Heaton Park Farm Centre

Roof and Fabric Repair Works

Specification

September 2026



KEPCZYK SANDERSON + ASSOCIATES
ARCHITECTS | SURVEYORS | HISTORIC BUILDING CONSULTANTS

HEATON PARK FARM CENTRE : SPECIFICATION

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A35 SCAFFOLDING

A35 SPECIFIC LIMITATIONS ON METHOD/SEQUENCE/TIMING

140 ACCESS TO THE SITE:

By agreement with the Client and the Heaton Estate at Manchester City Council

150 USE OF THE SITE:

By agreement with the client

155 SCAFFOLDING:

Ensure that standing scaffolding is erected and dismantled in sufficient time for the works to be carried out in accordance with the contract programme, and to meet any restrictions in terms of usage of the site by the client. The security of the building is paramount at all times.

This specification is to be read in conjunction with the contract Preliminaries, Kepczyk Sanderson + Associates drawings REF:2225 and all attached documents.

The contractor may propose an alternative arrangement for the consideration and approval of the Employer and Design Team.

180 SCAFFOLDING:

The contractor is to submit a brief method statement and outline drawing with his tender which describes the nature and location of the proposed scaffolding, having taken careful consideration of the materials and construction of the church:

- Scaffolding is to be designed and constructed in accordance with appropriate British Standards and Codes of Practice and Health & Safety Executive guidance.
- Cornices, hood moulds and other projecting architectural features, and walls cannot be used for support.
- The use of resin anchors is to be avoided unless the architect's express permission is given. Any such fixing is to be a stainless steel "socket" type. Any fixing must have pull out tests prior to adoption for this project. The fixing loadings are to be determined by the scaffolding designer. Pull out tests must be undertaken prior to erection to confirm design assumptions and adjustments should then be made to the design where necessary.
- It must be the aim of the team including scaffolding operatives to keep physical fixings into the building to an absolute minimum. All fixings are to be removed upon completion and the building fabric properly and sympathetically repaired to the satisfaction of the architect.
- After his appointment and no later than 14 days before commencement on site the contractor shall present his design for the scaffolding to the Architect for approval. The Architect will seek the advice of a structural Engineer to check the design and to require amendments where he considers the design inadequate in terms of location, safety, and serviceability.
- All surfaces used for support must be capable of safely transmitting the loads placed upon them and must be protected against abrasion, impact, or any other damage. All tubes placed within 25 mm of the face of the building are to be fitted with double plastic caps to prevent damage by abrasion, with single caps to tubes within 300mm.

- The contractor shall examine the suitability of the existing ground and structures and must satisfy himself of their ability to support the loads anticipated. Scaffold bases/foundations should be on firm, level ground. Specific agreement will be required from the Architect and Structural Engineer before any scaffolding can be supported / propped from roofs, or other elements of the church fabric.
- Where scaffold bearing onto roofs is considered to be the only reasonably practicable option allowance should be made for adequately spreading the load and applying loads to suitable structural members, to be agreed with the Structural Engineer and Architect. Proposals are to be submitted for approval, allowing sufficient notice, and the contractor should assume and allow for the need for reasonable adjustments.
- Should access be required over the Nave roof for erecting and dismantling, the scaffold should be designed to avoid loading the roof. Proposals are to be submitted for approval.
- Adequate protection is to be provided to roofs and roof finishes where access is unavoidable, or in the vicinity of adjacent works. Particular attention should be paid to protection against damage to roofs and the safety of persons below.
- Temporary weatherproof enclosures are required to areas exposed during the works. All rainwater must be directed away from the building using temporary gutters, rainwater pipes. As the existing roof finishes and deck are to be removed a temporary roof should be considered, if not the contractor should submit proposals for keeping the structure weathertight throughout the duration of the works.
- The base of the scaffold it is to be secured to a height of 4.0m from the ground level to prevent unauthorised access by steel sheeting, 'Hoardtek', 18mm plywood sheeting, or other agreed material, secured at all edges.
- Ensure that all ladders from ground level to a height of 4 m are removed and locked away at the end of each working day.
- The scaffold should be alarmed, see 'Prevention of Unauthorised Access to the Scaffolding', drawing 2225..
- All scaffolding must also be protected with green debris netting or other approved. The scaffolding is to be designed to take account of the sheeting.
- It will be necessary to use the scaffold for hoisting materials to the required level and as a working platform upon which items can be stored after dismantling and/or prior to reincorporation.
- Agree design loading with contractor or greater if required by contractor.
- Lifting gear should be capable of safely carrying objects up to 500 kg in weight.
- The use of 'ladder' or 'unit' beams is permitted provided they conform to the manufacturer's recommendations and the Structural Engineer approves of their use. Such beams should be adequately braced and restrained.
- Allow for erecting, adapting and dismantling the scaffold as work proceeds to meet the contract programme.
- Proprietary couplers must be used between any wall channels and scaffold units.
- The contractor shall ensure that a competent person inspects all materials to be used for any scaffold prior to erection and inspect the completed scaffolding within seven days of erection and prior to use. Further inspections shall be carried out within seven days of any alteration to the scaffolding and prior to use. Regular inspections are to be carried out whilst the scaffold is in use and all statutory requirements are to be satisfied.
- Working platforms will be required around all elevations, with sufficient lifts to enable full repointing and masonry cleaning down to the base of the string course around the parapet, and, on the south side of the east face, down to roof level to allow replacement of rainwater goods and cleaning of staining from the masonry.
- Ladder accesses are to be built within the scaffold to the full height.
- The contractor is to ensure safe access and egress to the buildings is maintained, specifically to the Courtyard and The Stables Café.

180A NON STANDARD OR COMPLEX SCAFFOLDS

For non-standard or complex scaffolds

NB for the purpose of this clause, non-standard or complex scaffolds are scaffolds that do not conform to any nationally recognised configuration.

1. The scaffold provider shall deliver preliminary drawings to the Architect and Structural Engineer prior to erection starting on site. Drawings issued for this purpose shall not be classed as contract drawings. These drawings shall be marked 'preliminary for information only' ("preliminary drawings"). All such preliminary drawings shall include a plan and elevation of each face of the scaffold with:
   - The loads in each standard clearly shown;
   - All tie positions and the load to be applied at each tie position clearly shown;
   - The number of working lifts and the maximum permissible load on each working lift clearly stated; and
   - Details of the support for the scaffold at its base or, in the case of slung or suspended scaffolds, details of the support at the point from which it is slung or suspended, and details of the proposed tying and restraint method or methods.
2. The scaffold provider shall not assume:
   - that any surface that the scaffold is supported from is capable of taking the loads to be applied by the scaffold; and
   - That any roof or suspended slab is capable of supporting scaffolding or access loading, and
   - That any façade is capable of providing the necessary resistance required for tying the scaffold to the facade.

Where the requirements for the scaffold stated on the drawings cannot be verified by the design team, the scaffold provider shall make all the necessary arrangements to obtain the information necessary to support any assumptions made in the design and amend the design accordingly.

The Architect and Structural Engineer undertake to review these drawings and provide comments within 5 working days of receipt.

The scaffold provider shall provider shall review and incorporate where appropriate the design team's comments and reissue the drawings marked up as working drawing. The design remains the responsibility of the scaffold provider at all times.

3. The scaffold provider is to comply with the requirements of design checking by an independent competent person in accordance with BS5975:2008.

C20 DEMOLITION

5 SURVEY

- Scope: Before starting work, carry out a survey and submit a report and method statement covering the following:
  - Form, condition and details of the structures, site and surrounding area. Extent: As indicated and noted on the tender drawings.
  - Condition and demolition methods and sequences for the structures.
  - Removal methods of hazardous materials.
  - Form, location and removal methods of materials for reuse or recycling.
  - Type and location of adjoining or surrounding premises which may be adversely affected by the Works.
  - Type and location of features of historical, archaeological, geological or ecological importance.
  - Identification, location, disconnection and removal of services.
  - Arrangements for protection of personnel and the public.
  - Arrangements for control of site transport and traffic.
  - Special requirements: Structural calculations in support of method statements.
- Format of report: paper submission, with supporting dilapidations photographs. Photographs to be issued on disc to the client / CA.

10A EXTENT OF DEMOLITION

- General: Remove existing pitched and flat roof coverings and gutters as indicated on architect's drawings, and cart away. Take down any stone corbel necessary to execute the removal works and store for refurbishment/repairs and reinstatement. Remove the existing cast iron hoppers and rainwater pipes and cart away to allow forming new chute outlets through the parapet wall with lead spigot connections through the refurbished hoppers direct to the head of the new / refurbished rainwater pipes.

15 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found.

- Do not remove or destroy.

20 FEATURES TO BE RETAINED

- General: In addition to features to be removed and reinstated as identified Clause 10A keep in place and protect the following: All existing ornamental stonework.

25 LOCATION OF SERVICES

- Services crossed by the Works: Locate and mark positions.
- Mains services: Arrange with the appropriate authorities for locating and marking positions.

30 DISCONNECTION OF SERVICES ARRANGED BY CONTRACTOR

- Responsibility: Before starting demolition arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment.

35 DRAINS IN USE

- General: Protect drains and fittings still in use and keep free of debris.
- Damage: Make good damage arising from demolition work. Leave clean and in working order at completion.

40 BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the same and adjoining properties.
- Notice: Give adequate notice to occupiers if shutdown is necessary.

45 SERVICES WHICH ARE TO REMAIN

- Damage: Give notice and notify the service authority or owner of damage arising from the execution of the Works.
- Repairs: Complete to the satisfaction of service authority or owner.

50 WORKMANSHIP

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

55 SITE HAZARDS

- Precautions: Prevent fire or explosion caused by gas or vapour: Prevent.
- Dust: Reduce by periodically spraying with an appropriate wetting agent.
- Site operatives and general public: Protect from vibration, dangerous fumes and dust arising during the course of the Works.

60A ADJOINING BOUNDARY WALLS

- Temporary support and protection: Provide at each stage.
- Damage: Prevent. Promptly repair. Leave no unnecessary or unstable projections.
- Support to foundations: Do not disturb.
- Defects: Report when defects exposed or becoming apparent.

65 STRUCTURES TO BE RETAINED

- Parts which are to be kept in place: Protect.
- Extent of work: Cut away and strip out the minimum necessary.

70 PARTLY DEMOLISHED STRUCTURES

- General: Leave partly in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Keep safe outside working hours.
- Debris: Prevent from overloading scaffolding platforms.
- Unauthorized persons: Prevent access.

71 DANGEROUS OPENINGS

- General: Illuminate and protect as necessary.

76 ASBESTOS CONTAINING MATERIALS

- Discovery: Give note immediately of suspected asbestos containing materials discovered. Avoid disturbing such materials and submit details of methods for safe removal. Arrange for 'Refurbishment and Demolition' survey of the work area prior to commencement

78 UNFORESEEN HAZARDS

- Unrecorded voids, tanks, chemicals, etc discovered during demolition: Give notice.
- Method for safe removal: Submit proposals.

85 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site tidy on completion.
- Special requirements: Set aside remnants of removed features to inform replacement.

91 EMPLOYER'S PROPERTY

- Components / materials to remain the property of the Employer: Description: Existing feature stonework/brickwork, metal brackets etc.
- Protection: Until removed by the Employer, reused in the Works or end of the Contract.
- Specific limitations: None.

C40 CLEANING MASONRY / CONCRETE

GENERAL/ PREPARATION

110 SCOPE OF WORK

Cleaning of organic growth from masonry where necessary in connection with the works to stonework and brickwork.

120 RELATED REPAIR AND REMEDIAL WORKS

Work to be carried out before cleaning work: Execute any necessary repairs to stones as identified on the tender drawings and review following installation of the access scaffolding, and to the techniques as described in Section C41. All pointing to be carried out following completion of the cleaning works.

142 REMOVAL OF FITTINGS

- Timing: Before commencement of cleaning work.
- Disturbance to surfaces: Minimize.
- Items for disposal: Any bracketry and other redundant fixings, cable clips, bobbins etc.
- Items to be kept for reuse: Metal brackets associated with features / fittings to be retained and modified to suit new gutter profile.

160 PROTECTION

- Surfaces not designated for cleaning: Prevent damage, including marking and staining.
- Openings: Prevent ingress of water, cleaning agents, and detritus.
- Vents and grilles: Seek instructions before sealing up.
- Temporary mechanical fastenings:
    - In masonry: Locate in joints.
    - In other surfaces: Seek instructions.
- Additional protection: stairs around the building and means of escape, café and office furniture, courtyard and outdoor furniture, glass to windows and doors, kitchen and office equipment, workshop areas, hay loft areas: Contractor to submit proposals / method statements for CA approval.

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

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

190 CLEANING GENERALLY

- Operatives: Appropriately trained and experienced for each type of cleaning work.
  Evidence of training: Submit on request.

- Control of cleaning: Confine cleaning processes and materials to designated areas. Prevent wind drift.
- Detritus: Remove regularly. Dispose of safely.
- Monitoring: Frequently check results of cleaning compared to approved trial samples. If results established by trials are not achieved, seek instructions.
- Modifications to cleaning methods and materials: Seek instructions.

215 RECORD OF CLEANING WORKS

- Written report: Record cleaning methods and procedures used for each type of surface and deposit.
  Content: Relevant attributes of cleaning methods used including:
  - Equipment and settings.
  - Dwell times.
  - Number of applications.
  - Ambient temperatures.
- Additional documentation: Mark cleaned areas on drawings for record purposes and bind into report.
- Submission: At completion of cleaning works.

230 TRIAL SAMPLES

- Trial sample reference: To be confirmed on site.
- Surface: Lime mortar to brick walls, new bricks to match existing, slates type, size and colour.
- Location/ Size: To be confirmed on site by CA.
- Type of soiling: Moss, algae, lichen and other organic growth, Bird detritus, localised areas where carbon deposits have built up.
- Cleaning methods: Steam ('DOFF' system), possibly followed by other (chemical poultice) in localised areas where calcium from bird detritus has drawn into the stone/brick.
- Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

PRODUCTS/ EQUIPMENT

312 SURFACE BIOCIDES

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

352 STEAM CLEANING EQUIPMENT

- Manufacturer: Contractor's choice of suitable licensed products / applicators to CA approval.
  Product reference: 'DOFF' system to be used throughout.

362 CHEMICAL AGENTS PACKS / POULTICES

- Manufacturer: Stonehealth.
  Product reference: 'Calcimex'.

APPLICATION

412 REMOVAL OF LOOSELY ADHERED DEPOSITS

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

482 STEAM CLEANING

- Surfaces: Prevent damage, including abrasion.

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

500 CHEMICAL CLEANING

- 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.
- Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

C41 REPAIRING / RENOVATING / CONSERVING MASONRY

110A SCOPE OF WORK

- Schedule: Repairs to roofs and fabric of the building including repair works to windows, doors and gates, improvements of sewage and drainage systems.
- Final scope to be determined by joint inspection on site when scaffold access is afforded.

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: Contractor and Architect / Contract administrator.
- Timing: At least 10 working days before starting each section of work.
- Instructions issued during inspection: Confirm in writing, with drawings and schedules as required, before commencing work.

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.

WORKMANSHIP GENERALLY

150 POWER TOOLS

- Usage for removal of mortar: Permitted only with prior approval.

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:

Repointing – for each different type of mix/ pointing profile/ finish prepare sample areas of approximately one square metre; first stage approval – after preparation; second stage approval – after repointing. Pointing sample to include a 1:3 lime (NHL 3.5) : Sand (Nosterfield / Waddington Fell or Leighton Buzzard) for consideration. NOTE: for copings and ridges use NHL 5 due to exposed marine environment.
Alternatively consider a suitable hot lime mix, to be confirmed by analysis of any assumed original areas identified on site.

MATERIAL/ PRODUCTION/ ACCESSORIES

215 MATERIAL SAMPLES

- Representative samples of designated materials: Submit before placing orders.

- Designated materials: Sands for bedding and pointing. New stone to match existing sandstone.

- 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 replacements to be matched accurately.
Recording in situ: If there are no suitable joints for inserts, seek instructions.
Drawings and templates: Prepare as necessary, clearly and indelibly marked to identify use and location.

240 STONE FOR GENERAL WALLING, FEATURES, AND CARVED WORK

Type: buff-yellow to light cream tone with a smooth ashlar finish sandstone to string courses, corbel stones, plinth stones , all to match original. Contractor to offer samples for approval.
Requirements: Free from vents, cracks, fissures, discolouration, or other defects which may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
Finish: Smooth / tooled Ashlar dependent on location and to match existing.
Supplier: Contractor to submit samples to CA for approval to match as closely as possible the original

245A REPLACEMENT STONE UNITS

Minimum bed depths and agreed face lines in relation to existing work: Maintain. Make suitable allowances for any final finishing carried out in situ.

Sizes and profiles: To match existing masonry; existing joint widths maintained.
Sinkings for fixings and joggles: Accurately aligned and positioned in relation to existing masonry. Provide sinkings for lifting devices.
Marking: Each block/ dressing clearly marked on a concealed face to indicate the natural bed and position in the finished work. Stones are to be cut so that they are laid on bed and at right angles to the line of thrust in arches. Face bedded units are not permitted without prior consent of the CA.

255 ASHLAR BLOCKS/ DRESSINGS
Cutting and dressing stone: To true and regular surfaces, free from hollow or rough areas.

281A FIXINGS FOR REPLACEMENT STONEWORK
Procurement: Selected by the specialist contractor/ supplier. Submit details of proposed fixings and agree with structural engineer if considered necessary.
Material: All dowels and cramps to parapet copings and for use in general walling to be austenitic stainless steel.
Type, size, strength and number: As necessary to resist all loads likely to occur during the life of the building, and to prevent any lateral displacement or pulling apart of the construction.

REPLACEMENTS AND INSERTIONS (IF NECESSARY)

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 completely.
Recesses: Thoroughly clean to remove loose material and leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather.

340A REPLACEMENT OF STONE: PLAIN ASHLAR, FULL BLOCK
Stone: Limestone / sandstone, as clause 240.
Bedding depths: To match existing, assume 150 - 200mm.
Mortar: As section Z21.
- Mix: As clause 320.
- Sand source/ type: As clause 320.

Fixings: Stainless steel dowels / cramps if considered necessary, as clause 281.
Joints: As clause 320.
Other requirements: Carefully cut out walling stone / ashlar block, in one piece if possible, and insert new stone on 1:3 lime sand mortar bedding and backing. Keep mortar back from face 25mm for later repointing

340B REPLACEMENT OF STONE: CARVED WORK, FULL BLOCK
Stone: sandstone as clause 240.
Bedding depths: To match existing, assume 150 - 200mm.
Mortar: As section Z21.
- Mix: As clause 320.
- Sand source/ type: As clause 320.

Fixings: Stainless steel dowels / cramps if considered necessary, as clause 281.
Joints: As clause 320.
Other requirements: Carefully remove all mouldings, copings etc in one piece, and insert new stone on 1:3 lime/sand mortar bedding and backing. Keep mortar back from face 25mm for later repointing.

340C REPLACEMENT OF STONE: PLAIN ASHLAR, PART BLOCK

Stone: buff-yellow to light cream tone with a smooth ashlar finish sandstone as clause 240.

- Bedding depths: To match existing, assume 150 - 200mm.
- Mortar: As section Z21.
  - Mix: As clause 320.
  - Sand source/ type: As clause 320.

Fixings: Stainless steel dowels / cramps if considered necessary, as clause 281.

Joints: As clause 320.

Other requirements: Carefully cut back existing block to an agreed line full depth, and hand dress the remaining section to a sharp arris. Insert new stone on 1:3 lime sand mortar bedding and backing. Keep mortar back from face 25mm for later repointing.

350B STONE INSERTS PLAIN ASHLAR, PART FACE

Stone: Pink sandstone as clause 240.

Finish: Flush and to match existing.

Preparation and insertion: As clause 395.

Mortar: As section Z21.

- Mix: As clause 320.
- Sand source/ type: As clause 320.

Fixings: As clause 320, if considered necessary.

Joints: Fine.

Other requirements: No resin / adhesives are to be used as a bonding material for inserts, although such use is permitted for securing to dowels. A positive 3 - 5mm mortar pointed joint should be formed between the insert and surrounding masonry, and similarly mortar should be used as a bedding and backing material.

350C STONE INSERTS: CARVED WORK, PART FACE REPLACEMENT

Stone: Pink sandstone as clause 240.

Finish: Flush and to match existing.

Preparation and insertion: As clause 395.

Mortar: As section Z21.

- Mix: As clause 320.
- Sand source/ type: As clause 320.

Fixings: As clause 320, if considered necessary.

Joints: fine.

Other requirements: Part block or indent replacement of projecting, weathering or other detailed work such as window reveal stones etc. No resin / adhesives are to be used as a bonding material for inserts, although such use is permitted for securing to dowels. A positive 3 - 5mm mortar pointed joint should be formed between the insert and surrounding masonry, and similarly mortar should be used as a bedding and backing material.

385 LAYING REPLACEMENT MASONRY

Exposed faces of new material: Keep to approved face lines.

Faces, angles and features: Accurately align. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.

Joint surfaces: Dampen to control suction as necessary.

Laying: On a full bed of mortar, all joints filled.

Exposed faces: Keep clear of mortar and grout.

395A 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 mortar. NOTE: No resin / adhesives should be used as bonding materials, all inserts should be bedded backed and pointed in mortar, as clause 320, 350, and Section Z21.
Existing joint widths: Maintain. Do not bridge joints.
Replacement cramps: From new shoulders as required.

405 BONDED DOWELS FOR STONE INSERTS

Dowels: 6mm diameter austenitic stainless steel. Secured into clean, dry holes with adhesive. Do not use adhesive to bond stones at joints unless agreed otherwise.
Adhesive: Epoxy resin to contractor's choice.
Additional requirements: NOTE: No resin / adhesives should be used to bond inserts to retained material. All inserts should be bedded, backed, and pointed in mortar, as clause 320, 350, and Section Z21.
Holes: Drilled in the background and the rear of the replacement/ insert to receive dowels and adhesive. Aligned to allow accurate positioning of the replacement/ insert.

410A CORRODED FIXINGS

Removal: Cut out carefully, causing the least possible disturbance to surrounding masonry. Remove associated rust debris.

POINTING/ REPOINTING

810 PREPARATION FOR REPOINTING

Removing mortar: Work from the top of the wall downwards. Remove carefully and without damaging adjacent masonry, arrises or widening joints.
Recess for repointing: Form a neat recess of depth not less than 25mm minimum or twice the thickness of the joint When mortar beyond this depth is loose and friable and/ or cavities are found seek instructions.
Dust and loose debris. Remove. Dampen joints to control suction as necessary.

820 POINTING STONEWORK GENERALLY

Preparation of joints: Rake out (if soft) or chop back (if hard) to a clean depth of 25mm minimum or twice the width of the joint. The old mortar is to be left with a square face, and the arrises lightly dressed to exclude water traps. The use of power tools is forbidden, all work is to be carried out by hand.
Mortar: As section Z21.

Mix: 1:3 Hydraulic Lime (NHL 3.5) : Sand. (Alternative use hot lime to agreed mix)
Sand source/ type: Well graded crushed stone pointing sand to approved sample, 4 parts course to 5 parts fine.

Joints: Conservation flush joints: The cleaned joint is to be flushed out with clean water and ironed in with a pointing iron, bringing the mortar out of the joint slightly. After the initial set has taken place the mortar face is to be knocked off, then hit back with a stiff bristle brush to compact the mortar within the joint thoroughly, while also exposing the aggregate.
Other requirements: Any loose or flaking masonry is to be dressed back lightly by hand.

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.

C51 REPAIRING / RENOVATING / CONSERVING TIMBER

GENERAL

110 INSPECTION
Purpose: To confirm nature and extent of repair/ renovation/ conservation work shown on drawings and described in Schedule of Work.
Parties involved: Contractor's representative, Architect, Structural Engineer, Timber treatment specialist.
Timing: On completion of the works to strip the roof coverings.
Instructions issued during inspection: Timber specialist to produce a costed timber repair schedule based on the findings, for confirmation on architect's instruction prior to commencement of the works.

130 OPENING UP
Purpose: To reveal previously concealed areas of structure or fabric not recorded during initial surveys.
Extent: All roof areas covered by the drawings, as noted on drawing 2251/01-06.
Timing: Give notice before starting opening up.
Period of notice: At least 48 hours.
Retained building structure/ fabric: Do not damage or destabilize.

150 TIMBER PROCUREMENT
Timber (including timber for wood based products): 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.

160 TIMBER SUPPLIER
Supplier: Contractor's choice, submit proposals.

STRUCTURAL REPAIRS/ ALTERATIONS

230 MEMBER STRENGTHENING - EXTERNAL REINFORCEMENT
Reinforcement: Stainless Steel Plate.

Size: As required.
Fixing to existing timber: Stainless Steel Bolts.

250 TIMBER SECTION REPAIRS - EXTERNAL SPLICE
Defective timber: Cut out to clean, regular profile.
Replacement timber: Approved Softwood.
Splice plates:
Material: Stainless Steel Plate.
Size: 8mm.
Fixing to existing timber: Stainless Steel Bolts.

PRODUCTS

310 STRUCTURAL SOFTWOOD (GRADED DIRECT TO STRENGTH CLASS) C24
Grading standard: To BS 4978, BS EN 519, BS EN 14081-1 or other national equivalent and so marked.
Strength class to BS EN 338: To Structural Engineer's recommendations.
Treatment: Organic solvent to British Wood Preserving and Damp Proofing Association Commodity Specification C8, or fire retard and impregnation FR3, Type B (humidity resistant), as appropriate.
Moisture content (maximum) at time of installation: 20%.
Other requirements: Refer to Structural Engineer.

330 STRUCTURAL HARDWOOD (GRADED DIRECT TO STRENGTH CLASS) D30
Grading standard: To BS 5756 and so marked.
Strength class to BS EN 338: To Structural Engineer's recommendations.
Surface finish: Planed all round.
Treatment: As Clause 310.
Moisture content (maximum) at time of installation: As supplied.
Other requirements: Refer to Structural Engineer.

340 STRUCTURAL HARDWOOD (STRENGTH CLASS NOT SPECIFIED) FOR STRUCTURAL USE
Species and origin: Oak.
Grading standard: To BS 5756 and so marked.
Grade: To be determined.
Surface finish: Planed all round.
Treatment: As Clause 310.
Moisture content (maximum) at time of installation: As supplied.
Other requirements: Refer to Structural Engineer.

420 STAINLESS STEEL SECTIONS AND PLATES FOR TRUSS REPAIRS
Standard: To BS EN 10088.
Grade: 316.
Source: Obtain steel from a source accredited to a national or internationally accepted quality standard.

430 PROPRIETARY FRAMING ANCHORS AND CLEATS
Manufacturer: Ancon.
Product reference: To suit.
Material/ finish: Stainless Steel.
Fasteners: As recommended by Structural Engineer.

450 STAINLESS STEEL BOLT ASSEMBLIES FOR TRUSS END REPAIRS
Bolts: To BS EN ISO 3506-1.
Designation: Grade 4.6.
Nuts and washers: To suit grade of bolt.
Washer size: In contact with timber: Diameter: 2 times bolt diameter; thickness: 0.2 times bolt diameter. In contact with steel section/ plate (required when surface finish may be damaged by nut or bolt head rotating): To BS 4320.

460 CONNECTOR ASSEMBLIES FOR GENERAL USE
Connectors: To BS EN 912.
- Type: As specified.
- Anti-corrosion treatment: None required (Stainless Steel).

Bolts:
- Designation: Grade 4.6.
- Diameter: To BS 5268-2 to suit type and size of connector.
- Finish as delivered: As supplied.

Nuts and washers: Materials, grades and finishes to suit bolts.
Washer size: In contact with timber: Diameter: 2 times bolt diameter; thickness: 0.2 times bolt diameter. In contact with steel section/ plate (required when surface finish may be damaged by nut or bolt head rotating): To BS 4320.

480 SCREWS FOR GENERAL USE
Standard: As section Z20.
Material: Stainless Steel.
Tensile strength (minimum): To Structural Engineer's recommendations.
Finish as delivered: As supplied.

530 NON-FERROUS DOWELS FOR TRUSS END REPAIRS
Material: Hardwood to Structural Engineer's approval.
Manufacturer: Supplier to be approved by Structural Engineer.
Product reference: 20mm diameter hardwood dowels.

540 RESIN GROUT/ ADHESIVE FOR REPAIRS GENERALLY
Type: Gap filling epoxy resin, or similar to Structural Engineer's recommendations.
Manufacturer: Contractor's choice, to SE approval.
Product reference: To SE approval.

EXECUTION

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

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

660 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD
General: Dimensions given on drawings and in schedules of work are finished sizes.
Maximum permitted deviations from finished sizes:

Sawn surfaces:
Thickness and widths < 100 mm: -1, +3 mm.
Thickness and widths > 100 mm: -2, +4 mm.
Further processed surfaces:
Thickness and widths < 100 mm: -1, +1 mm.
Thickness and widths > 100 mm: -1.5, +1.5 mm.

670 CROSS SECTION DIMENSIONS OF NONSTRUCTURAL SOFTWOOD AND HARDWOOD
General: Dimensions given on drawings and in schedules of work are finished sizes.
Maximum permitted deviations from finished sizes:
Sawn surfaces:
Thickness and widths < 100 mm: -1, +3 mm.
Thickness and widths > 100 mm: -2, +4 mm.
Further processed surfaces: -0, +1.

680 WARPING OF TIMBER
Bow, spring, twist and cup: Not greater than the limits set down in BS 4978, BS EN 519 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.

710 REUSE OF TIMBER SECTIONS/ WOOD COMPONENTS
Sections/ components scheduled to be removed but not reused in existing locations: Agree extent of retention for reuse elsewhere in the works.
Treatment following removal: Refurbish and repair as necessary.
Storage: Protect against damage, and store until required.
Storage location: On site.
Reuse: Adapt sections/ components, as necessary, and install in agreed locations.

COMPLETION

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

C52 FUNGUS / BEETLE ERADICATION

110 SURVEY AND REPORT

The tender should include the Provisional Sum identified in the Schedule of Works for rot eradication works. Once the access scaffold has been completed, together with any temporary protection measures, a survey to establish the scope of works should be undertaken, supplemented by a quotation and method statement for undertaking the works. Opening up of the roof structure in key areas in the vicinity of the external walls should be undertaken to inform the survey, allowing as far as possible an accurate informed assessment of the scope of works. This costed report should be prepared by a timber treatment specialist experienced in historic building works, and should record the following:

- The source and extent of any dampness.
- The nature and extent of infestation and decay.
- Any site conditions and restrictions likely to affect the execution of the works.

The report should be supplemented with a description and provisional quantities for proposed eradication treatment and the nature and extent of removal of/or replacement of building fabric which will be required. It will also detail their requirements for contractor's attendance, and any scaffold modifications etc. required for the successful completion of the works. Copies of the report are to be circulated to all parties, and the extent of works to be agreed with the CA and Structural Engineer, with the costs reported therein reconciled against the Provisional Sum for the works.

Work consequent upon treatment but not included in the tender is to be clearly identified as such. Costs are to be inserted in the Schedule of Works. Insofar as it affects the insurance backed guarantee (See clause 390) the removal and replacement of all rot affected structural timber is to be carried out by the appointed specialist.

Preservation. The extent of removals and replacement are to be agreed with the Architect and Structural Engineer prior to the commencement of the work.

120 ASSOCIATED WORK

Work shown to be necessary by survey: Carry out as part of main contract works. Any temporary support is to be provided by the Main Contractor (who shall also include for any alterations to suit the progress of the work) to the SE's approval prior to its installation. It is not to be removed until work in the specific area is completed. Agree with the appointed specialist the programme, nature, and extent of such timber removal and incorporate into the contract programme.

140 OPENING UP/ CUTTING OUT/ REMOVAL OF BUILDING FABRIC

Extent: Submit proposals.
Retained building fabric: Maintain stability and do not damage.

210 DRY ROT

Fruiting bodies: Do not disturb. Spray with fungicide.
Removal: Remove carefully. Clean down surfaces.
Infected materials: Remove immediately and dispose of safely at a tip approved by a waste regulation authority. Prevent contamination of other parts of the building.
Refer to Robinson’s timber preservation specification

220 WET ROT

Rotten timber: Cut out until sound timber is reached.
Refer to Robinson’s timber preservation specification

230A BEETLE INFESTATION

Remove timber agreed with CA as being structurally unsound. Probe timber, drilling if necessary, to determine the extent of the damage. Scrape and trim back all friable parts of otherwise sound timber. Remove infected material immediately from the building and dispose of safely at a tip approved by a Waste Regulation authority.
Refer to Robinson’s timber preservation specification

250 CLEANING

Thoroughly clean down all surfaces in affected areas. Remove all loose material, dust and debris and burn or remove from site without delay.

310A TIMBER PRESERVATIVES/ MASONRY FUNGICIDES GENERALLY

Comply with the Health and Safety Executive Guide, 'Remedial Timber Treatment in Buildings: A guide to good practice and the safe use of wood preservatives', current at the time of tendering. Preservatives to

be approved and registered by the Health and Safety Executive (HSE) and listed in the 'Pesticides (Reference Book 500)' and the 'Pesticides Register' current at the time of tendering.
Apply in strict accordane with statutory conditions of approval given on product labels. 315 TREATMENT METHODS GENERALLY
Select treatment method(s) from those specified, ensuring suitability for the type, scale and location of the fungal/insect attack.
Where treatment involves drilling timber, agree the number, sizes and locations of holes with the CA.

318 TIMBER PRESERVATIVE TREATMENTFOR DRY ROT
Preservative type: Pro-Bor 10 or product to the approval of the CA.
Treatment method: To suit type, scale and location of fungal/ beetle attack.

338A MASONRY FUNGICIDE TREATMENT AGAINST DRY ROT
Fungicide type: Probor DB Fungicidal Wall Solution, or similar product to the approval of the CA.
Treatment method: Drill and irrigate walls, or pressure spray soak wall surfaces with solution, to specialist's recommendations dependent on location.

355 DRILLING TIMBER FOR INJECTION OF PRESERVATIVES
Sizes and location of holes: Submit proposals.
Sealing holes after treatment: To allow retreatment. Submit proposals for CA approval.
Approval of appearance: Obtain approval of first few holes before completing remainder.

390A GUARANTEE
Type: Insurance protection. Administered by an independent insurance protection company. Guarantee period from completion of installation (minimum): 20 years
Documentation: Provide certificates/ guarantees at completion of installation. Robinson's Preservation are to provide an insurance backed guarantee administered by an independent insurance protection company, as a condition of handover.
The guarantee for a period of not less than 20 years from Practical Completion as a condition of handover. The certificate is to be bound into the Building Owner's Manual.

H62 NATURAL SLATING

105A ROOF SLATING TO ROOFS WITH PITCH ABOVE 27 ° DEGREES
Substrate: New 50x50mm treated s/w counter battens over existing roof boarding and scissor trusses, renewed / repaired where necessary.
Pitch: Approx. 27 degrees to both roof areas.
Underlay: 33mm TXL Gold intelligent 2 in 1 insulating breather membrane, as manufactured by TXL Insulation Ltd, Moss Lane, Bolton, Lancashire, BL6 5JB, with strip of breathable roofing underlay membrane at the eaves and stapled to counterbattens as manufacturer's recommendations.
Recycled content: None permitted.
Direction: Parallel to eaves.
Head-lap (minimum): 150mm, proprietary self-adhesive joints, as manufacturers recommendations.
Battens:
- Size: 50x25mm.
- Fixing: 63x5mm stainless steel ringshank nails.

Slates: Ffestiniog Blue Grey (County grade) natural Welsh slates.
Supplier: Alfred McAlpine Slate Limited, Penrhyn Quarry, Bethesda, Bangor, Gwynedd, LL57 4YG.
Product reference: Ffestiniog Blue Grey (County grade) natural Welsh slates.
- Grade: 7mm County Grade, or to match existing slate thickness.

- Size: 500x250mm.
- Head-lap (minimum): 90mm.
- Fixing: Centre nailed with 2 No. nails each slate, as Clause 275.

Other requirements: Allow fixing 50x50mm counter battens over existing roof boarding in positions corresponding to rafters beneath to allow new underlay to sag. Record existing slate pattern and banding, and lay new slates to the same gauge and lap as far as possible, but not less than laps indicated. Cut slates to the secret gutters at upstanding wall and gable abutments to be cut from slate and a half to allow min 2no. fixings.

105A ROOF SLATING TO ROOFS WITH PITCH BELOW 27 ° DEGREES

Substrate: New 50x50mm treated s/w counter battens over existing roof boarding and scissor trusses, renewed / repaired where necessary.
Pitch: Approx. 14 degrees to both roof areas.
Underlay: 33mm Skytech PRO XL intelligent 2 in 1 insulating breather membrane, as manufactured by Permavent Ltd11, Cumberland Drive, Granby Industrial Estate, Weymouth, Dorset, DT4 9TB, Eenquiries@permavent.co.uk, Tel:01305 766 703
(James Ford james.ford@permavent.co.uk 07879314659 and Martyn Halliwell; 07795 160567, martyn@permavent.co.uk) with strip of breathable roofing underlay membrane at the eaves and stapled to counterbattens as manufacturer's recommendations.
Recycled content: None permitted.

Permavent Easy Roof System Specification below: A patented low-pitch roofing system for use with Natural Slates. The system is NHBC accepted and independently tested and passed by the BRE. All Permavent clauses should be read in conjunction with the Slate Supplier H62 Specification (Natural Slating), BS 5534:2014 Code of Practice for Slating and Tiling, BS 8000: part 6: 2013 Code of Practice for Workmanship for Slating and Tiling and Permavent Easy Roof Installation Guide.

System Manufacturer: Permavent Ltd, 11 Cumberland Drive, Granby Industrial Estate, Weymouth, Dorset, DT49TB

H62 NATURAL SLATING

To be read with Preliminaries/ General Conditions.
BS 5534: 2014, Code of Practice for Slating and Tiling.
BS 8000: part 6: 2013 Code of Practice for Workmanship, Slating & Tiling.
Technical Fixing Guide to be provided by Slate Supplier.
NHBC Chapter 7.2 Pitched roofs 2012.

TYPES OF SLATING

105 ROOF SLATING
- Substrate: New truss rafter roof
- Pitch:
- Underlay: PERMAVENT DRY + VAPOUR-PERMEABLE MEMBRANE
- Recycled content: None.
- Direction: Parallel to eaves.
- Head-lap (minimum): 225mm, restrained with double-integrated tape system

- Waterproofing Tape: PERMAVENT HI-TACK BUTYL TAPE

- Slating Battens & Counter Battens:
- Size: 50x25mm / 50mm x 38mm
- Fixing: 65x3.35mm ring shank nails (minimum)
- Slates: Ffestiniog Blue Grey (County grade) natural Welsh slates.
- Supplier: as above
- Size: – 500X300mm
- Head-lap: 100mm Minimum when installed with Easy Slate
- Fixing: Permavent Easy Slate. Product code: ES500.

Easy Slate should be installed underneath the first full length slate. Easy Slate must always be the full length of each slate and one must be used for every full slate on the whole roof. Always ensure that the flexible seals are leaning towards the side edge of each slate. The flexible super seals will prevent water running back under the slate. To be read in conjunction with Permavent Easy Roof Installation Guide.

SLATING GENERALLY

205 SUPPLIERS INFORMATION

Check the existing supporting roof structure to be slated is in a suitable state to receive the roof covering. It must be sound and true to its flatness and square.
Permavent cannot be held responsible for problems that exist prior to roof slating or that are not in compliance with Permavent Easy Roof Installation Guidelines and the following British Standards; BS 5534 code of practice for slating and tiling, BS 6000 part 6 Workmanship, slating and tiling.

240 UNDERLAY

- Handling: Do not tear or puncture.
- Manufacturer; Permavent Ltd
- Type; SkyTech PRO XL:PERMAVENT DRY + VAPOUR PERMEABLE MEMBRANE
  Contact: Martyn Halliwell; 07795 160567, martyn@permavent.co.uk
- Laying: Drape – 5-15°
- Horizontal laps (minimum): 225 mm wide, secured and restrained with Permavent double-integrated tape system
- Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
- Eaves: Application of Underlay Support Tray / Eave Carrier is required
- Penetrations: Use proprietary underlay seals or cut underlay to give a watertight fit around pipes and components.
- Ventilation paths: Do not obstruct and designed in conjunction with BS5250:2021

275 SLATE FIXING

- Setting out: Position Easy Slate beneath the first full length slate, ensuring the flexible seals are leaning toward the side edge of each slate. Easy slate must always be the full length of the slate and one Easy Slate must be installed with every full slate on the roof. Lay slates with an even overall appearance with slightly open (maximum 5 mm) butt joints. Align tails.
- Slate thickness: Consistent in any one course. Lay with thicker end as tail.
- Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
- Top course: Head-nail short course to maintain gauge.

- Fixing: Centre nail each slate twice through countersunk holes 20-25 mm (maximum) from side edges.
- Nails: Copper clout to BS 1202-2.
- Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, With drawl resistance, and slate supplier's recommendations.

ROOF SLATING EDGES/ JUNCTIONS/ FEATURE

670 TOP EDGE ABUTMENTS
- Underlay: Turn up not less than 100 mm at abutments.

690 ROOF WINDOWS
- Underlay: Turn up not less than 100 mm at window surrounds under integral flashings/ soakers.
- Roof slates: Cut as necessary and fix closely all around. Permavent Easy Slate should not be installed as part of the rooflight flashing system.
- Type: TBC

940A COMPLETION
- Roof areas: Clean.
- Work necessary to provide a weather tight finish: Complete.
- Storage of materials on finished surface: Not permitted.

940B GUARANTEE
- GUARANTEE: Permavent Ltd will issue a 40 Year Materials Guarantee, upon satisfactory completion of the works, so long as the works proceed in accordance with this specification. Failure to adhere to these instructions will jeopardise guarantee issue.

CAUTION: It is recommended to arrange a site visit with the team at Permavent to demonstrate how the system works. Contact g.copson@permavent.co.uk, Technical Manager, +44 (0) 7442 893 645

SLATING GENERALLY

210 BASIC WORKMANSHIP
General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
Setting out: To true lines and regular appearance, with neat fit at edges, junctions and features.
Fixings for slating accessories: As recommended by manufacturer.
Gutters and pipes: Keep free of debris. Clean out at completion.

240 UNDERLAY

Handling: Do not tear or puncture.
Laying: Maintain consistent tautness.
Vertical laps (minimum): 100 mm wide, coinciding with supports and securely fixed.
Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
Eaves: Where exposed, underlay must be BS 8747, Annex B, type 5U, or equivalent UV durable type.
Penetrations: Use proprietary underlay seals or cut underlay to give a watertight fit around pipes and components.
Ventilation paths: Do not obstruct.

245A BATTENS/ COUNTERBATTENS - TREATED

Timber: Sawn softwood.

- Standard: To BS 5534, clause 4.12.1.
- Permissible characteristics and defects: Not to exceed limits in BS 5534, annex C.
- Moisture content at time of fixing and covering (maximum): 22%.

Preservative treatment: CCA vaccum pressure or organic solvent double vaccum, as section Z12 and Wood Protection Association Commodity Specification C8. Organic solvent (OS) or copper-organic and micro-emulsion (ME) treatments are possible.

247A BATTENS AT SLATE EDGES TO VALLEY GUTTERS - UNTREATED

Timber: Sawn softwood.

- Standard: To BS 5534, clause 4.12.1.
- Permissible characteristics and defects: Not to exceed limits in BS 5534, annex C.
- Moisture content at time of fixing and covering (maximum): 22%.

265 BATTEN FIXING

Setting out: Align parallel to ridge in straight horizontal lines to gauge of slates. Align on adjacent areas.
Batten length (minimum): Sufficient to span over three supports.
Joints in length: Square cut. Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
Additional battens: Provide where unsupported laps in underlay occur between battens.
Fixing: Each batten to each support. Splay fix at joints in length.

270 BATTENS FIXED TO MASONRY
Setting out: In straight horizontal lines. Align on adjacent areas.
Batten length (minimum): 3 m.
Fixing centres (maximum): 400 mm.

275 SLATE FIXING
Setting out: Lay slates with an even overall appearance with slightly open (maximum 5 mm) butt joints. Align tails.
Slate thickness: Consistent in any one course. Lay with thicker end as tail.
Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
Top course: Head-nail short course to maintain gauge.
Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

290 MORTAR BEDDING/ POINTING
Mortar: As section Z21, 1:3 lime (NHL 5) :sand, with plasticizing admixtures permitted.
Bond strength providing resistance to uplift: To BS 5534.
Weather: Do not use in wet or frosty conditions or when imminent.
Preparation of concrete and clay tile accessories to be bedded: Wet and drain surface water before fixing.
Appearance: Finish neatly as work proceeds and remove residue.

ROOF SLATING EDGES/ JUNCTIONS/ FEATURES

305 GENERALLY
Fittings and accessories: As recommended by slate supplier, do not improvise.
Exposed fittings and accessories: To match slate colour and finish.
Cut slates: Cut only where necessary, to give straight, clean edges.
Flashings: Fix with or immediately after slating. Form neatly.

365A UNVENTILATED EAVES
Underlay support: Treated timber tilt fillet. Continuous to prevent water retaining troughs.
Gutter: Dress underlay or underlay support tray to form drip into gutter.
Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter, whichever dimension is the lesser.

615 METAL VALLEYS
Underlay: Cut to rake. Dress over tilting fillets to lap onto metal valley. Do not lay under metal.

Valley width between slates: 125mm.

660 SIDE ABUTMENTS
Underlay: Turn up not less than 100 mm at abutments.
Abutment slates: Cut as necessary. Fix close to abutments.
Soakers: Interleave with abutment slates. Fix by turning down over head of abutment slates.

740A MORTAR BEDDED TILE RIDGES
Underlay: Lay courses over ridge.
Overlap (minimum): 150 mm.
Ridge tiles: Manufacturer: Red Bank Manufacturing Ltd., or equivalent.
Product reference: Slotted Roll Top red terracotta Ridge tiles,
Length: 300mm, angle 75 degrees, or to match existing and to suit 55 degree roof pitches to Vestry and North Transept roofs
Bedding: Continuous solid bedding to all edges, joints, etc in mortar, as clause 290.
Fixing: Where rigid masonry walls support or abut ridge, secure ridge tiles within 900 mm of such walls to ridge boards or supplementary ridge battens with nails/ wire ties or screws.
Gable end ridge tiles: Fill ends with mortar and slips of tiles finished flush.
Accessories: Red terracotta inserts to match existing, 1 No. per tile, as Clause 870A.

870A SUNDRY ACCESSORIES CLAY RIDGE INSERTS.
Allow for the procurement and manufacture of new clay ridge inserts,
Colour: Red terracotta to match ridge tiles, 2 No. per tile length, approx o/all size 300mm long x height and pattern to match existing, and as indicated on KS+A Drawing No. 2251/06. Approx 57 no. total required, allow for manufacture of 65 no. minimum. Bed inserts into slots in ridge tiles with sealant and mastic point top each side of insert to prevent water ingress and subsequent damage.

H71 LEAD SHEET COVERINGS / FLASHINGS

TYPES OF LEADWORK

110A FLAT ROOFINGS:
Substrate: New 100x25mm untreated s/w square edged roof boards with 3mm 'penny' gaps between, fixed to 25x50mm (south roof) or 100x50mm (north roof) treated softwood battens over the existing, assumed, timber boarded deck corresponding to the location of the rafters below. See plans, sections and details on 2251/06.
Preparation: Remove extg finishes and cart away, undertake any necessary remedial works to existing deck and structure, and build up new substrate to accept new roofing as described above.
Underlay: None.
Type of lead: Rolled as clause 520.
Thickness: 3.15mm, (Code 7)
Pretreatment: Apply a thin coat of chalk slurry to the underside of the lead and allow to dry before laying.
Longitudinal joints: Wood cored rolls at nominal 675mm c/cs, with 40mm splash lap.
Spacing: 675mm.
Eaves detail to roofs: Dress down lower edge of roofing min 100mm and lap min 75mm with upstanding parapet gutter linings.
Where the distance from the gutter sole to the eaves requires the eaves flashing to be 225mm or more, lap flashing 75mm over Code 6 lead vertical cladding, head fixed, with welts between sheets @ 1000mm c/cs. Lap cladding min. 75mm over gutter Retain eaves flashings / cladding with lead welded clips to the undercloak at 300mm c/cs. See Details 1 and 3, 2251/04.
Cross joints: 70mm steps without splashlaps

Intermediate fixings: Copper / stainless steel nails at 50mm c/cs into wood cored rolls in the top third of each bay only as LSA requirements.
Ridge/ Hip detail: None
Other requirements: At abutments with upstanding wall, south Vestry roof, use ventilated abutment detail, Nicholas Airtrack AB1, as Detail 2 and Detail 4 (2251/06), and other abutments (top edges of both

north and south roofs) flash upstanding top edge of roof, min. 75mm, with Code 5 lead cover flashing as described elsewhere. Refer to 2251/06 for full specification, layout and details.

200A PARAPET GUTTERS

Substrate: Form new screeded bases over existing wall head masonry.
Preparation: Remove existing finishes and where necessary break out assumed screeded substrate over wall head sufficient to allow forming of new bases to levels and gradients to suit existing roof.
Underlay: Class A Building Paper to BS 1521 if wall head is screeded to required gutter levels.
Type of lead: Rolled as clause 520.
Thickness: 3.15mm (Code 7). Refer to drawing 2251/06 for locations.
Pretreatment: Apply a thin coat of patination oil to underside of lead and allow to dry before laying. All faces of lead in direct contact with masonry to be painted with a thick coat of bituminous paint.
Longitudinal joints: None (just step into catchpit). See Detail 3, 2251/06.
Spacing: As indicated on drawing No. 2251/06.
Cross joints: None required
Spacing: N/A
Outlets: Remove existing catchpit lining and cart away to allow forming of new catchpit and block existing apertures through parapet walls and make good. Enlarge and deepen existing catchpit and line smooth in render to form larger capacity outlet. Renew catchpit lining in Code 7 lead, on Type A Building Paper, extending through newly formed aperture in masonry beneath moulded string course at base of parapet wall as lead chute with weir overflow. Connect to existing refurbished hopper and rainwater pipe with 125 x 75mm lead welded spigots, as NBS H71/483.
Fixing: Head fix by plugging and s/s / copper screwing (at 75mm staggered c/cs) into parapet wall at head of the gutter. Plugs to be polyamide or similar plastic, unaffected by moisture.

200A PARAPET GUTTER LININGS

Substrate: Form new screeded bases over existing wall head masonry.
Preparation: Remove existing finishes and where necessary break out assumed screeded substrate over wall head sufficient to allow forming of new bases to levels and gradients as indicated on drawing no. 2251/06.
Underlay: Class A Building Paper to BS 1521 if wall head is screeded to required gutter levels.
Type of lead: Rolled as clause 520.
Thickness: 3.15mm (Code 7). Refer to drawing 2251/06 for locations.
Pretreatment: Apply a thin coat of patination oil to underside of lead and allow to dry before laying. All faces of lead in direct contact with masonry to be painted with a thick coat of bituminous paint.
Longitudinal joints: None required.
Cross joints: 70mm steps, 'T-pren' expansion joint with code 7 lead cover piece welded to upstream side as required.
Spacing: N/A
Outlets: Remove existing catchpit lining and cart away to allow forming of new catchpit and block existing aperture through parapet wall and make good. Enlarge and deepen existing catchpit and line smooth in render to form larger capacity outlet. Renew catchpit lining in Code 7 lead, on Type A Building Paper, extending through newly formed aperture in masonry beneath moulded string course at base of parapet wall as lead chute with weir overflow. Connect to existing refurbished hopper and rainwater pipe with 125 x 75mm lead welded spigot, as NBS H71/483.
Fixing: Head fix by plugging and s/s / copper screwing (at 75mm staggered c/cs) into parapet wall at head of the east and west gutters, and each end of the north gutter . Plugs to be polyamide or similar plastic, unaffected by moisture.

230A VALLEY GUTTER LINING AT INTERSECTION OF EDUCATIONAL CENTRE AND TOILETS/ HAY LOFT AND STORAGE BACK GUTTER TO ABUTMENT WALLS

Underlay: Building paper Class A
Type of lead: Rolled as clause 520.
Thickness: 2.65mm Code 6.
Pretreatment: Apply a thin coat of chalk slurry to underside of lead and allow to dry before laying
Laying: Over and beyond tilting fillets. Lengths not more than 1500 mm.
Cross joints: Lapped not less than 150 mm.
Fixing: Welt edges under slate edges each side of valley. Nail top edge of each sheet in the undercloak. Dress bottom end neatly to flash over roof slating.

231 VALLEY GUTTER LINING AT INTERSECTION OF NORTH TRANSEPT AND CHANCEL ROOF
Underlay: Building paper Class A
Type of lead: Rolled as clause 520.
Thickness: 2.65mm Code 6.
Pretreatment: Apply a thin coat of chalk slurry to underside of lead and allow to dry before laying
Laying: Over and beyond tilting fillets. Lengths not more than 1500 mm.
Cross joints: Lapped not less than 115 mm.
Fixing: Welt edges under slate edges each side of valley. Nail top edge of each sheet in the undercloak. Dress bottom end neatly to flash over.

232A SECRET GUTTER LINING: NORTH TRANSEPT AND VESTRY ROOF AT GABLE AND WALL ABUTMENTS
Underlay: Building Paper Class A
Type of lead: Rolled as clause 520.
Thickness: 2.65mm Code 6.
Pretreatment: Apply a thin coat of chalk slurry to underside of lead in contact with timber and allow to dry before laying. All surfaces of lead in direct contact with masonry to be painted with a thick coat of bituminous paint.
Laying: Lead to be laid on new untreated s/w boards with 'penny' gaps fixed to treated s/w bearers nailed to the top of the existing roof boarding. Top of the new secret gutter base boarding to be finished flush with top face of counterbattens. Lead to be dressed min 100mm up upstanding raking west gable wall, (outer edge), to be flashed by inner edge of lead dpc under copings, and dressed over and beyond lining batten and finished with a welt (inner edge). Lengths not more than 1500 mm. If lead will come into direct contact with treated timber lay on Class A Building Paper. See Detail 1 and 2, drawing No. 2251/05
Cross joints: Lapped not less than 100 mm.
Fixing: Welt edge under slate. Nail top edge of each sheet in the undercloak. Dress bottom end neatly over vertical cladding to transfer run off to parapet gutter.

233 BACK GUTTER LININGS
Underlay: Class A Building Paper on repaired / renewed as necessary timber bases to give min 1:80 falls and min. 70mm steps between bays of lead.
Type of lead: Rolled as clause 520.
Thickness: 3.15 Code 7.
Pretreatment: Apply a thin coat of chalk slurry to underside of lead in contact with timber and allow to dry before laying. All surfaces of lead in direct contact with masonry to be painted with a thick coat of bituminous paint.
Laying: Lead to be laid on existing or new untreated s/w boards with 'penny' gaps fixed to treated s/w bearers nailed to the top of the existing roof boarding (secret gutters) and framed out on 75x50mm treated s/w bearers fixed between the roof boarding and set out to bays steps and falls to be compliant with current LSA recommendations. Lead to be dressed min 100mm up upstanding masonry walls to be flashed by Code 5 lead cover flashings, and dressed up the roof slope over the tilt fillet to be finished with a welt, and protected by loose laid Code 7 lead 'sacrificial' flashings in 1500mm lengths, lapped min. 100mm. Inner edge of back gutter linings to be dressed over tilt fillet to slating and finished with a welt.

Cross joints: 70mm steps without splashlaps, and Code 7 lead gutter weathering over wood cored roll at the 'ridge' of the gutter.
Fixing: Welt edge under slate. Nail top edge of each sheet in the undercloak.
Outlets:

- Renew catchpit lining in Code 7 lead, on Type A Building Paper, Connect to existing refurbished hopper and rainwater pipe with 125 x 75mm lead welded spigots, as Clause 483.

310A RIDGE WEATHERING OVER WOOD CORED ROLL:

- Core: Rounded timber as clause 640.
- Size: 75X75mm or 45 x 45 mm tapering to a flat base 30 mm wide.
- Fixing: To ridge boarding of back gutter linings with brass / stainless steel screws at not more than 600 mm centres.
- Back gutter linings: Code 7 lead as Clause 233.
- Fixing: Boss around ridge roll and retain lower 'free' edges of wings over slating with lead welded clips at 300mm c/cs as above. Dress up wall at gable abutment min 100mm to lap min. 75mm with Code 5 lead cover flashing, dress up roof and over tilt fillet at slate abutment and finish with a welt.
- Capping: Lead as clause 520.
- Thickness: 3.15mm Code 7.
- Lengths: Not more than 1500 mm.
- Wings: Extend not less than 150 mm onto the roof.
- Laps in length: None envisaged.

325A WEATHERING TO PARAPET COPINGS
Lead: As clause 520.
Thickness: 2.65mm, Code 6.
Dimensions: Approx. 450mm, dependent on level of gutter base (varies). Confirm on site.
Lengths: Not more than 1000mm.
End to end joints: Welted, with clips in the welts to LSA recommendations, form lead in single sheets.
Fixing: s/s clips in the welts at sheet junctions at 200mm max c/cs. Lead to inside of coping left long to act as cover flashing to upstanding side of parapet gutter lining. Lower edge retained by lead welded clips at 300mm c/cs, and upper (outer) edge dressed over roll mould and retained by copper / s/s clips at 300mm c/cs. Dress lead up sides of upstanding masonry at abutments and weather with Code 5 lead cover flashings secured into bed joints in the masonry.

420A COVER FLASHINGS TO ROOF AND PARAPET GUTTER UPSTANDS AGAINST UPSTANDING WALLS

Lead: As clause 520.

Thickness: 2.24mm Code 5.

Dimensions:

- Lengths: Not more than 1500 mm.
- End to end joints: Laps of not less than 100 mm.

Cover: Overlap to upstand of not less than 75 mm.

Fixing: Secured into existing bed joints / 25x10mm new chases cut in parapet / general wall masonry where necessary (see drawing No. 2251/06 for location and approximate levels) with lead wedges @ 300mm c/cs, as Clause 770, and back pointed in BLM mastic. Free edge of flashings retained by lead clips welded to roof / gutter upstand at 300mm c/cs. Ensure min. 75mm lap over upstanding lead of roof and gutter sides. Coat surfaces of lead in direct contact with masonry in bitumen.

430A COVER FLASHINGS TO SECRET GUTTER UPSTANDS

Lead: As clause 520.

Thickness: 2.24mm Code 5.

Dimensions:

Lengths: Not more than 1500 mm, (likely to be in a single shorter length, continuous, with flashings inserted into 10x25mm chases cut in rear face of copings, as Clause 430).

End to end joints: Laps of not less than 100mm with adjacent lead dpc left long under copings each side, see clause 477A.

Overlap to upstand: min 75mm, recommended 100mm

Cover to roof: Not less than 75 mm, tbc.

Fixing: Clips to bottom edge @ 300mm c/cs as clause 715, and built into new / existing chases cut in the rear face of the stones or stepped in brick joints, secure with lead wedges at 300mm c/cs, as Clause 770, and back pointed in BLM mastic. Sheet width to be sufficient to allow minimum 25mm dressed into chases to masonry,. Allow for cutting chases carefully around base of features where necessary.

477A DAMP PROOF COURSE UNDER RAKING COPINGS

Position: On the raking wall head masonry to the gables, under the raking coping stones and apex stone. Finish at abutment to kneeler stones and any fixed element of masonry built into the wall.

Lead: As clause 520.

Thickness: 2.24mm Code 5.

Protection: Fully coated with high build bitumen-based paint on all surfaces to be embedded or in direct contact with masonry.

Dimensions: Maximum 1500mm lengths (min.100mm lap between sheets) by approx. 375mm, plan thickness of wall plus 120mm (lead turned down 25mm to outer face, and inner edge left long to act as cover flashing to secret gutter), to be confirmed on site.

Laying: On a thin even bed of wet mortar.

Next layer of overlying construction: Bed copings on mortar, and dowel through lead dpc to secure. Raking gable copings are to be refixed with 2 No. 200mm long stainless steel dowels secured min. 60mm into each stone. The dowels should be located min. 100mm from the top and bottom of each stone, and alternate fixings staggered between the outer and inner sections of the wall. Dowels are to be firmly resin fixed to sockets drilled through the dpc into the wall head, and where the lead dpc is punctured the joint between the dowel and lead is to be sealed in bitumen. The copings are to be located on the dowels with sockets chiseled in the underside of the copings, filled with lime mortar. Point up in lime mortar and finish joints neatly and flush.

483 CATCHPIT WITH LEAD CHUTE OUTLET

Lead: As clause 520.

Thickness: 3.15mm (Code 7).

Dimensions: Base: Rectangular catchpits to roof areas with bases extended some 360mm from the face of the wall in the form of a chute outlet immediately under the projecting embellished stone string course at the base of the parapet. In each instance the existing openings through the parapet walls are to be made good and new outlets formed through the external walls under the moulded string course, exact size to be determined on site, with s/s flat over if necessary due to bonding of the masonry over. Edges of lead at overhang to be folded over 8mm diameter stainless steel reinforcing bars, and base to have weir at open end to act as overflow. 125mm x 75mm rectangular spigot outlet welded to gutter sole behind weir to discharge through refurbished cast iron hoppers and rainwater pipes.

484 LEAD 'BIN LID' COVER TO PARAPET GUTTER CATCHPIT OUTLETS

Lead: As clause 520.

Thickness: 3.15mm (Code 7).

Position: Over catchpit outlets to parapet gutter.

Dimensions: To be determined on site.

Plan size: To be determined on site as noted above. Lids to rest on parapet gutter bases each side of catchpit and span over catchpit. Exact configuration of cover and support to 'lid' to be determined on site. 'Lids' to be approx. 60mm high, with 30mm apertures all 4 No. sides to allow drainage into outlet and prevent build-up of debris and nesting material in sump. Lead weld strap handle for lifting to clear and maintain gutters.

GENERAL REQUIREMENTS/ PREPARATORY WORK

510A WORKMANSHIP GENERALLY

\- Standard: To BS 6915 and latest editions of 'The Lead Sheet Manual' and Updates published by the Lead Sheet Association.

Fabrication and fixing: To provide a secure, free draining and weathertight installation.

Operatives: Trained in the application of lead coverings/ flashings and intricate lead detailing. Submit records of experience on request.

The Contractor / Sub Contractor executing the work must be a member of the Lead Contractors Association, and their work guaranteed, insurance backed and underwritten under the terms of their membership of that organisation.

Measuring, marking, cutting and forming: 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 LEADWELDING

In situ 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, Agrément certified and to code thicknesses with a tolerance (by weight) of ±5%, 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 thickness/ code, weight and type.

610 SUITABILITY OF SUBSTRATES

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

620 PREPARATION OF EXISTING TIMBER SUBSTRATES

Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners and plane or sand to achieve an even surface.

Defective boards: Give notice.

Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

640 TIMBER FOR USE WITH LEADWORK

Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).

Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

Preservative treatment: CCA as section Z12 and British Wood Preserving and Damp- proofing Association Manual Commodity Specification C8.

FIXING LEAD

705 HEAD FIXING LEAD SHEET

Top edge: Secured with two rows of fixings, 25mm and 50 mm from top edge of sheet, at 75 mm centres in each row, evenly spaced and staggered.

Sheets less than 500 mm deep: May be secured with one row of fixings, 25 mm from top edge of sheet and evenly spaced at 50 mm centres.

710 FIXINGS

Nails to timber substrates: Copper clout nails to BS 1202-2, or stainless steel (austenitic) clout nails to BS 1202-1.

- Shank type: Annular ringed, helical threaded or serrated.
- Shank diameter: Not less than 2.65 mm for light duty or 3.35 mm for heavy duty.
- Length: Not less than 20 mm or equal to substrate thickness.

Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210, tables 3 or 4.

- Diameter: Not less than 3.35 mm.
- Length: Not less than 19 mm.
- Washers and plastic plugs: Compatible with screws.

Screws to composite metal decks: Self tapping as recommended by the deck and lead manufacturer/ supplier for clips.

715 CLIPS

Material:

- Lead clips: Cut from sheets of same thickness/ code as sheet being secured.
- Copper clips: Cut from 0.7 mm thick sheet to BS EN 1172, temper designation R220 in welts, seams and rolls, R240 elsewhere; dipped in solder if exposed to view.
- Stainless steel clips: Cut from 0.46 mm sheet to BS EN 10088, grade 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 two fixings not more than 50 mm from edge of lead sheet.
Fixing lead sheet: Welt clips around edges and turn over 25 mm.

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: As section Z22: Lead sealant / mastic by British Lead Mills.

780 WEDGE FIXING INTO DAMP PROOF COURSE JOINTS

Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm.
Lead: Dress lead into joint.
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: As section Z22: Lead sealant / mastic by British Lead Mills .

JOINTING LEAD

810 FORMING DETAILS

Method: Bossing or leadwelding except where bossing is specifically required.
Leadwelded 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.
Details where bossing must be used: WHERE REQUIRED .

845 WOOD CORED ROLL JOINTS WITH SPLASH LAP

Core: Timber as clause 640.

- Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
- Fixing to substrate: Brass or stainless steel countersunk screws at not more than 300 mm centres.

Undercloak: Dress three quarters around core.

- Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.

Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

865 DRIPS WITHOUT SPLASH LAPS

Underlap: Dress into rebate along top edge of drip.
Fixing: One row of nails at 50 mm centres on centre line of rebate.
Overlap: Dress over drip to just short of lower level.

880 WELTED JOINTS
Joint allowance: 50 mm overlap and 25 mm underlap.
Copper or stainless steel clips (clause 715): Fix to substrate at not more than 450 mm centres.
Overlap: Welt around underlap and clips and lightly dress down.

970 FINISHING
Patination oil: As soon as practical, apply a smear coating evenly in one direction and in dry conditions, to: ALL LEAD.

M60 PAINTING / CLEAR FINISHING

COATING SYSTEMS

130A GLOSS PAINT TO NEW AND REFURBISHED CAST IRON RAINWATER GOODS
Manufacturer: Dulux
Product reference: Weathershield Exterior High Gloss.
Surfaces: New and refurbished cast iron rainwater pipes.
Preparation: None required to new rainwater gutters and downpipes or any new components necessary to complete the system. Existing rainwater pipes and hoppers to be retained are to be abrasive cleaned to remove existing loose and flaking paint, cleaned and degreased ready for priming, and coating. Refer to manufacturer's Product Advice Sheets for full details.
Initial coats: Dulux Trade Metal Primer Undercoat.
Number of coats: One, dipped on site.
Undercoats: Dulux Weathershield Exterior Undercoat.
Number of coats: One, dipped on site.
Finishing coats: Dulux Weathershield Exterior High Gloss.
Number of coats: Two, dipped on site prior to installation of systems. Brush down each coating following dipping to prevent paint runs and touch up any scratches / damage by hand following installation.

130B GLOSS PAINT TO EXTERIOR TIMBERS: EXPOSED FASCIAS, BOARDING, RAFTER ENDS
Manufacturer: Dulux
Product reference: Weathershield Exterior High Gloss.
Surfaces: existing exposed timber fascias, rater ends and boarding, and any other exposed timbers in the area of the works.
Preparation: Remove all loose and defective coatings from existing surfaces, if necessary stripping back to bare wood. Remove and treat any mould, algae, lichen or moss with 'Weathershield Fungicidal Wash'. Undertake any necessary timber repairs. Refer to manufacturer's Product Advice Sheets for full details.
Initial coats: Dulux 'Weathershield Aquatech Preservative Basecoat'.
Number of coats: One, brush applied
Undercoats: Dulux Weathershield Exterior Undercoat.
Number of coats: Two, brush applied on site.
Finishing coats: Dulux Weathershield Exterior High Gloss.
Number of coats: One, brush applied on site

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.

240 SURFACES NOT TO BE COATED
External masonry generally.

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

PREPARATION

400 PREPARATION GENERALLY
Standard: To BS 6150, Section 4.
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: Abade to a smooth finish.
Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Work well in and finish off flush with surface. Abrade to a smooth finish.
Dust, particlaes and residues from abrasion: Remove.
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.

440 PREVIOUSLY COATED SURFACES GENERALLY
Preparation standard: To BS 6150, Section 6.
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.
Contaminated surfaces: Give notice of:
- Coatings suspected of containing lead.
- Substrates suspected of containing asbestos.
- Significant rot, corrosion or other degradation of substrates.

Retained coatings: Thoroughly clean to remove dirt, grease and contaminants.
Gloss coated surfaces: Abrade to provide a key.
Partly removed coatings:
Additional preparatory coats: Apply to restore original coating thicknesses.
Junctions: Abrade to give a flush surface.
Completely stripped surfaces: Prepare as for uncoated surfaces.

456 PREVIOUSLY COATED SURFACES: BURNING OFF
Risk assessment and action plan: Prepare and obtain approval before commencing work.
Adjacent areas: Protect from excessive heat and falling. scrapings.
Exposed resinous areas and knots: Apply to coats of knotting.
Removed coatings: Dispose of safely.

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: To BS 6150, Section 5.
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.

740 CONCEALED METAL SURFACES
General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
Components: Gutter Brackets and rainwater goods fixing 'ears'.
Additional coatings: One undercoat.

R10 RAINWATER PIPEWORK / GUTTERS

TYPES OF PIPEWORK/ GUTTER

130A CAST IRON PIPEWORK FOR EXTERNAL USE: NEW RAINWATER PIPES
Pipes, fittings and accessories:
Standard: To BS 460.
Manufacturer: Hargreaves Foundry, Water Ln, Halifax HX3 9HG, or equal / approved.
Type: Premier Eared Round Rainwater Pipe .
Nominal sizes: 125 x 100mm (5 x 4").
Finish as supplied: Primed for painting.
Finish / Colour: Apply 2 No. undercoats and 1 No. gloss by site dipping prior to installation. Hang vertically and brush down each coat to avoid paint runs. Touch up any damage / scratches when fixed.
Accessories: Anti splash shoes to base of pipes over existing gullies, bends around plinth and to maintain the line of the pipe drops, and any other components necessary to complete the installation.
Fixing: Stainless steel fixing screws through HW timber bobbins to plugs into masonry.
Jointing: Sealed socketed joints.
Fixing: Cast Iron Brackets with bobbins to masonry.
Other Requirements: Allow for all accessories, offset bends, shoes, etc to complete the system.

130B CAST IRON EAVES GUTTERS
Gutters, fittings and accessories:
Standard: To BS 460.
Manufacturer: Hargreaves Foundry, Water Ln, Halifax HX3 9HG, or equal / approved.
Type: Premier G46 MOULDED GUTTER.
Nominal sizes: 125 x 100mm (5 x 4").

Finish as supplied: Primed for painting.
Finish / Colour: Apply 2 No. undercoats and 1 No. gloss by site dipping prior to installation. Hang vertically and brush down each coat to avoid paint runs. Touch up any damage / scratches when fixed.
Accessories: All fascia brackets, stop ends, spigot outlets, and any other components necessary to complete the installation.
Fixing: rise and fall brackets fixed to existing ornamental metal brackets.
Jointing: Sealed socketed joints.

INSTALLATION

400 PREPARATION
Timing: Before commencing work specified in this section.
Work to be completed:
Below ground drainage. Make arrangements for the temporary disposal of run off from the Chancel roof into the underground system. Contractor to agree method with C/A prior to commencing works.

410 INSTALLATION GENERALLY
Discharge of rainwater: Complete, and without leakage or noise nuisance.
Components: Obtain from the same manufacturer for each type of pipework/ guttering.
Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
Plastics and galvanized steel pipes: Do not bend.
Protection:
Fit purpose made temporary caps to prevent ingress of debris.
Fit access covers, cleaning eyes and blanking plates as the work proceeds.
Fixings/ Fasteners: As section Z20.

450 RAINWATER OUTLETS
Fixing: Securely, before connecting pipework.
Junctions between outlets and pipework: To accommodate movement in structure and pipework.

460 FIXING PIPEWORK
Pipework: Fix securely at specified centres plumb and/ or true to line.
Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.
Externally socketed pipes/ fittings: Fix with sockets facing upstream.
Additional supports: Provide as necessary to support junctions and changes in direction.
Vertical pipes:
Provide a loadbearing support at least at every storey level.
Tighten fixings as work proceeds so that every storey is self-supporting.
Wedge joints in unsealed metal pipes to prevent rattling.
Wall and floor penetrations: Isolate from structure.
Pipe sleeves: As Section P31.
Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
Expansion joint pipe sockets: Fix rigidly to building. Elsewhere, use brackets/ fixings that allow pipes to slide.

465 JOINTING PIPEWORK/ GUTTERS
General: Joint using materials, fittings and techniques which will make effective and durable connections.
Jointing differing pipework/ gutter systems: Use adaptors recommended by manufacturers.
Cut ends of pipes/ gutters: Clean and square with burrs and swarf removed. Chamfer pipe ends before inserting into ring seal sockets.

Jointing or mating surfaces: Clean, and where necessary lubricated, immediately before assembly.
Junctions: Form using fittings intended for the purpose.
Jointing material: Strike off flush and remove surplus. Do not allow to project into bore of pipes, fittings and appliances.
Surplus flux, solvent, cement: Remove.

510 ELECTRICAL CONTINUITY - PIPEWORK
Joints in metal pipes with flexible couplings: Use clips (or suitable standard pipe couplings) supplied for earth bonding by pipework manufacturer to ensure electrical continuity.

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

Z10 PURPOSE MADE JOINERY

110 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 or more and screws into hardwood: Provide clearance holes.
Countersink screws: Heads sunk at least 2 mm below surfaces visible in completed work.

120 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.
Clause NA.2 for further processed sections.
Hardwood sections: To BS EN 1313-2:- Clause 6 for sawn sections.
Clause NA.3 for further processed sections.

130 PRESERVATIVE TREATED WOOD
Cutting and machining: Completed as far as possible before treatment.
Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

140 MOISTURE CONTENT
Wood and wood based products: Maintained within range specified for the component during manufacture and storage.

250 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 allowed to dry before assembly.

Z11 PURPOSE MADE METALWORK

310 METAL PRODUCTS
Standards: Generally, as specified in the following clauses.
Fasteners: Generally, same metal as component, with matching coating and finish.

510 PREPARATION FOR APPLICATION OF COATINGS
General: Complete fabrication, and drill fixing holes before applying coatings.
Paint, grease, flux, rust, burrs and sharp arrises: Remove.

515 FABRICATION GENERALLY
Contact between dissimilar metals in components: Avoid.
Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
Moving parts: Free moving without binding.
Corner junctions of identical sections: Mitre.
Prefinished metals: Do not damage or alter appearance of finish.

535 WELDING AND BRAZING GENERALLY
Surfaces to be joined: Clean thoroughly.
Tack welds: Use only for temporary attachment.
Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
Surfaces of materials that will be self-finished and visible in completed work: Protect from weld spatter.
Flux residue, slag and weld spatter: Remove.

545 WELDING OF STAINLESS STEEL
Method: TIG welding to BS EN 1011-3.
Butt welds: Double bevel.

565 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK
Butt joints: Smooth, and flush with adjacent surfaces.
Fillet joints: Neat.
Grinding: Grind smooth where indicated on drawings

Z20 FIXINGS / ADHESIVES

110 FIXINGS GENERALLY
Integrity of supported components: Types, sizes and quantities of fasteners/ packings and spacings of fixings selected to retain supported components without distortion or loss of support.
Components/ substrates/ fasteners of dissimilar metals: Fixed with isolating washers/ sleeves to avoid bimetallic corrosion.
General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
Appearance: As approved samples.

130 FASTENER DURABILITY
Fasteners in external construction:
Fasteners not directly exposed to weather: Of corrosion resistant material or with a corrosion resistant finish.
Fasteners directly exposed to weather: Of corrosion resistant material.

140 FIXINGS THROUGH FINISHES
Penetration of fasteners/ plugs into substrate: To achieve a secure fixing.

150 PACKINGS
Function: To take up tolerances and prevent distortion of materials/ components.
Materials: Noncompressible, noncorrodible, rot proof.
Locations: Not within zones to be filled with sealant.

160 CRAMP FIXINGS
Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
Fasteners: Cramps fixed to frames with screws of same material as cramps.
Cramp fixings in masonry work: Fully bedded in mortar.

230 PELLETED COUNTERSUNK FIXINGS
Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
Pellets: Cut from matching timber, grain matched and glued in to full depth of hole.
Finished level of pellets: Flush with surface.

510 ADHESIVES
Storage/ Usage: In accordance with manufacturer's and statutory requirements.
Surfaces: Clean. Regularity and texture adjusted to suit bonding and gap filling characteristics of adhesive.
Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z21 MORTARS

10 MORTAR MIXES
Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

25A SAND FOR LIME : SAND MASONRY MORTARS
Type: Cefn Graianog Zone 2 well graded washed sand, Nosterfield, Leighton Buzzard, or contractor's choice to CA approval. Fuel Ash may also be required depending on analysis of existing mix.
Quality, sampling and testing: To BS EN 13139.
Grading/ Source: As specified elsewhere.

30A LIME FOR GAUGED MASONRY MORTARS
Standard: To BS EN 998-2.
Lime: St. Astier NHL 3.5.
Mortar Mix ratio 1:3.

50 ADMIXTURES FOR SITE MADE 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.

60 MAKING MORTARS GENERALLY
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.
Contamination: Prevent intermixing with other materials.

70 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.

Z22 SEALANTS

31 JOINTS WHERE LEAD CHASED INTO MASONRY
Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

EXECUTION

61A SUITABILITY OF JOINTS
Before commencing, check that:
Joint dimensions are within limits specified for the sealant.
Surfaces are smooth and undamaged
Preparatory work which must be done before assembly of the joint has been carried out, Inform CA if joints are not suitable to recieve sealant and submit proposals for rectification.

62 PREPARING JOINTS
Surfaces to which sealant must adhere:
Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
Clean using materials and methods recommended by sealant manufacturer.
Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
Protection: Keep joints clean and protect from damage until sealant is applied.

63 APPLYING SEALANTS
Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
Environmental conditions: Do not dry or raise temperature of joints by heating.
Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
Sealant profiles:
Butt and lap joints: Slightly concave.
Fillet joints: Flat or slightly convex.
Protection: Protect finished joints from contamination or damage until sealant has cured.