

DIA –SOAS-A-SPC-0001

**SOAS North Block Repairs
to Interior Finishes**

**Construction Issue
Revision C2
11 September 2014**

Revision History

Section M41

Clauses amended in revision C2 for Construction:

Clause 120	Edited	11 th September 2014
Clause 120A	Added	11 th September 2014
Clause 160	Edited	11 th September 2014
Clause 483	Added	11 th September 2014
Clause 485	Edited	11 th September 2014
Clause 520	Edited	11 th September 2014

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B30

GENERAL PROTECTION AND CLEARING AWAY

B30 GENERAL PROTECTION AND CLEARING AWAY

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS:

10 METHOD STATEMENT

- The contractor is required to submit method statements for protection two (2) weeks before works start on site for approval by the Project Manager.
- The method statements will address the following:
 - Methods for dust control;
 - Methods for floor protection to stone floor finishes to prevent mechanical damage;
 - Methods for protection to stone wall finishes;
 - Methods for protection of wall, floor and openings throughout work area as appropriate, with particular attention to traffic heavy areas.
 - Methods for protection to joinery to remain in situ, including but not limited to architraves, doors, timber radiator surrounds and sills.
 - Methods for protection of glazing to interior corridor transoms and glazed door panels; and
 - Methods of control and disposal of coatings, water and detritus.

13 PROTECTION GENERALLY

- Protect all surfaces indicated from impact damage, water, and decoration materials prior to the commencement of any works in the vicinity.
- Keep and maintain protection in a good state of repair throughout the works and only remove when necessary to undertake specified cleaning or repair works. Reinstate on completion of repair works.
- Use only new flame resistant sheeting fleece, boarding, netting for the protection of the works, persons and building fabric.
- Do not use materials that may stain the building fabric.
- No insertions or fixings of any description will be permitted into the existing building fabric unless instructed by the Project Manager.
- Ensure all surfaces are dust free to ensure good adhesion of protection.
- Keep and maintain protection in good state of repair throughout the works.
- Maintain all protection in good repair and in a clean and tidy state, to the satisfaction of the Project Manager, during the course of the works.
Take account of access requirements to undertake the works and allow for all protection adaptations as / if necessary, for their execution.

15 PROTECT AREAS OF STONE FLOORING AND TIMBER BLOCK AND HERRINGBONE FLOORING

- Floor areas are to be protected prior to works commencing on site and are only to be lifted to undertake specified cleaning/ refinishing and repair works. On completion of the cleaning and repair works, the flooring protection is to be reinstated and remain in situ until the completion of all surrounding works.
- Protect all against impact damage, water, compression, abrasion, soiling and / or contamination.
- Lay over with heavy-duty (1200 microns minimum) polythene sheet with 150mm (min) laps at joints prior to commencement of the works to prevent damage, soiling and abrasion. Laps to be sealed with self-adhesive tape or type recommended for the purpose by the manufacturer.
- Overlay polythene sheet with 18mm sheathing plywood sheets on 6mm Correx sheets. Joints to Correx sheathing to be sealed with scrim backed pressure sensitive tape. Ensure joints are offset from those of the polythene by at least 500mm.
- Keep and maintain protection in good state of repair throughout the works.

- 25 PROTECT TO JOINERY, WALL COVERINGS AND WINDOW CILLS, LIFT DOORS AND LIFT INTERIORS
- Protection to joinery to include architraves, doors and door linings, dado panelling, fireplace surround, proscenium moulding to the ground floor, timber panelling to the ground floor corridor ante-room (directly off of the reception), lift door linings, and timber radiator casing/ sill assemblies.
 - For the fireplace surround, provide a bespoke plywood box lined with 5mm flame-retardant polyethylene foam.
 - For door linings/ architraves use a proprietary flame-retardent foam jamb guard.
 - For all other joinery lay over with heavy-duty (1200 microns minimum) polythene sheet with 150mm (min) laps at joints prior to commencement of the works to prevent damage, soiling and abrasion. Laps to be sealed with self-adhesive tape or type recommended for the purpose by the manufacturer. Over polythene sheet lay 6mm Correx sheets. Joints to Correx sheeting to be sealed with scrim backed pressure sensitive tape. Ensure joints are offset from those of the polythene by at least 500mm.
 - For travertine wall coverings and window cills and lift doors/ interiors, protect as above with a 5mm flame-retardant polyethylene foam between the polythene and Correx sheeting.
 - Do not install any fixings.
- 35 REMOVAL, PROTECTION AND STORAGE OF TRAVERTINE RADIATOR PANELS
- Prior to works commencing on site, all travertine radiator panels are to be removed and protected as per the below methodology.
 - Label each panel and record location prior to removal, i.e. with room references and location marked up on drawings, as most rooms have several radiators.
 - Carefully removal travertine radiator panels, leaving the original ironmongery/fixings in situ. If the panel is fractured and schedules for repair, ensure all pieces of the panel are labelled and carefully packed to avoid any further damage.
 - Panels are to be packed and stored flat in bespoke, heavy-duty crates sized to the dimension of the panels. No more than 5No. panels per crate.
 - Protection to include padding between the panels, between the panels and the crate and around the edges to ensure the arrises do not get damaged in transport from banging against the crate. As some of the panels are slightly warped from exposure to heat, use foam packers as necessary between the panels to ensure each panel is level before packing another on top.
 - Label individual crates to indicate contents, including panel and room reference numbers.
 - Crates are to be stored flat in a secure location throughout the duration of the works and are to be reinstated in their original location on completion.
- 45 PROTECT INTERIOR GLAZING
- For the interior corridor transoms/ fanlights, lay 10mm flame-retardent polyethylene foam on either side of the glazing followed by 12mm plywood boarding, cut to fit securely in the frame.
 - For doors with glazed elements, lay 10mm flame-retardent polyethylene foam on either side of the glazing followed by 12mm plywood boarding, cut to fit securely in the frame. Protect the door as per clause 25.
- 55 PROTECT INTERIOR STAIR RAILINGS
- Apply 5mm flame-retardent polyethylene foam pipe insulation with the appropriate diameter to cover the bronze railing to the staircases.

- 100 CLEAN AND DISPOSE OF DEBRIS/ MATERIALS ARISING FROM THE WORKS
- Remove, sweep clean, vacuum up, as necessary, and clear away / dispose of all debris, ponding water and / or other extraneous materials arising from the works as work proceeds and upon completion.
 - Bag up all waste materials arising taking care not to disperse residue across or beyond the site.
 - Dispose of all materials at an appropriate Local Authority licensed tip.
 - **NOTE: This is a listed building. No materials not scheduled for disposal shall leave the confines of the work site.**
- 110 PRODUCTS/ EQUIPMENT MANUFACTURERS
- Manufacturer:
 - *Flame-Retardent Polyethylene Foam and Sheeting/ and Door Jamb/Architrave Guard:*
 - Proteca Screen Limited
 - 2 Driberg Way, Braintree, Essex. CM7 1NB
 - Tel: 0870 121 8670
 - *Flame-Retardent Polyethylene Foam Pipe Insulation*
 - Insulation Express
 - Hillsborough Works, Langsett Road, Sheffield, S6 2LW
 - Tel: 0113 399 3377
 - *Correx Sheeting*
 - Cordex Limited
 - Spring Copse Business Park, Slinfold, West Sussex, RH13 0SZ
 - Tel: 01403799600
- Or similar approved.

C11
Site investigation

C11 Site investigation

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS

LABORATORY TESTS

355 LABORATORY ANALYSIS FOR MORTARS

- Method: Submit proposals. Allow for submission of four (4) samples of mortar from the Portland stone interior walls, four (4) samples of mortar from the York stone floor flags (including grout), and four (4) samples of mortar from the travertine floor flags for analysis.
- Timing: submit results for comment by the EA four weeks before new mortar is required for the works on site.
- For guidance, the below list of companies have been successfully used:
 - The Lime Centre
 - Hazeley Road, Morstead, Winchester SO21 1LZ
 - Tel: 019 6271 636
 - info@thelimecentre.co.uk
 - or
 - Rose of Jericho
 - Horchester Farm, Holywell, nr. Evershot, Dorchester, Dorset. DT2 0LL
 - Contact: Peter Ellis
 - Tel: 01935 83676
 - info@rose-of-jericho.demon.co.uk

356 LABORATORY ANALYSIS FOR TERRAZZO FLOORING (IN-SITU, SKIRTINGS AND TILES)

- Method: Submit proposals.
- Timing: submit results for comment by the EA four weeks before new mortar is required for the works on site.
- Requirements:
 - To determine the composition of the terrazzo floor to enable reproduction of the original floor appearance including size and colour for the following:
 - Aggregates, sand, cement, Matrix pigments, and curing compounds.
- Ensure sample is representative of the original floor (i.e. from a core sample).

365 LABORATORY ANALYSIS FOR PLASTER

- Method: Submit proposals.
- Requirements:
 - To determine plaster type and whether it is gypsum or lime-based;
 - To determine plaster mixes with compatible physical and visual properties of the existing plaster for the purpose of repair works.

C40
Cleaning Masonry

C40 Cleaning Masonry

To be read with Preliminaries/ General conditions.

GENERAL/ PREPARATION

110 SCOPE OF WORK

- The following surface require cleaning:
 - Travertine stone (including flooring, wall panels, decorative mouldings (skirtings, sills, etc) and radiator panels)
 - Remove paint and general soiling.
 - Remove adhesives (associated with linoleum and carpet installation) as required.
 - Portland stone (internal walls)
 - Remove paint and general soiling.
 - York Flag Stones (floors)
 - Remove paint and general soiling.
 - Remove adhesives (associated with linoleum and carpets installation) as required.
 - Marble surfaces
 - Remove paint and general soiling Undertake trials of the outlined cleaning methods, and, subject to EA approval, carry out masonry cleaning as outline in the repair scehdule .

110 SCOPE OF WORK

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 - Marble surfaces
 - Remove paint and general soiling .
- Undertake trials of the outlined cleaning methods, and, subject to EA approval, carry out masonry cleaning as outline in the repair scehdule

120 RELATED REPAIR AND REMEDIAL WORKS

- Work to be carried out before cleaning work: Carefully remove and set aside, for reinstatement, linings and fixings as required. Refer to clause C40 142 for removal of fittings. Pointing and plaster repairs as section C41.

142 REMOVAL OF FITTINGS TO ENABLE CLEANING OF MASONRY

- Timing: Before commencement of cleaning work.
- Disturbance to surfaces: Minimize.
- Items for disposal: as repair schedules and drawings. Do not dispose of original ironmongery, fixtures or linings unless specifically instructed by architects drawings or schedule. If in doubt, seek instruction from EA.
- Items to be kept for reuse: Items temporarily removed to provide access.
 - Ensure items are labelled or bagged and labelled, and stored in a safe dry environment matching the environmental conditions of the location of removal.
 - Record removed items with unique location identification code, and record on schedule with accompanying photographic record.
 - Items to be labelled with identifying plastic tag securely fixed (with either cable tie like fixing or stapled to concealed face) with identification code marked written with indelible marker pen.
 - Maintain secure duplicate record of removed fittings and submit a copy of completed schedule to EA.
 - Ensure storage areas are secure and locked
 - Refer to clause C40 160 for protection measures.

160 PROTECTION GENERALLY

- Refer to section B30 for details of general protection.
- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents, and detritus.
 - Vents and grilles: Seek instructions before sealing up.
- Temporary mechanical fastenings:
 - In masonry: locate in joints.
 - In other surfaces: Seek instructions.
- Additional protection:
 - Prevent spillage of water, cleaning agents and detritus on surrounding site. Do not allow saturation of surfaces (note, generally void beneath floor).
 - Used approved protective boards, sheeting, films, sealants and sealing tapes that do not stain protected materials and that can be readily removed after cleaning without damaging or staining the protected material.
 - Where items are removed for cleaning, and repair:
 - If applying cleaning products via air brush, take especial care to protect all areas air borne spray could affect .

176 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS DURING CLEANING WORKS

- Disposal: Safely. Obtain approvals from relevant Authority.
- Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
- Above and below ground drainage systems: Keep free from detritus and maintain normal operation.
- Ensure that water does not penetrate interiors and damage finishes, etc. Monitor interior of building and seek instructions when any signs of damp appear internally.

190 CLEANING GENERALLY

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

210 HEALTH AND SAFETY

- Take all necessary precautions to protect site operative and the general public from health hazards associated with the materials and procedures for the cleaning methods(s) used.

215 RECORD OF CLEANING TRIALS AND CLEANING WORKS

- Written report: Record cleaning methods and procedures used for each type of surface and deposit.
 - Content: Relevant attributes of cleaning methods used including:
 - Equipment and settings.
 - Dwell times.
 - Number of applications.
 - Ambient temperatures.
 - Additional documentation: Survey before cleaning: Photogrammetric drawings of each elevation and any damage to surface masonry caused by cleaning works.
 - Submission: At completion of cleaning works.

220 CONDITION OF SURFACES TO BE CLEANED

- Before commencing cleaning of each area, ensure that surfaces are in a suitable condition to be cleaned and that
 - Walling and associated features/ components are stable and that preparatory repair works are complete.
 - Fixtures and fittings have been removed in accordance with clause C40 142.

230 TRIAL SAMPLES OF TRAVERTINE STONE CLEANING

- Trial sample reference: Travertine Stone Cleaning Test Location 1 (2,3, etc for each test), Method 1 (2,3 etc for each method undertaken).
 - Surface: Travertine stone.
 - Location/ Size: Locate typical examples of travertine cleaning scenarios (allow for five tests) and identify inconspicuous area for test. Submit location to EA for approval prior to undertaking test. Undertake method 1 and 2 below to an area 300 x 300mm. EA may instruct further tests depending on results or further locations requiring cleaning tests.
 - Type of soiling: General soiling and paint, and areas of adhesive (presumed waterbased)
 - Cleaning methods:
 - **Method 1: PH Neutral Soap (Areas with Minor Soling and Without Adhesive)**
 - Step 1: Vacuum the area to be cleaning and adjacent areas, including mouldings, carved from work and flat areas of the wall. Protect the surrounding area. Where relevant, mask off painted areas, glass and metal fittings with a light duty polyethylene. Protect doors, windows and other fragile items with heavy duty grade polyethylene. Carefully tape to seal protection completely and to prevent the ingress of water, cleaning fluids, dirt or debris.
 - Step 2: Mix a PH neutral soap and warm water mix. Using medium nylon bristle brushes and sponges, work solution on surface in circular motions, starting at the highest point. Care should be taken to use as little water as possible to achieve the desired cleaning effect (avoid over saturation of the stone).
 - Step 3: Clean down from the highest point using a little water and sponge to remove any soap remnants (avoid over saturation of the stone).
 - Step 4: Repeat cleaning method if surfaces remains soiled.
 - **Method 2: Arte Mundit 3 (Areas with Adhesive)**
 - Step 1: Vacuum the area to be cleaning and adjacent areas, including mouldings, carved from work and flat areas of the wall. Mask off painted areas, glass and metal fittings with a light duty polyethylene. Protect doors, windows and other fragile items with heavy duty grade polyethylene. Carefully tape to seal protection completely and to prevent the ingress of water, cleaning fluids, dirt or debris. Ensure application surface is not hot.
 - Step 2: Mix the Arte Mundit 3 well prior to application. Do not dilute.
 - Step 3: Apply the product with a synthetic paintbrush, ensuring the product forms a continuous film and that the product is applied and in contact with all crevices. Apply the product over the edges of the polyethylene to ensure completely water proof seal around the borders of the area.
 - Step 4: Allow product to cure (see below for times)
 - 20°C (68°F) – 40% R.H.: 3 HOURS
 - 20°C (68°F) – 65% R.H.: 3 HOURS
 - 20°C (68°F) – 95% R.H.: 22 HOURS
 - 5°C (41°F) – 65% R.H.: 23 HOURS
 - 10°C (50°F) – 65% R.H.: 22 HOURS
 - 20°C (68°F) – 65% R.H.: 3 HOURS
 - 30°C (86°F) – 65% R.H.: 2,5 HOURS
 - Step 5: Peel back the cured product exposing only a surface large enough to be washed down within 1 hour. When removing from areas of carved stonework particular care must be taken to peel back gently, cutting where necessary to reduce tension.
 - Step 6: Clean down from the highest point using a little water and sponge. Where necessary medium nylon bristle brushes will be required to clean more intensely. Care should be taken to use as little water as possible. Use cold water and a pH neutral liquid soap, or by peeling if possible
 - Note: Ensure good ventilation of the area during the preparation and application of the product (refer to the product data sheet)
 - Refer to clause C40 310 regarding approved tools.
 - At completion, ensure there is no tackiness remains on the floor finishes. - Obtain

EAs approval of cleaning to each area/surface and before removal of temporary protection .

- Records: Maintain written records for each trial area, including cleaning methods and conditions as per clause C40 215, and results, including photographic records, to enable replication of results elsewhere.
- Sample area will be deemed satisfactory when the appearance of dirt, general staining, paint and discolouration are removed from the stone allowing the natural colour and finish of the stone to be visible, to the approval of the EA.
- Seek and record EA approval of sample area, prior to undertaking cleaning works outlined in architect's schedules and drawings.

231 TRIAL SAMPLES OR YORK STONE CLEANING

- Trial sample reference: York Stone Cleaning Test Location 1 (2,3, etc for each test), Method 1(2,3, etc for each test), Method 1 (2,3 etc for each method undertaken).
 - Surface: York stone.
 - location/ Size: Locate typical examples of travertine cleaning scenarios (allow for five tests) and identify inconspicuous area for cleaning test. Submit location to EA for approval prior to undertaking test. Undertake method below to an area 300 x 300mm. EA may instruct further tests depending on results or further locations requiring cleaning tests.
 - Type of soiling: General soiling and paint, and areas of adhesive (presumed waterbased)
 - Cleaning methods: As '**Method: Tavec 201**' outlined in clause C40 232.
- Records: Maintain written records for each trial area, including cleaning methods and conditions as per clause C40 215, and results, including photographic records, to enable replication of results elsewhere.
- Sample area will be deemed satisfactory when the appearance of dirt, general staining, paint and discolouration are removed from the stone allowing the natural colour and finish of the stone to be visible, to the approval of the EA.
- Seek and record EA approval of sample area, prior to undertaking cleaning works outlined in architect's schedules and drawings.

232 TRIAL SAMPLES PORTLAND STONE CLEANING

- Trial sample reference: Portland Stone Test Location 1 (2,3, etc for each test), Method 1 (2,3, etc for each test), Method 1 (2,3 etc for each method undertaken).
 - Surface: Portland stone.
 - location/ Size: Locate typical examples of travertine cleaning scenarios (allow for five tests) and identify inconspicuous area for cleaning test. Submit to EA for approval prior to undertaking test. Apply method below to an area 300 x 300mm. EA may instruct further tests depending on results or further locations requiring cleaning tests.
 - Type of soiling: General soiling and paint.
 - Cleaning methods:
 - **Method (Tavec 201) :**
 - Step 1: Protect the surrounding area. Do not allow product to come into contact with rubber or plastic.
 - Step 2: Apply a uniform coating of Tavec 201 Stripper, by brush application, to a dry surface so the paint is no longer visible. Ensure stripper does not come into contact with surrounding area (inform EA immediately should this occur and follow manufacturers instructions for removal).
 - Step 3: Allow the stripper to remain on the surface for minimum 30 minutes – maximum 4 hours (establish duration of exposure - assess whether product has cleaned the surface at hourly intervals). On multiple layers of paint, or deep soiling, it may be necessary to remove the lifted layers and re-apply the product. Do not allow the product to dry on the surface.
 - Step 4: Removal of Chemicals: As recommended by the product manufacturer, including rinsing with water, and removal of dissolved adhesive with scourers or a spatula, if required. Take care to minimise the amount of water used in washing down, as to prevent ingress of water into finishes.
 - Step 5: Re-application may be necessary, but ensure surface is dry prior to application of the stripper
 - Refer to clause C40 310 regarding approved tools.
 - At completion, ensure there is no tackiness remains on the floor finishes. - Obtain EAs approval of cleaning to each area/surface and before removal of temporary protection .
- Records: Maintain written records for each trial area, including cleaning methods and conditions as per clause C40 215, and results, including photographic records, to enable replication of results elsewhere.
- Sample area will be deemed satisfactory when the appearance of dirt, general staining, paint and discolouration are removed from the stone allowing the natural colour and finish of the stone to be visible, to the approval of the EA.
- Seek and record EA approval of sample area, prior to undertaking cleaning works outlined in architect's schedules and drawings.

PRODUCTS/ EQUIPMENT**310 TOOLS GENERALLY**

- Use of stiff bristle brushes and non-scrape scourers to remove adhesive and soiling is permitted providing that the original surface/detail is not affected

362 CHEMICAL AGENTS FOR CLEANING TRIALS 'TAVEC 203'

- Manufacturer:
 - Address: Tensid U.K., Ltd., Awquila House, 70a Wheatash Road, Addlestone, Surrey. KT15 2ES.
 - Telephone: 01932 564133
 - Fax: 01932 562046
 - Email: info@tensid.com .
 - Product reference: Tavec® 203 Paint Stripper .

363 CHEMICAL AGENTS FOR CLEANING TRIALS PH NEUTRAL SOAP

- Manufacturer: Submit proposals to EA.
 - Product reference: Submit proposals to EA.

364 CHEMICAL AGENTS FOR CLEANING TRIALS ARTE MUNDIT

- Manufacturer:
 - Address: Bouwelven 19, B-2280 Grobbendonk, Belgium
 - Tel: +32 (0) 14 84 80 80
 - Fax: +32 (0) 14 84 80 81
 - Product reference: Arte Mudit 3

370 MECHANICAL METHODS & HAND TOOLS

- Products: Non-metallic, stiff bristle brushes.

APPLICATION**413 REMOVAL OF LOOSELY ADHERED DEPOSITS**

- Timing: Before commencement of other cleaning methods.
- Surfaces: Prevent damage, including abrasion to soft red brick and stone mouldings using brushes.

420 LATEX CLEANING APPLICATION AND REMOVAL GENERALLY

- As per described in Clause 230.

500 CHEMICAL CLEANING GENERALLY

- Surfaces: Prevent damage, including discolouration, bleaching and efflorescence.
- Product variables (including concentrations, dwell times and number of applications): Adjust for each surface to achieve optimum cleaning performance.
- Application: To wetted surfaces.
 - Drying out: Prevent unless recommended otherwise by cleaning product manufacturer.
- Removal of chemicals and neutralization: As recommended by product manufacturer, including rinsing with clean water.
 - Additional treatment: Where water rinsing is insufficient to neutralize surface, apply compatible neutralizing agent - Submit proposals to EA.
 - Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

501 CHEMICAL CLEANING: APPLICATION OF ARTE MUNDIT

- As method outlined in cleaning trial. Refer to clause C40 230.

502 CHEMICAL CLEANING: APPLICATION OF TAVIC 201

- As method outlined in cleaning trial. Refer to clause C40 232.

520 COMPLETION

- Obtain EA's approval of cleaning to each area/ surface and before removal of temporary protection.
- After removal of temporary protection, thoroughly clean all glazing, window frames, doors, sills, and other affected surfaces.
- Give the EA one week's notice before striking each stage of scaffolding, to allow for final inspections.
- Refix the following fittings: Items temporarily removed to provide access that will not interfere with any stone conservation.

C41DIA
REPAIRING/ RENOVATING/ CONSERVING MASONRY

C41DIA REPAIRING/ RENOVATING/ CONSERVING MASONRY**111D REVIEW OF SCOPE OF REPAIR WORK UPON CLOSE INSPECTION**

- Provide access scaffolding and artificial lighting to all areas where stone repair is to be made to enable the EA to make a close inspection.
- Provide attendance and inspect the work with the EA to confirm the nature and extent of the cutting out and preparation of voids as identified on drawings.
- Make a record of instructions given during inspections, which may either confirm or vary scope of work, and measure and record relevant details, as clause 121D.
- Prepare and submit details of instructions for confirmation.
- Prepare schedules and drawings for use as basis of implementation of work.

112D RELATED WORK

- is specified in the following sections:
 - C40 Cleaning Masonry
 - Z21 Mortars

121D RECORDING TO THE APPROVAL OF THE EA

- Clearly mark by appropriate means, the defective stones or parts of stones to be cut out.
- Record by photograph or other approved method, stones to be cut out and/or missing stones to be reinstated, and the relationship of surrounding work. Note bond, joint size, style and texture of pointing and any special or unusual features for replication.
- Cross-reference identified and marked stones for cutting out and/or missing stones for reinstatement to drawings or photographs

145D OPERATIVES

Cutting, dressing, laying and jointing of stone to be carried out by masons skilled in the work required.

- Provide evidence of previous experience and details of work previously carried out.

166D TEMPORARY SUPPORT

Provide temporary support to structure. Maintain and modify support as required during repair work.

186D WARM DRY WEATHER

- In dry weather keep areas of work damp for a minimum of four hours before pointing and three days after

211D ORDERING OF STONE

- Calculate the quantities required, agree delivery dates and place a firm order for stone from the suppliers specified below promptly upon placement of contract.
- Agree storage location/method with EA prior to ordering.

221D TAKING PROFILES/PREPARING MOULDS FOR MASONRY REPAIRS

- Take profile of existing stones, as identified by the EA, by letting zinc/plastic plates into joints.
- Prepare moulds, face and zinc/acrylic templates, clearly marked for identification and location.
- Hand all templates to EA on completion.

222D WORKING DRAWINGS

- Prepare drawings of plinths, string courses, quoins, arches, cornice elements and moulded stones, to show:
 - Fixing details numbered to correspond to numbers on stones.
 - Details and locations of accessories.
- Provide a Method Statement to show how awkward stones are to be handled, hoisted, protected and stored.
- Submit copies of drawings to EA at least two weeks before required date for cutting stone before proceeding with cutting.
- Hand approved set of drawings to EA on completion.

224D GUARANTEE

- Obtain and submit written guarantee by suppliers that all new stone will be from the quarry and bed specified

235D INSPECTION OF MASONRY UNITS

- General: Before despatch to site, inspect and check completed units for:
 - Match with approved samples.
 - Compliance with drawings and specification.
- Give notice: At appropriate stages in production to allow inspection of masonry units before delivery to site.

237D APPEARANCE OF STONE TO BE USED ON MASONRY REPAIRS

- Make arrangements for the EA to inspect samples of dressed which represent the range of variation in appearance.
- Obtain approval of appearance before placing orders with suppliers or proceeding with production.

242 STONE FOR INTERNAL REPLACEMENT/REPAIR: FOR TRAVERTINE STONE REPAIRS (AS REQUIRED)

- Stone: Travertine stone of similar type, density and quality to that to be replaced, to match existing in shade, texture, finish and range of colour variations. Free from defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked before delivery to site in accordance with shop drawings prepared by the supplier.
 - Finish: As adjacent area/replaced unit.
 - Supplier: Submit sample and proposal to EA.
 - Mortar: as section Z21, if required to match existing.
 - Bond: To match existing.
 - Joints and pointing: To match existing

243 STONE FOR INTERNAL REPLACEMENT/REPAIR: FOR YORK STONE REPAIRS (AS REQUIRED)

- Stone: York stone of similar type, density and quality to that to be replaced, to match existing in shade, texture, finish and range of colour variations. Free from defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked before delivery to site in accordance with shop drawings prepared by the supplier.
 - Finish: As adjacent area/replaced unit.
 - Supplier: Submit sample and proposal to EA.
 - Mortar: as section Z21, if required to match existing.
 - Bond: To match existing.
 - Joints and pointing: To match existing

247D RE-USE OF STONE

- Agree extent to which existing stone is to be retained for re-use in other than its existing location. Remove all such stone; clean, overhaul, protect and store on site until required.

248D CARVING TRAVERTINE SKIRTING

- Supply sufficient stone, consistent in grain and colour, for carver to have ample scope for this work.
- Carve stone to accurate clean profiles before or after building in, as agreed with the EA.

249D PRODUCTION OF STONE FOR MASONRY REPAIRS

- Cut and dress stone so that:
 - Shaping, finishing and all sinkings and holes for fixing and lifting devices are completed after seasoning but before delivery to site.
 - Finished surfaces match those of existing surrounding stones.
 - Stone bond and joint lines are maintained.
 - Meeting surfaces between adjacent stones are compatible with each other and free from hollow or rough areas.
 - V-shaped sinkings and dowel holes correspond with those in new or existing stones that remain or are to be reincorporated, for filling with mortar to form joggles.
 - Drill holes for dowels are of equal depth in adjacent stones and in core work.
 - Joint size between stones matches that of existing work.
 - Joint size within repaired stones is kept to minimum.
 - Mitred joints do not occur at corners.
 - Natural bed is horizontal in plain walling and quoin stones, vertical and at right angles to wall face in projecting stones and at right angles to line of thrust in arches.

252D IDENTIFICATION OF STONE FOR MASONRY REPAIRS

- Mark each stone, whether new, secondhand or re-used, clearly on an unexposed face to indicate the natural bed and, where known, its position in the finished work.
 - Mark stone with indelible marker pen, on a concealed surface, and record on schedule.
 - Maintain secure duplicate records of ID numbers and submit a copy of completed schedule to EA and at request.

253D INSPECTION OF MASONRY UNITS

- General: Before despatch to site, inspect and check completed units for:
 - Match with approved samples.
 - Compliance with drawings and specification. Give notice at appropriate stages in production to allow inspection of masonry units before delivery to site.

327D REMOVAL OF PAINT, ADHESIVE ETC FROM STONE

- Clean face with manual tools only: paint scrapers, bristle brushes, mason's brushes and, if necessary, bronze wire brushes.
- Refer to section C40 for paint removal trials to stone work, to be implement subject to EA approval post submission of trial results.
 - If any stain proves difficult to remove without causing damage to surface of stonework, stop work and seek further instruction from EA.

341D PREPARING BEDS AND BACKINGS TO RECEIVE YORK STONE FLAGS

- Method:
 - Remove soft mortar by brushing, vacuuming or raking with chisel in preference to cutting with hammer and chisel.
 - Cut out defective stones or parts of stones until structurally sound material is reached.
 - Leave cavities cut square and take care not to damage adjacent stones or surfaces to be retained.
 - Remove or cut out fully all stones, or parts of stones, to be replaced with new, prior to cutting and dressing replacement stone, to ensure that new stone exactly matches the void into which it is to be set.
 - Remove all unwanted remaining bedding and backing material, fixings and similar items from voids left where defective stones have been cut out and/or where stones are missing.
 - Rake and clean out cavities to provide sound, hard surfaces for replacement stones/tiles.
 - Remove dust throughout with a vacuum cleaner.

370D BASIC WORKMANSHIP

- Comply with the clauses of the following that are relevant to this section, unless otherwise specified or shown on drawings:
 - BS EN 1996, parts 1-3; 2005 and 2006, and PD 6697:2010.

371D PROTECTION GENERALLY

- Provide all necessary protection as section B30.

382D MASONRY ADHESIVES FOR REPAIRS TO TRAVERTINE STONE

- For fixing small sections of stone in 'dentistry' repairs use 'Akemi' resin/epoxy-based adhesive from Ebor Equipment Limited, Trans-Pennine Trading Estate, Gorrells Way, Rochdale, Lancashire OL11 2PX. Tel. 01706 869691, or other approved.
- For piecing-in larger stones use Certite from SBD Ltd. Dickens House, Enterprise Way, Flitwick, Bedford MK45 5BY, Tel. 01525 722 100, or other approved, in conjunction with metal fixings as clause 392D.

401D LAYING AND JOINTING OF YORK STONE FLAGS

- Keep stonework clean during construction and until Practical Completion.
- Ensure that no mortar encroaches on face when laying.
- Rubbing to remove marks or stains will not be permitted.
- Set mechanical fixings in mortar as clause 442D
- Dampen stones and well wet existing stonework and lay stones on a full even bed of mortar with all joints filled.
- Maintain joint lines as existing, unless otherwise instructed.

412D JOINTING GENERALLY

- To match existing. Make a record of jointing style prior to removal.

430D REPAIR OF INDIVIDUAL HOLES AND CRACKS IN TRAVERTINE

- Undertake a trial of the proposed repair method below, prior to (with EA approval) applying as per repair schedule.
- Trial sample:
 - Location/ Size: Locate typical examples of travertine cracking/holes and identify area for test. Submit location to EA for approval prior to undertaking test. Undertake method below. EA may instruct further samples depending on results.
 - Records: Maintain written records for trial, including photographic records, to enable replication of results elsewhere.
- Method for Repairing Cracks:
 - As clause 463A.
- Method for Repairing Holes and small, non structural, cracks:
 - Thoroughly brush clean and remove loose material.
 - Remove all surface contaminants (e.g. grease, release agent, etc.).
 - Repair with a tinted resin and stone dust travertine repair solution to match appearance of existing travertine. Submit proposals to EA, for installation as per manufacturer's instruction.
- Sample area will be deemed satisfactory when the appearance of is harmonious with the surrounding stone appearance, to EA approval.
- Seek and record EA approval of sample, prior to undertaking repair works outlined in architect's schedules and drawings.

432 REPAIRS OF IN-SITU TERRAZZO FLOORING

- Refer to section M41.

451D RETAINED ORIGINAL MASONRY

- Is not to be cut or adjusted in any way to accommodate new or re-used masonry, except with prior approval of the EA.

463D REPAIRING SPLIT TRAVERTINE STONE PANELS WITH PINNING

- Method for repairing split travertine (non-removable panels and stone):
 - Carefully drill through face at approximately 30 degrees to horizontal, to diameter instructed, ensuring drilling has penetrated background, solid stone or stable core to minimum depth of 75mm, at approximately 100mm, or less if required, centres.
 - Remove debris from hole by blowing out with tubing and flush out hole with clean water from a syringe.
 - Attach tubing to syringe and fill with resin prior to filling hole.
 - Cut to length threaded austenitic stainless steel rod. Allow 6mm cover to face for small diameter rod.
 - Fill hole with resin to correct depth to avoid overfilling: e.g. 6mm diameter hole to take 3mm diameter rod hole to be resin filled to two thirds depth.
 - Place protective plastic film and modelling clay plug below hole.
 - Carefully insert dowel into resin filled hole by gently turning and pushing.
 - Allow resin to cure to Manufacturer's recommended timings.
 - Following curing, point hole tinted resin as per travertine repair clause C41 430D.
- Method for repairing split travertine (removable panels - i.e. radiator panels):
 - Carefully remove panel and move to safe working area.
 - Separate fragments at split.
 - Carefully drill through one fragment at the centre of split face (i.e. within the width of the panel, so as to be concealed when reassembled), perpendicular to the split face, to diameter instructed. Ensure drilling has penetrated solid stone to minimum depth of 100mm, at approximately 100mm centres. Align matching fragment and drill corresponding holes in matching panel, using previously outlined method, ensuring panels will line up, without lip or disalignment, when bonded together with resin set rods.
 - Install 6mm threaded stainless steel rod with resin as outlined above, securing fragments together. Push and support panels to minimise the visible crack.
 - Repair crack with tinted resin as outlined in clause C41DIA 430.
 - Carefully remove panel and/or pieces of panel and move to safe working area.
 - Take care not to further damage to arrises of fractured surface, so as to maintain the surface as a clean break. Protection as per section B30.
 - Carefully drill through one fragment at the centreline of split face (i.e. within the width of the panel, so as to be concealed when reassembled), perpendicular to the split face, to diameter instructed. Ensure drilling has penetrated solid stone to minimum depth of 55mm, at approximately 100mm centres. Align matching fragment and drill corresponding holes in matching panel, using previously outlined method, ensuring panels will line up, without lip or disalignment, when bonded together with resin set rods.
 - Install 6mm diameter and 100mm long threaded stainless steel rod with resin as outlined above, securing fragments together. Push and support panels to minimise the visible crack.
 - Repair crack with tinted resin as per instruction in clause C41DIA 430D.

465D STITCHING ACROSS MAJOR CRACKS (IF REQUIRED)

- Where instructed and as directed specifically by the EA. All be carried out with utmost care:
 - works to remove stones as instructed for a distance of a minimum of 900 mm across the crack. Clean stones, mark and set aside for possible re-use.
 - Do not adjust adjacent sound stonework to accommodate new stone unless instructed to do so.
 - Using removed stone or matching stone salvaged from elsewhere, fill each pocket with pieces of stone at least 200 mm long.
 - Set stones in mortar as section Z21.
 - Ensure vertical joints are between 15 mm and 25 mm wide and that the crack line is covered by a stones placed centrally across it.

815D REPOINTING MIXES FOR INTERNAL PORTLAND (WALLS) AND TRAVERTINE STONE (AS REQUIRED)

(Final mixes subject to appraisal of sample panels. Note that it is likely that mix constituents will vary to suit the varying site conditions.)

- Joint depth > 130mm or where stones loose: point 1:3 NHL 3.5 hydraulic lime:sand mortar mix to within 30mm of outer stone face, allow 48 hours to pass then point 30mm deep face joint 1:1:2 NHL 3.5 hydraulic lime:sand:crushed stone.
- Joint depth <30mm point 1:1:2 mix NHL 3.5 hydraulic lime:sand:crushed stone mix in one operation.

825D SAMPLE PANELS

- Allow for providing four different sample panels of re-pointing, each approximately 900mm square, to be carried out successively, in agreed locations, for each type of joint/colour required.
- Allow for altering the mortar mix for each sample and for each panel to dry out completely.
- Submit panels first raked out and prepared for re-pointing. When this stage is approved then re-point panels and obtain further approval before proceeding generally.
- Obtain EA approval of sample areas before ordering bulk materials.
- Retain and protect samples until Practical Completion and ensure executed work match

835D REPOINTING PROCESS FOR PORTLAND STONE WALLS (AS REQUIRED)

- Method:
 - Remove fixings as required to enable works, as outlined for cleaning process in C40 clause 142. Protect local area from damage or spillage, as outlined C40 clause 160.
 - Begin from top of wall. Immediately before re-pointing flush out joints with water to remove all dust and to control suction.
 - Wet surface until it remains wet. Do not allow saturation of surrounding area or floor.
 - While damp fill joint with specified mortar.
 - Thoroughly compact mortar to fill all voids and to ensure it adheres firmly to each side of joint.
 - Iron mortar in with appropriate pointing tool (not trowel) of width to suit joint width, keeping finished mortar face back from damaged and weathered arrises and to width of original joint.
 - Once complete, return fittings and remove temporary protection.
- Allow sufficient time for the re-pointing to be done without hurry.

851D CLEANLINESS OF POINTING

- Keep face of brickwork/stonework clean during pointing. Wash and brush down surface to remove light staining as soon as it occurs. Turn back scaffold boards at night and during heavy rain to prevent splashing

865D FINISH TO STONEMWORK POINTING FOR INTERNAL WALLS

- Ensure that all new pointing to stonework harmonises in pattern, width, style, colour and texture with the old and surrounding work.
 - Finish joints slightly recessed from the stone face.
 - Rub mortar as it 'goes off' with a stiff bristle brush to pull forward grit and give the mortar a roughened but weathering surface.
- Take care to ensure that no mortar is smudged over the surfaces of the stones and that no mortar is left covering stone arrises.

866D WASH DOWN OF COMPLETED POINTING

- completed sections of wall from top to bottom after pointing has hardened. Do not allow surrounding area of floor to become saturated, and apply temporary protection if necessary.

C53DIA
REPAIR/RENOVATION JOINERY

C53DIA REPAIR/RENOVATION JOINERY

TO BE READ IN CONJUNCTION WITH

Associated repairs schedules (including door and window schedules) and drawings.

100D TIMBER PROCUREMENT AND ENVIRONMENTAL POLICY

- Obtain all new timber (including timber for wood based products) from a sustainable source, and submit suitable documentary evidence to demonstrate this and obtain the PM's approval before placing orders.
- Preference will be given to suppliers who have adopted the Environmental Policy agreed by Forests Forever and the Timber Trade Federation, or another comparable policy, and who can provide evidence of their commitment to that Policy.
- Obtained from well managed forests and/ or plantations in accordance with:
 - The laws governing forest management in the producer country or countries.
 - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
 - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification schemes:
 - Certification scheme: Forest Stewardship Council (FSA).

120D SCOPE OF WORK

- Repair and overhaul the following as agreed with EA and make ready for redecoration:
 - Window linings, sills, sill boards and architraves (note window frames and glazing are covered by separate specification and repairs schedule);
 - Internal doors (including door glazing), frames, linings and architraves;
 - Skirtings and dado rails;
 - Timber floors;
 - And all other items identified by architects drawings and schedules.

130D REPAIRS TO ALL JOINERY GENERALLY

- Retain as much existing timber as possible. Remove only sufficient to make repairs.
- Remove sufficient paint to open movable components and to disclose any decayed material.
- Piece-in and plug with matching material – either softwood or hardwood as appropriate, where required.
- Match in colour, and grain type and direction, new hardwood sections that are to be finished in clear coatings.
- Cut out damaged arrises to a sound surface and piece-in new matching timber to original profile, or replace damaged section or part section to full section length.
- Remake or reassemble open or damaged mitres.
- Do not make repairs across joints.
- Store temporarily removed doors, sashes and frames vertically in controlled and protected environment to prevent damage.
 - Protection and storage as outlined in for masonry items C40 160.
- Use screws to match existing/similar locations for all exposed fixings.

131D REPAIRS TO EXISTING INTERNAL DOORS, FRAMES, LININGS AND ARCHITRAVES

- Timber species: To match existing: Assume European oak for tender (TBC by EA).
 - Supplier: Sample to be agreed as per clause C53DIA 480D.
 - Moisture content: As clause C53 DIA140.
 - Finish: As existing: As per clause M60 161.
- Refer to door schedule and associated drawings for details of door repairs. Where indicated and appropriate to enable works:
 - Remove all ironmongery. Bag sets and label, using indelible marker, with door numbers and hand to main contractor. Avoid unnecessary removal of ironmongery.
 - Remove cracked panels by disassembling doors and repair by gluing and cramping or replace to match existing. Reassemble on completion of repairs.
 - Glue and cramp doors to close open joints between frame members.
 - Remove redundant lock boxes, cylinder locks and striking plates and piece-in where fittings removed.
 - Rout out styles and head of corridor doors and insert intumescent and draught strips as scheduled.
 - Clean ironmongery for reuse and provide new matching components where indicated (refer to clause M60 430).
 - Where indicated, drill out existing hinges to clear finished doors to receive larger gauge screws in existing locations.
 - Cut out locally in hinge positions to opaque finished doors and piece-in 30 mm deep dovetailed softwood section to receive refixed hinges.
 - Repair damage to architraves and linings. Piece-in or replace matching timber as required.
 - Re-hang doors. Ease and adjust as necessary.

133D REPAIRS TO EXISTING WINDOW LININGS, SILLS, SILL BOARDS

- Timber species: To match existing: Assume European oak for tender (TBC by EA).
 - Supplier: Submit proposals. Sample to be agreed as per clause C53DIA 480D.
 - Moisture content: As clause C53 DIA140.
 - Finish: As existing: As per clause M60 161.
- Refer to window schedule and associated drawings for details of window repairs. Where indicated and appropriate to enable works:
 - Remove all ironmongery. Bag sets and label, using indelible marker, with door numbers and hand to main contractor. Avoid unnecessary removal of ironmongery.
 - Carry out repairs without dismantling/removing windows. If window requires removal seek EA approval.
 - Cut out broken or decayed putty and replace following the priming of bare timber exposed by removal of putty.
 - Replace damaged sections or piece-in new matching timber as necessary.
 - Clean ironmongery for reuse and provide new matching components where indicated.
 - Repair damage to architraves and linings. Piece-in or replace with matching timber as required.
- Note window frames and glazing are covered by separate specification and repairs schedule.

134D REPAIRS TO EXISTING SKIRTINGS, DADO RAILS, WALL PANELLING, ARCHITRAVES AND LININGS

- Timber species: To match existing: European oak (TBC by EA).
 - Supplier: Submit proposals
 - Moisture content: As clause C53DIA140.
 - Finish: As existing: As per clause M60 160.
- Piece-in or replace missing timber with matching timber as required.
- Piece-in repair where services removed, to match adjacent area.

140 MOISTURE CONTENT OF NEW TIMBER

- Conditions during and after installation: Control ambient temperature and humidity conditions to maintain moisture content at average level specified in BS EN 942, table B.1 for the relevant service condition until Completion.
- Test for moisture content: When instructed, using an approved moisture meter.
- Moisture content of all new internal wood: 9 -13%.

150D FIXING NEW TIMBER BOARDS TO REPLACE MISSING BOARDS

- Environmental conditions: Do not fix boards when ambient temperature is at or below 0°C, or above 30°C.
- Generally: Fix boards securely to each support to give flat, true surfaces free from undulations, lipping, splits and protruding fasteners.
- Wood movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
- Heading joints: Tightly butted, central over supports and at least two board widths apart on any one support.
- Edges: Plane off proud edges.
- Exposed nail heads: Neatly punch below surface.
- Screw fixed heads: Ensure screw head is flush with floor finish.

155D REPAIR TO EXISTING TIMBER FLOORS

- Timber species: To match existing: European oak (TBC by EA).
 - Supplier: Submit proposals. Sample to be agreed as per clause C53DIA 480D.
 - Profile/Dimensions:
 - Finished face width (exposed width after fixing): As existing: Confirm on site prior to procuring timber (for tender assume nominal 3 10/16 inches).
 - Finished thickness: To match existing: Confirm on site prior to procuring timber (for tender assume nominal 1 1/8 inches).
 - Fixing: To match existing: Nail fixed
 - Edge profile: To match existing: Tongue and groove (TBC on site).
 - Moisture content: To match clause C53DIA140.
 - Finish: As existing: As per clause M60 161.
 - Preservative treatment: As section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C10.
 - Type/desired service life: 40 years.
- Method
 - Remove loosely adhered deposits prior to commencement of other cleaning methods.
 - Ensure all nails and screws are flush or within the floor board.
 - Replace missing screws and nails. Install brass knurled screw cup socket insets, to suit existing screw counter sink hole and screw thread diameter, beneath counter sunk screws when fixing service run floor boards.
 - Replace damaged (including split, foreshortened and gouged boards) and missing sections with new matching timber (refer to clause 150D).
 - Clean free of adhesive by sanding to original floor surface. Only sand to allow for removal of adhesive and final light sanding of the original timber to remove any existing floor finishes, and to provide unified surface.
 - Finish floor as per section M60 161.
- Prepare 1000x1000mm on site control sample, in location approved by EA, for EA approval for each type of floor (allow four).
- Ensure all boards are fixed and do not rock. Where boards are loose tighten, and pack beneath if necessary to provide a level and firm surface.
- Note, timber boarded floors have removable boards over service runs, to enable access. Retain and match fixing details/profiles where repairing service run boards.

156D REPAIRS TO TIMBER FLOORS (BOARDS - SERVICE TRENCH COVER BOARDS & ADJOINING BOARDS)

- As per clause C53DIA155D, with the additional/substituted notes:
 - Fixing: To match existing existing: Brass screw fixed (with brass screw cup socket insets (knurled).
 - Edge profile: To match existing: Rebated edged forming lip at edge.

157D REPAIRS TO TIMBER FLOORS (PARQUET - HERRINGBONE)

- Timber species: To match existing: English Oak (TBC by EA).
 - Supplier: Submit proposals. Sample to be agreed as per clause C53DIA 480D.
- Wood blocks: Free from decay, through splits and insect attack (including ambrosia beetle damage, unless permitted in the class/ grade specified).
 - Manufacturer: Submit proposals.
 - Species: To match existing: European Oak (TBC by EA).
 - Appearance class/ Grade:
 - To match existing (including grain, texture and colour).
 - To BS EN 942, class J2, except that sound knots up to 20 mm are permitted.
 - Block size:
 - Block width: To match existing: Confirm on site prior to procuring timber (for tender assume nominal 2.75 inches).
 - Block length: To match existing: Confirm on site prior to procuring timber (for tender assume nominal 9 inches).
 - Block thickness: To match existing: Confirm on site prior to procuring timber (for tender assume nominal 0.75 inches).].
 - Edges: Square.
 - Bottom of long edges: Chamfered/ grooved to take up surplus adhesive.
 - Finish as delivered: Planed
 - Moisture content: As clause C53DIA140.
 - Finish: As existing: As per clause M60 161. .
 - Preservative treatment: As section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C10.
 - Type/desired service life: 40 years.
- Prepare 1000x1000mm on site control sample, in location approved by EA, for EA approval for each type of floor (allow four).

158D REPAIRS TO TIMBER FLOORS (PARQUET - BORDER)

As per clause C53DIA 157D.

PREPARATORY INSPECTIONS, RECORDS AND DRAWINGS**200D REVIEW OF SCOPE OF REPAIR WORK UPON CLOSE INSPECTION**

- Provide safe access scaffolding and artificial lighting to all areas where joinery repair is to be made to enable the EA to make a close inspection.
- Provide attendance and inspect the work with the EA to confirm the nature and extent of the cutting out and removal of joinery as identified on drawings.
- Make a record of instructions given during inspections, which may either confirm or vary scope of work, and measure and record relevant details, as clause 210D.
- Prepare and submit details of instructions for confirmation.
- Prepare schedules and drawings for use as basis of implementation of work.

210D RECORDING TO THE APPROVAL OF THE EA

- Clearly mark by appropriate means, the defective joinery or parts of components to be removed.
- Record by photograph or other approved method, joinery to be cut out and/or missing elements to be reinstated, and the relationship of surrounding work.
- Cross-reference identified and marked elements to drawings or photographs.

GENERAL REQUIREMENTS/PRODUCTION**300D RELATED WORK**

- Is specified in the following sections:
 - G20 Carpentry/Timber Framing/First Fixing
 - Z10 Purpose Made Joinery
 - Z20 Fixings/Adhesives.

310D TEMPORARY REMOVAL TO ENABLE WORKS

- Mark any components to be temporarily removed.
 - As method outlined in C40 142.
- Remove all such components; clean, overhaul, protect and store on site until required.
 - Protection as outlined in C53DIA 400.
- Subsequently reinstate in original locations in original manner.

320D RE-USE OF MATERIAL

- Agree extent to which existing timber and elements of construction are to be retained for re-use in other than their existing locations.
- Mark any components to be re-used.
 - As method outlined in C40 142.
- Remove all such components; clean, overhaul, protect and store on site until required.
 - Protection as outlined in C53DIA 400.
- Subsequently adapt as required and reinstate in agreed locations.

WORKMANSHIP GENERALLY**400 BASIC WORKMANSHIP**

- Comply with the clauses of BS 8000 Part 5:1990 that are relevant to this section, unless otherwise specified or shown on drawings.
- Protect timber repairs and floors during and after installation: Keep dry. Protect from dirt, stain and damage until Completion.
 - Used approved protective boards, sheeting, films, sealants and sealing tapes that do not stain protected materials and that can be readily removed after cleaning without damaging or staining the protected material.
 - Where items are removed ensure item is adequately protected, with particular care of edges, arrises and corners. Protect surrounding surfaces and movement routes from becoming damage during removal and transit to storage. Where items are stored, provide adequate protection to storage area using methods outlined above.
 - As per section B30.

410D ACCURACY

- Notwithstanding BS 8000 Part 5:1990 ' clause 3.2.1, comply with Preliminaries clause A33/340 and any required critical dimensions given in the Specification or on the drawings.

420D GENERAL JOINERY

- Timber for joinery that is to be decorated with opaque coatings to comply with BS EN 942:2007 as follows:
 - Hardwood or imported softwood Class 2 and Class 3 selected for suitability of usage from appendix B and C but excluding hardwood described as resinous.
 - Average percentage of moisture content as recommended in Table B.1.

430D CLEAR FINISHED JOINERY

- Timber for joinery specified as 'clear finished' to comply with BS EN 942:2007 Class CSH.

431D WOOD TRIM

- Timber as defined as trim in BS 942:2007 Part 3 is to be supplied and fixed in accordance with that BS.

440D TIMBER FOR GROUNDS ETC

Timber permanently concealed in finished work to be free from any defects likely to affect the stability or accuracy of the work adversely, and treated with preservative as required for carpentry work.

450D CROSS SECTION DIMENSIONS

- Of timber shown on drawings are finished sizes from which no deviation is allowed unless stated otherwise.

470 SELECTION AND USE OF TIMBER

- Select timber with due regard to the particular purpose for which is to be used.

472D ADHESIVES INCLUDING GLUED JOINTS AND VENEER REPAIRS

- Adhesive:
 - Obtain manufacturer's confirmation that adhesive is compatible with preservative/fire retardant treatment.
 - Fabricate glued structural components to BS 6446:1997 in clean, controlled workshop conditions.
 - Anticipated equilibrium moisture content of timber in service: 9 -13%
 - Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
 - Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
 - Finished adhesive joints: Fully bonded. Free of surplus adhesive
 - Surfaces to receive adhesive to be sound, unfrozen, free from dust, grease and any other contamination likely to affect bond. Where necessary, clean surfaces using methods and materials recommended by adhesive manufacturer.
 - Adjust surface regularity and texture as necessary to suit bonding and gap filling characteristics of adhesive.
 - Where necessary seal friable or dusty surface using methods and material recommended by adhesive manufacturer.
 - Ensure that operatives observe manufacturer's and statutory requirements for storage and safe usage of adhesives.
 - Do not use adhesives in unsuitable environmental conditions or beyond the storage period recommended by the manufacturer.
 - Apply adhesives using recommended spreaders/applicators to ensure correct coverage. Bring surfaces together within recommended time period and apply pressure evenly over full area of contact to ensure full bonding.

480D SAMPLES OF TIMBER TO BE USED FOR REPAIRS

- Submit sample(s) of proposed timber samples, including but not limited to:
 - Replacement or piecing in of:
 - Window linings, sills, sill boards and architraves (note window frames and glazing are covered by separate specification and repairs schedule);
 - Internal doors (including door glazing), frames, linings and architraves;
 - Skirtings and dado rails;
 - Timber floors;
 - And all other items identified by architects drawings and schedules.
 - Where new timber is proposed to replace existing:
 - New timber floors (Refer to section K20).
- Seek and record EA approval of samples.
- Obtain approval of samples before ordering bulk materials.
- Retain and protect approved samples until Practical Completion and ensure executed work matches.

490D MAKING GOOD DAMAGE TO LOCAL FINISHES

- Method:
 - Where local decoration remains, and whole area is not to be stripped of paint, rub back locally to reveal timber face.
 - Where small areas of lead paint are to be removed abrade timber surface using water and waterproof sandpaper.
 - Cut out timber that is to be replaced and piece in new, flush with timber finished face.
 - Reproduce exactly all features of adjacent existing work.

600D JOINTING/FIXING GENERALLY

- Where not specified otherwise, select fixing and jointing methods and types, sizes and spacings of fastenings in compliance with section Z10DIA and clause C53DIA 472D. Fastenings to comply with relevant British Standards.

K21

Wood strip/ board fine flooring/ linings

K21 Wood strip/ board fine flooring/ linings

To be read with Preliminaries/ General conditions.

TYPES OF FLOORING/ LINING

100 TIMBER PROCUREMENT AND ENVIRONMENTAL POLICY

- Obtain all new timber (including timber for wood based products) from a sustainable source, and submit suitable documentary evidence to demonstrate this and obtain the EA's approval before placing orders.
- Preference will be given to suppliers who have adopted the Environmental Policy agreed by Forests Forever and the Timber Trade Federation, or another comparable policy, and who can provide evidence of their commitment to that Policy.
- Obtained from well managed forests and/ or plantations in accordance with:
 - The laws governing forest management in the producer country or countries.
 - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
 - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification schemes:
 - Certification scheme: Forest Stewardship Council (FSA).

110 WOOD FLOORING WHERE BOARD REPLACEMENT SPECIFIED IN REPAIR SCHEDULE (GENERAL BOARDS)

- Substrate: Existing floor joists.
- Strips/ Boards: Free from decay, through splits and insect attack (including ambrosia beetle damage, unless permitted in the class/ grade specified). Planed all round.
 - Wood species: To match existing: English Oak (TBC by EA).
 - Quality: Blue stain, fissures, knot holes and loose or unsound knots not permitted on face side of flooring.
 - Finished face width (exposed width after fixing): To match existing: dimensions/note as outlined in C53DIA 155D.
 - Finished thickness: To match existing: dimensions/note as outlined in C53DIA 155D.
 - Edge profile: To match existing: Tongued and grooved (TBC on site).
 - Moisture content at time of fixing: 9-13 %.
- Submit sample of propose timber floor. Seek and record EA approval of samples.
 - Obtain approval of samples before ordering bulk materials.
 - Retain and protect approved samples until Practical Completion and ensure executed work matches.

110A WOOD FLOORING WHERE BOARD REPLACEMENT SPECIFIED IN REPAIR SCHEDULE (SERVICE TRENCH COVER BOARDS & ADJOINING BOARDS)

- As per clause K22 110, with the replace note:
 - Fixing: To match existing existing: Brass screw fixed (with brass screw cup socket insets (knurled).
 - Edge profile: To match existing: Rebated edged forming lip at edge.

GENERAL/ PREPARATION**210A WORKMANSHIP GENERALLY**

- Moisture content of timber supports: 9-13%.
- Methods of fixing and fasteners: As section Z20 where not specified.
- Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

220 ENVIRONMENTAL CONDITIONS

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

230 HEATING SYSTEM

- Operating mode: TBC by EA.
- Room temperatures for which the system has been designed: TBC by EA.
- Operation up to Completion: TBC by EA.

250 FIXTURES

- Fixtures around which strip flooring is to be fixed: Installed before starting work specified in this section.

260 DRYNESS OF CONCRETE/ SCREED SUBSTRATES FOR FLOORING

- Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
 - Test points: All corners, around perimeter, and random points over area being tested.
- Drying aids: Turned off for not less than four days before testing.

270 STRIP/ BOARD MOISTURE CONTENT TESTING

- Test regime and equipment: Submit proposals.
- Test results: Submit record of tests and results.

290 CONTROL SAMPLES

- Sample area: Complete as part of the finished work.
 - Clause reference: K21 110/110A.
 - Location: Submit proposals to EA for approval.
 - Size (minimum): 1000 x 1000mm.
 - Included features: Service trench cover board.
- Approval of appearance: Obtain before proceeding.

FIXING/ FINISHING**350 FIXING STRIPS/ BOARDS**

- Strips/ Boards: Fixed securely to each support with flat, true surfaces free from undulations, splits, hammer marks, scratches and protruding fastenings.
- Movement of timber: Allowed for when positioning strips/ boards and fastenings to prevent cupping, springing, opening of joints or other defects.
- Heading joints (where permitted): End matched, butted and, where applicable, positioned centrally over supports and distributed across the flooring to match existing arrangement.
- Surface fixing: To match existing.

360 EXPANSION PROVISION

- Expansion gaps:
 - Edges of flooring: Parallel to lie of strips/ boards. Obtain and submit recommendations from floor manufacturer/supplier to EA.
 - Ends of flooring: 10 mm wide.
- Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.
- Intermediate expansion/ movement joints: Formed as recommended by flooring manufacturer/ supplier - Submit proposals.

370 FINISH TO FLOORING

- Exposed fastener heads: Punched or set below surface and filled with stopping to match wood.
- Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.
- Finish: Refer to clause M60 161 .

L40
General glazing

L40 General glazing

To be read with Preliminaries/ General conditions.

GENERAL REQUIREMENTS

20D TEMPORARY PROTECTION OF INTERNAL GLAZING

- As Section B30.

140 MATERIAL SAMPLES OF GLASS FOR REPAIRS

- Representative samples of designated materials: Submit before cutting panes.
 - Sample size (minimum): 300 x 300 mm.
 - Designated materials:
 - Replacement glass for missing/damaged traditional Georgian wired glazing, to match existing.
 - Replacement glass for missing/damaged copper leaded glazing, to match existing
 - Replacement glass for missing/damages clear glass, to match existing
- As far as possible reinstate existing glass. Insert new glass only as directed in repair schedule or with approval of EA.
- Replacement glass, where possible, to matching original in shape, colour, texture, translucency and thickness. Seek approval of proposed new glass sample prior to bulk ordering or fitting.

150 WORKMANSHIP GENERALLY

- Glazing generally: To BS 6262.
- Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
- Dimensional tolerances: Panes/ sheets to be within ± 2 mm of specified dimensions.
- Materials:
 - Compatibility: Glass/ plastics, surround materials, sealers, primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
 - Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

152 PREPARATION

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

155 GLASS GENERALLY

- Standards: To BS 952 and relevant parts of:
 - BS EN 572 for basic soda lime silicate glass.
 - BS EN 1096 for coated glass.
 - BS EN 1748-1 for borosilicate glass.
 - BS EN 1748-2 for ceramic glass.
 - BS EN 1863 for heat strengthened soda lime silicate glass.
 - BS EN 12150 for thermally toughened soda lime silicate safety glass.
 - BS EN 12337 for chemically strengthened soda lime silicate glass.
 - BS EN 13024 for thermally toughened borosilicate safety glass.
 - BS EN ISO 12543 for laminated glass and laminated safety glass.
- Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
 - Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

- 160 LINEAR PATTERNED/ WIRED GLASS
- Alignment: Vertical/ Horizontal as appropriate, and pattern matched across adjacent panes in close proximity.
- 165 REMOVAL OF GLASS FOR REPAIR
- Existing glass and glazing compound, beads, etc: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.
 - Deterioration of frame/ surround: Submit report to EA on defects revealed by removal of glazing.
 - Affected areas: Do not reglaze until instructed.
 - Reusable materials: Clean glass, beads and other components that are to be reused.
 - Before any glazing is removed prepare drawing(s) on which to mark the extent of the work on completion. Take colour photographs from both inside and out to record pattern of cames and supports and all features of design.
- 175 REINSTATING GLASS
- Re-fit cleaned and repaired glass, together with new glass, in new copper cames (where applicable).
 - Use cames of the same size, material and profile as those existing (where applicable).
 - Where relevant, fit new copper tying wires, and solder joints.
- 180 BEAD FIXING WITH PINS
- Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner.
 - Exposed pin heads: Punched just below wood surface.
- 181 BEAD FIXING WITH SCREWS
- Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.
- 185 IN-SITU CLEANING OF ALL INTERNAL GLAZING
- Remove dirt and paint.
 - Remove loose matter, from the bottom of the window(s), using a vacuum cleaner.
 - Gently clean down each panel with a soft cloth and de-ionised water.

TYPES OF GLAZING

- 210 PUTTY FRONTED SINGLE GLAZING TO EXISTING INTERNAL STEEL FRAME WINDOWS WHERE GLASS REPLACED
- Pane material: To match existing (Georgian wired, copperlight or clear)
 - Glazing in the following locations should be toughened Class C safety glass complying with BS6206:
 - Glazing within doors up to and including a height of 1500mm from FFL.
 - Glazing surrounding door opening to a margin up to and including 300mm wide, and to a height of 1500mm from FFL.
 - Glazing in windows up to and including 800mm from FFL .
 - Surround: As existing: Steel frame .
 - Sealer: Paint primer .
 - Type of putty: Linseed oil .
 - Glass installation:
 - Glass: Located centrally in surround using setting and location blocks, and secured with glazing sprigs/ cleats/ clips at 300 mm centres.
 - Finished thickness of back bedding after inserting glazing (minimum): 1.5 mm.
 - Front putty: Finished to a smooth, neat triangular profile stopping 2 mm short of sight line. Surface lightly brushed to seal putty to glass and left smooth with no brush marks.
 - Sealing putty: Seal as soon as sufficiently hard but not within 7 days of glazing. Within 28 days apply either:
 - The full final finish, suitably protected until completion and cleaned down and made good as necessary, or
 - Two coats of primer applied locally to the compound, to be followed nearer completion with the full specified finish.
 - Opening lights: Keep in closed position until putty has set sufficiently to prevent displacement of glazing when opened.
- 230 BEAD FIXED SINGLE GLAZING TO EXISTING INTERNAL GLAZED DOORS WHERE GLASS REPLACED
- Pane material: To match existing (Georgian wired, copperlight or clear)
 - Glazing in the following locations should be toughened Class C safety glass complying with BS6206:
 - Glazing within doors up to and including a height of 1500mm from FFL.
 - Glazing surrounding door opening to a margin up to and including 300mm wide, and to a height of 1500mm from FFL.
 - Glazing in windows up to and including 800mm from FFL .
 - Surround/ bead: As existing: Timber .
 - Preparation: Priming/ sealing not required .
 - Bead location: As existing .
 - Bead fixing: To match existing .
 - Glazing compound: Nonsetting compound .
 - Glazing installation:
 - Glass: Located centrally in surround using setting and location blocks and distance pieces.
 - Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
 - Front bedding: Applied to fill voids.
 - Beads: Bedded in glazing compound and fixed securely.
 - Visible edge of glazing compound: Finished internally and externally with a smooth chamfer.

M20

Plastered/ Rendered/ Roughcast coatings

M20 Plastered/ Rendered/ Roughcast coatings

To be read with Preliminaries/ General conditions.

TYPES OF COATING

- 205 ESTABLISHING EXISTING PLASTER COMPOSITION OF AREAS REQUIRING REPAIRS
- Plaster throughout assumed to be Gypsum based (specification below written on this basis). Contractor to undertake laboratory test of existing plaster as per section C11.
 - If analysis results indicate plaster of non-Gypsum base, do not proceed with works and inform EA immediately.
- 496D WORK TO INTERNAL PLASTER GENERALLY
- Materials, and methods of working for the repair and replacement of plasterwork (decorative and plain) must match that of the original work as closely as possible, unless specified otherwise.
 - Type of plaster to be established by EA prior to construction. For tender assume three coat Gypsum based plaster.
 - Before commencing work, agree mixes, preparation and application methods with the EA.
 - Use plasterers who are skilled and experienced in the repair and replacement of historic plasterwork.
 - Do not expose dry out plastered rooms with heaters.
- 498D PROTECTION OF INTERNAL PLASTERWORK
- As section B30 and additionally:
 - Prevent damage and disfigurement to plain and decorative plasterwork during the course of the works:
 - Provide or ensure provision of protection and/or temporary support to all vulnerable areas of plasterwork using methods agreed with the EA.
 - Adopt careful working methods when working alongside or above plasterwork to prevent disturbance from vibration and impact.
 - Do not make temporary fixings into decorative plasterwork or apply adhesive tape to plaster surfaces.
 - Do not allow rigid boards, battens, etc. to touch plasterwork directly. Sandwich an isolating layer of mineral wool or other approved soft material between the boards and plaster face. Ensure that the isolating layer is firmly pressed against the plaster face.

PREPARING SUBSTRATES

- 510 SUITABILITY OF SUBSTRATES
- Soundness: Free from loose areas and significant cracks and gaps.
 - Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.
 - Tolerances: Permitting specified flatness/ regularity of finished coatings.
 - Cleanliness: Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.
- 512D PREPARATION FOR REPAIR OF INTERNAL PLASTER ON SOLID BACKGROUND
- Prior to commencing repair, clean out cracks and voids with vacuum cleaner, and wash away any remaining dust.

513D NON-ORIGINAL PLASTER WORK

Where plaster work is found not to be historic carry out repairs in matching materials.

514D AREAS OF INTERNAL MODELLED OR MOULDED PLASTERWORK AT RISK

- Have due regard to the fragility of this type of finish and when working on or close to such areas take all necessary steps to record and protect the items at risk.
- Stop work immediately if the finish or background plaster shows signs of movement, and introduce temporary supports until loose area can be secured.

KEYING/BONDING FOR PLASTER REPAIRS (WHERE REQUIRED)

- Prepare backgrounds as specified for the type of coating to be applied. Methods other than those specified may be submitted for approval.

532D INTERNAL PLASTER REPAIRS DIRECTLY ON BRICK/STONWORK (WHERE REQUIRED)

- Remove only those areas of failed plaster as agreed with EA.
- Repoint and flush up areas where pointing missing.
- Wet and re-wet surfaces as required to equalise suction before applying first coat of plaster.

548D JUNCTION OF NEW REPAIR WORK WITH EXISTING PLASTER (WHERE APPROPRIATE)

- Where possible make these at changes in direction.

566 REMOVING DAMP AFFECTED EXISTING PLASTER

- Seek instruction if required.

567D REPAIRING EXISTING PLASTER

- Remove only those areas of failed plaster as agreed with EA - refer to repair schedule.
- Where agreed, remove and replace plaster that is loose, soft, friable, badly cracked or affected by efflorescence, using a sharp knife to give a square cut edge and the minimum impact necessary. Gently tap all remaining intact surfaces and remove hollow sounding areas of plaster, unless otherwise agreed with the EA.
- Where agreed, remove and replace stained plaster to 300 mm beyond last point of visible staining, unless otherwise agreed with the EA. Advise EA if any built-in timbers, structural deficiencies or sources of damp are revealed. Thoroughly dry brush the background and edges to remove dust, loose material and efflorescence.
- Where agreed, repair of cracks and holes in existing plaster:
 - Fine hairline cracking/ crazing: Leave.
 - Other cracks/holes:
 - Method:
 - Thoroughly brush clean and remove loose material.
 - Where necessary carefully cut back edges of plaster either side of cracks using a sharp knife to give a square cut edge and the minimum impact necessary.
 - If plasterboard, cut away any damaged paper liner back to plaster core.
 - Where EML is found to be present, refix if detached from wall.
 - Remove all surface contaminants (e.g. grease, release agent, etc.).
 - Brush clean background plaster to repair area and lightly dampen cracks to control suction.
 - Apply a Gypsum based plaster suitable for the substrate, and finish with skim coat flush with surrounding surface.
 - Redecorate as required. Ensure smooth repair and edge to existing, without undulation.
- Where EML mesh is present, work undercoat well into interstices to obtain maximum key.

- 581D ESTABLISH ORIGINAL PLASTER FACE FOR REPLICATION OF PROFILES
- Before carrying out repairs to plasterwork ensure that decorative finishes and fillers have been removed from:
 - Repair area(s) at junctions with new plasterwork.
 - Decorative plasterwork before making any castings.
 - Where paint coatings are suspected of containing lead, obtain instructions before proceeding.

- 584D RECORD CASTINGS
- Store record casting(s) safely until required for use or as otherwise instructed by the EA.

BACKINGS/ BEADS/ JOINTS

- 610 FIXING PLASTERBOARD BACKINGS TO TIMBER BACKGROUNDS
- Fixings, accessories and installation methods: As recommended by board manufacturer.
 - Fixing: At the following centres (maximum):
 - Nails: 150 mm.
 - Screws to partitions/ walls: 300 mm. Reduce to 200 mm at external angles.
 - Screws to ceilings: 230 mm.
 - Position of nails/ screws from edges of boards (minimum):
 - Bound edges: 10 mm.
 - Cut/ unbound edges: 13 mm.
 - Position of nails/ screws from edges of supports (minimum): 6 mm.
 - Nail/ screw heads: Set below surface. Do not break paper or gypsum core.
- 611 FIXING PLASTERBOARD BACKINGS IF REQUIRED
- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
 - Accessories, materials and installation methods: As recommended by the plasterboard manufacturer.
- 612 JOINTS IN PLASTERBOARD BACKINGS
- Ceilings:
 - Bound edges: At right angles to supports and with ends staggered in adjacent rows.
 - Two layer boarding: Stagger joints between layers.
 - Partitions/ walls:
 - Vertical joints: Centre on studs. Stagger joints on opposite sides of studs.
 - Two layer boarding: Stagger joints between layers.
 - Horizontal joints:
 - Two layer boarding: Stagger joints between layers by at least 600 mm. Support edges of outer layer.
 - Joint widths (maximum): 3 mm.
- 640 BEADS/ STOPS GENERALLY
- Location: External angles and stop ends, except where specified otherwise.
 - Corners: Neat mitres at return angles.
 - Fixing: Secure, using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
 - Beads/ stops for external render: Fix mechanically.
 - Finishing: After coatings have been applied remove surplus material, while still wet, from surfaces of beads/ stops exposed to view.
 - Material: Galvanized steel to BS 13658-1.

646 CRACK CONTROL AT JUNCTIONS BETWEEN DISSIMILAR SOLID SUBSTRATES

- Locations: Where defined movement joints are not required. Where dissimilar solid substrates materials are in same plane and rigidly bonded or tied together.
- Crack control materials:
 - Isolating layer: Building paper to BS 1521.
 - Metal lathing: Internally: Galvanized steel plain expanded metal with spacers.
- Installation: Fix metal lathing over isolating layer. Stagger fixings along both edges of lathing.
- Width of installation over single junctions:
 - Isolating layer: 150 mm.
 - Lathing: 300 mm.
- Width of installation across face of dissimilar substrates material (column, beam, etc. with face width not greater than 450 mm):
 - Isolating layer: 25 mm (minimum) beyond junctions with adjacent substrates.
 - Lathing: 100 mm (minimum) beyond edges of isolating layer.

659 PLASTERBOARD JOINTS

- Joints and angles (except where coincident with metal beads): Reinforce with continuous lengths of jointing tape.

MOULDINGS/ DECORATIVE PLASTERWORK**680 FIBROUS PLASTER MOULDINGS FOR REPAIR AND REPLACEMENT (REFER TO REPAIR SCHEDULE)**

- Type: Reproduction of existing in same material.
- Noggings, bearers, etc. to support mouldings: Accurately position and securely fix.
- Installation: True to line and level.
 - Fixing: As existing moulding to be replaced, or as local examples of moulding.
 - Framing, fixing points and joints: Reinforce.
- Finishing: Smooth, to correct profile and with flush joints.

695D REPRODUCTION OF EXISTING PLASTER MOULDINGS

- Agree section(s) of mouldings to be reproduced and casting methods with the EA before commencing work.
- Ensure that any paint is removed from the original moulding (model) as clause M20 581D.
- Form reverse mould using methods and materials which allow the profile and detail of the original to be reproduced accurately and without damaging original moulding.
- Make sufficient moulds to complete the required number of casts and maintain a consistent appearance.
- Cast reproductions using plaster of Paris and include all necessary inserts to give strength and rigidity to the moulding section and allow secure fixing to the background.
- Mouldings to be run in-situ.

INTERNAL PLASTERING**705D CLEANINESS GENERALLY**

- Protect thoroughly all existing work and surroundings using suitable boards, sheets, etc. Clean off all droppings on to finished work immediately.

710 APPLICATION GENERALLY

- Application of coatings: Firmly and in one continuous operation between angles and joints. Achieve good adhesion.
- Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
 - 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.
- Drying out: Prevent excessively rapid or localised drying out.

715 FLATNESS/ SURFACE REGULARITY

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

725 UNDERCOATS GENERALLY

- General: Rule to an even surface. Cross scratch to provide a key for the next coat.
- Undercoats on metal lathing: Work well into interstices to obtain maximum key.
- Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

777 SMOOTH FINISH

- Appearance: To match existing: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.

M40

Stone/ concrete/ quarry/ ceramic tiling/ mosaic

M40 Stone/ concrete/ quarry/ ceramic tiling/ mosaic

To be read with Preliminaries/ General conditions.

- 115 NATURAL STONE FOR REPLACEMENT OF EXISTING YORK STONE FLOOR (REFER TO REPAIR SCHEDULE)
- Type: To BS EN 12058.
 - Stone:
 - Name (traditional): York stone.
 - Petrological family: Sandstone.
 - Colour: To match existing: Submit sample to EA for approval.
 - Origin: UK.
 - Finish: To match existing.
 - Supplier: Submit proposals.
 - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
 - Size: Slab size to match existing: Confirm on site prior to procuring (for tender assume nominal 700 x 700mm).
 - Thickness: to match existing: Assume nominal 40mm for tender. Notify EA if different.
 - Other requirements: Appearance to match existing including veining and colour variation.
 - Background/ Base: Existing floor - presume concrete slab for tender. Notify EA if different.
 - Preparation:
 - Remove existing stone flags and bedding.
 - Remove loose material and dust, creating a sound slab for new bedding.
 - Liberally dampen the slab and surrounding edges, ensuring all surfaces are moist to the touch .
 - Bedding: Natural hydraulic mortar NHL2 (2.5 Sand:1 Lime) .
 - Joint width: To match existing: Assume 3mm for tender. Notify EA if different .
 - Grout: As bedding mix .

116 NATURAL STONE FOR REPLACEMENT OF EXISTING TRAVERTINE FLOORS, WALL LININGS AND RADIATOR COVER PANELS (REFER TO REPAIR SCHEDULE)

- Type: To BS EN 12057 or BS EN 12058 as relevant for installation.
- Stone:
 - Name (traditional): Travertine.
 - Petrological family: Limestone.
 - Colour: To match existing: Submit sample to EA for approval.
 - Origin: Italy.
 - Finish: To match existing.
 - Supplier: Submit proposals.
 - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
 - Size: To match existing: Confirm on site prior to procuring (for tender assume nominal 600 x 500mm).
 - Thickness: To match existing: Assume nominal 30mm at walls and 40mm at floors for tender. Notify EA if different.
 - Other requirements: Appearance to match existing, to be replaced, including veining and colour variation.
- Background/ Base:
 - Floor: As existing - Presume concrete slab for tender.
 - Walls: As existing - Presume masonry for tender.
 - Radiator Panels: As existing - Presume void with edge mechanical fixings for tender.
 - Preparation:
 - Remove existing.
 - Remove loose material and dust.
 - Liberally dampen the slab and surrounding edges, ensuring all surfaces are moist to the touch (where laying in mortar).
- Intermediate substrate: None required.
- Bedding: Natural hydraulic mortar NHL2 (2.5 Sand:1 Lime).
 - Joint width: To match existing: Assume 3mm, where applicable, for tender. Notify EA if different.
- Grout: As bedding mix.
- Accessories: New mechanical fixings, to match existing, where applicable and existing cannot be re-used (i.e. radiator cover panels) - submit proposals and sample to EA.

GENERAL**210 SUITABILITY OF BACKGROUNDS/ BASES**

- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
 - Concrete walls: 6 weeks.
 - Brick/ block walls: 6 weeks.
 - Rendering: 2 weeks.
 - Gypsum plaster: 4 weeks.
- New base drying times (minimum):
 - Concrete slabs: 6 weeks.
 - Cement:sand screeds: 3 weeks.

250 SAMPLES OF STONE FOR REPLACEMENT OF EXISTING (REFER TO REPAIRS SCHEDULE)

- General: Submit representative samples of the following: Each type of stone type (including samples of different textures and patterns if applicable) of a minimum dimension of 300 x 300mm.

252 NATURAL STONE SAMPLES

- General: Submit samples in accordance with BS EN 12058, clause 4.2.3.2.

260 CONTROL SAMPLES

- General: Complete sample areas, being part of finished work, in locations as follows: Each type of stone type (including samples of different textures and patterns if applicable) including, but not limited to:
 - Skirtings, wall panelling, radiator panels, flag stone floors and replacement wall stone.
 - Approval of appearance: Obtain before proceeding.

PREPARATION**310 EXISTING BACKGROUNDS/BASES GENERALLY**

- Efflorescence, laitance, dirt and other loose material: Remove.
- Deposits of oil, grease and other materials incompatible with the bedding: Remove.
- Tile, paint and other nonporous surfaces: Clean.
- Wet backgrounds: Dry before tiling.

380 NEW PLASTER

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

390 PLASTERBOARD BACKGROUNDS

- Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.

FIXING**530 SETTING OUT**

- Joints: True to line, continuous and without steps.
 - Joints on walls: Horizontal, vertical and aligned round corners.
 - Joints in floors: Parallel to the main axis of the space or specified features.
- Cut tiles: Minimise number, maximise size and locate unobtrusively.
- Joints in adjoining floors and walls: Align.
- Joints in adjoining floors and skirtings: Align.
- Movement joints: Where locations are not indicated, submit proposals.
- Setting out of stone: As existing arrangement (create record drawing and photographs of existing arrangement prior to removal).

570 BEDDING MIX

- Bedding mix:
 - Natural Hydraulic Lime: To BS EN 459-1 2010.
 - Sand for walls: To BS EN 13139. Do not use sand from marine sources.
Grading designation: 0/2 (CP or MP) category 2 fines.
 - Sand for floors: To BS EN 13139. Do not use sand from marine sources.
Grading designation: 0/4 (MP) category 1 fines and between 20%-66% passing a 0.5 sieve.
- Batching: Select from:
 - Batch by weight.
 - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
- Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

MOVEMENT JOINTS/ GROUTING/ COMPLETION**875 GROUTING FOR YORK STONE FLOOR, TRAVERTINE FLOOR AND WALL PANELS**

- Sequence: Grout when bed/adhesive has set sufficient to prevent disturbance of tiles.
- Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
- Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
 - Profile: As existing.
- Polishing: When grout is hard, polish tiling with a dry cloth.

M41

Terrazzo tiling/ in situ terrazzo

M41 Terrazzo tiling/ in situ terrazzo

To be read with Preliminaries/ General conditions.

TYPES OF TERRAZZO

- 110 TERRAZZO TILING FOR REPLACEMENT OF EXISTING (REFER TO REPAIR SCHEDULE)
- Antistatic requirements: None.
 - Tiles: To match existing. Submit sample for analysis as per section C11.
 - To BS EN 13748-1 for internal use.
 - Manufacturer: Submit proposals.
 - Product reference: Submit proposals and sample to EA. Seek and record EA approval of samples.
 - Obtain approval of samples before ordering bulk materials.
 - Retain and protect approved samples until Practical Completion and ensure executed work matches .
 - Recycled content: Submit proposals .
 - Size: To match existing: Assume 300x300mm for tender .
 - Substrate: As existing: Assume concrete slab. Notify EA if different .
 - Preparation for bedding: Wash thoroughly and wire brush to remove adhering dirt, apply bonding coat .
 - Bedding:
 - Thickness (minimum): To match existing. For tender assume nominal 40mm. Notify EA if different .
 - Mix: 1:3 cement:sand mortar .
 - Attachment to substrate: To match existing: Assume bonded for tender. Notify PM if different .
 - Reinforcement for crack control: Not required (bonded construction) .
 - Joint width: To match existing.
 - Movement joints: As clause 440 at perimeters, including junctions with terrazzo skirting and thresholds with doors and stairs .
 - Finishing:
 - Grinding: As clause M41 520 .
 - Finish: Chemical sealing coat as clause M41 540 .
 - Other requirements: Skirtings, and in-situ border, where applicable .

120 IN SITU TERRAZZO FOR REPLACEMENT OF EXISTING (REFER TO REPAIR SCHEDULE)

- Terrazzo: To match existing: Submit sample for analysis as per section C11.
 - Prepare 6 samples for approval by EA. Seek and record EA approval of samples.
 - Obtain approval of samples before ordering bulk materials.
 - Retain and protect approved samples until Practical Completion and ensure executed work matches .
- Thickness (minimum): As existing: Assume floor surfaces are nominal 12mm for tender. Notify EA if different .
- Mix: To match existing: Submit proposals to EA .
- Substrate: As existing: Assume concrete slab with brushed finish. Notify EA if different .
 - Preparation for bedding: Wash thoroughly and wire brush to remove adhering dirt, apply bonding coat .
- Bedding:
 - Thickness (minimum): To match existing: For tender assume nominal 40mm. Notify EA if different .
 - Mix: 1:3 cement:sand mortar
 - Attachment to substrate: To match existing: Assume bonded for tender. Notify EA if different .
- Movement joints: As clause M41 440 at perimeters, including junctions with terrazzo skirting and thresholds with doors and stairs .
- Finishing:
 - Grinding: As clause M41 520 .
 - Finish: Chemical sealing coat as clause M41 54 .
- Other requirements:
 - Skirtings to be monolithic (continuous) terrazzo to match existing historic profile and to include brass divider strip, where applicable. -Chemical additive to prevent crazing. Submit proposals to EA .

120A IN SITU TERRAZZO FOR REPLACEMENT OF EXISTING RUN SKIRTINGS AND CONTINUOUS RUN SKIRTINGS AND BORDERS (REFER TO REPAIR SCHEDULE)

- Terrazzo: To match existing: Submit sample for analysis as per section C11.
 - To BS EN 13748-1 for internal use.
 - Manufacturer: Submit proposals and sample for approval by EA.
 - Product reference: Submit proposals.
 - Recycled content: Submit proposals.
 - Size: To match existing.
 - Colour: To match existing.
 - Prepare 6 samples for approval by EA. Seek and record EA approval of samples.
 - Obtain approval of samples before ordering bulk materials.
 - Retain and protect approved samples until Practical Completion and ensure executed work matches.
 - Thickness (minimum): As existing: Assume floor surfaces are nominal 12mm for tender. Notify EA if different.
 - Mix: To match existing: Submit proposals to EA.
- Substrate: As existing: Assume concrete slab with brushed finish/ block or brickwork. Notify EA if different.
 - Preparation for bedding: Wash thoroughly, scabble heavy accretions/adhered materials and wire brush to remove adhering dirt, apply bonding coat.
- Bedding:
 - Thickness (minimum): To match existing: For tender assume nominal 40mm to horizontal 25mm to vertical. Notify EA if different.
 - Mix: 1:3 cement:sand mortar
 - Attachment to substrate: To match existing: Assume bonded for tender. Notify EA if different.
- Movement joints: As clause M41 440 at perimeters, including junctions with terrazzo floors, walls, jambs and thresholds with doors and stairs as directed by EA.
- Finishing:
 - Grinding: As clause M41 520.
 - Finish: Chemical sealing coat as clause M41 54.
- Other requirements:
 - Dividing strips to match existing, where applicable.
 - Chemical additive to prevent crazing. Submit proposals to EA.

GENERAL**210 SUITABILITY OF SUBSTRATES**

- General: Suitably dry and clean for specified bedding method.
- Existing substrates: Free from loose areas and significant cracks and gaps.
- New in situ concrete substrates: Allow for initial shrinkage:
 - Air drying after curing (minimum): 6 weeks.
 - Other methods: Submit proposals.

242 CEMENT

- Standard: To BS EN 197-1.
 - Types: Portland cement, CEM I or Portland slag cement, CEM II/ B-S
 - Strength class: 42.5.
- Certification: BSI Kitemark scheme.
- Provide nonstaining white cement for terrazzo matrix.

245 SAND

- Standard: To BS EN 13139.
- Do not use sand from a marine source.

LAYING

305 LAYING GENERALLY

- Tiles: Fully adhered to bedding.
- Cut tiles: Neat and accurate.
- Joints: True to line, continuous and without steps.
 - Joints in floors: Parallel to main axis of the space or specified features.
- Dividing strips/ Movement joints: If locations are not indicated, submit drawings indicating proposed locations.
- Special setting out: To match existing. Document with drawings and photographs existing layout prior to removal (where instructed in repair schedule).
- To be read in conjunction with M41 480.

340 FLATNESS/ SURFACE REGULARITY OF FINISHED FLOOR

- Sudden irregularities: Not permitted.
- Deviation (maximum) of surface measured from underside of a 2 m straightedge, between points of contact, and placed anywhere on the surface: 3 mm.

345 LEVEL OF UNGROUND TILING ACROSS JOINTS

- Deviations (maximum) between surfaces either side of any type of joint:
 - Joints less than 6 mm wide: 1 mm.
 - Joints 6 mm wide or greater: 2 mm.

390 MIXING BEDDING MORTAR

- Batching: Select from:
 - Batch by weight.
 - Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Allow for bulking of damp sand.
- Water content: Minimum necessary to achieve full compaction.
- Mixes: Of uniform consistence, free from lumps. Do not retemper or reconstitute mixes.

405 TILING ON MORTAR BEDDING

- Compaction of bedding: Compact thoroughly.
- Tiling: Lay tiles on layer of wet slurry and beat firmly into position.
 - Timing: Before bedding sets and to achieve effective bond between bedding and tiles.
 - Slurry type: 1:1 cement: fine sand.
- Grouting: Fill joints. Remove surplus and allow grout to cure before finishing.
 - Grout colour: To match tile/ tile matrix.

430 IN SITU TERRAZZO

- Mixing terrazzo materials: Before adding water, mix in a dry state to a uniform colour and with even distribution of different size aggregates.
 - Water content: Minimum necessary to achieve full compaction.
- Bedding: Compact thoroughly.
- Terrazzo: Lay on layer of wet slurry and compact level with the dividing strips.
 - Timing: To achieve effective bond to bedding.
 - Slurry type: 1:1 cement: fine sand.
- Surfaces: Free from excess laitance.
 - Aggregate: Regularly distributed with minimum amount of cement matrix visible.
- To be read in conjunction with M41 480.

440 DIVIDING STRIPS

- Material: To match existing (size, colour, material): Brass of solid composition.
 - Thickness: To match existing: Assume 6 mm for tender.
 - Installation: Set to required finished floor level.
- Do not use coated divider strips.
- Provide control joints where required by installing angle-type divider strips back-to-back with neoprene rubber filler cemented between strips flush with finish floor. Submit location proposals to EA.

480 INSTALLING NEW BONDED TERRAZZO FLOOR TO MATCH EXISTING TERRAZZO

- Materials:
 - Terrazzo composition to be determined by laboratory testing, as per section C11.
 - Aggregate:
 - Natural, sound, crushed marble chips without excessive flats or flakes. To match the original aggregate types and ratios.
 - Colour and gradation of aggregate sizes as required to match original existing intact materials and patterns.
 - Aggregate colour and matrix pigments to be matched after cleaning or taken from the interior of core samples.
 - Matrix Pigments:
 - Pure mineral or synthetic pigments, resistant to alkalis and non-fading. Mix pigments with matrix to provide required colour. Do not exceed, however, 0.9KG of pigment per bag of cement.
 - Curing Compound:
 - Liquid-membrane-forming compound
- Method:
 - Clean and prepare substrate to comply with requirements and specifications for type of terrazzo application indicated. Clean substrate of loose chips and foreign matter. Grind concrete substrate to provide surfaces within tolerances required for type of terrazzo application.
 - Thoroughly clean and soak the base slab with water.
 - Dust it with dry Portland cement to ensure a good bond.
 - Install the underbed followed by the placing of divider strips and terrazzo topping.
 - Terrazzo:
 - Composition as Clause M41 110. Mixing and laying as per M41 305, 390 and 430.
 - Exercise extreme care to ensure fluids from grinding operation do not react with divider or control joint strips to produce a stain on aggregate or discolour strips.
 - Delay grinding and finishing until heavy trade work is completed and construction traffic through the area is restricted. Grind and polish the new areas, patches, and the entire floor as required to produce a clean, smooth, and uniform finish, capable of being sealed and polished to match the original installation. Refer to clauses M41 520 and 540.
 - Protect the floor, especially the grouting, with a penetrating type seal as per clause M41 540.
- Provide terrazzo bases, thresholds, and landings, without interruptions of seams, except where divider strips, control joints and expansion joints are required. Place and finish terrazzo around obstructions to achieve continuous colour, pattern and finish.
- To be read in conjunction with M41 305, 390 and 430.

- 483 REFURBISHING TERRAZZO FLOORING WITH HEAVY SOILING/ RESIDUAL ADHESIVES (AS INSTRUCTED BY THE EA)
- Method:
 - Strip existing polishes and coatings from floor.
 - Use neutral liquid chemical cleaner (submit proposals to EA) with a pH factor between 7 and 10, formulated for the specific type of terrazzo.
 - Following manufacturer's directions, apply chemical floor cleaner and let stand recommended time or time determined by test area.
 - Grind and polish surface of terrazzo as per Clause M41/ 520.
 - Apply sealer as per Clause M41/ 540
 - **If discolouration remains after grinding, seek instruction from EA. Do not attempt to 'grind' through stain.**
- 485 REFURBISHING TERRAZZO SKIRTING (AS INSTRUCTED BY THE EA)
- Method:
 - Strip existing sealers and coatings from floor.
 - Use neutral liquid chemical cleaner (submit proposals to EA) with a pH factor between 7 and 10, formulated for the specific type of terrazzo.
 - Following manufacturer's directions, apply chemical floor cleaner and let stand recommended time or time determined by test area.
 - Apply a mist of water over the cleaner on the floor.
 - Pick up residue with a wet vacuum.
 - Using a power scrubber with a scrub brush attachment, fibre bristle brush, or white nylon pad, scrub the floor until all coating material has been removed.
 - Pick up all liquid residues with a wet vacuum.
 - Thoroughly rinse the surface with clean water.
 - Pick up all remaining liquid residues with a wet vacuum and allow floor to dry.
 - Do not use metal brushes or steel wool.
 - Repeat process if necessary.
 - **If discolouration remains, seek instruction from EA. Do not attempt to 'grind' through stain.**
- 490 PATCHING MINOR CHIPS AND CRACKS IN TERRAZZO WITH CEMENT GROUT (AS INSTRUCTED BY THE EA)
- Undertake a trial of the proposed repair method below:
 - Trial sample:
 - Location/ Size: Locate typical examples of Terrazzo cracking/holes and identify area for test. Submit location to EA for approval prior to undertaking test. Undertake method below. EA may instruct further samples depending on results.
 - Records: Maintain written records for trial, including photographic records, to enable replication of results elsewhere.
 - Hairline cracks: No repairs.
 - Larger cracks:
 - Remove loose material.
 - Remove all surface contaminants (e.g. grease, release agent, etc.).
 - Fill crack with a tinted resin terrazzo repair solution to match appearance of existing terrazzo. Submit proposals to EA, for installation as per manufacturer's instruction.
 - Sand surface with hand sander or small grinding tool, using fine stones to achieve desired finish.
 - Grind floor and grout holes as per clause M41 520.
 - Seal floor as per clause M41 540.
 - Protect as per clause M41 520.
 - Sample area will be deemed satisfactory when the appearance of is harmonious with the surrounding stone appearance, to EA approval.
 - Seek and record EA approval of sample, prior to undertaking repair works outlined in architect's schedules and drawings.

- 520 GRINDING TO TERRAZZO FLOORING THROUGHOUT (EXISTING AND NEW)
- Mechanical grinding: Use wet process. Dry process permitted only where it is not practicable to use wet process.
 - Submit control sample of proposed floor finish, outlined below, to EA for approval (including sealant as per clause M41 540). Sample size to be 1000 x 1000. Agree location of trial with EA. Note, final appearance to match existing floor - level of grinding TBC on site with EA.
 - Method:
 - Coarse grinding: Using a circular buffing machine with grinding and polishing pads, suitable for the proposed works, remove surface grout, correct unevenness, and remove lipping between tiles/ slabs.
 - Residue and dust: Remove. Wash and rinse surface.
 - Level of grinding TBC by EA - Assume 120 grit for tender purposes.
 - Holes: Fill with matching grout, to match existing, taking care to fill all voids completely.
 - Cover grouted surface with paper or polyethylene for at least 72 hours.
 - Fine grinding: Using a circular buffing machine with grinding and polishing pads, suitable for the proposed works to even-out finish of coarse grinding.
 - Residue and dust: Remove. Wash and rinse surface.
 - Level of grinding TBC by EA - Assume 400 grit for tender purposes.
 - Polishing:
 - Residue and dust: Remove. Wash and rinse surface and leave to dry naturally.
 - Use powder polishing
 - Seal as per clause M41 540.
 - Take care grinding around dividing strips, so as to not damage or abrade metal surface.
 - Use conventional terrazzo grinding equipment rather than lighter type machines.
 - Protection: Cover flooring and keep free from traffic for at least two days.
- 530 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS DURING WORKS
- Disposal: Safely.
 - Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.
 - Above and below ground drainage systems: Keep free from detritus and maintain normal operation.
 - Ensure that water does not penetrate interiors and damage finishes, etc. Monitor interior of building and seek instructions when any signs of damp appear internally.
- 540 CHEMICAL FLOOR SEALANT TO TERRAZZO FLOORING THROUGHOUT
- Seal terrazzo with a colourless, slip and stain resistant penetrating/ impregnating sealer with pH factor between 7 and 10, that does not affect colour or physical properties of the terrazzo - Submit proposals to EA.
 - The type of sealer required depends on the type of binder used (see below).
 - Portland Cement systems must be sealed with a penetrating solvent-type sealer immediately after polishing. Terrazzo composition to be established as per section C11.
 - Be sure finish is slip resistant.
 - Be sure floor surface is clean of all dirt and particles before application.
 - Submit control sample to EA..
 - Floor surface stripped of existing sealants during grinding, as per clause M41 520.
 - Apply sealer according to the manufacturer's instructions.
 - Do not use wax or general-purpose sealers. The floor could be slippery after application.
 - Penetrating sealer and finish are not to result in high sheen.
 - Excess hardener: Prevent drying out on the surface of terrazzo. Remove with clean water.

M42

**Wood block/ composition block/ mosaic parquet
flooring**

M42 Wood block/ composition block/ mosaic parquet flooring

To be read with Preliminaries/General conditions.

TYPES OF FLOORING

100 TIMBER PROCUREMENT AND ENVIRONMENTAL POLICY

- Obtain all new timber (including timber for wood based products) from a sustainable source, and submit suitable documentary evidence to demonstrate this and obtain the EA's approval before placing orders.
- Preference will be given to suppliers who have adopted the Environmental Policy agreed by Forests Forever and the Timber Trade Federation, or another comparable policy, and who can provide evidence of their commitment to that Policy.
- Obtained from well managed forests and/ or plantations in accordance with:
 - The laws governing forest management in the producer country or countries.
 - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
 - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification schemes:
 - Certification scheme: Forest Stewardship Council (FSA).

105 WOOD FLOORING GENERALLY

- Standard: To BS EN 14342.
 - Evidence of compliance: Submit.

110 WOOD BLOCK FLOORING FOR REPLACEMENT OF EXISTING (REFER TO REPAIR SCHEDULE)

- Substrate: As existing: Assume timber boards on joists for tender. Notify EA if different.
 - Preparation: Remove existing flooring (where noted) and, subject to inspection, boarding beneath.
- Wood blocks: As clause C53DIA 157D, with the following additional/replacement notes:
 - Moisture content at time of laying: 6–10% (Suitability for proposed environment TBC with flooring manufacturer prior to procurement).
- Laying:
 - Pattern: To match existing: Herringbone with boarder runner.
 - Adhesive: Type recommended by flooring manufacturer/ supplier - Submit proposals.
- Submit sample of propose timber floor. Seek and record EA approval of samples.
 - Obtain approval of samples before ordering bulk materials.
 - Retain and protect approved samples until Practical Completion and ensure executed work matches.
- Method of finishing:
 - Sand and seal as clause M42 580.
 - Varnished as clause M60 161.

PREPARATION OF SUBSTRATES

- 210 DRYNESS OF CONCRETE/ SCREED SUBSTRATES
- Relative humidity above substrate when tested with a hygrometer to BS 8201, Appendix A (maximum): 75%.
 - Test points: All corners, around perimeter, and random points over area being tested.
 - Drying aids: Turned off for not less than 4 days before testing.
- 220 CONCRETE/ SCREED SUBSTRATES
- Finished surface: Smooth, even, and free from abrupt changes in level. Apply suitable smoothing compound, as necessary.
 - Surface regularity when checked with a 3 m straightedge with 3 mm feet at each end, placed anywhere on the surface: No gap greater than 6 mm, and straightedge not obstructed by the substrate.
 - Primer: If recommended by adhesive manufacturer, apply and allow to dry thoroughly before laying flooring.
- 250 HACKING FOR KEY
- Specified substrates: Roughened thoroughly and evenly by pneumatic scabbling or bush hammering.
- 260 BONDING TREATMENT FOR MORTAR BEDDING
- Alternative treatments: Immediately before commencing flooring, carry out one of the following:
 - Wet substrate, remove free water, brush in a slurry bonding coat of creamy consistency.
 - Bonding coat: As recommended by flooring manufacturer .
 - Prepare substrate, prime as necessary, apply a bonding agent.
 - Bonding agent: As recommended by flooring manufacturer .
 - Bedding: Lay while bonding treatment is still wet, to ensure a good bond.
- GENERAL**
- 310 ENVIRONMENTAL CONDITIONS
- General requirements prior to starting work specified in this section: Building weathertight, wet trades completed and affected areas dried out.
 - Temperature and humidity before, during and after installing strips/ boards: Maintained at levels approximating to those which will prevail after building is occupied.
- 350 PRODUCT SAMPLES OF WOODBLOCK FLOORING
- Representative samples of flooring: Submit before placing orders.
- 380 ACCLIMATIZATION
- General: Before laying commences acclimatize materials by unpacking and spreading out in the spaces where they are to be laid.
 - Acclimatization period: As recommended by manufacturer, but not less than 48 hours.
- 390 MOISTURE CONTENT TESTING
- Test regime and equipment: Submit proposals.
 - Test results: Submit record of tests and results as soon as they are available.

LAYING/ FINISHING**410D SUITABILITY OF SUBSTRATE**

Condition prior to laying flooring: Dry and free from dust, debris, grease and other deleterious matter.

Laying of flooring will be taken as acceptance by the flooring contractor of the suitability of the base within any given area

420 FIXTURES

- Fixtures around which flooring is to be fitted: Installed before laying flooring.

430 DRY LAYING

- General: When instructed, dry lay areas sufficient to check pattern layout and fit.

440 SAMPLE AREA OF FLOORING

- Sample area: Complete as part of the finished work.
 - Location: Submit proposal to EA.
 - Size (minimum): 1000x1000mm.
 - Included features: Border, sanding and sealing, and varnishing as per finish outlined in clause M42 110.
- Approval of appearance: Obtain before proceeding.

450 APPEARANCE OF FINISHED FLOOR

- General: Even distribution of colour variation and free from patchiness.
- Flatness/ regularity when checked with a 2 m straightedge with 3 mm feet at each end, placed anywhere on the surface: Sudden irregularities not permitted. Straightedge not obstructed by flooring and no gap greater than 6 mm.

510 LAYING WOOD BLOCKS

- Setting out: Blocks laid to a symmetrical pattern. Small cut blocks kept to a minimum. Minor vertical gaps between blocks evened out.
- Laying: Blocks fully bonded to substrate.

560 ALLOWANCE FOR MOVEMENT

- Expansion gap around perimeter of flooring: As recommended by flooring manufacturer (concealed beneath skirting) .
 - Gap filler: Permanently elastic, high density, acrylic impregnated, open cell polyurethane foam .
 - Spacer blocks and debris: Removed before fixing skirtings/ cover fillets.
- Intermediate movement joints: Formed as recommended by flooring manufacturer/ supplier in agreed positions.

570 DIVIDING/ DIMINISHING STRIPS (AS REQUIRED)

- Manufacturer: Submit proposals .
 - Product reference: Submit proposals .
- Material: To match existing: Brass .
 - Cross section size: To match existing .
 - Finish: To match existing .
- Location: Junctions with other materials.
- Method of fixing: Submit proposals .

580 SANDING AND FILLING

- Finished surfaces: Smooth and even, free from drum marks and with a minimum of crossgrain scoring.
- Minor cracks and gaps: Fill with a proprietary filler coloured to match flooring.
- Dust and debris: Remove from flooring and adjacent surfaces.

590 PROTECTION OF COMPLETED FLOOR

- Protective covering: 4 mm plywood with taped joints .
 - Remove at completion.

M60
Painting/ clear finishing

M60 Painting/ clear finishing

To be read with Preliminaries/ General conditions.

COATING SYSTEMS

- 130 GLOSS PAINT TO INTERNAL STEEL WINDOWS
- Manufacturer: Dulux, or similar (as agreed with EA).
 - Product reference: Dulux Gloss (Colour TBC) - (TBC by EA - Submit samples as per M60 300D).
 - Surfaces: Previously decorated.
 - Preparation: Degrease and abrade to provide key.
 - Initial coats: Dulux Trade Metalshield Zinc Phosphate Primer.
 - Number of coats: 1No.
 - Undercoats: Dulux Trade Undercoat.
 - Number of coats: 1No.
 - Finishing coats: Dulux Trade High Gloss.
 - Number of coats: 2No.
- 150A EGG SHELL/ SATIN PAINT TO REPAIRED PAINTED JOINERY (AS REQUIRED)
- Manufacturer: Dulux, or similar (as agreed with EA).
 - Product reference: Dulux Trade Diamond Satinwood (Colour TBC) - (TBC by EA - Submit samples as per M60 300D).
 - Surfaces: Previously decorated.
 - Preparation: Degrease and abrade to provide key.
 - Number of coats: 2No. finishing coats.
- 160 DECORATIVE WOODSTAIN VARNISH TO REPAIRED AND NEW JOINERY (AS REQUIRED)
- Manufacturer: Liberon.
 - Product reference: High protection woodstain (TBC by EA - Submit samples as per M60 300D).
 - Surfaces: New and repaired timber.
 - Preparation: Degrease and rub down. Strip previous varnish/finishes, neutralise, dry and remove all dust as manufacturer's instructions
 - Application: Brush. 2No. coats minimum.
 - New and repaired surfaces are to be brought to the same colour and finish.
- 161 DECORATIVE WOODSTAIN VARNISH TO EXISTING AND NEW TIMBER FLOORS (AS REQUIRED)
- Manufacturer: Liberon.
 - Product reference: Natural Finish Floor Varnish (TBC by EA - Submit samples as per M60 300D).
 - Surfaces: New timber and repair surfaces.
 - Preparation: Degrease and rub down. Strip previous varnish/finishes, neutralise, dry and remove all dust as manufacturer's instructions.
 - Application: Brush or short hair roller, as recommended by manufacturer. Leave for 24 hour before using floor.
 - New and repaired surfaces are to be brought to the same colour and finish, using Liberon Wood Floor Dye before varnishing.

GENERAL

200D PROTECTION

- Adequately protect internal surfaces, fixtures and fittings which are not to be coated as Section B30.

215 HANDLING AND STORAGE

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

215D HANDLING AND STORAGE

- Coating materials must be delivered in sealed containers, each clearly labelled to show:
 - Maker's name, initials or recognised trade mark.
 - Title and specification number.
 - Whether primer, undercoat or finishing coat.
 - Whether for internal or external use, where appropriate.
 - Colour reference, from BS 4800:2011 where appropriate.
 - Method of application.
 - Batch number and date of despatch or re-test.
 - Detailed instruction for storage and use if highly flammable or toxic.
 - Statutory markings.
 - Wherever possible materials must be from one manufacturing batch. Inform the EA if materials from more than one batch are to be used, store separately and allocate to distinct parts or areas of the work.
 - Store materials in accordance with manufacturer's recommendations. Use in order of delivery and before expiry of any shelf life date.

217 MARKING OF CONTAINERS

- Ensure that containers of coating materials are labelled as clause 215D, and remove from site any containers not so labelled

220 TESTING OF VISCOSI, ETC

- The EA may, with discretion, take samples of materials from each manufacturing batch as follows:
 - Unopened containers, or samples from previously unopened containers, for submission to manufacturer for comparison with manufacturer's own retained samples from the same batch.
 - Unopened containers, or samples from previously unopened containers, as a control sample for assessment of samples taken from painters' kettles.
 - Samples from painters' kettles for submission with control sample to manufacturer and/or independent testing laboratory for comparative testing.

240 SURFACES NOT TO BE COATED

- Radiator valves and stop valves,
- Ironmongery,
- Glazed elements.
- Stone .

280 PROTECTION

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

290D SAMPLES FOR RETENTION BY EMPLOYER

- Provide wet samples in fully identified half litre air-tight containers of all specially mixed paints that are used in works.

300D CONTROL SAMPLES

- Inspection of the whole of the work at each of the stages set out below may be made, at the discretion of the EA.
- Agree with the EA a programme that will facilitate such inspections and notify him when each part and stage of the work is ready for inspection. Do not proceed with subsequent stages of the work or remove scaffolding until authorised.
- Type(s) of coating/works:

Nature of sample/ trial	Inspection at completion of
Cleaned / Prepared. Metal Surface	Sample area determined by EA
Metal Primer Undercoat to windows	Sample area determined by EA
Metal Gloss to windows	Sample area determined by EA
Timber Undercoat	Sample area determined by EA
Timber Finishing Coats	Sample area determined by EA
Floor Timber Clear Coat	Sample area determined by EA
Joinery Timber Clear Coats	Sample area determined by EA

- Inspection: Give prior notice when each stage is ready for inspection.
- Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable repetition of results elsewhere.

PREPARATION**400 PREPARATION GENERALLY**

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

405D SUITABILITY OF SURFACES

- Application of coatings will be taken as joint acceptance by the Main Contractor and the Painting Contractor of the suitability of surfaces and conditions within any given area to receive the specified coatings.

410D APPLICATION OR REMOVAL OF LEAD PAINT

- Complete part 1 of the Declaration on Intended Supply and Use of Lead Carbonate or Lead Sulphate in Paint, and before removing or applying any such paint ensure that three weeks have elapsed following the service of the completed Declaration to the competent regulating authority.
- Comply with the relevant health and safety regulations referred to in the notes relating to the Declaration when removing or applying lead paint.

420 FIXTURES AND FITTINGS

- Removal: Before commencing work remove: Coverplates, grilles, wall clocks, and other surface mounted fixtures, where required .
- Replacement: Refurbishment as necessary, refit when coating is dry.

425 IRONMONGERY

- Removal: Before commencing work remove ironmongery from surfaces to be coated.
- Hinges: Remove.
- Replacement: Refurbish as necessary; refit when coating is dry.

430 EXISTING IRONMONGERY

- Refurbishment: Remove paint and coating marks.
- Clean and polish bronze ironmongery to restore the damaged or worn historic finish to its original uniform texture and gloss. Undertake trial of the following method on a scarifical item (seek instruction from EA) and submit to EA for approval.
 - Method:
 - Manually rub the metal surface, in the direction of the grain only, using abrasive with solvent (toluene-acetone based) until surface is smooth and uniform in color, and other visual characteristics. Finished bronze shall feel smooth to the touch.

435 EXISTING STAIR BALUSTRADE AND HANDRAIL

- Stair guarding/railings: Remove paint. Clean and repaint guarding.
- Stair handrail: Remove paint and coating marks from bronze handrail. Clean and polish as outlined for ironmongery in clause M60 430.

- 440 PREVIOUSLY COATED SURFACES GENERALLY
- Preparation: In accordance with BS 6150, clause 11.5.
 - Contaminated or hazardous surfaces: Give notice of:
 - Coatings suspected of containing lead.
 - Substrates suspected of containing asbestos or other hazardous materials.
 - Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
 - Significant rot, corrosion or other degradation of substrates.
 - Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
 - Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
 - Alkali affected coatings: Completely remove.
 - Retained coatings:
 - Thoroughly clean to remove dirt, grease and contaminants.
 - Gloss coated surfaces: Provide key.
 - Partly removed coatings:
 - Additional preparatory coats: Apply to restore original coating thicknesses.
 - Junctions: Provide flush surface.
 - Completely stripped surfaces: Prepare as for uncoated surfaces.
- 461 PREVIOUSLY COATED WOOD
- Degraded or weathered surface wood: Take back to provide suitable substrate.
 - Degraded substrate wood: Repair with sound material of same species.
 - Exposed resinous areas and knots: Apply two coats of knotting.
- 481 UNCOATED WOOD
- General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
 - Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
 - Resinous areas and knots: Apply two coats of knotting.
- 490 PREVIOUSLY COATED STEEL WINDOWS AND METAL STAIR BALUSTRADES
- Defective paintwork: Remove to leave a firm edge and clean bright metal.
 - Sound paintwork: Provide key for subsequent coats.
 - Corrosion and loose scale: Take back to bare metal.
 - Residual rust: Treat with a proprietary removal solution.
 - Bare metal: Apply primer as soon as possible.
 - Remaining areas: Degrease.
- 631 PREVIOUSLY PAINTED INTERNAL WINDOW FRAMES
- Paint encroaching beyond glass sight line: Remove.
 - Loose and defective putty: Remove.
 - Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
 - Finishing:
 - Patch prime, reputty as necessary, and allow to harden.
 - Seal and coat as soon as sufficiently hard.

APPLICATION

711 COATING GENERALLY

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

715D UNSUITABLE CONDITIONS

- Take all necessary precautions including restrictions on working hours, providing temporary protection and allowing extra drying time, to ensure that coatings are not adversely affected by climatic conditions during and after application.
- Prevent or control exposure of operatives to solvent vapour levels exceeding occupational exposure standards set in the current Health and Safety Executive (HSE) document EH40.
- Apply coatings only where it is specifically permitted by the coating manufacturer:
 - To surfaces affected by moisture, frost or airborne dust.
 - When the air or substrate temperature is below 5°C.
 - When the relative humidity is above 80%.
 - When heat is likely to cause blistering or wrinkling.

720D COATING EQUIPMENT

- All coatings shall be applied by good quality brushes of suitable width for the surfaces to be coated, unless otherwise specified or agreed in writing.

730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES

- General: Apply coatings to all surfaces of components.

731 SITE COATING OF CONCEALED JOINERY SURFACES

- General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.

751 STAINING WOOD

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

760 VARNISHING WOOD

- First coat: As per manufacturer's recommendation.
 - Brush well in and lay off avoiding aeration.
- Subsequent coats: Rub down lightly along the grain between coats.

780 BEAD GLAZING TO COATED WOOD

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

790 PUTTY GLAZING

- Setting: Allow putty to set for seven days.
- Sealing:
 - Within a further 14 days, seal with an oil based primer.
 - Fully protect putty with coating system as soon as it is sufficiently hard.
 - Extend finishing coats on to glass up to sight line.

P21

Door/ window ironmongery

P21 Door/ window ironmongery

To be read with Preliminaries/ General conditions.

TO BE READ IN CONJUNCTION WITH REPAIR, DOOR AND WINDOW SCHEDULES, AND ASSOCIATED DRAWAINGS

PRE-TENDER

10 QUANTITIES AND LOCATIONS

- Quantities and locations of ironmongery are in the door, window and repair schedules .
- Fixing: As sections L10 and L20.

GENERAL

140 SAMPLES

- General: Before placing orders with suppliers submit labelled samples of the following: All replacement ironmongery items, for EA approval .
 - Conformity: Retain samples on site for the duration of the contract. Ensure conformity of ironmongery as delivered with labelled samples.

170 IRONMONGERY FOR FIRE DOORS

- Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire resisting door assembly.
- Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
 - Certification: Submit CERTIFIRE certificates .
- Melting point of components (except decorative non functional parts): 800°C minimum.

180 CATEGORY OF DUTY FOR DOOR IRONMONGERY

- Standard: To DD 171.
 - Category of duty of doors: Heavy duty .
- General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.
 - Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.
Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.

185 CLEANING OF EXISTING IRONMONGERY

- Refer to clause M60 425.

Z10DIA
PURPOSE MADE JOINERY

Z10DIA PURPOSE MADE JOINERY

DIA Z10 PURPOSE MADE NEW AND REPLICA JOINERY

100D BASIC WORKMANSHIP

Comply with the clauses of BS 8000 Part 5:1990 that are relevant to this section, unless otherwise specified or shown on drawings.

103D TIMBER PROCUREMENT AND ENVIRONMENTAL POLICY

- Obtain all new timber (including timber for wood based products) from a sustainable source, and submit suitable documentary evidence to demonstrate this and obtain the EA's approval before placing orders.
- Preference will be given to suppliers who have adopted the Environmental Policy agreed by Forests Forever and the Timber Trade Federation, or another comparable policy, and who can provide evidence of their commitment to that Policy.
- Obtained from well managed forests and/ or plantations in accordance with:
 - The laws governing forest management in the producer country or countries.
 - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
- Documentation: Provide either:
 - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification schemes:
 - Certification scheme: Forest Stewardship Council (FSA).

107D PROCEDURE

- Prepare full size drawings to show setting out, geometry, jointing and all details. State proposed timber species, grades and sizes.
- Submit drawings in duplicate of each element for comment four weeks before proposed fabrication.

110D FABRICATION

- Standard: To BS 1186-2.
- Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
- Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
- Joints: Tight and close fitting.
- Assembled components: Rigid. Free from distortion.
- Screws: Provide pilot holes.
- Screws of 8 gauge (4 mm diameter) or more and screws into hardwood: Provide clearance holes.
- Countersunk screws: Heads sunk at least 2 mm below surfaces visible in completed work.
- Adhesives: Compatible with wood preservatives applied and end uses of timber.
- Make as much joinery as possible in humidity controlled workshop equipped with modern machinery and manned by skilled joiners.
- Restrict site work to fixings and other operations that cannot be done in the workshop

115D TIMBER FOR JOINERY

- Timber for joinery to be decorated with opaque coatings to comply with BS EN 942 as follows:
- Hardwood or imported softwood Class 2 and Class 3 selected for suitability for usage from Appendices B and C but excluding hardwood described as resinous. New softwood joinery replicating existing features such as dados, panelling, skirtings and doors to be in redwood generally with yellow pine used for mouldings to be enriched by carving.
- Average percentage of moisture content as recommended in Section 3 and Table 2.
- New timber for joinery to be preservative treated in accordance with Z12.

120D CROSS SECTION DIMENSIONS OF TIMBER

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

130D PRESERVATIVE TREATED WOOD

- Cutting and machining: completed as far as possible before treatment.
- Extensively processed timber: Retreat timber sawn lengthwise, thickened, planed, ploughed etc.
- Surfaces exposed by minor cutting and/or drilling: treat as recommended by main treatment solution manufacturer.

150D REPLICATING EXISTING JOINERY

- Make new joinery which replicates original material to match such original material in every respect.
- Joinery to be constructed using components matching the original work in profile, species and overall dimensions, using similar techniques employed in each different location and/or as shown on the contract drawings. Where no examples of joinery to be replicated survive, details are to be agreed with the EA.

152D SITE DIMENSIONS FOR REPLICATED JOINERY

- To be taken at the building and not from the contract drawings.

155D SIZES FOR REPLICATED JOINERY

- Timber to be to sizes to match material being replicated.

160D JOINERY PROFILES FOR REPLICATED JOINERY

- Notwithstanding any record survey drawings provided with the contract documents, all dimensions and profiles are to be taken from stripped, salvaged material where this exists. Where salvaged material does not exist or is incomplete, the works to be carried out as shown on the contract drawings with profiles and precise dimensions agreed with the EA.

170D CONTRACTORS' DRAWINGS FOR REPLICATED JOINERY

- Work shall not commence on fabrication until detailed drawings have been submitted to the EA for comment. Full size setting out drawings and other details to show the geometry of the structures, the timber species sizes and grades and the methods of jointing to be prepared and submitted to the EA at least four weeks before starting fabrication of new or replicated joinery.

250D FINISHING

- Joinery surfaces: Smooth, even and suitable to receive finishes.
- Arrises: Eased unless shown otherwise on drawings.
- End grain in external components: Sealed with primer or sealer as section M60 and allow to dry before assembly.
 - Apply two coats of primer to backs of all built in joinery set against masonry.
 - Do not assume that primer or first undercoats provide protection against weather

310D INSPECTION OF JOINERY

- Allow the EA to inspect joinery in progress in shops and on the site and before any priming or decoration is applied.

320D FINISHED APPEARANCE

- Joinery to receive decoration: a fine smooth surface free from any imperfections that might be apparent after decoration.
- Joinery with clear finishes: finely finished to remove cutter or sanding marks, raised grain, stains or other blemishes. The timber, including veneers, in adjacent places shall be matched or uniform symmetrical in colour and grain.
- Angles and edges slightly rounded: exposed edges and vulnerable angles to be pencil rounded unless otherwise detailed.

330D SEALING AND PRIMING

- Seal exposed end grain of the following joinery before sealer or primer is applied, where possible before general sealer or primer is applied, where possible before delivery to the site: windows, doors, frames to both.
- Prime built in surfaces with two coats of priming paint.
- Apply two coats of primer to back of all built-in joinery set against masonry etc and isolate by installing damp proof material as specified in section C45.

340D JOINTING

- The arrangement, jointing and fixing of all joinery works shall be such that shrinkage in any part and in any direction shall not cause damage to any contiguous materials or structures. All works necessary for the proper construction of all framings, linings etc and for their support and fixing in the building to be included.
- Replicated joinery to be constructed to match exactly the original work or be as shown on the contract drawings. Where joints are not specifically indicated, they shall be recognised forms of joints for each position. The joints shall be made so as to comply with BS1186, part 2.
- Loose joints to be used where provision must be made for shrinkage or other movements in the connections and where sealed joints are required. All glued joints to be cross-tongued or otherwise reinforced. All nails, springs etc to be punched and puttied. Surfaces in contact are to have a good sawn or planed finish. The surface of plywood to be glued to be lightly dressed with sand or glass paper. The sand or glass paper must not be allowed to clog and cause burnishing.

350D TOLERANCES

- Reasonable tolerance to be provided at all connections between joinery works and the building carcass, whether of masonry or frame construction, so that any irregularities, settlements or other movements will be adequately compensated.

360D GROUNDS

- Grounds, battens, bearers and packings as necessary for fixing joinery to be provided.

370D FIXINGS

- Securely fix sections together and to substrates using jointing methods and types and spacing of fastenings as shown on the drawings or that are suitable having regard to:
 - Nature of substrate
 - Materials and loads to be supported.
 - Conditions expected in use
- Construct groundwork required to provide a suitable base and fixing for the joinery works. Vertical junctions shall be solidly secured.
- Timber frames, when not specified otherwise, to be fixed at 600mm maximum centres with at least one fixing 150mm from each end of jambs and one adjacent to each hanging point of opening element.

371D FIXING PLUGS

- Locate specified plugs accurately. use proprietary plugs in accordance with the manufacturer's instructions recommendation. When plugging through applied finishes, ensure that plugs and fastenings have adequate penetration into the structural backing.

372D NAILING

- Nails that would be visible in completed work to be punched below timber surfaces.

373D SCREWING

- All screws to have clearance holes. Screws 3mm in diameter or more and all screws into hardwood to have pilot holes. Countersink screwheads which would be visible in completed work no less than 2mm below timber surfaces.
- In timber surfaces which are to be clear finished, countersink screwheads 6mm below surface. Glue in grain matched pellets not less than 6mm thick and cut from matching timber. Finish off flush with face.

375 SCREW FIXING

- Finished level of countersunk screw heads:
 - In timber surfaces which are to be clear finished, countersink screwheads 6mm below surface. Glue in grain matched pellets not less than 6mm thick and cut from matching timber. Finish off flush with face.
 - Exposed: Flush with timber surface.
 - Concealed (holes filled or stopped): Sink minimum 2 mm below surface.
- All screws to have clearance holes.
 - Screws 3mm in diameter or more and all screws into hardwood to have pilot holes. Countersink screwheads which would be visible in completed work no less than 2mm below timber surfaces.
 - Screws of 8 gauge or more and all screws into hardwood to have pilot holes about half the diameter of the shank.
- Before using brass, aluminium or other soft metal wood screws pre-cut the thread with a matching steel wood screw.
- Do not hammer screws unless specifically designed to be hammered.
- Drive countersunk heads flush with timber surface, or not less than 2 mm below it if they are to be stopped.
- Washers and screw cups, where specified, to be of the same material as the screw.
- Brass and BMA finished screws are to have slot (not Phillips) heads.

380D MOULDINGS

- All moulded work to be accurately worked to the full size either to match the existing materials stripped of coatings or the contract drawings. All mouldings to be worked on the solid, except where otherwise constructed originally.

390D SCRIBING

- All skirtings, architraves, plates and other joinery works to be accurately scribed to fit the contour of any irregular surface against which they may be requires to form a close butt connection.

410D PROTECTION

- Provide all necessary protection to joinery items to prevent any damage after fabrication, either on or off site. Prevent damage to and distortion of joinery during transit, handling, storage and fixing. Keep joinery clean and dry. Prevent marking of surfaces which will be visible in completed work.

Z21
Mortars

Z21 Mortars

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

107D ADMIXTURES

- Do not use in mortar unless specified or approved. Do not use calcium chloride or any admixtures containing calcium chloride. Admixtures, if specified, to be to BS EN 934-3:2003

110 CEMENT GAUGED MORTAR MIXES

- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS

- Standard: To BS EN 13139.
- Grading: 0/2 (FP or MP).
 - Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5-6):
 - Lower proportion of sand: Use category 3 fines.
 - Higher proportion of sand: Use category 2 fines.
- Do not use sand from marine source.

135 SITE MADE LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

- Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.
- Lime: Nonhydraulic to BS EN 459-1.
 - Type: CL 90S.
- Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

160 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1 and CE marked.
 - Types: Portland cement, CEM I.
 - Portland limestone cement, CEM II/A-L or CEM II/A-LL.
 - Portland slag cement, CEM II/B-S.
 - Portland fly ash cement, CEM II/B-V.
 - Strength class: 32.5, 42.5 or 52.5.
- White cement: To BS EN 197-1 and CE marked.
 - Type: Portland cement, CEM I.
 - Strength class: 52.5.
- Sulfate resisting Portland cement:
 - Types: To BS 4027 and Kitemarked.
 - To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
 - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
 - Class: MC 12.5.

- 180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS
- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
 - Other admixtures: Submit proposals.
 - Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.
- 210 MAKING CEMENT GAUGED MORTARS
- Batching: By volume. Use clean and accurate gauge boxes or buckets.
 - Mix proportions: Based on dry sand. Allow for bulking of damp sand.
 - Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
 - Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
 - Working time (maximum): Two hours at normal temperatures.
 - Contamination: Prevent intermixing with other materials.
- LIME:SAND MORTARS**
- 310 LIME:SAND MORTAR MIXES
- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.
- 320 SAND FOR LIME:SAND MASONRY MORTARS
- Type: Sharp, well graded.
 - Quality, sampling and testing: To BS EN 13139.
 - Grading/ Source: As specified elsewhere in relevant mortar mix items.
- 326D LIMESTONE DUST
- To be clean, free of silt or organic matter, and of appropriate colour and texture to match existing mortar.
Where stone dust constitutes more than 25% of aggregate used in mix particle size is to be graded.
Store in dry.
- 330 READY PREPARED LIME PUTTY
- Type: Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.
 - Maturation: In pits/ containers that allow excess water to drain away.
 - Density of matured lime putty: 1.3-1.4 kg/litre.
 - Maturation period before use (minimum): 90 days.
- 360 MAKING LIME:SAND MORTARS GENERALLY
- Batching: By volume. Use clean and accurate gauge boxes or buckets.
 - Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
 - Contamination: Prevent intermixing with other materials, including cement.
- 370A SITE PREPARED NONHYDRAULIC LIME:SAND MORTARS
- Mixing: Mix materials thoroughly by compressing, beating and chopping. Do not add water.
 - Equipment: Roller pan mixer or submit proposals.
 - Maturation period before use (minimum): 90 days.
- 390 KNOCKING UP NONHYDRAULIC LIME:SAND MORTARS
- Knocking up before and during use: Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
 - Equipment: Roller pan mixer or submit proposals.

400 MAKING HYDRAULIC LIME:SAND MORTARS

- Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
 - Water quantity: Only sufficient to produce a workable mix.
- Working time: Within limits recommended by the hydraulic lime manufacturer.