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We invest in people Silver

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C41
Repairing/ renovating/ conserving masonry

Generally/ preparation

110 Scope of work

- Schedule: Refer to Conisbee Drawings DR-S-1100, 1102, 3000, 3001, 4000, 4002, 4003
- Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
- Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs.

120 Site inspection

- Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
- Parties involved: Contract administrator, Contractor's representative, Foreman mason, Structural engineer
- Timing: At least 5 working days before starting each section of work
- Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work

125 Removal of fittings/ fixtures

- Items to be removed, and reinstated on completion of repair work: Lightning conductor tape
    - Storage: Protect against damage, and store until required.
    - Reinstatement: Refit in original locations using original installation methods.
- Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures.

130 Removal of plant growths from masonry

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

140 Record of work

- General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
- Documentation: Submit on completion of the work.
    - Number of sets: 1 in electronic format

Workmanship generally

150 Power tools

- Usage for removal of mortar: Not permitted

160 Protection of masonry units and masonry

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

165 Structural stability

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

170 Disturbance to retained masonry

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

180 Workmanship

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

185 Adverse weather

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

190 Control samples

- General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: Indent repairs, Stone pointing, Brick pointing, Brick replacements.

Materials/ production/ accessories

215 Material samples

- Representative samples of designated materials: Submit before placing orders.
  - Designated materials: Doulting Stone
- Retention of samples: Unless instructed otherwise, retain samples on-site for reference. Protect from damage and contamination.

220 Recording profiles

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

240 Stone Type A (GARDEN PLINTH WALLS)

- Standard: To BS EN 771-6
- Supplier: TBC - to match existing
- Type: Sandstone
- Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
- Finish: Tooled to match original appearance

240 Stone (FACADES)

- Standard: To BS EN 771-6
- Supplier: Doulting Stone Quarry
- Type: Doulting Limestone
- Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
- Finish: Tooled to match original appearance

245 Replacement stone units

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

250 Stone orientation

- Orientation of natural bed
  - In plain walling: Horizontal.
  - In projecting stones and copings: Vertical and perpendicular to wall face.
  - In arches: Perpendicular to line of thrust.

255 Ashlar blocks/ Dressings

- Cutting and dressing stone: To true and regular surfaces, free from hollow or rough areas.

260 Bricks

- Standard: To BS EN 771-1.
- Manufacturer: Submit proposals
  - Product reference: TBC
- Size: To match existing

Dismantling/ rebuilding

310 Dismantling masonry for reuse

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

320 Rebuilding

- Description: GARDEN LEVEL PLINTH WALLS
- Mortar: As section Z21.
  - Standard: Not applicable
  - Mix: 1:3 St Astier Ltd NHL 3.5 hydraulic lime:sand
  - Sand source/ type: Well graded sharp sand to match existing colour/texture
- Fixings: Cramps and dowels, as clause 281
- Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate.
- Joint surfaces: Dampen, as necessary, to control suction.
- Laying masonry units: On a full bed of mortar; perpend joints filled.
- Exposed faces: Remove mortar and grout splashes immediately.
- Joints: To match existing

Replacements and insertions

330 Preparation for replacement masonry

- Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.

- Existing metal fixings, frame members, etc.: Report when exposed.
- Redundant metal fixings: Remove.
- Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.

340 Replacement of stone

- Description: TO EASTERN TOWER
- Stone: Doulting Limestone, as clause 240
- Bedding depths: 100 mm
- Mortar: As section Z21.
    - Standard: Not applicable
    - Mix: 1:2 St Astier NHL 2 hydraulic lime:sand
    - Sand source/ type: Well-graded sharp sand to match existing mortar colour/texture
- Joints: Flush

350 Stone inserts

- Description: TO 1901 BUILDING - WEST ELEVATION
- Stone: Doulting Limestone, as clause 240
- Finish: Flush and to match existing.
- Preparation and insertion: As clause 395.
- Mortar: As section Z21.
    - Standard: Not applicable
    - Mix: 1:2 NHL 2 hydraulic lime:sand
    - Sand source/ type: Well-graded sharp sand to match existing mortar colour/texture
- Fine sand to approval
- Fixings: Stainless steel dowels, 8mm dia.
- Joints: Very fine

355 Stone inserts

- Description: TO GARDEN LEVEL PLINTH WALLS
- Stone: Sandstone, as Clause 240 A
- Finish: Flush and to match existing.
- Preparation and insertion: As clause 395.
- Fixings: Stainless steel dowels, 6mm dia.
- Joints: Very fine with no adhesive visible.

365 Replacement of bricks

- Description: TO CHIMNEY STACKS
- Bricks: Clay as clause 260
- Mortar: As section Z21.
    - Standard: Not applicable

  - Mix: 1:2½ St Astier NHL 3.5 hydraulic lime:sand
  - Sand source/ type: Well graded sharp sand to match existing mortar colour/texture
- Joints: Flush

385 Laying replacement masonry units

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

395 Installing stone inserts

- Pockets to receive inserts
  - Cut out accurately. Undercut sides of pocket where necessary to provide space for bonding material.
  - Adjust depth so that insert stands proud of existing stone for finishing in situ.
  - Clean out thoroughly.
- Inserts: Cut to the smallest rectangular shape necessary to replace the defective area and provide a firm seating. Install accurately and securely.
  - Exposed faces: Keep clear of bonding material.
- Existing joint widths: Maintain. Do not bridge joints.

405 Bonded dowels

- Description: FOR STONE INSERTS
- Standard: To BS EN 1090-1
- Dowels: Austenitic stainless steel, Grade 316/1.4401
- Adhesive: Hilti HIT HY-270
- Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
- Other requirements: Do not use adhesive to bond stones at joints unless instructed.

420 Temporary distance pieces for joints in ashlar stonework

- Material: Lead or stainless steel.
- Removal: When mortar/ grout is sufficiently strong to take loading without compression.

Tooling/ dressing stone in situ

450 Weathering ledges at joints

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

455 Descaling stone

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

458 Redressing stone

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

Mortar repairs - Not Used

Crack repairs/ ties/ reinforcement

610 Mortar repair of cracks

- Description: TO WEST TOWER FRONT
- Mortar: As section Z21.
  - Standard: Not applicable
  - Mix: 1:3 feebly hydraulic lime:sand, to approval
  - Sand source/ type: Well graded sharp sand
- Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
- Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.
- Other requirements:

675 Joint reinforcement

- Description: FOR STITCHING ACROSS CRACKS
- Existing construction: Solid brick wall
- Joint width: 10 ± 2 mm
- Reinforcement system
  - Standard: Not applicable
  - Manufacturer: Helifix
    - Product reference: Helibar
  - Type: 6mm SS Helical bar
- Grout: Helibond TE
- Installation: Remove existing mortar without damaging adjacent masonry or widening joints. Form recess to depth recommended by reinforcement manufacturer. Remove dust and debris. Install reinforcement using methods recommended by manufacturer.
- Joints: Repoint, as clause 820.

Grouting rubble filled cores - Not Used

Pointing/ repointing

810 Preparation for repointing

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

820 Pointing

- Description: STONEWORK GENERALLY
- Preparation of joints: Rake out existing mortar
- Mortar: As section Z21.
    - Standard: Not applicable
    - Mix: 1:2½ St Astier Ltd NHL 2 hydraulic lime:sand
    - Sand source/ type: Sharp sand/stone dust to match existing colour/texture
- Joint profile/ finish: Recessed back from weathered arrises to retain original joint widths. Brushed finish, as clause 860

820 Pointing Type A

- Description: BRICKWORK GENERALLY
- Preparation of joints: Rake out existing mortar
- Mortar: As section Z21.
    - Standard: Not applicable
    - Mix: 1:2½ St Astier Ltd NHL 3.5 hydraulic lime:sand
    - Sand source/ type: Well-graded sharp sand to match existing color/texture
- Joint profile/ finish: To match existing

840 Pointing with tools/ Irons

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

860 Brushed finish to joints

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

Ω End of Section

G10
Structural steel framing

General requirements/ information - Not Used

Frame systems - Not Used

Cold-formed materials - Not Used

Fabrication

225 Steelwork to be galvanized

- Cutting, drilling and shop welding: Complete before galvanizing.

Welding

270 Additional welds

- Welds (including tack welds) not indicated on drawings: Not permitted without approval.

Bolt assemblies

304 Proprietary bolt assemblies

- Manufacturer: Lindapter
  - Product reference: HB12-1 HDG

370 Galvanized coating to bolt assemblies

- Standard: To BS 7371-6.
- Galvanizing: Applied by fastener manufacturer. Passivated and lubricated if no additional coatings are specified. Nuts tapped after galvanizing.
- Use/location: All new bolts

Erection

425 Modifications

- Steelwork: Do not modify without approval.

Testing - Not Used

Protective coatings - Not Used

Protective coating systems

620 Galvanizing to blast cleaned steel

- Use/ location: NEW PFC TO EAST TOWER
- Preparation: Blast cleaning to BS EN ISO 8501-1, preparation grade Sa2½ using chilled angular iron grit grade G24 to give a coarse surface profile, followed by chemical cleaning.

- Galvanizing: To BS EN ISO 1461.
  - Minimum mean coating thickness: 140 micrometres.

650 Site painting

- Description: WITH ZINC EPOXY PRIMER
- Use/ location: TO EXPOSED EXISTING STEEL FRAME
- Paint manufacturer: Sherwin-Williams
- Site preparation: Manual.
- Site primer: Macropoxy M902
  - Dry film thickness: Manufacturer's recommendation

Preparation for painting

725 Manual cleaning of existing steelwork

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

Painting

810 Environmental conditions

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

815 Coatings

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

825 Stripe coat

- External angles, nuts, bolt heads, rough weld seams, and areas difficult to coat: Apply an additional stripe coat of primer .

Ω End of Section

G12
Isolated structural metal members

Products

320 Steel members

- Steel: To BS EN 10025-2
  - Grade: S275J0
  - Section properties and dimensions: To BS EN 10365
  - Surface condition: Free from heavy pitting and rust, burrs, sharp edges and flame cutting dross.

Fabrication

510 Fabrication of steel members

- Cuts and holes: Accurate and neat.
- Joints: Location and layout of fastenings as drawing DR-S-4000.

Execution

610 Installation

- Accuracy: Members positioned true to line and level using, if necessary, steel packs of sufficient area to allow full transfer of loads to bearing surfaces.
- Fixing: Use washers under bolt heads and nuts.
  - Tapered washers: Provide under bolt heads and nuts bearing on sloping surfaces. Match taper to slope angle and align correctly.

640 Preparation and priming

- Sequence of working: Fabricate, prepare, prime.
- Surfaces inaccessible after assembly: Apply full treatment and coating system including, if necessary, local application of site coatings.
- Galvanized/ sherardized fasteners: After steelwork erection and before applying site coatings, thoroughly degrease and clean. Etch prime.

Completion - Not Used

Ω End of Section

H71
Lead sheet fully supported roof and wall coverings/ flashings

Types of leadwork

250 Weathering to

- Description: CORNICES & PEDIMENTS (Refer to drawing DR-S-4001)
- Substrate: Stone
- Sheet underlay: Building paper to BS 1521, Class A1
- Type of lead: Rolled to BS EN 12588
  - Thickness: 2.50 or 2.65 mm (Code 6)
- Joints: Welted
  - Spacing: To LSTA Guidance
- Edge details: Welted drip at front, upstand at rear (if chase joint already present - do not cut new), with tuck in
- Fixing: Stainless steel clips at 300 centres
- Accessories: To LSTA Guidance

430 Abutment flashings

- Description: TO 1911 BUILDING PITCHED ROOF
- Lead
  - Thickness: 2.00 or 2.24 mm (Code 5)
- Dimensions
  - Lengths: Not more than 1000 mm.
  - End to end joints: Laps of not less than 100 mm.
- Fixing: Lead wedges into bed joint, clips to lead upstand at laps and 500 mm centres

General requirements/ preparatory work

510 Workmanship generally

- Standard: In accordance with BS EN 14783 and BS EN 12588 and to BS 6915 and latest edition of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Training Academy.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of lead coverings/ flashings. Submit records of experience on request.
- Preforming: Measure, mark, cut and form lead prior to assembly wherever possible.
- Marking out: With pencil, chalk or crayon. Do not use scribers or other sharp instruments without approval.
- Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks, buckling and cracks.
- Solder: Use only where specified.

- Sharp metal edges: Fold under or remove as work proceeds.
- Finished work: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
- Protection: Prevent staining, discolouration and damage by subsequent works.

516 Lead-welding

- In situ lead-welding: Is permitted, subject to completion of a 'hot work permit' form and compliance with its requirements.

520 Lead sheet

- Production method
  - Rolled, to BS EN 12588, or
  - Machine cast and BBA-certified, or
  - Sand cast, from lead free from bitumen, solder, other impurities, inclusions, laminations, cracks, air, pinholes and blowholes; to code thicknesses but with a tolerance (by weight) of ±10%.
- Identification: Labelled to show compliance with the harmonized standard (hEN) BS EN 14783, where appropriate, and detail of the thickness/ code, weight and type.

555 Layout

- Setting out of longitudinal and cross joints: Submit proposals.

560 Control samples

- General: Complete areas of the finished work, and obtain approval of appearance before proceeding:
- Size: Submit proposals
- Location: 1911 Building Cornice

610 Suitability of substrates

- Condition: Dry and free of dust, debris, grease and other deleterious matter.

Fixing lead

710 Fixings

- Screws to concrete or masonry substrates: Brass or stainless steel.
  - Diameter: Not less than 3.35 mm.
  - Length: Not less than 19 mm.
  - Washers and plastic plugs: Compatible with screws and lead.

715 Clips

- Material
  - Stainless steel clips
    - Thickness: 0.46 mm
    - Grade: BS EN 10088-1, 1.4301(304) terne-coated if exposed to view.

- Dimensions
  - Width: 50 mm where not continuous.
  - Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

760 Continuous clips

- Manufacturer: Contractor's choice
- Material: Material:
  - Stainless steel continuous clips
    - Thickness: 0.46 mm
    - Grade: BS EN 10088-1, 1.4301(304).
- Dimensions
  - Width: To suit detail.
- Fixing clips: Secure at 200 mm centres.
- Fixing lead sheet: Welt edge around continuous clip and dress down.

770 Wedge fixing into joints/ Chases

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

Jointing lead

810 Forming details

- Method: Bossing or lead-welding except where bossing is specifically required.
- Lead-welded seams: Neatly and consistently formed.
  - Seams: Do not undercut or reduce sheet thickness.
  - Filler strips: Of the same composition as the sheets being joined.
  - Butt joints: Formed to a thickness one third more than the sheets being joined.
  - Lap joints: Formed with 25 mm laps and two loadings to the edge of the overlap.
- Bossing: Carried out without thinning, cutting or otherwise splitting the lead sheet.

880 Welted joints

- Joint allowance: 50 mm overlap and 25 mm underlap.
- Copper or stainless steel clips: Fix to substrate at not more than 450 mm centres.
- Overlap: Welt around underlap and clips and lightly dress down.

970 Patination oil

- Manufacturer: Contractor's choice
  - Product reference: Submit proposals
- Location: ALL NEW LEADWORK
- Application: As soon as practical, apply a smear coating to lead, evenly in one direction and in dry conditions.

Ω End of Section

M40
Stone/ concrete/ quarry/ ceramic tiling/ mosaic

Types of tiling/ mosaic

115 Natural stone covering to

- Description: ENTRANCE PAVING
- Type: Slabs to BS EN 12058
- Stone
  - Name (traditional): Portland Stone
  - Petrological family: Limestone
  - Colour: To match existing
  - Origin: Submit proposals
  - Finish: Refer to Drawing LAB-649-DE-2500
  - Supplier: Submit proposals
  - Quality: Free from vents, cracks, fissures, discoloration, or other defects deleterious to strength/ colour.
  - Size: Refer to Drawing LAB-649-DE-2500
  - Thickness: 100mm (confirm on site)
  - Slip potential
    - Slip resistance value (SRV) (minimum) to BS EN 14231: To be agreed
    - Surface roughness (Rz) (minimum) to BS 1134: To be agreed
    - Ramp test class: To be agreed
- Background/ Base: Contractor to lift existing to confirm
  - Preparation: To be confirmed
- Bedding: Adhesive on cement:sand bed, as clause 720.
  - Adhesive to BS EN 12004-1: Ardex or similar approved - submit proposals
- Joint width: To match existing
- Grout: Submit proposals

General

215 Falls in the bases

- General: Give notice if falls are inadequate.

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: Entrance Paving.
  - Approval of appearance: Obtain before proceeding.

- Floor covering slip resistance testing: As clause 900

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.

320 Existing concrete/ screeds

- Loose or hollow portions: Cut out.
- Making good: 1:3 cement:sand mortar applied over cement slurry bonding coat

355 Old adhesive residues on concrete/ screed bases

- Soft or unsound adhesive residues: Remove without damaging base.

438 Preparing concrete bases for fully bonded bedding

- Surface cement:sand matrix: Remove to expose coarse aggregate.
- Surface preparation: Suitable to achieve a full bond with bedding. Select from:
  - Keep well wetted for several hours. Remove free water then brush in a slurry bonding coat.
    - Slurry: SBR polymer modified cement
  - Prepare, prime as necessary and apply a bonding agent.
    - Bonding agent: BBA certified SBR bonding agent

460 Smoothing underlayment

- Type: Recommended by adhesive manufacturer.
- Condition: Allow to dry before tiling.

Fixing

510 Fixing generally

- Colour/ shade: Unintended variations within tiles for use in each area/ room are not permitted.
  - Variegated tiles: Mix thoroughly.
- Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.
- Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.
- Cut tiles: Neat and accurate.
- Fixing: Provide adhesion over entire background/ base and tile backs.
- Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
- Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

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: Minimize number, maximize 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 Paving around handrail posts : Drawing references: LAB-649-DE-2500.

710 Adhesive bed – notched trowel and buttering method (floors)

- Application: Floated coat of adhesive to dry base and comb surface.
- Tiling: Apply coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
- Finished adhesive thickness: Within range allowed by manufacturer.

711 Adhesive bed – buttering method (floors)

- Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
- Finished adhesive thickness: Within the range allowed by the adhesive manufacturer.

720 Cement:sand mortar bedding (floors)

- Mortar bedding mix: 1:3-4 cement:sand.
  - Consistency: Stiff plastic.
- Laying: Lay suitably small working areas of screeded bed. Compact thoroughly to level.
  - Finished bed thickness
    - For tiles up to 10 mm thick: 10-15 mm.
    - For tiles greater than 10 mm thick: 15-20 mm.
- Tiling: Within two hours and before bedding sets, evenly coat backs of tiles with adhesive. Press tiles firmly into position.
- Finished adhesive thickness: Within range recommended by manufacturer.

Movement joints/ grouting/ completion

875 Grouting

- 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:
- Polishing: When grout is hard, polish tiling with a dry cloth.

885 Coloured grout

- Staining of tiles: Not permitted

- Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.

Performance - Not Used

Ω End of Section

M60
Painting/clear finishing

Coating systems

190 Oil gilding

- Description:
- Surfaces:
  - Preparation:
- Initial/ priming coat:
  - Number of coats:
- Undercoat:
  - Number of coats:
- Base coat:
  - Number of coats:
- Gilding
  - Applicator:
  - Adhesive:
  - Leaf:
    - Quality:
    - Colour:
- Finish coat:
  - Number of coats:
- Other requirements:

195 Special coating

- Description: DECORATIVE IRONWORK TO 1901 BUILDING
- Manufacturer: Sherwin Williams (or similar approved)
  - Product reference: Submit proposals
- Surfaces: IRONWORK
  - Preparation: Remove all loose and defective coatings to minimum St2 standard
- Initial coats: As recommended by manufacturer
- Undercoats: As recommended by manufacturer
- Finishing coats: As recommended by manufacturer (Black colour)

Generally

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. Allocate to distinct parts or areas of the work.

220 Compatibility

- Coating materials selected by contractor
  - Recommended by their manufacturers for the particular surface and conditions of exposure.
  - Compatible with each other.
  - Compatible with and not inhibiting performance of preservative/fire-retardant pretreatments.

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.

300 Control samples

- Sample areas of finished work: Carry out, including preparation, as follows:
- Types of coating Location
- M60/ ……. …….
- Approval of appearance: Obtain before commencement of general coating work.

320 Inspection by coating manufacturers

- General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

Preparation

400 Preparation generally

- Standard: In accordance with BS 6150.
- Refer to any pre-existing CDM Health and Safety File.
- Refer to CDM Construction Phase Plan where applicable.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
- Surface irregularities: Remove.
- Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Oil based stoppers and fillers: Apply after priming.

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.
  - Significant rot, corrosion or other degradation of substrates.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
- 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.

490 Previously coated iron/steel

- Defective paintwork: Remove to leave a firm edge. Clean surfaces to St2 Standard
- Sound paintwork: Confirm Compatibility with Paint Supplier. Provide key for subsequent coats.
- Corrosion and loose scale: Take back to bare metal (St2 Standard)
- Residual rust: Clean to St2 Standard
- Bare metal: Apply primer as soon as possible.
- Remaining areas: Degrease.

622 Organic growths

- Dead and loose growths and infected coatings: Scrape off and remove from site.
- Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
- Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

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.

Ω End of Section

Z21
Mortars

Cement gauged mortars - Not Used

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.

345 Admixtures for hydraulic lime:sand mortars

- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

350 Storage of lime:sand mortar materials

- Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
- Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
- Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
- Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

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.

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.

Ω End of Section