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C41
Repairing/ renovating/ conserving masonry REVISED

Generally/ preparation

10 SCOPE AND OBJECTIVES

1. The section covers:
    1.1. The dismantling and rebuilding of stonework as set out on the drawings and the general repointing of stone walls.
    1.2. See drawings: IOS-PUR-01-ZZ-DR-A-1315 to 1319
2. Objective:
    2.1. To conserve the existing stonework for the next phase of its use and prepare the building for the new works.

40 DESIGN OF STONE MASONRY, STONE REPAIRS AND STONE CLEANING

1. The cleaning, repair and stonework are to be carried out by qualified stonemasons working for an accredited stone masonry company to achieve a high standard of consistent work across the building façade.

50 SUBMITTALS

1. At tender, and in accordance with the contract, submit:
    1.1. Details of the proposed specialist subcontractor and their accreditation.
    1.2. Documentation as Preamble section AP* 70 part 4.1 & 4.2.
2. After tender, and in accordance with the contract and the contractor's programme submit:
    2.1. Details of the proposed works, products and materials to be used and inspection regime.
    2.2. Evidence of the installation team’s qualifications, experience and training.
    2.3. Documentation as Preamble section AP* 70 part 4.3.

106* DISMANTLE EXISTING STONEWORK AND REBUILD

1. This is to be carried out where indicated on drawings IOS-PUR-01-ZZ-DR-A-1315 to 1319.
2. Stone: Reuse existing. Where existing is unsound for reuse, seek instruction.
3. Mortar: C41/221A for bedding and pointing stonework C41/221B for ridge tiles, flaunching and copings.
4. Recording:

4.1. All areas of masonry rebuilding works are to be fully recorded by the contractor using photography and marked up record drawings prior to taking down, noting position of stones, the nature and style of the walling and style of the bedding and pointing. All profiles are to be accurately measured to allow any required replacements to be match accurately.

4.2. All materials resulting from taking down operations are to be carefully handled, salvaged and stored on site. they will remain the property of the Employer until such time as they are instructed specifically for disposal.

5. Releasing:

5.1. Release stones by cutting out jointing material, cutting through anchors, fixings and the like and easing/levering stones from their backing, by adopting such methods necessary to prevent damage to stones being removed and surrounding work.

5.2. Use manual tools only, i.e. chasing chisels and hacksaws. Power tools will not be permitted;

5.3. Lay dust by adequate sprinkling with water;

5.4. Notify the Architect of any signs of structural movement found within walls when stones have been removed.

5.5. Number individual stones on their underside as they are released. Ensure stones are marked clearly but indelibly

5.6. Wash each stone in clean water, scrub off dirt, etc. Set out in courses on adjacent decking.

6. Preparing beds:

6.1. Generally to receive new work.

6.2. Thoroughly clear out void using hand tools and brushes.

6.3. Treat voids with herbicide.

6.4. Temporarily support surrounding work.

6.5. Cut out and remove, label and set aside in store existing corroded cramp/cramps from stone and bed where the removal will not be detrimental to surrounding stonework. If detrimental, to be agreed with the Architect and treated insitu with a Fertan Rust converter

6.6. Provide new stainless steel cramps and fixings to match those removed and fix.

7. Preparation of Stones:

7.1. Thoroughly clean stones set aside/stored for reuse to the approval of the Architect removing any remaining adhering mortar.

7.2. Move and handle stones, loading, unloading and lowering or hoisting into position by adopting such methods necessary to prevent damage to stones.

7.3. Provide to masons copies of all photographs, records, etc. necessary for the accurate resetting of the stones.

8. Laying/Bonding:
   8.1. Ensure that bond, joint size and any other special or unusual features are replicated as recorded and to match existing.
   8.2. Provide and insert stainless steel ties; cramps and dowels as necessary for bonding in the rebuilt work to the surrounding structure.
   8.3. Clean out and flush out or moisten with clean water voids left after removal of stonework (preparation of void) to remove dust and reduce suction.
   8.4. Dampen stones to be reset/rebuilt and tamp into place on a full and even bed of mortar.
   8.5. Pack remaining joint with mortar using a rammer and pointing key.
9. Joint treatment/finish:
   9.1. Finish joints ensuring consistency of colour, texture, profile, and overall appearance to match the existing surrounding mortar.
   9.2. Set joint face flush with the face of stonework unless:
      - this is at difference with the existing surrounding mortar, and/or
      - the joints are very wide or arises are broken; and/or
      - the Architect instructs otherwise.
   9.3. Where masonry arises are eroded, set joint face further back, but avoiding the creation of ledges, which may trap or hold water.
   9.4. In order to match the existing texture:
      - Carry out such surface treatments as water spraying and bristle brush stippling after the mortar has achieved an appropriate surface set (this may vary according to season)
      - Bristle brush stippling should be carried out by tapping the brush into the mortar.
   9.5. Tend all mortar as described in C41*/126A.

110 SCOPE OF WORK

1. Inspection: Arrange before starting work. Confirm type and extent of work required.
2. Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
3. Identification of masonry units to be removed, replaced or repaired: Mark each unit clearly and indelibly on the underside as above, indicating its original position in the construction. Transcribe makings to drawings/ photographs.

120 SITE INSPECTION

1. Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.
2. Parties involved: CA, Architect, Contractor's representative, Subcontractor's representative and Foreman mason if different people, Structural engineer.
3. Timing: At least two weeks before starting work.
4. Instructions issued during inspection: To be confirmed in writing in accordance with the contract.

125 REMOVAL OF FITTINGS/ FIXTURES

1. Items to be removed, and reinstated on completion of repair work: All ferrous cramps and fixings exposed during works are to be carefully removed and replaced with stainless steel cramps and dowels following inspection by the Architect and structural engineer. Minimise disturbance to surfaces.
    1.1. Removal: Carefully release existing cramps using hand tools avoiding damage to adjoining stonework and set aside for recording.
    1.2. Treatment following removal: Infill redundant holes with NHL 3.5 lime mortar.
    1.3. Treatment of fixed (ferrous) items insitu: If old cramps cannot be removed without damaging adjacent stonework they are to be treated. Wire brush and treat with 2 coats of Fertan Rust Converter.
    1.4. Reinstatement: Where agreed in accordance with the contract, supply and fix new cramps made of 5mm stainless steel threaded bar, bent to shape and inserted 60mm in pre-drilled holes. Fix new cramps with resin.

126* RAKE OUT, PREPARE & REPOINTING OF STONEWORK REVISED

1. This is to be carried out where indicated on the drawings IOS-PUR-01-ZZ-DR-A-1315 to 1319.
2. Mortar for pointing: C41/221A
3. Sequencing: Work from top of wall downwards
4. Rake out mortar:
    4.1. Existing pointing to be carefully raked out to a depth of 2.5 times the joint width - typically 40mm deep (for 16mm wide joint) but where joints are narrower, the depth can be shallower; where joints are wider, joints should be raked out to a depth of 50mm (max) to avoid undermining the stones, and small pieces of granite should be set in the joint to reduce the joint width. Use chisels or hacksaw blades of appropriate width so as not to damage existing arises and flush out with water. **No power tools are permitted to be used**. Rake out all decayed or friable lime mortar and leave a clean and square prepared face of existing sound mortar.

5. Cement removal: Remove cement patch repairs and renders using hand tools. This is best achieved by continual gentle tapping with a hammer at the centre of the repair/render until the different mechanical properties between the stone and the cementitious mix causes the two to part without damage. The process is lengthy and time should be allowed for it. Care is to be taken to avoid damage to edges of sound stone. If cement cannot be removed without damaging the stone it should be retained and reviewed by the Architect. Remove cement pointing using hand tools using as quirks or narrow chisels, proceeding only if the hard mortar can be removed without damaging the stone. Clean out joints using dry air sprays or stiff bristle brushes.
6. Joint treatment/finish: (Placing Mortar):
    6.1. All original joint lines are to be maintained.
    6.2. Any deep tamping mortar to be applied first to deep voids and packed well in to the joints, leaving a square face 20mm from final surface.
    6.3. Apply final pointing using fine pointing tools. Take great care to avoid lime staining to the ashlar. Joint lines to ashlar repairs should be kept, and pointed as for sound stone. Other joints, e.g. window architraves, to be drawn in to match existing joints.
    6.4. After the initial set has taken place, brush joints to remove laitance/ excess fines and give a coarse texture. Do not compact mortar.
    6.5. Repairs to be kept damp and protected from frost, wind and direct sunlight to prevent rapid drying out and subsequent cracking, shrinking, and failure. The mortars in joints should be kept damp and covered with wet hessian for a minimum of three days. The hessian should be covered with polythene sheeting over the three days. The areas should be checked and if drying out the hessian and the mortar should be wet up using a light spray. Particular attention needs to be paid to overnight protection. Avoid and take care not to allow run off as lime mortar causes stains which are invisible until they have dried out. Ensure ashlar arises are crisp and sharp matching the original quality.
    6.6. Fine ashlar joints: Apply plastic faced adhesive tape over the joint to prevent smearing of mortar during pointing. Create incision on the tape through the joint. Press mortar into the joint using a pointing iron. Remove adhesive tape. Trials with tape product are to be undertaken before proceeding to ensure the tape leaves no residual adhesive on the stone faces. Repairs to be tended between applications, and each stage allowed to go off to a leathery consistency but still green before application of the next coat.

130 REMOVAL OF PLANT GROWTHS FROM MASONRY

1. Plants, root systems and associated soil/ debris: Treat with herbicide, allow to die and carefully remove from joints, voids and facework as indicated on drawings.

2. Removal of roots: Where growths cannot be removed completely without disturbing masonry seek instructions.
3. Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.

Workmanship generally

150 POWER TOOLS

1. Usage for removal of mortar: Not permitted without written permission of the Architect

160A HANDLING AND PROTECTION

1. Handling of masonry units: Prevent overstressing during transit, storage and fixing. Lift units at designed lifting points where provided.
2. Storage of masonry units: On level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination by salts and other deleterious substances.
3. Protection of masonry: Suitable non-staining slats, boards, etc. Remove at completion.
4. Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces.
5. Prevent mortar/ grout splashes and other staining and marking.

165 STRUCTURAL STABILITY

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

170 DISTURBANCE TO RETAINED MASONRY

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

180 WORKMANSHIP

1. Skill and experience of site operatives: The work described in this section should be carried out by a qualified heritage stonemason working in accordance with clause 101* above.
    1.1. Documentary evidence: Submit on request.
2. Workmanship generally

2.1. Joints in new work to match existing. Rake out while setting and point on completion.

2.2. Store dressed stone clear of the ground, protect from inclement weather and keep dry. Prevent soiling, chipping and contamination by salts and other deleterious substances.

2.3. Dampen stones and lay on a full even bed of mortar with all joints filled. Use temporary lead or stainless steel distance pieces to ensure consistent with joint width; remove when mortar is sufficiently strong.

2.4. Keep courses level and in line, and accurately plumb all wall faces, angles and features. Set out carefully to ensure satisfactory junctions and joints with adjoining or built-in elements and components.

2.5. Keep stonework clean during construction and until Practical Completion. Ensure that no mortar encroaches on face when laying. Turn back scaffolding boards at night and during heavy rain.

2.6. Rubbing to remove marks or stains will not be permitted.

2.7. Construct and lay in accordance with BS 5390 (superseded but still relevant) BS 5628-1 & 3 (withdrawn but still relevant) and relevant parts of BS 8298-2 and BS EN 1996-1-1.

2.8. Mitred angles not to be used.

2.9. Hoist stones carefully into position to avoid damage. Make provision for Lewises for large or heavy stones

3. General sequence of repairs to masonry: Pointing, consolidation and localised renewals

3.1. Agree repair type with Architect and according to drawings and/or schedule of work

3.2. Rationalise repair area by de-scaling unsalvageable material and removing inappropriate/failing mortars

3.3. Confirm repair types with CA / Architect following rationalisation exercise and update drawing

3.4. Remove metal inserts, cramps etc. if not to be retained

3.5. Treat any metal inserts to be retained

3.6. Agree type(s) of mortar according to repair context and samples

3.7. Repoint open joints. Precede with deep packing/tamping/grouting if necessary

3.8. Carry out any lime-based consolidation as required

3.9. Carry out renewals if required: photograph areas to be repaired

3.10. Deep point joints for depth of repair and grout any voids

3.11. Carry out final cleaning down and complete 'as-built' record

185 ADVERSE WEATHER

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

190 CONTROL SAMPLES

1. General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: each type of repointing and repair.
2. Allow to prepare minimum 1m² sample panel of each requested control sample.

Materials/ production/ accessories

215 MATERIAL SAMPLES

1. Representative samples of designated materials: Submit before placing orders, including any replacement stonework.
2. Retention of samples: Unless instructed otherwise, retain samples on-site for reference. Protect from damage and contamination.

220 RECORDING PROFILES

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

221A - Mix 1 - General lime mortar for pointing MORTAR

1. Mix: 1.6 : 0.4 :4 Hydraulic Lime : Trass : Sand Aggregate
2. Samples of the mortar are to be prepared for approval by the CA (minimum 1m²) not less than 4weeks prior to commencement of this work section.
3. Source:
   3.1. Lime: St Astier, NHL 3.5

3.2. Trass: From Cornish Lime https://cornishlime.co.uk/

3.3. Sand Aggregates: Locally sourced and selected to achieve as close as possible match to the existing scraped back mortar as possible, adjusting the mix accordingly and adding additional aggregates where necessary.

221B - Mix 2 - Lime mortar for high level and bedding MORTAR

1. Mix: 1.6 : 0.4 :4 Hydraulic Lime : Trass : Sand Aggregate
2. Samples of the mortar are to be prepared for approval by the CA (minimum 1m²) not less than 4weeks prior to the commencement of this work section.
3. Source:
   3.1. Lime: St Astier, NHL 5
   3.2. Trass: From Cornish Lime https://cornishlime.co.uk/
   3.3. Sand Aggregates: Locally sourced aggregate subject to approval following approval of sample panels.

221C - Mix 3 - Lime mortar for grouting MORTAR

1. Mix: 1.3 : 0.7 : 4 Hydraulic Lime : Trass : Sand Aggregate
   1.1. Note: This mix is that of C41/221B adjusted such that 20% of the binder (NHL) is substituted with Trass.
2. Samples of the mortar are to be prepared for approval by the CA (minimum 1m²) not less than 4weeks prior to the commencement of this work section.
3. Requirement for this work to be confirmed following site review at commencement of contract.
4. Source:
   4.1. Lime: St Astier, NHL 2
   4.2. Trass: From Cornish Lime https://cornishlime.co.uk/
   4.3. Sand Aggregates: Locally sourced aggregate subject to approval following approval of sample panels.

221D - Mix 4 - Surface Repairs to Stonework STONE

1. For protecting laminated surfaces / reinstating profiles up to a depth of 5mm on faceted / moulded / carved stonework. Cavities deeper than 5mm are to be dubbed out using Mix 1 followed by Mix 4.
2. Mix: 1 : 3: 0.75 NHL: Sand Aggregate : Trass
3. Requirement for this work to be confirmed following site review at commencement of contract.
4. Gauging: Washed well graded sand, gauging to be confirmed following site trial.
   4.1. Lime: St Astier, NHL 2

4.2. Trass: From Cornish Lime https://cornishlime.co.uk/

4.3. Sand Aggregates: Locally sourced aggregate subject to approval following approval of sample panels.

250 STONE ORIENTATION

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

Dismantling/ rebuilding

310 DISMANTLING MASONRY FOR REUSE

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

Replacements and insertions

330 PREPARATION FOR REPLACEMENT MASONRY

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

385 LAYING REPLACEMENT MASONRY UNITS

1. Position: In the exact position as previously occupied by the original stones and as recorded.
2. Features: Ensure that the bond, joint size and any other special or unusual features are replicated as recorded and to match existing
3. Preparation: Clean out and flush out or moisten with clean water voids left after removal of stonework to remove dust and reduce suction
4. Exposed faces of new material: Keep to agreed face lines.

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

Tooling/ dressing stone in situ - Not Used

Mortar repairs

540 APPLYING MORTAR

1. Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
2. Raking out: By hand, carefully remove all failed or cementitious pointing from joints back to sound material, and to a depth of at least 40mm or a depth of 2.5 times the joint width, which ever is greater. Carefully remove any similar material from the faces of stone at the same time
3. Preparation: Before commencing any form of lime work, thoroughly wet the masonry and joints with potable water using a hose. No joint should be pointed dry
4. Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
5. Finishing mortar coat: Form accurately to required planes/ profiles, and finish slightly below the edge of the stonework to ensure the arrises are fully readable. Make the joint surface open textured and as course as possible.
6. Protection: Periodic dampening of the wall is essential. After initial set has taken place stipple face with hessian rag, brush stump or stick to expose the aggregate. Protect the work with hessian or polythene, especially during warm, windy or cold conditions.

Crack repairs/ ties/ reinforcement

610 MORTAR REPAIRS

1. Description: Repoint all cracks in stonework
2. Mortar: As section Z21.
   2.1. Mix: As C41*/221A
3. Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
4. 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.

640 PINNING

1. Description: Grade 316 stainless steel pins for attaching or stabilizing detached, loose or cracked masonry units by pinning with dowels bonded with resin.
2. Dowels/ Pins
    2.1. Standard: To BS EN 1090-1
    2.2. Type: Austenitic stainless steel threaded rods
    2.3. Diameter: 6 mm
    2.4. Additional requirements: Penetration into background not less than 100 mm
3. Resin: Low viscosity resin to approval
4. Holes: Drill carefully, sloping downwards into background. Remove drilling dust and debris and keep dry.
5. Filling holes
    5.1. Check that dowel lengths are correct before filling with resin.
    5.2. Use sufficient resin so that when the dowel is inserted the resin is dispersed to achieve an effective repair.
6. Exposed faces: Keep clean and free from resin stains
7. Clearances: Keep ends of ties and resin back from face of masonry
8. Making good after resin has cured: Fill cracks with hydraulic lime slurry and point any drill holes with lime mortar as C41*/221A

Grouting rubble filled cores - Not Used

Pointing/ repointing - Not Used

Ω End of Section

C51
Repairing/ renovating/ conserving timber

General

10 SCOPE AND OBJECTIVES

1. The section covers:
    1.1. Repairs to the timber ceiling in the main Town Hall building. See drawing: IOS-PUR-01-02-DR-A-2402.
    1.2. Repairs to the timber panelling in the main Town Hall. See drawing: IOS-PUR-01-ZZ-DR-A-1315.
    1.3. Repairs to the trusses in the main Town Hall.
    1.4. For any fungus/beetle eradication please refer to section C52
2. Objective:
    2.1. To retain the building's heritage, reduce material use and provide the desired finish.

110 INSPECTION

1. Purpose: To confirm nature and extent of cleaning and renovation / conservation work shown on drawings.
2. Parties involved: Contract Administrator / Architect, Structural Engineer.
3. Timing: At least 4 weeks before starting work - contractor to give notice of opening up works to allow inspection of concealed roof timbers to be undertake at earliest opportunity.
4. Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work.

150 TIMBER PROCUREMENT

1. In accordance with AP* 060

Structural repairs/ alterations - Not Used

Products

360 SOFTWOOD FOR JOINERY REPAIRS

1. Description: Further to C51/365
2. Species: Douglas Fir - confirm with CA. See also C51/110 Inspection.

3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
    3.1. Appearance class: Class J2 for glazing beads, drip mouldings and the like. J30 or better for all other members. Knots or arrises not permitted where exposed to view.
4. Treatment: Organic solvent to NBS section Z12 and Wood Protection Association Commodity Specification C8. Service life 60 years. Pre-treat where required for decay as C52.
5. Moisture content on delivery: 13-19%

365A TIMBER REPAIRS TO DAMAGED INTERNAL JOINERY

1. Items/locations: Shutters, skirtings, dado, architraves, wall panelling, cills.
2. Defective/damaged timber: Cut out to clean, regular profile.
3. Replacement timber
    3.1. To match existing timbers, carvings, and profiles - submit representative examples. Species Douglas Fir - see C51/360.
    3.2. Dimensions: To match that which is being repaired.
    3.3. Length/quantity: Refer to BoQ; exact length to be confirmed on site and is to conserve as much of the original timber as possible.
4. Fixing to existing timber
    4.1. Reinstate joints to match existing.
    4.2. Glue and clamp using ss countersunk screws; sized to suit application.
    4.3. Mitre with existing.
5. Decoration: to match adjacent finish - confirm with CA; refer to drawings and M60.

365B TIMBER REPAIRS TO DAMAGED SARKING

1. Items/location: Sarking boards generally.
2. Inspection: See C51/110. Confirm extent of required repairs with CA.
3. Defective/damaged timber: Cut out to clean, regular profile.
4. Temporary support: As required - see C51/610.
5. Replacement timber
    5.1. Consult Structural Engineer. To match existing - submit representative examples. Species Douglas Fir - see C51/360.
    5.2. Dimensions: To match existing.
    5.3. Length/quantity: Exact length to be confirmed on site and is to conserve as much of the original timber as possible.
6. Fixing to existing timber

6.1. Reinstate joints to match existing.

6.2. Fix using appropriate ss fixings.

365C TIMBER REPAIRS TO DAMAGED STRUCTURAL ELEMENTS

1. Refer to Structural Engineer's information.
2. Items/location: Structural timbers generally.
3. Inspection: See C51/110. Confirm extent of required repairs with CA and SEng.
4. Defective/damaged timber: Cut out to clean, regular profile or as directed to achieve required repair joints.
5. Temporary support: As required - see C51/610.
6. Replacement timber
   6.1. Consult Structural Engineer. To match existing - submit representative examples.
   6.2. Dimensions: To match existing.
   6.3. Length/quantity: Refer to BoQ; exact length to be confirmed on site and is to conserve as much of the original timber as possible.
7. Fixing to existing timber
   7.1. Reinstate joints to match existing.
   7.2. Fix using appropriate ss fixings.

370 HARDWOOD FOR JOINERY REPAIRS

1. Description: Further to C51/365
2. Species: Oak
3. Quality: Generally to BS EN 942; free from decay and insect attack (except pinhole borers).
   3.1. Appearance class: Class J2 for glazing beads, drip mouldings and the like. J30 or better.
4. Treatment: None required
5. Moisture content on delivery: 13-19%

470 FIXINGS

1. Description: All fixings to be stainless steel Grade 316.

Execution

600 WORKMANSHIP

1. Skill and experience of site operatives: Appropriate for types of work on which they are employed.

1.1. Documentary evidence: Submit on request.

610 TEMPORARY SUPPORTS/ PROPPING

1. General: Provide adequate temporary support at each stage of repair work to prevent damage, overstressing or uncontrolled collapse of any part of the structure.
2. Bearings for temporary supports/ propping: Suitable to carry loads throughout repair operations.

620 PROTECTION OF TIMBER AND WOOD COMPONENTS BEFORE AND DURING INSTALLATION

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

630 MATERIAL SAMPLES

1. Representative samples of designated materials: Submit before placing orders.
   1.1. Designated materials: All timbers visible in the finished works.

650 DIMENSIONS GENERALLY

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

660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD

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

665 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL SOFTWOOD

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

670 CROSS SECTION DIMENSIONS OF NON-STRUCTURAL HARDWOOD

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.

2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-2:
    2.1. Clause 6 for sawn sections.
    2.2. Clause NA.3 for further processed sections.

690 PROCESSING TREATED TIMBER

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

710 REUSE OF TIMBER SECTIONS/ WOOD COMPONENTS

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

750 CLEANING DIRTY OR STAINED WOOD

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

860 MOISTURE CONTENT CHECKING

1. Procedure: Check moisture content of timber sections with an approved electrical moisture meter.
2. Test results: Keep records of all tests. If moisture content falls outside specified range, obtain instructions.

870 MOISTURE CONTENT TESTING

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

Completion - Not Used

Ω End of Section