Description: Hazard warning strips to Courthouse Patio as per G-900s
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Material: 316 Marine grade Stainless steel
   3.1. Format: Strip for insertion, 5 mm thick, pre finished, with ridges
      3.1.1. Predrilled: Required
   3.2. Slip resistance - water wet (minimum): PTV to BS 7976-2 of 40
4. Size/ Coverage: As per drawings G-900s and to comply with Part M document.
5. Colour: Not applicable
6. Accessories/ Features: None

72 Laying geotextile sheet overlays

1. Location: Immediately below the laying course.
2. Laying: Fit neatly at edge restraints and other features that interrupt the laying course, e.g. drainage fittings, channels, manholes and kerbs.
3. Edge detail: Turn sheet up to form an upstand against features, height not less than thickness of the laying course.
4. Width: 1000 mm
5. Jointing: Lap by 400 mm.

90 Completion of paving with dry sand or fine aggregate filled joints

1. Sand dressing: Leave a thin layer of dry jointing sand/ fine aggregate over the paving, sweep clean before practical completion
2. Final compaction of the surface course: In accordance with BS 7533-101:2021.
3. Vacuum cleaning machines: Not allowed.

Ω End of Section

Q28
Topsoil and soil ameliorants

To be read with preliminaries/ general conditions.

10 Preparation of undisturbed topsoil

1. Standard: In accordance with BS 4428.
    1.1. Grading and cultivation: Premium Grade
2. Hard ground: Break up thoroughly.
3. Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
4. Areas covered with turf or a thick sward: Plough or dig over to full depth of topsoil.
5. Fallow period (minimum): Three months
    5.1. Weed control: At appropriate times seed with an approved green manure seed mix.

20 Imported topsoil to BS 3882

1. Description: For grass seeding and planting beds
2. Quantity: Provide as necessary to make up any deficiency existing on site and to complete the work.
3. Standard: To BS 3882.
4. Classification: Multipurpose
    4.1. Soil textural class to BS 3882, Figure 1: Any class
5. Source: Contractor's choice
    5.1. Product reference: Submit proposals

30 Spreading topsoil

1. Standard: In accordance with BS 3882.
2. Temporary roads or surfacing: Remove before spreading topsoil.
3. Layers
    3.1. Depth (maximum): 150 mm.
    3.2. Gently firm each layer before spreading the next.
4. Depth after firming and settlement: 100 mm
5. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

35 Planting into topsoil

1. Grass seed
    1.1. Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent
    1.2. Application rate: 25-30 g/m²
2. Trees, shrubs, climbers
    2.1. Standard: The relevant parts of BS 3936
    2.2. Species: As plant schedule
    2.3. Origin/ provenance: As plant schedule

40 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: As drawings G-900s

2. In relation to dpc of adjoining buildings: Not less than As drawings G-900s.
3. In relation to adjacent grass areas: As drawings G-900s
4. Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
6. Adjoining soil areas. Marry in.
7. Thickness of turf or mulch: Included.

Ω End of Section

Q40
Fencing

To be read with preliminaries/ general conditions.

40 Cast-iron gates and fences - Repairing/Renovating/conserving ironwork

1. Description: To existing cast-iron gate and railing/fence at front entrance - including stone piers at front entrance
2. Manufacturer: Submit proposals
3. General requirements: Masonry piers and wall - To be cleaned and repaired as per clause C40 to ensure structural stability and integrity.

   Iron fence and gate - Cleaning, repair and paint works to reinstate original design. The minimum level of intervention should be carried out in order to retain as much of the original material as possible. Before starting the work, the contractor will assess the ironwork's condition and determine the degree of intervention and type of repairs required.

   Nb. An ironwork specialist with at least 5 years conservation experience must be engaged by the contractor to carry out the following works.
4. Cleaning: Remove any dirt, corrosion and lose paint. Clean with a bristle brush. Remove corrosion with a chisel, bronze brush and sandpaper. Avoid using excessive amount of water. Use of high-pressure power hoses is not permitted. Do not damage sound paint. Dry thoroughly.

   Nb. Existing lose lead paint should be removed in compliance with relevant safety standards (Control Lead at Work Regulations, LiPSA guidelines).
5. After cleaning, carry-out full assessment of ironwork's condition to determine the degree of intervention and submit a plan for the repairs to the Design Team. The ironwork should be photographed to record its appearance and condition before any works start, and should also be measured. An accurate measured drawing of the existing ironwork is to be provided if the repairs are to be carried-out off site. Where ironwork is to be dismantled, every element should be numbered using tags corresponding to a numbered drawing.
6. Repairs, generally: Maintain as much as possible of the original elements, ensuring durable structural stability. Where piece-in or replacement parts are necessary, care should be taken to match them and their fittings to the originals. Welding is not an appropriate substitute for collars, mortice-and-tenon joints, or rivets. Where sections of iron were traditionally joined together using forge welding, this method should also be used for their repair.
   - 6.1. Corroded gate's slam bar: Should be removed, cleaned, reshaped, and painted before it is replaced in its original position.
   - 6.2. Corroded bars: Where bases of the bars have narrowed too much and cannot ensure structural stability, the corroded section (only) should be removed and replaced by a new piece or similar iron, using suitable welding techniques. Replacement bars should pierce through the rail rather than be welded to it.
   - 6.3. Corroded rails: Thoroughly cleaned and dried out. Re-profiled using epoxy resin to allow rail to shed water more efficiently. If corrosion is severe and piece-in is necessary, use iron type to match existing and traditional welding techniques as much as possible. Where corrosion develops around joints, stainless steel pins can be used, isolated from surrounding material using a nylon sleeve or washer.
   - 6.4. Broken backstays: Repairs should follow details as shown by other existing stays. Where defect is cause by supporting wall or foundations, seek for instructions.
   - 6.5. New finials: Hollow interior to be painted before being put in place. To be slotted over the original spiked end of the bar and hammered or secure in place by hot-poured lead.

6.6. Missing fixings: To replace missing fixings, stainless steel or phosphor bronze fixings are preferable and should be isolated from surrounding ironwork by means of nylon sleeves or 'top hats'.

6.7. Masonry-related issues:

- Where coping stones have been fractured by corroding railings, remove railings and seek instructions. Masonry repairs should be assessed and conducted by qualified masons and as clause C41.
- Where sockets have an unnaturally large diameter, new stone can be pieced in before fixing railings with hot-poured molten lead, as clause C41. Resin should not be used to fix railings into masonry.

7. Painting: Black gloss paint as clause M60.

7.1. Conditions: If conducted outside, paintwork to be carried-out in dry and tempered weather conditions. Avoid any wet, damp, windy and cold weather conditions.

7.2. Surface preparation: Ensure all surfaces are clean and absolutely dry. Remove all rust, dirt, grease and chemical deposits, with a particular focus on vulnerable points (collars, finials, rails, and other junction details). Existing paint should be sanded lightly. Any damaged paint to be sanded back to a smooth edge.

7.3. Application, generally: Hand-application with a brush is preferred. Coats must be applied in thin layers, allowing each to dry thoroughly before next coat is applied.

7.4. Painting on top of existing coatings: Carry out a patch test prior to commencing paintwork, paint a small section and allow to dry for 48 hours to assess any potential incompatibility. New paint to overlap the existing by about 50mm.

7.5. Painting bare metal: Apply in following order: 1) two coats of a zinc-based primer. 2) One or two base coats of micaceous iron oxide (MIO). 3) One or two top coats of gloss paint, ensuring that a dry film thickness (DFT) of no more than 250 microns is formed.

8. Fittings: Retained existing fittings or new ones or match existing

8.1. Finish: Painted as specifications above with black gloss paint as clause M60/12.

9. Method of fixing: To match existing

10. Fillers and sealants: Polysulphide mastics can be used as an alternative to traditional fillers.

11. Accessories: none

Ω End of Section

Q50
Site/street furniture/equipment

To be read with preliminaries/ general conditions.

32 Cycle stands

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Type: Single stands, Sheffield type
3. Material: Stainless steel
   3.1. Finish: As manufactured
   3.2. Colour: None
4. Accessories: None
5. Method of fixing: Base plate bolted to 400 x 400 x 400 mm concrete base 100 mm below paving surface

33 Benches

1. Description: To all external benches as per G-900s.
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Material: Cast in-situ concrete (C32).
   3.1. Finish: Honed, polished on site.
   3.2. Colour: White/Light grey
4. Size: As per schedule in G-900s.
5. Accessories/ Special requirements: None
6. Method of fixing: Root, min. 100 mm below ground, set in concrete base

35 Litter bins

1. Manufacturer: Contractor's choice
   1.1. Product reference: Submit proposals
2. Material: Stainless steel
   2.1. Finish: As manufactured
   2.2. Colour: None
3. Accessories/ Special requirements: None
4. Method of fixing: Base plate bolted to 400 x 400 x 400 mm concrete base 100 mm below paving surface

40 Nesting boxes

1. Description: Bat box
2. Manufacturer: Contractor's choice
   2.1. Product reference: Submit proposals
3. Material:
   3.1. Finish:
   3.2. Colour:
4. Accessories/ Special requirements:

5. Method of fixing:

80 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

85 Setting components in concrete

1. Components: Accurately positioned and securely supported.
2. Concrete fill: Fully compacted as filling proceeds.
3. Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
4. Temporary component support: Maintain undisturbed for minimum 48 hours.

90 Building in to masonry walls

1. Components being built in: Accurately positioned and securely supported. Set in mortar and point neatly to match adjacent walling.
2. Temporary support: Maintain for 48 hours (minimum) and prevent disturbance.

Ω End of Section

R10
Rainwater drainage systems

To be read with preliminaries/ general conditions.

26 Proprietary rainwater outlets

1. Description: To both flat rooves of the new Courthouse extension
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Roof construction: See section J41
   3.1. Roof insulation thickness: 150mm
4. Type or outlet: Flat roof outlet
5. Type of grate/ Fittings: Domed grating, Flange and clamping collar for roof membrane
6. Outlet: Type and direction to suit pipework, with suitable adaptors and connections.
7. Accessories: Insulation jackets and all connecting pieces to downpipes
8. Fixing: Support plate and clamp

30 Aluminium pipework

1. Description: To new extension downpipes
2. Standard: Agrément certified
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Type/ Thickness: Minimum 0.9 mm
5. Section: Round
6. Nominal sizes: 152 mm
7. Finish: Polyester powder coating
8. Colour: Black
9. Brackets: Extruded aluminium pipe clips coated as pipes
   9.1. Fixings: Stainless steel screws
      9.1.1. Size: 40 x 5 mm
10. Accessories: Rainwater shoes

32 Cast iron pipework - flexible couplings

1. Description: To existing downpipes and their new extensions.
2. Standard: To BS EN 877, Agrément certified.
3. Manufacturer: Contractor's choice
   3.1. Product reference: Contractor's choice
4. Coupling type: Push fit
5. Nominal size: To match existing
6. Finish as supplied: Prepainted semigloss black
7. Brackets: Cast iron holderbats
   7.1. Fixings: Stainless steel screws
8. Accessories: Matching rainwater shoes

50 Installation generally

1. Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
2. Discharge of rainwater: Complete, and without leakage or noise nuisance.
3. Components: Obtain from same manufacturer for each type of pipework and guttering.
4. Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
5. Fixings and fasteners: As section Z20.
6. Protection
   6.1. Fit purpose made temporary caps to prevent ingress of debris.
   6.2. Fit access covers, cleaning eyes and blanking plates as the work proceeds.

60 Gutters laid to fall

1. Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
2. Joints: Watertight.
3. Roofing underlay: Dressed into gutter.

65 Gutters laid level

1. Setting out: Level and as close as practical to roof.
2. Joints: Watertight.
3. Roofing underlay: Dressed into gutter.

70 Pipework

1. Fixing: Securely, plumb and/ or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
2. Cut ends of pipes and gutters: Clean and square with burrs and swarf removed.

75 Fixing insulation to internal pipelines and gutters

1. Fixing: Secure and neat. Provide continuity at supports and leave no gaps. Fix split pipe insulation with the split on 'blind' side of pipeline.
   1.1. Method: Mechanical fasteners
2. Timing: Do not fit insulation until completion of pipe airtightness or leakage testing.

80 Internal pipework test –England,Wales,IrelandandNorthern Ireland

1. Preparation: Temporarily seal open ends of pipework with plugs.
2. Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug.
3. Testing: Pump air into pipework until gauge registers 38 mm.
4. Required performance
   4.1. Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

92 Gutter test

1. Preparation: Temporarily block all outlets.
2. Testing: Fill gutters to overflow level and after 5 minutes closely inspect for leakage.

Ω End of Section

Z10
Purpose-made joinery

To be read with preliminaries/ general conditions.

110 Fabrication

1. Standard: To BS 1186-2.
2. Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
   2.1. Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
3. Joints: Tight and close fitting.
4. Assembled components: Rigid. Free from distortion.
5. Screws: Provide pilot holes.
   5.1. Screws of 8 gauge (4 mm diameter) or more and screws into hardwood: Provide clearance holes.
   5.2. Countersink screws: Heads sunk at least 2 mm below surfaces visible in completed work.
   5.3. Adhesives: Compatible with wood preservatives applied and end uses of timber.

120 Cross section dimensions of timber

1. General: Dimensions on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes
   2.1. Softwood sections: To BS EN 1313-1:-
      2.1.1. Clause 6 for sawn sections.
   2.2. Hardwood sections: To BS EN 1313-2:-
      2.2.1. Clause 6 for sawn sections.
      2.2.2. Clause NA.3 for further processed sections.

130 Preservative treated wood

1. Cutting and machining: Completed as far as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
3. Surfaces exposed by minor cutting and/ or drilling: Treat as recommended by main treatment solution manufacturer.

140 Moisture content

1. Wood and wood-based products: Maintained within range specified for the component during manufacture and storage.

250 Finishing

1. Surfaces: Smooth, even and suitable to receive finishes.
   1.1. Arrises: Eased unless shown otherwise on drawings.
2. End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

Ω End of Section

Z11
Purpose-made metalwork

Products

310 Materials generally

1. Grades of metals, section dimensions and properties: To appropriate British or European Standards. When not specified, select grades and sections appropriate for the purpose.
2. Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.
3. Fasteners: To appropriate British or European Standards and, unless specified otherwise, of same metal as component being fastened, with matching coating or finish.

Fabrication

515 Fabrication generally

1. Contact between dissimilar metals in components: Avoid.
2. Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
   2.1. Moving parts: Free moving without binding.
3. Corner junctions of identical sections: Mitre.

520 Cold formed work

1. Profiles: Accurate, with straight arrises.

527 Welding

1. Description: To all steel components
2. Welding procedures
   2.1. Method and standard: TIG or MIG welding to BS EN 1011-4
   2.2. Welding Procedure Specification (WPS): Submit copies before commencement of welding
3. Preparation
   3.1. Joint preparation: Clean thoroughly.
   3.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
4. Jointing
   4.1. Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
   4.2. Dissimilar metals: Filler metal grade to be approved by a qualified metallurgist
   4.3. Strength requirements: Welds to achieve design loads.
   4.4. Heat straightening: Not permitted Obtain approval
   4.5. Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
   4.6. Tack welds: Use only for temporary attachment.
   4.7. Jigs: Provide to support and restrain members during welding.
   4.8. Filler plates: Not permitted
   4.9. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
   4.10. Weld terminations: Clean and sound.

Finishing

710 Finishing welded and brazed joints visible in complete work

1. Standard: To BS EN ISO 8501-3.
   1.1. Preparation grade: P1
2. Butt joints: Smooth, and flush with adjacent surfaces.
3. Fillet joints: Neat.
4. Grinding: Grind smooth where indicated on drawings.

745 Preparation for application of coatings

1. General: Complete fabrication, and drill fixing holes before applying coatings.
2. Paint, grease, flux, rust, burrs and sharp arrises: Remove.

780 Galvanizing

1. Standard: To BS EN ISO 1461.
2. Preparation
   2.1. Vent and drain holes: Provide in accordance with BS EN 14713-1 and -2. Seal after sections have been drained and cooled.
   2.2. Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
   2.3. Welding slag: Remove.
   2.4. Component cleaning: To BS EN ISO 8501-3.
   2.5. Grade: St 2

Ω End of Section

Z12
Preservative/ flame-retardant treatment

To be read with preliminaries/ general conditions.

110 Treatment application

1. Timing: After cutting and machining timber, and before assembling components.
2. Processor: WPA Benchmark-accredited for the specified treated components.

120 Commodity specifications

1. Standard: In accordance with the Wood Protection Association (WPA) publication 'Code of practice: Industrial Wood Preservation'.

130 Preservative treatment solution strengths/ treatment cycles

1. General: Select to achieve specified service life and to suit treatability of specified wood species.

140 Copper-organic preservative treatment

1. Solution
    - 1.1. Manufacturer: Contractor's choice
        - 1.1.1. Product reference: Submit proposals
    - 1.2. Colour: Brown
    - 1.3. Application: High-pressure impregnation.
2. Moisture content of wood
    - 2.1. At time of treatment: Not more than 28%.
    - 2.2. After treatment: Timber to be surface dry before using.

150 Water-based organic preservative treatment

1. Solution
    - 1.1. Manufacturer: Contractor's choice
        - 1.1.1. Product reference: Submit proposals
    - 1.2. Application: High-pressure impregnation.
2. Moisture content of wood
    - 2.1. At time of treatment: Not more than 28%.
    - 2.2. After treatment: Timber to be surface dry before use.

167 Boron compound preservative treatment

1. Solution
    - 1.1. Manufacturer: Submit proposals
        - 1.1.1. Product reference: Submit proposals
    - 1.2. Application: High-pressure impregnation.
2. Moisture content of wood
    - 2.1. At time of treatment: Not more than 28%.
    - 2.2. After treatment: Timber to be surface dry before using.

210 Flame-retardant treatment

1. Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial flame retardant treatment of wood and wood-based panel products'.
2. Solution type: INT 2
   - 2.1. Manufacturer: Contractor's choice
     - 2.1.1. Product reference: Contractor's choice
   - 2.2. Application: Vacuum and pressure impregnation.
3. Moisture content of wood
   - 3.1. At time of treatment: As specified in product classification report.
   - 3.2. After treatment (INT 1 only): Timber to be re-dried slowly at temperatures not exceeding 60°C to minimize distortion and degradation.

610 Making good to preservative treatment on site

1. Preservative solution: Compatible with off-site treatment.
2. Application: In accordance with preservative manufacturer's recommendations.

620 Making good to flame-retardant treatment on site

1. Flame-retardant: Compatible with off-site treatment.
2. Application: In accordance with flame-retardant manufacturer's recommendations.

Ω End of Section

Z20
Fixings and adhesives

Products

310 Fasteners generally

1. Materials: To have:
   1.1. Bimetallic corrosion resistance appropriate to items being fixed.
   1.2. Atmospheric corrosion resistance appropriate to fixing location.
2. Appearance: Submit samples on request.

320 Packings

1. Materials: Non-compressible, corrosion proof.
2. Area of packings: Sufficient to transfer loads.

340 Masonry fixings

1. Light duty: Plugs and screws.
2. Heavy duty: Expansion anchors or chemical anchors.

350 Plugs

1. Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

390 Adhesives generally

1. Standards
   1.1. Hot-setting phenolic and aminoplastic: To BS 1203.
   1.2. Thermosetting wood adhesives: To BS EN 12765.
   1.3. Thermoplastic adhesives: To BS EN 204.

410 Powder actuated fixing systems

1. Types of fastener, accessories and consumables: As recommended by tool manufacturer.

Execution

610 Fixing generally

1. Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
2. Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
3. Appearance: Fixings to be in straight lines at regular centres.

620 Fixing through finishes

1. Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 Fixing packings

1. Function: To take up tolerances and prevent distortion of materials and components.
2. Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.

3. Locations: Not within zones to be filled with sealant.

640 Fixing cramps

1. Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
2. Fasteners: Fix cramps to frames with screws of same material as cramps.
3. Fixings in masonry work: Fully bed in mortar.

670 Pelleted countersunk screw fixing

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
3. Finished level of pellets: Flush with surface.

680 Plugged countersunk screw fixing

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Plugs: Glue in to full depth of hole.
3. Finished level of plugs: Projecting above surface.

690 Using powder actuated fixing systems

1. Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
2. Operatives: Trained and certified as competent by tool manufacturer.

700 Applying adhesives

1. Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
    1.1. Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
2. Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

Z21
Mortars

Cement gauged mortars

110 Cement gauged mortar mixes

1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

160 Cements for mortars

1. Cement: To BS EN 197-1 and CE marked.
   1.1. Types: Portland cement, CEM I.
2. Portland limestone cement, CEM II/A-L or CEM II/A-LL.
3. Portland slag cement, CEM II/B-S.
4. Portland fly ash cement, CEM II/B-V.
   4.1. Strength class: 32.5, 42.5 or 52.5.
5. White cement: To BS EN 197-1 and CE marked.
   5.1. Type: Portland cement, CEM I.
   5.2. Strength class: 52.5.
6. Sulfate resisting Portland cement
   6.1. Types: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
7. To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
   7.1. Strength class: 32.5, 42.5 or 52.5.
8. Masonry cement: To BS EN 413-1 and CE marked.
   8.1. Class: MC 12.5.

190 Retarded ready to use cement gauged masonry mortars

1. Standard: BS EN 998-2.
2. Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
   2.1. Type: CL 90S.
3. Pigments for coloured mortars: To BS EN 12878.
4. Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
   4.1. Retempering: Restore workability with water only within prescribed time limits.

Lime:sand mortars

310 Lime:sand mortar mixes

1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

380 Ready to use nonhydraulic lime:sand mortars

1. Manufacturer: Contractor's choice
   1.1. Product reference: Contractor's choice
2. Materials: Select from:
   2.1. Lime putty slaked directly from quicklime to BS EN 459-1 and mixed thoroughly with sand.
   2.2. Quicklime to BS EN 459-1 slaked directly with sand.

3. Maturation period before use (maximum): max. Seven days

390 Knocking up nonhydraulic lime:sand mortars

1. Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
   1.1. Equipment: Roller pan mixer or submit proposals.

Ω End of Section

Z22
Sealants

Products

310 Joints

1. Description: GENERALLY
2. Manufacturer: Contractor's choice
   2.1. Product reference: Contractor's choice
3. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.
4. Fire performance
   4.1. Fire resistance: Not required
   4.2. Reaction to fire: Not required

Execution

610 Suitability of joints

1. Presealing checks
   1.1. Joint dimensions: Within limits specified for the sealant.
   1.2. Substrate quality: Surfaces regular, undamaged and stable.
2. Joints not fit to receive sealant: Submit proposals for rectification

620 Preparing joints

1. Surfaces to which sealant must adhere
   1.1. Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
   1.2. Clean using materials and methods recommended by sealant manufacturer.
2. Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
3. Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
4. Protection: Keep joints clean and protect from damage until sealant is applied.

630 Applying sealants

1. Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
2. Environmental conditions: Do not dry or raise temperature of joints by heating.
3. Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
4. Sealant profiles
   4.1. Butt and lap joints: Slightly concave.
   4.2. Fillet joints: Flat or slightly convex.
5. Protection: Protect finished joints from contamination or damage until sealant has cured.

Ω End of Section



Specification created using NBS Chorus