

London Road Fire Station, Manchester

Conservation repair methodologies; general principles for protection during demolition

Supplementary information
to accompany an
application for planning
permission in relation to
proposed refurbishment for
hotel use

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Prepared for OBI Ltd

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London Road Fire Station, Manchester: Conservation repair methodologies

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1 Introduction

1.1 Aim of this report

- i) This document sets out to provide a guiding methodology and outline specifications for the proposed conservation works to the historic fabric of the Grade II* listed London Road Fire Station, Manchester. The purpose of the document is to outline specifications which will inform the proposed repair and conservation works necessary to retain the building's significant historic fabric. The document also provides general conservation principles to inform protection of retained fabric during the elements of demolition which form part of the scheme.
- ii) In particular, this document provides relevant supplementary information to accompany an application for planning permission in relation to the building. The proposed development would adapt the historic building for new hotel, food and beverage, residential and workspace use while restoring the key historic features.
- iii) This report provides outline specifications for the conservation elements of the necessary works to the building, including in the following key areas:
 - **External leadwork, including lead flashings, parapet gutters and related details**
 - **Repairs to slate roof coverings**
 - **Timber repairs**
 - **Window and door repairs**
 - **Cleaning and repairing of brickwork**
 - **Cleaning and repairing of stone**
 - **Cleaning and repairing of terracotta**
 - **Redecorations**
 - **Internal plaster and cornice repairs**
 - **Internal tile repairs**
- iv) The development will retain the key architectural features as identified in the proposed scheme.
- v) The fundamental requirement is that the proposed conservation cleaning and repair works are carried out according to good conservation methods and practice as outlined by Historic England's guidelines.
- vi) The key purpose of this **Conservation Specification** is, therefore, to clarify the appropriate work methodology and specifications to guide the intervention in the identified historic fabric components, according to the accepted best standards.
- vii) This document should also be read in conjunction with Heritage Architecture's previously issued **Heritage Statement** in relation to London Road Fire Station which was submitted with the application for planning permission for the development and which identifies the surviving areas of key significance within the Grade II* listed building. The document should also be read alongside the Condition, fabric and repair strategy prepared by OBI, and in conjunction with the demolition plans.
- viii) It is not intended that this document should become a contract document or form part of the contract building works package.

1.2 Authorship

This report has been prepared by Stephen Levrant Heritage Architecture Ltd., a practice of conservation architects and historic building consultants specialising exclusively in the historic cultural environment. The authors were:

- Nick Grimshaw [BA (Hons), BPL, MA, RICS.PgDipBldgCons, MRTPI, IHBC] – Senior Associate
- Matthew Williams [MA MSc PgDipSurv MRICS] – Senior Conservation Surveyor

2 CONSERVATION PRINCIPLES AND GUIDANCE

2.1 Introduction – the purpose of conservation

- i) The over-arching policy which defines the proposed development is one of **minimum intervention** in the repair and/or replacement of the significant components of the historic building. This principle applies across the individual items of fabric, with the important caveat that the objective is to achieve a long-term, sustainable preservation of the individual components and the building as a whole.
- ii) When assessing individual components it is important to look beyond the immediate need for action, to understand the reasons for the need for repair. The objective to make useable and habitable the historic building's fabric and spaces needs to be considered as the basis for all interventions. Therefore, it is necessary to plan for the long-term consequences of inevitable change and decay. While sufficient work should be undertaken to achieve a lasting repair, the extent of the repair should normally be limited to that necessary to make failing elements sound and capable of continuing to fulfil their intended functions.
- iii) However, the requirement for long-term repair means that severely damaged or decayed components should be subject to authentic and faithful replacement rather than consolidation and repair. This principle will be applied in respect of significantly damaged sections of stone, brick or terracotta where these have been significantly compromised by redundant fixings or mechanical impact damage, and in relation to severely decayed timber sections affected by water ingress.
- iv) The following specifications have been adopted by Stephen Levrant Heritage Architecture Ltd for use only in this project.

2.2 Definitions of terms used in the repair/refurbishment

- i) **REMOVE** means disconnect, dismantle as necessary and remove the stated element, work or component and all associated accessories, fastenings, supports, linings and bedding materials, and dispose of unwanted materials. It does not include removing associated pipework, wiring, ductwork or other services.
- ii) **KEEP FOR REUSE** means, during removal, prevent damage to the stated components or materials, and clean off bedding and jointing materials. Then stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.
- iii) **REPLACE** means carefully remove the stated existing components, features and finishes, and hand to the Employer for their records. Provide and fit in lieu new components, features or finishes which, unless specified otherwise, must match those which have been removed. Make good as necessary.
- iv) **REPAIR** means carry out local remedial work to components, features and finishes as found in the existing building. Re-secure or re-fix as necessary and leave in a sound and neat condition. It does not include the replacement of components or parts of components or redecoration.
- v) **MAKE GOOD** means carry out local remedial work to components, features and finishes which have been disturbed by other, previous work under the Contract and leave in a sound and neat condition. It does not include replacement of components or parts of components or redecoration. The meaning of the term shall not be limited by this definition where used in connection with the defects liability provisions of the Contract.

- vi) **TO MATCH EXISTING** means use products, materials and methods to match closely all visual characteristics and features of the existing work, with joints between existing and new work as inconspicuous as possible, all to approval of appearance.

2.3 Necessary approvals

- i) The proposed cleaning and repair works have been devised to be the minimum necessary in extent, and specified to ensure that they do not result in any harm to the building's significance, or cause any irreversible alteration of the historic fabric.

- ii) It is a criminal offence under the Planning Acts if any person executes:

“any work for the demolition of a listed building or for its alteration or extension in any manner which would affect its character as a building of special architectural or historic interest unless the works are authorised”.

Consequently, considering the building's Grade II* listed status it is essential to ensure that any scheduled works are confirmed as formally agreed by the Project Architect.

- iii) However, the repair and cleaning works to be undertaken to the elevations do not fall under the definition of *demolition, alteration or extension*, in terms of Section 7 of the Planning (Listed Buildings and Conservation Areas) Act 1990, as they will not affect the character, architectural or historic interest of the listed building.
- iv) Nevertheless, given the building's Grade II* listed status and role in the regeneration of the Piccadilly area of Manchester City Centre, individual task sheets will need to be carefully detailed by the contractor using a standard **task method statement**. This will enable the cumulative impact of the cleaning and repair works to be easily recorded, and understood by all stakeholders.
- v) Written confirmation of consent to proceed with the specific tasks, on the basis of the specific task method statements, must be secured from the Project Architect before starting on site.
- vi) The individual task method statements shall be of sufficient clarity to fully inform the Project Architect, Client and other relevant parties of the extent of the required works. This is necessary to confirm that the works are appropriately authorised and that they do not fall within the scope of Section 7, of the Planning (LB&CA) Act 1990.
- vii) Once authorised the collection of **task method statements** will be appended to the site documentation to provide a detailed, accessible record of the works undertaken during this development project.
- viii) The report also provides guidance and outline principles for proposed demolition works in relation to protection of existing fabric. Such demolition works will usually require listed building consent under Section 7 of the 1990 act.

3 STANDARD GUIDELINES FOR HERITAGE ITEMS

3.1 Limitations

- i) The following applies to the necessary conservation works which will be required to the historic fabric of the Grade II* listed London Road Fire Station .
- ii) Products or services referred to within the specification advice are included as indicative and it is the intention that either these products or services or an equal approved product or service should be used in the actual works, subject to the approval of the project architect and conservation consultant.

3.2 Survey and task method statements

- i) Before starting work, examine all available information, carry out a detailed survey of the affected areas of historic fabric, and submit a survey report and a brief but detailed **task method statement** in relation to each type of conservation work to the Project Architect (as noted above 2.3 iv).
- ii) The task method statement should define the extent of conservation repairs required to the existing fabric and cover all relevant matters listed below in accordance with the requirements of the Construction (Design and Management) Regulations and to meet the requirements of the appointed CDM Coordinator.
- iii) The survey and method statement should detail:
 - The exact areas proposed to be conserved.
 - The form, condition and any repair and or replacement methods to be used on the affected areas.
 - The form, location and removal methods of any toxic or hazardous materials.
 - The identification and location of services.
 - The management of health and safety of operatives and the public during the works.

3.3 Workmanship generally

- i) All cleaning, repair and replacement works shall be completed in the most careful manner preventing unnecessary damage or destruction of adjacent surfaces and materials.
- ii) The site staff responsible for carrying out conservation cleaning works are to be suitably trained and evidence of training is to be available on request. Where Stonehealth DOFF, TORC and Clean-film cleaning systems are in use the operatives are to be specialist sub-contractors trained, approved and recommended by Stonehealth.
- iii) The site staff responsible for carrying out any repair / replacement works historic fabric shall be suitably trained and experienced and under the supervision of a suitably experienced foreman / supervisor. Evidence of credentials and CSCS cards shall be available for inspection.
- iv) All areas affected by the works should be carefully protected using rigid plastic sheeting, fully taped at joints to prevent dust and debris passing through any gaps.

- v) On completion of the works all areas shall be left thoroughly clean and free of debris, builder's rubble, dust, grime and dirt to the entire satisfaction of the project architect and Conservation Consultant (CC).

4 REPAIR AND REPLACEMENT OF EXTERNAL LEADWORK

H71 LEAD SHEET COVERINGS AND FLASHINGS

H71/1 TYPE(S) OF LEADWORK

H71/1.1 BOX GUTTER / PARAPET LINING REPAIRS

- Investigate box gutters etc with suitably qualified leadworker and CC and determine extent of repairs.
- Where entire lead panels remain undamaged these should be left in place with local re-dressing and / or spot repairs if required.
- Where individual lead panels have been damaged these should be carefully removed and disposed of off site.
- Replacement panels should match the existing in code / thickness and dressing style.
- Identify and correct any cracks, displacement or other failures of the lead box gutter linings etc.
- Allow to extend the lead upstand of the box gutter linings to a height of at least three brick courses above the base of the box gutter (refer to photographs below).
- Substrate: Softwood boards as NBS clause H71/640 Preparation: Existing bases: as clause H71/621
- Underlay: none
- Type of lead: Rolled lead as NBS clause H71/520 Thickness: Code 6 or otherwise agreed to match existing details in accordance with the Lead Sheet Association guidelines.
- Pre-treatment: Anti-oxidising emulsion as NBS clause H71/652 and H71/653
- Post-treatment: Lead patination oil
- Longitudinal joints: Wood cored or hollow rolls to match existing
- Spacing: As clause H71/510
- Cross joints: Drips without splash laps as NBS clause H71/865
- Spacing: As NBS clause H71/510
- Hot works are to be permitted with the use of a Permit to Work system. Hot works must cease 1.5 hrs before the end of the working day and the area where hot works have taken place must be the subject of a final inspection by the site manager at the end of each day to check for any smouldering timbers in the substrate.
- Any waste lead must be disposed of in accordance with the Scrap Metal Dealers Act 2013. Only traders licensed under the Act may be used and no cash payments may be received by the contractor.

H71/2 GENERAL REQUIREMENTS/PREPARATORY WORK

H71/2.1 WORKMANSHIP GENERALLY:

- Standard: To BS 6915 and latest editions of 'The Lead Sheet Manual' as published by the Lead Sheet Association.
- Design, observe the recommendations included in 'The Lead Sheet Manual' for maximum lead sheet sizes, joint spacing, clip spacing laps, upstands and cover.
- Fabrication and fixing: To provide a secure, free draining and weathertight installation.
- Operatives: Trained in the application of lead coverings/flashings.
- Measuring, marking, cutting and forming: Prior to assembly wherever possible.
- Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
- Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks, buckling and cracks
- Sharp metal edges: Fold under and remove as work proceeds.
- Finished work: Fully supported, adequately fixed to resist wind uplift but also to accommodate thermal movement without distortion or stress.
- Protection: Prevent staining, discolouration and damage by subsequent works.

H71/2.2 LEAD WELDING

- IN SITU WELDING: Should be avoided where practical. Wherever possible lead details should be formed by bossing or prefabrication off site. Contractors should tender accordingly.
- Only where off-site prefabrication is completely impractical will on-site lead welding be permitted; in this instance there shall be a 'hot works permit' system in place, monitored by the employer or their agent.
- All hot works must cease at least 1.5 hrs before vacation of the site and the location of hot works must be repeatedly inspected to check for any smoldering timbers in the underlying substrate.
- Further advice should be obtained from the building's and contractor's insurers.

H71/2.3 LEAD SHEET

- Production method: Rolled, to BS EN 12588. Identification: Labelled to show thickness/code and type.

H71/2.4 REPLACEMENT OF EXISTING LEAD:

- Must be carried out in small sections at a time to reduce the risk of

weather damage to a minimum. Provide and maintain temporary waterproof coverings to ensure that there is no damage to the existing base and building.

H71/2.5 SUITABILITY OF SUBSTRATES

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

H71/2.6 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: Report to the employer or their agent who will issue instructions concerning repairs.

H71/2.7 TIMBER FOR USE WITH LEADWORK

- Quality: Sawn and regularised, free from wane, pitch pockets, decay and insect attack.
- Preservative treatment: organic solvent as section Z12 and British Wood Preserving and Damp Proofing Association Manual – Commodity Specification C8.
- Allow to pre-treat (after fixing but before laying head) with anti-oxidising treatment as clause 652 and 653.
- CCA preservatives must not be used.

H71/2.8 PRE-PATINATION (PRIMING) UNDERSIDE OF LEAD COVERINGS:

Prior to laying lead roofing the following operations are to be undertaken.

- Pre-patination applied to the underside of the lead.
- Pre-patination material can be obtained from:
- Rowan Technologies Ltd (216 Church Street, Urmston, Manchester M41 9DX. Tel 0161 748 3644) or equal approved.
- Chalk emulsion, colour green, for application to the underside of the lead prior to laying.
- The underside of the sheets should be pre-cleaned using a wire wool or similar material to remove any corrosion products/deposits. Appropriate health and safety precautions must be adhered to. The emulsion should be applied to the underside of the lead so that the surface can no longer be seen.
- The emulsion should be allowed to dry before laying the lead. Follow the manufacturer's instructions concerning application.

- H71/2.9 UNDERSIDE OF LEAD COVERINGS WHERE PRIMING IS TO BE OMITTED:
- Chalk paste can draw in water by capillary action. Residues should therefore not be left on the matching lead to lead surfaces to the bottom 50mm of laps, or to the bottom 25mm vertical distance of rolls and steps.
- H71/3 FIXING LEAD
- H71/3.1 HEAD FIXING LEAD SHEET
- Number position and spacing of fixings to be in accordance with the recommendations of 'The Lead Sheet Manual' and updates.
- H71/3.2 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 2.65mm for light duty or 3.5mm for heavy duty.
 - Length: Not less than 20mm or equal to substrate thickness.
 - Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210, tables 3 or 3.
 - Diameter: not less than 3.35mm. Length: Not less than 19mm.
 - Washers and plastic plugs: Compatible with screws.
- H71/3.3 CLIPS
- Material:
 - Lead clips: Cut from sheets of same thickness/code as sheet being secured. Stainless steel clips: Cut from 0.38mm sheet to BS EN 10088, grade 1.4301
 - (304)terne coated if exposed to view. Dimensions:
 - Width: As clause H71/510 Length: As clause H71/510
 - Fixing Positions: As clause H71/510
- H71/3.4 WEDGE FIXING INTO JOINTS/CHASES
- Joint/chase: As clause H71/510 Lead: Dress into joint/chase
 - Fixing: Lead wedges As clause H71/510
 - Sealant: (As section Z22): Where there is a risk of thermal movement. Mortar pointing: to match adjoining work and tooled to a neat finish.

H71/3.5 SCREW FIXING INTO JOINTS/CHASES

- Where joint fixings will strain finishes
- Joint/chase: Rake out to a depth of not less than 25mm. Lead: Dress into joint/chase and up back face.
- Fixing: Into back face with stainless steel screws and washers and plastic plugs, centres as H71/510.
- Sealant: As section Z22: Where there is a risk of thermal movement
- Mortar pointing; to match adjoining work and tooled to a neat finish.

H71/4 JOINTING LEAD

H71/4.1 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 25mm 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: Roll ends, roll junctions.

H71/4.2 DRIPS WITHOUT SPLASH LAPS

- Underlap: Dress into rebate along top edge of drip. Overlap: Dress over drip to just short of lower level.

5 REPAIRS TO SLATE ROOF COVERINGS

- H62/1 TYPE(S) OF SLATING
- H62/1.1 ROOF SLATING
- details as included in the Particular Specification/Schedule
- Pitch: as original
- Slates: To BS 680:Part 2.
- Supplier and reference: Blue Grey Welsh or Cumbrian slates to match original
- Size: to match original
- Fixing: As clause 275, minimum end lap as Particular Specification/Schedule
- Grading: To meet Standards T1 and S1 in respect of chemical durability.
- H62/2 SLATING GENERALLY
- H62/2.1 Comply with NBS Clauses regarding Basic Workmanship, Existing Natural Slating, Underlay, Battens/Counterbattens, Counterbattens On Rigid Sarking, Battens On Timber Supports, Slate Fixing, Mortar Bedding/Pointing.
- H62/3 ROOF SLATING EDGES/JUNCTIONS/FEATURES
- Comply with NBS Clauses regarding Generally, Fire Separating Walls, Eaves, Mortar Bedded Verge With Beeded Undercloak, Mortar Bedded Verge With Nailed Undercloak.
- H62/3.1 ROOF SLOPE VENTILATORS:
- Ventilator slates: Eternit In-line natural slate
 - ventilator Manufacturer: Eternit Roofing Division
Meldreth, Nr. Royston, Herts SG8
5RL or approved equivalent
 - Fix with underlay seal to ventilate roof space, as included in Particular Specification/Schedule.

H62/3.2 LEADVALLEY:

- Ensure that valley board, plywood valley sheathing and tilting fillets provide full support for lead gutter (specified in another section).
- Cut underlay to rake and dress over tilting fillets to lap onto lead gutter. Ensure that underlay is not laid under lead.
- Cut extra wide slates neatly to form a gap centred on gutter. Comply with NBS Clauses regarding side abutment, top edge abutment, top edge ventilation abutment, roof slope ventilators.

H62/3.3 ROOFWINDOW:

- Turn underlay up against window surround and cover with integral flashings/soakers all round.
- Cut slates as necessary and fit closely both sides.

H62/3.4 JUNCTIONS: Fix a lead saddle (specified in another section) to provide a weathertight detail at each:
as included in Particular Specification/Schedule**H62/3.5 LEAD HIPS AND RIDGES**

see section H71 for details of lead hips and ridges

6 TIMBER REPAIRS

GENERAL / PRELIMINARY ITEMS

Provide full internal and external scaffold access and allow time within the works programme for a detailed internal and external inspection of the affected areas by the project architect prior to the commencement of repairs. Note that the inspection may lead to additional items of work being required.

C50 REPAIRING TIMBER

C50/2 TIMBER REPAIRS:

- The full scope of work to be scheduled on marked up drawings following the scaffold inspection of the structure.

C50/3 TIMBER REPAIRS: GENERAL PRINCIPLES

- The minimum amount of historic timber must be cut away in making repairs.
- Generally follow the guidance in the relevant volume of the Historic England "Practical Building Conservation" guides.
- Repair methods to principal structural timbers to be agreed with CC before commencing any cutting away of timber.
- Epoxy resin is not to be used in timber repairs except with the written agreement of the CC.

C50/4 TIMBER REPAIRS:

- Provide and fix replacement sections to exterior timberwork, refer to general arrangement drawings.
- Provide details for agreement of suitably qualified conservation joinery workshop to be appointed to reproduce timber sections.
- Allow for attendance on site whilst joiner takes full measurements and drawings of existing timber sections.
- Timber sections are to be reproduced on a like for like basis
- Formerly concealed timbers, including lintels, bressummers and bonding timbers are to be checked for fire damage and replaced if necessary.
- The minimum amount of timber should be replaced, subject to the Structural Engineer's requirements for the safe functioning of the structure.
- Replacement of damaged sections should be in structural grade softwood jointed in to the existing without the use of flitching plates

or similar mechanism.

- Proposals for replacement should include detailed drawings showing the extent of works and must be submitted for CC approval with the Structural Engineer's calculations and method statement.

7 WINDOW AND DOOR REPAIRS

C51 CLEANING AND REPAIRING JOINERY

C51/1 WINDOW REPAIRS GENERALLY:

- Repairs are to be carried out without dismantling the surviving fixed lights where possible and retaining the maximum amount of original timber.

C51/2 PROTECTION OF EXISTING GLASS

- All panes of historic glass are to be identified and labelled with a removable marker.
- Protect glass with 6 mm hardboard, fixed in accordance with the manufacturer's recommendations and sealed with vacuum tape or heavy duty plastic sheeting or approved equivalent provision.
- Indicate that there is glass behind the protection.
- This will only offer a degree of protection; make every additional effort to avoid damage especially at erection and striking of scaffolding.
- All scaffold poles to be fitted with scaffold caps.

C51/3 REPAIRS TO ARCHITRAVES, LININGS ETC. (INTERNAL AND EXTERNAL)

- Carry out limited repairs to cracked, fire damaged and otherwise decayed areas of timber mouldings and panels to internal and external timber linings.
- Nail and screw holes:
- Drill out and plug
- Arrisses:
- Cut out damaged arris to a sound surface
- Piece in a matching profile with splayed joints and matching grain
- Where the damage is severe, cut back to a sound surface and fit a matching edging strip, tongued, glued and pinned.
- Panels:
- Take out cracked panels, repair by gluing and cramping until secure
- Replace, taking care to allow for some movement between the panel and the frame.
- Complete replacement panels are to match the existing in timber species, size and profile
- Mouldings :

- Carefully cut out damaged section of moulding piece in a matching section, glue and pin in position
- Mitres:
Re-make/re-assemble mitres that are opening or damaged
- Stiles:
- Repair damaged stiles by piecing or finger jointing in as appropriate glue and clamp any joint, split or crack until secure

L10 TIMBER WINDOWS

L10/1 PRELIMINARY INFORMATION/REQUIREMENTS

L10/1.1 GLAZING BARS

- Where historic glazing bars remain of a different pattern, agree the profile to be used with the CC before ordering manufacture.
- Provide a sample of the proposed glazing bar for agreement by the CC before manufacture.

L10/1.2 HARDWOODS:

- Do not use hardwoods from tropical rainforests
- Supply supporting documentation to indicate that each batch of hardwood comes from a renewable source managed in accordance with Forest Stewardship Council (FSC) standards or approved equivalent.

UK contact address: FSC UK, Great Oak Street, Llanidloes, Powys, Wales Tel: 01686 413916

<http://www.fsc-uk.org/contact-fsc-uk.22.htm>

L10/1.3 TIMBER GENERALLY:

L10/1.4 TIMBER CERTIFICATION:

- Requirements for all timbers and timber-based products.
- Ensure all supplies of timber and timber based products (including those used for temporary works) conform to the specified certification standard listed below:
 - a) FSC (refer to NBS clause 123) – All tropical hardwoods, all non-European sourced temperate hardwoods (e.g. North American sourced oak and walnut), all non-European

sourced softwoods (e.g. North American sourced Western Red Cedar), Plywood (except where formed from Birch or Douglas Fir).

- b) PEFC (refer to NBS clause 124) – All European sourced softwoods (White Wood, Deal, Douglas Fir, Larch, Yew, etc.), European sourced hardwoods not listed under D (European), Birch, Maple, etc.
- c) Provide evidence to the project architect to review on request.

L10/1.5 TIMBER WINDOW COMPONENTS

- Timber generally: To BS EN 942 and NBS clauses L10/121 to 124.
- Appearance class: J10 for glazed beading, drip mouldings and the like. J40 or better for all other members.
- Preservative treatment: As Z12, hazard class 3.

L10/2 COMPONENTS

L10/2.1 TIMBER WINDOWS IF REPLACEMENT IS REQUIRED:

- There is a presumption that replacement should not be required.
- To match original
- To BS 644:Part 1.
- Exposure category (Design wind pressure): 1600 (Pa)
- Timber species: hardwood glazing bead, cills etc, softwood frames Class 1 for glazing beads, drip mouldings and the like.
- Class 2 for all other members.
- Preservative treatment: Organic solvent as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C5.
- Moisture content on delivery: 16% +/- 3
- Glazing: as L40/9
- Ironmongery/accessories: original repaired if possible, or to match
- Finish as delivered: Primed and prepared for decoration as specified.
- Fixing: as original

L10/2.2 TIMBER SUBFRAMES:

- Timber: To BS 1186:Part 1.
- Cills and sub-cills to be hardwood as L10/1.3
- Preservative treatment: Organic solvent as section Z12 and British

Wood Preserving and Damp-proofing Association Commodity Specification C5.

- Joinery workmanship: As NBS section Z10.
- Moisture content on delivery: 16% +/- 3

L10/3 INSTALLATION

L10/3.1 MOISTURE CONTENT OF TIMBER COMPONENTS:

- During delivery, storage, fixing and thereafter to Practical Completion maintain conditions of temperature and humidity to suit specified moisture content(s) of components. When instructed by CC, test components with an approved electrical moisture meter used in accordance with manufacturer's recommendations.

L10/3.2 PRIMING/SEALING:

- Before fixing components ensure that surfaces of timber which will be inaccessible after installation are primed or sealed as specified.

L10/3.3 CORROSION PROTECTION:

- Before fixing, apply two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape, to surfaces of components listed in Particular Specification/Schedule which will come into contact with metals where electrolytic action may take place, or timbers where chemical reactions may take place.

L10/3.4 BUILDING IN:

- Will not be permitted except where specifically stated on the drawings and agreed in writing by the project architect.

L10/3.5 WINDOW INSTALLATION:

- Install windows into prepared openings, ensuring that the amount of window exposed on the face matches the original.
- Install windows without twist or diagonal racking.

L10/3.6 FIXING OF TIMBER FRAMES:

- As NBS section Z20
- When not predrilled or specified otherwise, position fixings not more than 150 mm from each end of jamb, adjacent to each hanging point of opening lights, and at maximum 450 mm centres.

L10/3.7 FIRE RESISTING FRAMES IF REQUIRED:

- Completely fill gap between frame and surrounding construction with intumescent material.

8 CLEANING AND REPAIRING BRICKWORK

- C40/1.1 RECLAIMED BRICKS: facing bricks reclaimed from demolitions and cutting away on the site will be approved for re-use only if they are free from fungus, have no deep or extensive cracks, or damaged corners or arrises, and are free from old mortar.
- C40/1.2 SAMPLES: obtain samples of facing bricks and voussoirs to be used in external brickwork to CC's approval; keep samples on site.
- C40/1.3 CONTROL SAMPLE PANELS: prepare sample panels of brickwork and pointing to match existing, for approval by the CC. Give notice to CC of the removal of any sample panels.
- C40/1.4 MORTAR: to be as specified in Section Z21.
- Ensure that the mortar for the repair is the same strength or weaker than the existing.
- C40/1.5 EXISTING MORTAR SAMPLES: in cases of fine brickwork, take samples of mortar for analysis by others; record positions of each sample.
- C40/1.6 CLEANING: the method of cleaning brickwork depends upon the degree and cause of the soiling.
- Contractors must be experienced in cleaning historic buildings.
 - Present details of soiling and proposals for cleaning to CC for approval before commencing any work.
 - Proposals must include details of collection of run-off and disposal/recycling of dirty water.
- C40/1.7 CLEANING: comply with section 1 of BS 6270: Parts 1 and 2 in respect of:
- means of access;
 - protection of building fabric, external and decorative fixtures;
 - protection of operatives, building users and public.
- Cleaning may be carried out using the Stonehealth DOFF system (see Appendix 1) in relation to lighter (usually biological) deposits or the Stonehealth TORC system (see Appendix 2) in relation to heavier or more persistent (usually chemical pollutant) deposits, or

an equal approved conservation cleaning system.

- C40/1.8 SURFACE REPAIR: comply with the general requirements of BS 6270 and use the particular method of repair specified in the Part and Section of BS 6270 stated below for the surface repair of:
- mortar joints (Part 1, Section 3, paragraph 13)
 - brickwork (Part 1, Section 3, paragraph 14.3)
- C40/1.9 BRICK TIES: ensure that the inner and outer skins of brickwork are properly bonded together; carry out remedial work as necessary using a suitable method of non-ferrous ties. Agree method with CC
- C40/1.10 BIOCIDES FOR ALGAE AND LICHEN: apply a biocide as approved by the Advisory Committee on Pesticides following Health and Safety Executive guidelines and COSHH Regulations.
- C40/1.11 ACCURACY: keep courses level and perpends vertical and in line with existing courses; plumb all wall faces, angles and features. Adjust joint thicknesses to match the existing.
- C40/1.12 SET OUT repairs carefully to achieve satisfactory junctions with existing brickwork/elements.
- C40/1.13 BOND: repairs are to match the existing bond. Additional ties / reinforcement are to be inserted to ensure patched brickwork is securely integrated.
- C40/1.14 TIES / CRAMPS: Any ties / cramps are to be of austenitic stainless steel as elsewhere.
- C40/1.15 BACKING BRICKWORK to faced walls is to be in the same bond as the facework.
- C40/1.16 LAY FACING BRICKWORK to be pointed later on a full bed of mortar and fill all frogs and joints; rake out to C40/240 TCE as the work proceeds.

- C40/1.17 LAY FACING BRICKWORK on a full bed of mortar and fill all frogs and joints; strike off joints as the work proceeds; tamp lightly with a stiff bristle brush when nearly dry to match weathered pointing.
- C40/1.18 LAY GENERAL WALLING brickwork on a full bed of mortar and fill all frogs and joints; strike off joints with a trowel as the work proceeds.
- C40/1.19 FROGS: lay single frogged bricks frog uppermost and double frogged bricks with the deeper frog uppermost.
- C40/1.120 REPAIRS: agree the extent of all brickwork repairs with the CC before starting any cutting out or repointing.
- C40/1.21 STITCHING: carefully cut out bricks as agreed between the by CA/SE/CC:
- remove all mortar from all faces of the hole. Do not damage the arrises of the retained brickwork
 - install reinforcement / ties in accordance with Particular Specification
 - fill hole with facing brickwork to match existing
 - point to match in with the wall
- C40/1.22 REPAIR OF GAUGED BRICK ARCHES is to be carried out by a qualified craftsman bricklayer experienced in repair/renovation of historic gauged brickwork.
- C40/1.23 REPLACEMENT OF GAUGED BRICK ARCHES using arch sets
- Install temporary centring
 - carefully dismantle the whole arch, setting aside any undamaged voussoirs for re-use in new arch set by specialist manufacturer
 - remove section of brickwork above existing timber lintels and cast in new reinforced concrete lintel as described in Section E, with cast in brick ties to Structural Engineer's requirements
 - check that the arch set is the correct one for the particular opening
 - bed voussoirs to designated pattern, using lime putty between them and bedding mortar behind them, ensuring that brick ties are in the correct position
 - point using method C40/1.27 if required

- C40/1.24 REPAIR OF GAUGED BRICK ARCHES using whole voussoirs
- install temporary centring as necessary to support existing and new voussoirs
 - carefully cut out damaged voussoirs
 - bed new voussoirs with lime putty between them, and bedding mortar behind
 - point with lime putty as C40/ 1.27
- C40/1.25 REPAIR OF DROPPED VOUSSOIRS: where one or two voussoirs have dropped but are still sound
- clean off the remaining mortar using a purpose made or hacksaw blade
 - ease the bricks back into position
 - wedge with a sliver of lead or slate
 - point in lime putty as C40/ 1.27
- C40/1.26 KEYED POINTING: rake out joints to a depth of 20 mm as the work proceeds. Point and form joints to approved profile with mortar in a continuous operation as scaffolding is taken down.
- C40/1.27 FINE POINTING: gauged brickwork and other fine joints
- lay a strip of carpet tape over the joint to be pointed
 - slit the tape into the joint with a sharp knife, and press the edges of the tape into the cut
 - point with mortar mix as Section Z21
 - press the mortar home with a pointing key until the joint is full
 - strike off and peel off the tape.
- C40/1.28 RE-POINTING:
- clean out joints to a minimum of 25 mm using hand, not power tools
 - Do not use angle grinders for cutting back joints
 - tamp or hand grout empty joints with mortar to a depth of 25 mm from the face of the masonry
 - clean the prepared face using a bristle brush
 - flush the joint out thoroughly with clean water, taking care to avoid saturation
 - remove all dust and loose material working from the top to the

bottom of the wall

- Lightly wet the joints and point neatly in the appropriate mortar mix from Section Z21
- Brush over lightly with a stiff bristle brush or dab with a piece of coarse sacking after the initial set has taken to leave a slightly textured finish

C40/1.29 TUCK POINTING:

- Prepare joints for pointing or re-pointing as above
- Mortar to match the colour of the brick
- finish with a flush face
- immediately afterwards cut a 3 mm deep groove carefully along each joint, width to match existing or approved sample
- tuck in the groove with the aid of a pointing rule and a flat-edged jointer, with lime putty gauged with a small amount of silver sand
- allow the putty to project 3 mm or to match existing brickwork adjoining
- cut both top and bottom joints off neatly
- form the bed joints first, followed by the vertical joints

C40/1.30 ALGAE AND LICHENS:

Remove any algae or lichens found in old weathered joints using an approved biocide following the manufacturers recommendations.

9 CLEANING AND REPAIRING STONE

C41/1 CLEANING AND REPAIRING STONE

C41/1.1 CAST STONE is not to be used.

C41/1.2 APPROVED FIRM: employ an approved specialist firm in compliance with A30/2.1 for ashlar stone repairs. The name of the proposed sub-contractor must be submitted to the CC, supplying evidence on demand of the sub-contractor's experience in the repair/renovation of historic stonework.

C41/1.3 PROVIDE DETAILED workshop drawings for all replacement stone profiles, sections and fixings; and submit to CC for agreement prior to the commencement of any works.

- base drawings on surveys and templates taken from least weathered areas at points agreed on site with the CC.
- Do not damage existing sound work whilst taking the templates.

C41/1.4 CLEANING comply with the general requirements of BS 6270 and use the particular method of repair specified in the Part and Section of BS 6270 stated below for the surface repair of stonework (Part 1, Section 3, paragraph 14.2)

Cleaning may be carried out using the Stonehealth DOFF system (see Appendix 2) in relation to lighter (usually biological) deposits or the Stonehealth TORC system (see Appendix 3) in relation to heavier or more persistent (usually chemical pollutant) deposits, or an equal approved conservation cleaning system.

C41/1.5 CILLS work all cill stones to match existing dimensions and profiles, with throating, to agreed profile

C41/1.6 STEPS - work to steps to follow dimensions and profiles of existing, unless existing are historically inappropriate.

C41/1.7 COPINGS

- Work coping stones to match existing profiles.
- Stones to be rubbed and throated in lengths to match the original
- Knee and bend stones to be solid as existing

- C41/1.8 IRON CRAMPS: When iron cramps are encountered during the repair works
- Carefully remove all rusting cramps, dowels and any associated lead flashings etc.
 - Replace with non-ferrous fixing
 - Remove any loose or friable materials from sound cramps with a wire brush and treat with a suitable rust inhibitor
- C41/1.9 STONE TO BE REINSTATED
- make a note of the position of all stones to be removed and reinstated
 - mark in indelible marker
 - cut out the perimeter joints with a purpose made fine saw blade
 - carefully set aside and store as for new stone
 - re-fix stones in their exact positions and proper beds
- C41/1.10 CUT OUT defective stones to 100 mm on bed or to sound stone, whichever is the deeper, or other depth agreed.
- cut out perimeter joint with a masonry saw, take care not to damage the arrises of the surrounding stones
 - break down the stone with vertical saw cuts or hammer and chisel.
- C41/1.11 TEMPORARY SUPPORTS; allow for temporary supports and centring to SE's approval and in accordance with the Health and Safety plan.
- C41/1.12 CUT OUT for piecing in using a small sharp chisel and small saw blades to a neat square profile
- C41/1.13 TOOLING BACK: dress back friable, loose or flaking stone to a firm edge
- leave without pockets or ledges to catch rainwater
- C41/1.14 PREPARATION OF BACKGROUND for the replacement of new or retained stones; clean out the cavity or open bed of all loose and friable material
- spread mortar bed in accordance with Particular Specification/Schedule onto the wetted old stone
 - do not saturate the cavity

- re-fix the stone with joint width to match existing
- C41/1.15 POSITIONING AND GROUTING; dampen new stone and handle into position
- ease in correct alignment on the bed of wet mortar
 - pack up with lead or slate shims for temporary support for very heavy stones
 - stop up the bed joint and perpendicular joints at the surface; leaving openings for grouting
 - grout with mortar as Section Z21
 - avoid staining of the stone face with mortar
- C41/1.16 ISOLATING PAINT: where new stone is laid against a core of brickwork
- treat brick with one coat of bitumen and sand finish.
 - Where it is not possible to paint the core, paint the new stone on all faces except the front, keeping the bitumen back from the face.
- C41/1.17 BEDDING AND POINTING; bed new stones not to be grouted up but do not point until the new work has settled in
- place mortar only under the bearing points of the cills and lintels
 - tamp and point last 25 mm to match original work
- C41/1.18 PIECE IN stones as described in preparation and grouting clauses above
- no ashlar to be less than 75 mm in depth
 - no feather edging will be permitted
 - tool the exposed face to match the existing stone
 - observe existing joint lines
 - properly secure with dowels, joggles, cramps and mortar as agreed with CC
- C41/1.19 PIECING IN REPAIRS to weathering sections are to be cut under existing brickwork or stonework by a minimum of 75 mm to prevent rain penetrating behind repairs.
- C41/1.20 STITCHING:
- Where possible, carefully cut out stone plug and set aside sound top section for re-use
 - protect face of stone with latex paint
 - drill hole for dowel or pin across fracture and flush out with volatile solvent

- fill hole 2/3 full with epoxy resin
- protect cored recess, and insert threaded stainless steel dowel cut to required length
- point up recess or replace stone plug
- remove protective latex paint

C41/1.21 CRAMPS AND DOWELS: all new work, repairs and rebuilt work is to be properly cramped and dowelled together and to existing adjoining fabric, using cramps and dowels as specified.

C41/1.22 CRAMPS:

- Austenitic stainless steel
- bedded in mortar, as Section Z21, depending upon location

C41/1.23 DOWELS :

- Austenitic stainless steel
- bedded in mortar or epoxy resin depending upon location

C41/1.24 REPLACEMENT STONE

- Replacement stone sections are to be matched to the existing stone being replaced using the British Geological Survey petrographic matching service and are to be a good match in terms of colour, grain, texture, bedding arrangement and dressing style.

10 CLEANING AND REPAIRING TERRACOTTA

C41/2 CLEANING AND REPAIRING TERRACOTTA

Cleaning may be carried out using the Stonehealth DOFF system (see Appendix 1) in relation to lighter (usually biological) deposits or the Stonehealth TORC system (see Appendix 2) in relation to heavier or more persistent (usually chemical pollutant) deposits, or an equal approved conservation cleaning system.

Internal areas may be cleaned using the Stonehealth Clean-Film system (see Appendix 3) or an equal approved system.

C41/2.1 CRAMPS AND DOWELS: all new work, repairs and rebuilt work is to be properly cramped and dowelled together and to existing adjoining fabric, using cramps and dowels as specified.

C41/2.2 CRAMPS:

- Austenitic stainless steel
- bedded in mortar, as Section Z21, depending upon location

C41/2.3 DOWELS:

- Austenitic stainless steel
- bedded in mortar or epoxy resin depending upon location

C41/2.4 REPLACEMENT TERRACOTTA: Replacement terracotta sections may be sourced from the following:

Darwen Terracotta Ltd
Building 0, Ribble House, Ribble Business Park
Challenge Way, Blackburn
Lancashire BB1 5RB
01254 460 500 / 07581 558 039
jonwilson@darwenterracotta.com

11 REDECORATIONS

M60 PAINTING AND CLEAR FINISHING

M60/1 COATING SYSTEMS

M60/1.1 PAINT SYSTEMS TO INTERNAL AND EXTERNAL TIMBER:

- All paints to be part of the same manufacturer's system and applied as the manufacturer's recommendations, to give a total of three coats after priming. The number of undercoats to top coats is to be as the manufacturer's system.
- Water-based paints are to be used in preference to solvent-based where possible.

M60/1.2 MICROPOROUS PAINT

- Manufacturer: Akzo Nobel Decorative Coatings
- Surface(s): Timber
- Preparation: As set out in clauses below
- Apply stabilising solution as required to manufacturer's recommendations
- Bring forward recessed areas of surface or those with non- matching texture with top coat to even out final surface texture as necessary
- Initial coat: Patch prime with M60/6.1 as necessary
- Top coats : 2 coats
- Colours: To match colour identified in paint analysis report and agreed by CC.

M60/1.3 OTHER PAINTS

- All surfaces to have at least three coats of paint, not including any primer or sealer.

M60/2 GENERALLY

M60/2.1 COATING MATERIALS:

- For all painting to be obtained from one only of the following manufacturers unless specified otherwise: Inform CC of selected manufacturer at an early date.
- Akzo Nobel Decorative Coatings Ltd

M60/2.2 FILLER

- Use filler recommended by the manufacturer of the paint selected. Filler to be used as the manufacturer's instructions and recommendations.

M60/2.3 EXTERNAL SURFACES NOT TO BE COATED:

- DO NOT paint any surfaces which have not been painted previously

M60/3 PREPARATION**M60/3.1 PREPARATION GENERALLY:**

- Comply with BS 6150 and additional requirements in this specification.
- Protect all services, disposal installations and other items retained within the roof space prior to the commencement of works.
- When removing or partially removing coatings, use methods which will not damage the substrate or adjacent surfaces or adversely affect subsequent coatings.
- Materials used in preparation to be as recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Apply oil based stoppers/fillers after priming. Apply water based stoppers/fillers before priming unless recommended otherwise by manufacturer. Patch prime water based stoppers/fillers when applied after priming.
- Apply all stoppers/fillers strictly according to manufacturer's recommendations.
- Ensure that all skylights are eased and repaired during the preparation works. Prepare and prime any resulting bare areas.

M60/3.2 MANUAL REMOVAL OF PAINT

- Removed loose and flaking paint manually.
- Peeling paint to the soffits of the timber sarking boards should be carefully removed by sliding a hand held scraper behind the loose sections.
- No removal of loose areas of paint using electrical hand held power tools or other mechanical means shall be allowed because of the risk to the timber substrate.
- Persons carrying out the manual removal works should be carefully trained and supervised by senior painter / decorators with suitable conservation experience.
- Undertake cleaning and removal of peeled paint sections prior to the commencement of Bicarbonate of Soda blasting as below.

M60/3.3 PAINT REMOVAL GENERALLY

- Prepare test areas using Bicarbonate of Soda blasting for approval by conservation consultant and project architect before the system of paint removal is adopted for those

areas which cannot be removed manually.

M60/3.4 BURNING OFF

- No burning off of existing paint layers shall be permitted because of the fire risk to historic buildings.

M60/3.5 CHEMICAL STRIPPING

- No conventional chemical paint stripping systems shall be used.

M60/3.6 NON-ABRASIVE BLASTING

- Remaining paint not removable by manual action shall be removed using non-abrasive Bicarbonate of Soda blasting.
- Bicarbonate of Soda blasting shall be carried out by trained and approved operatives wholly in accordance with the supplier's recommendations and product information.
- Operatives shall wear appropriate full Personal Protective Equipment (PPE) whilst using the system.
- The system products shall be used and managed wholly in accordance with COSHH and other relevant legislation.
- On completion of the works the area shall be carefully cleaned and all dust and debris removed wholly to the satisfaction of the project architect.
- The contractor shall submit detailed method statements for approval by the project architect and conservation consultant explaining how the system is to be operated safely within the roof space including confirmation of ventilation requirements, control of dust, arrangements for gaining access to the roof void with the system equipment, floor loadings imposed by the equipment and any requirements for spreader plates etc.
- Non abrasive paint removal systems can be procured from the following:

Soda Blast Systems (UK) Ltd.
River Lee Road, Birmingham B11 2JG
Telephone: 0845 644 8611
Mobile: 07775 508 084
Website: www.soda-blast.co.uk

M60/3.7 LEAD BASED PAINTS:

- Comply with all relevant Health and Safety requirements when removing lead based paints, including
- The Control of Lead At Work regulations 1980
- Personal Protective Equipment at Work Regulations 1992
- The Health and Safety at Work, etc. Act 1974
- The Construction (Health, Safety and Welfare) Regulations 1996

- The Factories Act 1996
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
- Note that the external render was regularly painted with lead-based paints until recent years.

M60/3.8

SUITABILITY OF SURFACES AND CONDITIONS:

- Application of coatings will be taken as joint acceptance by the Main Contractor and Subcontractor of the suitability of surfaces and conditions within any given area to receive the specified coatings.
- No paint is to be applied when the ambient temperature is less than 8°
- The paint specified for the exterior can be applied in wet weather during the painting season, but not to wet surfaces. Condensation can also affect the drying time and consistency of the paint on cold nights.
- No paint is to be applied to surfaces structurally or superficially damp and all surfaces must be free from condensation, dirt etc. before the application of each coat.
- No paint is to be applied to any surface where the moisture content exceeds 18%.
- No painting is to be commenced until 48 hours have elapsed after stopping and facing up
- Consult the manufacturers for their latest recommendations on the use of their products.

M60/3.9

PROGRAMME:

- External painting must be carried out during the summer months of May to September.
- No painting is to be carried out under adverse weather conditions, such as extremes of temperature, during rain or fog and the like.

M60/3.10

IRONMONGERY:

- Remove all old paint and varnish marks from existing ironmongery. Thoroughly clean and polish before re-fixing.

M60/3.11

STEEL - MANUAL CLEANING:

- In addition to general preparation and at an appropriate stage, remove residual rust with suitable chemical treatment, applying a zinc phosphate primer or patch primer as soon as it has cured.

M60/3.12 IRONWORK PREPARATION

- As clause C46/170.TCE Cleaning Metal Surfaces - cast iron and steel work.

M60/3.13 ALKALI AFFECTED COATINGS:

- Completely remove from affected surfaces. The extent of such treatment to be as instructed or approved.

M60/3.14 EXISTING PAINTED WINDOWS:

- Prepare previously painted surfaces as M60/3.2.
- Thoroughly clean junctions between previously painted surfaces and glass.
- Remove old paint splashes and old paint encroaching beyond the sight line.
- Remove loose and defective putty
- When dry, patch prime, re-putty and paint as soon as sufficiently hard.

M60/3.15 POINTING TO EXISTING FRAMES:

- Surface mastic pointing to existing frames is not acceptable. Details of any proposals for recessed mastic pointing to be agreed with the CC beforehand.
- Remove any defective pointing around frames; thoroughly clean the joint recess, remove all dust.
- Insert an inert backing strip to reduce the depth of the joint to half its width if necessary
- Point with lime mortar

M60/3.16 EXISTING BOX GUTTERS:

- Clean all dirt and debris from inside of all gutters (even though not to be painted). Clean out defective joints and seal with approved jointing material.

M60/4 APPLICATION**M60/4.1 PAINTING GENERALLY:**

- Comply with BS 8000: Part 12, Section 3.2 and additional

requirements in this specification. Ensure that a copy of BS 8000: Part 12 is kept on site throughout the term of the contract.

- All painting is to be undertaken in accordance with BS 6150:1991, and the additional requirements included in this specification.

M60/4.2 SPRAY PAINTING:

- Spray painting is not permitted internally or externally
- Specialist needle spray painting for fine cornices may be carried out with prior written permission of the project architect.

M60/4.3 APPLICATION:

- Priming coats are to be applied by brush.
- Ensure that cutting in is carried out by brush when using rollers
- Ensure that film thickness meets manufacturer's recommendations.

M60/4.4 DELAYS IN OVERPAINTING:

- Do not allow primed or undercoated surfaces to deteriorate by being left in an exposed or unsuitable situation before completing the painting process.

M60/4.5 INSPECTION:

- Ensure that the surface of each coat of paint is inspected by project architect, or where applicable, the CC before application of the next coat.

M60/4.6 CONCEALED JOINERY SURFACES:

- After priming, apply one undercoat to all concealed surfaces of joinery components before fixing.
- Where one or more additional coats are specified to be applied in the factory, they must be applied to all surfaces, including those which will be concealed when incorporated into the building.

M60/4.7 BEAD GLAZING:

- Joinery which is to be varnished must have the first two coats of varnish applied to rebates and beads before glazing.
- Joinery which is to be painted must have the primer and one undercoat applied to rebates and beads before glazing.

M60/4.8 PUTTY GLAZING:

- Allow putty to set for 7 days then, within a further 14 days, seal with an oil based primer. Ensure that putty is fully protected by coating system as soon as it is sufficiently hard.
- If using water-borne exterior coatings, note the requirement for the putty to fully cure before decorating.

M60/4.9 COMPLETION:

- Ensure that moving parts move freely. Remove all masking tape and temporary coverings.

M60/5 COLOURS

- Colours: To match colour identified in paint analysis report and agreed by CC.

M60/5.1 WINDOW JOINERY

- External window joinery to be painted to BS 00E55.

12 INTERNAL PLASTER AND CORNICE REPAIRS

C47/1 REFER to section M20 for plastering generally

C47/2 HAZARDS:

- The old plaster in the building will have been decorated with lead paints. The contractor must ensure that the works are carried out in accordance with the Approved Code of Practice to the Control of Lead and Works Regulations 1980. The contractor must keep all dust under control and dispose of in sealed bags to Local Authority Requirements.
- There is also a very small risk of anthrax spores being present on the animal hairs used in old plaster. Comply with the precautionary measures included in Guidance Note 23 (HSE 1979), and ensure all persons who might be exposed to the risk are aware of the early recognition of symptoms and prompt treatment.

C47/3 REPAIRING EXISTING PLASTER:

- Remove plaster which is loose, soft, friable, badly cracked or affected by efflorescence. Gently tap all remaining intact surfaces and remove hollow sounding areas of plaster. Remove stained plaster to 300 mm beyond last point of visible staining.
- Cut back to straight horizontal and vertical edges.
- Advise CC if any built-in timbers, structural deficiencies or sources of damp are revealed.
- Thoroughly dry brush the background and edges to remove dust, loose material and efflorescence before applying plaster.

C47/4 REPAIRING EXISTING DAMP PLASTER:

- Remove plaster on walls affected by rising damp up to a height of 300 mm above the highest point reached by the damp or 1 m above the dpc, whichever is higher.
- Rake out perished and salt contaminated mortar joints and cut out and renew any heavily salt contaminated bricks or blocks in the background.
- Advise CC if any built-in timbers, structural deficiencies or additional sources of damp are revealed.
- Provide the maximum ventilation possible and leave walls to dry for as long as possible before applying new plaster.
- Thoroughly dry brush background to remove dust, loose material and efflorescence before applying plaster.

C47/5 REPAIR OF LATHING:

- Clear dust, loose and friable material from the back of the lathing by brushing and vacuuming
- Refix detached laths by pre-drilling, using wood screws with wide washers and wire gauze washers to give key for plaster
- Reinforce small gaps in plaster using plaster bridges, or expanded stainless steel mesh
- For larger areas, agree method of repair with CC before cutting away any original plaster

C47/6 LIME PLASTER REPAIR MIXES: Plaster mix to match existing; typically

- Render Coat: 1:3 lime: sand with hair if appropriate, 8-10 mm thick
- Floating Coat: 1:3 lime: sand with less hair than render coat, 8- 10 mm thick
- Setting Coat: 3:2 lime: sand with no hair, 3mm thick

C47/7 REPAIR OF DECORATIVE PLASTER MOULDINGS: Agree method and

extent of repairs to decorative plaster mouldings with CC before cutting away any original fabric.

C47/8 REPAIR OF PAPIER MACHE, OR COMPOSITION ETC.
MOULDINGS:

- The material of any moulding must be carefully identified, especially where chemical stripping is proposed. Proposals for repair of mouldings in papier mache, composition or other materials must be agreed with CC before starting any work.

C47/9 SMALL PATCHES AND CRACKS IN LIME PLASTER:

- Cut out patches and large cracks to a firm edge, undercutting the edges to form a dovetail key, taking care not to cut through any lathing
- Brush and vacuum away any loose material, dust and dirt
- Treat the surrounding area with size
- Wet up old plaster with lime water
- Plaster with coats no more than 10 mm thick to the depth of the surrounding plaster

M20/1 TYPE(S) OF COATING**M20/1.1 LIME HAIR PLASTER ON TIMBER LATH**

- Location: stud partitions and ceilings.
- Background: timber lath as clause M30/1.2
- Preparation: clean down and wet up the lath background
- Render coat
 - Lime putty: as clause M20/2.5 or L20/2.12
 - Sand: sharp sand; colour and source to approval, 1-6 mm.
See also Z21
 - Mix proportions: 1:3 lime sand
 - Fibre reinforcement: hair as clause M20/20/5 Thickness (excluding dubbing out): 8-10mm
- Floating coat
 - Lime putty: as for render coat
 - Sand: as for render coat but 1-3 mm. Mix proportions: as for render coat
 - Fibre reinforcement: hair as clause M20/2.15, but at a lower density Thickness: as render coat
- Setting coat
 - Lime putty: as for render coat
 - Sand: as for render coat but 0.5 – 1.5 mm. Mix proportions: 3:2 lime:sand with no hair Thickness: 3 mm
 - Finish: smooth finish with steel trowel.

M20/2 GENERAL REQUIREMENTS FOR WORKMANSHIP

- M20/2.1 **BASIC WORKMANSHIP:** Comply with the clauses of BS 8000:Part 10 which are relevant to this section.
- M20/2.2 **FOLLOW THE MANUFACTURER'S/SUPPLIER'S INSTRUCTIONS** when using repair renders and plasters.
- M20/2.3 **SAMPLES**

General: Provide representative samples of the new render prepared to receive the paint finish for the approval of the Project Architect.
- M20/2.4 **UNIFORMITY OF COLOUR AND TEXTURE**

General: Maintain consistent colour and texture. Obtain materials from one source. Mix different loads if necessary.
- M20/2.5 **MIXING**

 - Mortars (site prepared):
 - Batching: By volume. Use clean and accurate gauge boxes or buckets.
 - Mix proportions: based on damp sand. Adjust for dry sands.
 - Mixes: Of uniform consistency and free from lumps. Do not retemper or reconstitute mixes.
 - Contamination: Prevent. Keep plant and banker boards clean.
 - Do not use air entraining or other admixtures.
- M20/2.6 **SCAFFOLDING**

General: Prevent putlog holes and other breaks in coatings.
- M20/2.7 **COLDWEATHER**

General: Do not use frozen materials or apply coatings to frozen or frost bound backgrounds.

External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising. Maintain temperature of work above freezing until coatings have fully hardened.

Internal work: Take all necessary precautions to enable internal coating work to proceed without damage when air temperature is below 3°C.

- M20/2.8 ADMIXTURES: Do not use, other than air-entraining and water-retaining admixtures, unless specified or approved.
- M20/2.9 MIXING:
- Proportions of specified mixes are by volume and for damp sand. Adjust proportions if dry or saturated sand is used
- M20/2.10 READY PREPARED LIME PUTTY
- Use lime putty slaked directly from CL90 (high calcium) quicklime to BS 890, using an excess of water and matured in pits/containers that allow excess water to drain away.
 - Density of matured lime putty: 1.3 to 1.4 kg/litre.
 - Maturity of lime putty before use: not less than 90 days after slaking.
 - Prevent lime putty from drying out and protect from frost.
- M20/2.11 SITE PREPARED NONHYDRAULIC LIME :SAND MORTAR
- Lime putty : As clause 486
 - Thoroughly mix lime putty with sand (or knock up previously prepared mortar) either mechanically or manually. Add only sufficient water to produce a workable mix.
- M20/2.12 HAIR REINFORCEMENT:
- Type: Goat hair
 - Proportions: add at approximately 5kg/m³ of lime:sand or as specified
 - Hair to be clean and free from grease and other impurities. Length of chopped fibres: 30-50 mm and well teased before adding to the mix.
 - Mix thoroughly into lime:sand mortar during final mixing stage or knocking up stage as appropriate for the type of lime. Ensure that hair is well distributed throughout the mix without balling into lumps. Do not add hair to lime:sand mortar which is to be stored for more than 4 weeks.
- M20/2.13 SMOOTH FINISH: trowel or float to produce a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Do not use waterbrush and avoid excessive trowelling and over polishing.

M20/3	PREPARING BACKGROUNDS
M20/3.1	KEYING/BONDING: Prepare backgrounds as specified for the type of coating to be applied. Where not specified, comply with BS 8000:Part 10, clause 2.2.2.2. Methods other than those specified may be submitted for approval.
M20/3.2	EXISTING BACKGROUNDS Prepare existing backgrounds as included in Section C44, C45 above.
M20/3.3	RAKING OUT FOR KEY Soft joints in masonry: Rake out to a depth of 136mm (minimum). Dust and debris: Remove from joints.
M20/3.4	EXISTING WALLS TO BE PLASTERED: - Scrape off all old plaster and loose friable material - Remove salts by brushing with a stiff bristle brush - Use water to wash down very wet walls to ensure removal of soluble salts - Completely remove all paint OR fix expanded metal lathing and apply plasters as M30/1 - Rake the joints on backgrounds of dense or hard bricks - Leave walls to dry off before plastering
M20/3.5	ROUGHENING FOR KEY Backgrounds: Roughen thoroughly and evenly. Depth of surface removal: Minimum necessary to provide an effective key.
M20/3.6	EXISTING PLASTER / RENDER Location and extent of renewal: Agree, at least on a provisional basis, before work commences with CC. Removal of existing coatings: Use methods that minimise the amount of removal and renewal.
M20/3.7	REMOVING DEFECTIVE EXISTING RENDER

Render for removal: Loose, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.

Patches: Cut out rectangular areas with straight edges.

Horizontal and vertical edges: Square cut or slightly undercut. Bottom edges to external render: Do not undercut.

Render with imitation joints: Cut back to joint lines.

Cracks (other than hairline cracks): Cut out to a width of 75mm (minimum).

M20/3.8 EXISTING DAMP AFFECTED PLASTER / RENDER

Plaster affected by rising damp: Remove to a height of 300mm above highest point reached by damp

Perished and salt contaminated

masonry: Mortar joints: Rake out

Masonry units: Seek instructions.

Faults in background (structural deficiencies, additional sources of damp, etc.): Seek instructions.

Drying out backgrounds: Established drying conditions. Leave walls to dry for as long as possible before plastering.

Dust and loose material: Remove from exposed backgrounds and edges.

M20/4 BACKINGS/BEADS/JOINTS/FEATURES

M20/4.1 BEADS/STOPS GENERALLY:

- Provide beads/stops at all external angles and stop ends except where specified otherwise.
- Cut neatly, form mitres at return angles and remove sharp edges, swarf and other potentially dangerous projections.
- Fix securely, using the longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with background. Use mechanical fixings for external beads/stops.
- After coatings have been applied, remove coating material while still wet from surfaces of beads/stops which are to be exposed to view.

- M20/4.2 DISSIMILAR SOLID BACKGROUNDS: Where not shown otherwise on drawings, continue coatings without break across joints between dissimilar solid backgrounds which are in the same plane, reinforcing with lathing as BS 8000: Part 10, clause 2.2.2.3.
- M20/4.3 CONDUITS bedded in undercoat to be covered with 90 mm wide jute scrim bedded in finishing coat mix, pressed flat and trowelled in. Do not lap ends of scrim.
- M20/4.4 FIBROUS PLASTER MOULDINGS
- Type: as Particular Specification
 - Fixing: as Particular Specification
 - Ensure that noggings, bearers, etc. required to support mouldings are accurately positioned and securely fixed.
 - Fix securely, true to line and level. Bed direct fixed mouldings solid.
 - Reinforce framing, fixing points and joints with wads.
 - Fill all joints and holes and finish flush and smooth to correct profile.
- M20/4.5 SOLID CAST PLASTER MOULDINGS
- Type: as Particular Specification
 - Fixing: as Particular Specification
 - Fix securely and accurately. Fill all joints and finish flush and smooth to correct profile.
- M20/4.6 RUN PROFILES IN LIME PLASTER
- Plaster: As clause 215
 - Preparation: for small profiles build up the work on the plain render coat. For larger profiles build up a base profile of lathing on bracketing.
 - Run profiles using a zinc or tin template, padded out for the under coats.
 - Finish: 3 mm finishing coat, smooth finish.
 - Enrichments: score the finishing coat before setting to ensure a good key where enrichments are to be fixed to the moulding.
- M20/5 PLASTERING

- M20/5.1 APPLICATION GENERALLY:
- Apply each coating firmly to achieve good adhesion and in one continuous operation between angles and joints.
 - All coatings to be not less than the thickness specified, firmly bonded, of even and consistent appearance, free from rippling, hollows, ridges, cracks and crazing.
 - Finish surfaces to a true plane, to correct line and level, with all angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
 - Prevent excessively rapid or localised drying out.
- M20/5.2 DUBBING OUT: If necessary to correct inaccuracies, dub out in thicknesses of not more than 10 mm in same mix as first coat. Allow each coat to set before the next is applied. Cross scratch surface of each dubbing out coat immediately after set.
- M20/5.3 DISSIMILAR BACKGROUNDS: Where scrim or lathing or beads are not specified, cut through plaster with a fine blade in a neat, straight line at junctions of:
- Dissimilar solid backgrounds.
- M20/5.4 SMOOTH FINISH: Trowel or float to produce a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Do not use water brush and avoid excessive trowelling and over polishing.
- M20/6 RENDERING
- M20/6.1 APPLICATION GENERALLY:
- Apply each coating firmly to achieve good adhesion and in one continuous operation between angles and joints.
 - All coatings to be not less than the thickness specified, firmly bonded, of even and consistent appearance, free from rippling, hollows and ridges.
 - Finish surfaces to a true plane, to correct line and level, with all angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
 - Prevent excessively rapid or localised drying out.

- M20/6.2 DUBBING OUT FOR RENDERING
- General: To correct background inaccuracies.
- Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Comb surface of each coat.
- M20/6.3 UNDERCOAT GENERALLY
- General: Rule to an even surface. Comb to provide a key for the next coat. Do not penetrate the coat.
- M20/6.4 FINAL COAT – PLAIN FLOATED FINISH
- Finish: An even, open texture free from laitance.
- M20/6.5 KEYING as specified in BS 8000:Part 10, clause 3.3.2.4 is to be carried out with a suitable comb to produce evenly spaced wavy horizontal lines, approximately 20 mm apart and 5 mm deep to provide a key for following coat. Do not penetrate through the coat. Do not use cross scratching.
- M20/6.6 CURING AND DRYING
- General: Prevent premature setting and uneven drying of each coat.
- Curing coatings: Keep each coat damp by covering with polyethylene sheet and / or spraying with water.
- Final coat: Hang sheeting clear of final coat.
- Drying: Allow each coat to dry thoroughly, with drying shrinkage substantially complete before applying each coat.
- Protection: Protect from frost and rain.
- M20/6.7 DRYING: Keep each undercoat and final coat damp for the first 3 days by covering with polyethylene sheet and/or spraying with water. Thereafter prevent from drying out too rapidly. Work in shade whenever possible.
- Allow each coat to dry out thoroughly to ensure that drying shrinkage is substantially complete before applying next coat.
- M20/6.8 PROTECTION: Adequately protect newly applied external coatings against frost and rain for the first 48 hours using polyethylene sheet hung clear of the face, or other approved method.

13 INTERNAL TILE REPAIRS

M40/1 GENERALLY

M40/1.1 SUITABILITY OF BACKGROUNDS/BASES: Before starting work ensure that backgrounds/bases:

- Are such as to permit specified flatness/regularity of finished surfaces, bearing in mind the permissible minimum and maximum thicknesses of the bedding material.
- Have been allowed to dry out by exposure to the air for not less than the following:
 - Concrete slabs: 6 weeks.
 - Concrete walls: 6 weeks.
 - Brick/block walls: 6 weeks.
 - Cement:sand screeds: 3 weeks. Rendering: 2 weeks.
 - Gypsum plaster: 4 weeks.

M40/1.2 FALLS IN THE BASE: Before starting work, check that where required, falls have been provided in the base. Inform the CA if the falls are inadequate. Do not attempt to provide falls by increasing or decreasing the specified thickness of the bedding material.

M40/1.3 STANDARDS:

- Comply with BS 8000 Part 11, and BS 5385

M40/2 PREPARATION

M40/2.1 EXISTING BACKGROUNDS/BASES GENERALLY:

- Remove efflorescence, laitance, dirt and other loose material by thoroughly dry brushing.
- Remove deposits of oil, grease and other materials incompatible with the bedding using a suitable emulsion cleaner then washing with clean water.
- Clean down all tile, paint and other nonporous surfaces by washing with water containing detergent then with clean water.

- Allow backgrounds/bases to dry before fixing tiles.

M40/2.2 EXISTING CONCRETE/SCREEDS: Cut out all loose or hollow portions and remove dust and debris.

M40/2.3 EXISTING PLASTER: Remove plaster which is loose, soft, friable, badly cracked or affected by efflorescence. Cut back to straight horizontal and vertical edges. Thoroughly dry brush the background and edges to remove dust, loose materials and efflorescence. Make good with plaster or non shrinking filler.

M40/2.4 NEW PLASTER: Ensure plaster is dry, solidly bedded, free from dust and friable matter. Apply plaster primer recommended by the adhesive manufacturer and allow to dry before tiling.

M40/3 FIXING

M40/3.1 FIXING GENERALLY:

- Check that there are no unintended colour/shade variations within the tiles for use in each area/room. Thoroughly mix variegated tiles.
- Check that adhesive is compatible with background/base. Use a primer where recommended by the adhesive manufacturer.
- Cut tiles neatly and accurately.
- Unless specified otherwise fix tiles so that there is adhesion over the whole of the background/base and tile backs.
- Before bedding material sets make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
- Clean surplus bedding material from joints and face of tiles without disturbing tiles.

M40/3.2 SETTING OUT:

- Joints to be true to line, continuous and without steps.
- Joints on walls to be truly horizontal, vertical and in alignment round corners.
- Joints in floors to be parallel to the main axis of the space or specified features.

- Cut tiles/slabs to be kept to the minimum, as large as possible and in unobtrusive locations.
- Joints in walls and floors to be in alignment.
- Where positions of movement joints are not specified they are to be agreed with the CA.

M40/3.3 CLEANING OF EXISTING AREAS:

- Existing areas of internal tiling may be cleaned using the Stonehealth Clean-Film system (see Appendix 3) or an equal approved conservation cleaning system.
- Before laying tiles obtain approval of setting out from CA

M40/3.4 FLATNESS/REGULARITY OF TILING: Sudden irregularities not permitted. When checked with a 2 m straight edge with 3 mm feet at each end, placed anywhere on the surface, the straight edge should not be obstructed by the tiles and no gap should be greater than 6 mm.

M40/3.5 LEVEL OF TILING ACROSS JOINTS:

Maximum deviation between tile or slab surfaces either side of a joint, including movement joints to be:

1 mm for joints less than 6 mm wide.

2 mm for joints 6 mm or greater in width.

M40/3.6 MORTAR/ADHESIVE:

- Method of fixing tiles to walls and floors above basement level to be agreed before commencing fixing.

M40/3.7 WATERPROOF UNDERLAYER

- The method of ensuring that water from bathroom or kitchen areas above ground does not enter the fabric of the building must be agreed with CC before commencing any work

M40/4 MOVEMENT JOINTS/GROUTING/COMPLETION

M40/4.1 SEALANT MOVEMENT JOINTS

- Install movement joints in accordance with BS 5385

M40/4.2 GROUTING:

- Grout tiles as soon as possible after bedding has set

sufficiently to prevent disturbance of tiles.

- Ensure that joints are 6 mm deep (or the depth of the tile if less), and are free from dust and debris.
- Fill joints completely, tool to an approved profile, clean off surface and leave free from blemishes.
- Polish wall tiling with a dry cloth when joints are hard.

M40/4.3 COLOURED GROUT: Check the potential risk of staining by applying the grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to the tiles and repeat the trial.

M40/4.4 PROTECTION GENERALLY: Adequately protect and keep clean all completed areas. Clean off any droppings immediately.

14 CONSERVATION PRINCIPLES FOR PROTECTION OF EXISTING FABRIC DURING DEMOLITION WORK

DEMOLITION / ALTERATION

This section deals with requirements for safety and protection of the retained building and services during demolition, removal of asbestos and restrictions on the disposal of waste.

C20 DEMOLISHING STRUCTURES

To be read with Preliminaries/General conditions.

GENERAL REQUIREMENTS

- C20/1.1 **SURVEY:** Before starting work, examine all available information, carry out a survey of the structure(s), site and surrounding area, and submit a survey report and method statement to the CA (Contract Administrator / Architect), covering all relevant matters listed below and in the Health and Safety Executive Guidance Note GS29/1 paragraph 32:
- The form, condition and demolition methods of the structure(s).
 - The form, location and removal methods of any toxic or hazardous materials.
 - The identification and location of services above and below ground.
- C20/1.2 **OPENING UP:** Carry out opening up to determine the extent of structural defects, rot and the like, as itemised, and agree remedial works with CA before commencing any works. Note that extensive opening up may require Listed Building Consent or agreement by exchange of correspondence.
- C20/1.3 **ARCHITECTURAL FEATURES:** Protect all architectural features to remain with casings/protection to be agreed with the CA before commencing any demolition.
- C20/1.4 **BENCHMARKS:** report any bench marks or other survey information, boundary markers and the like found on structures to be demolished. Do not destroy without the written permission of CA.

C20/2	SERVICES AFFECTED BY DEMOLITION
C20/2.1	Services carried out to or which affects new or existing services. Carry out in accordance with the byelaws or regulations of the relevant statutory authority.
C20/2.2	SERVICES WHICH ARE TO REMAIN: Notify the CA and service authority or owner of any damage. Make all arrangements for repair to the satisfaction of the CA and service authority or owner.
C20/3	DEMOLITION WORK
C20/3.1	WORKMANSHIP GENERALLY: - Demolish structure(s) in accordance with BS 6187 and Health and Safety Executive Guidance Notes GS29/1, 3 and 4. - Operatives must be appropriately skilled and experienced for the type of work and hold or be training to obtain relevant CITB Certificates of Competence. - Site staff responsible for supervision and control of the work are to be experienced in the assessment of the risks involved and in the methods of demolition to be used.
C20/3.2	GAS OR VAPOUR RISKS: Take adequate precautions to prevent fire or explosion caused by gas or vapour.
C20/3.3	DUST: Reduce dust by periodically spraying demolition works with water. Avoid wetting plasterwork etc which is to remain.
C20/3.4	BURNING ON SITE will not be permitted.
C20/3.5	NOISE: works that cannot be executed without undue noise or vibration are to be carried out at such times as are to be agreed with CA.
C20/3.6	HEALTH HAZARDS: Take adequate precautions to protect site operatives and the general public and neighbours from health hazards associated with dangerous fumes and dust arising during the course of the Works.

C20/3.7 ADJOINING PROPERTY:

- When demolishing structure(s) against adjoining property leave adequate temporary support and protection at each stage and arrange for inspection by the CA. Maintain and alter temporary supports and protection as necessary as work progresses.
- Demolish structure(s) causing a minimum of damage to adjoining property and leave no unnecessary or unstable projections.
- Do not disturb support to foundations of adjoining property unless otherwise instructed.
- CA to report any defects exposed or becoming apparent in adjoining property.
- Promptly repair any damage caused to adjoining property by demolition work. Make good to ensure safety, stability, weather protection and security.

C20/3.8 STRUCTURE(S) TO BE RETAINED:

- Adequately protect parts of existing structure(s) which are to be kept in place.
- Cut away and strip out the minimum necessary and with care to reduce the amount of making good to a minimum.
- Prevent debris from overloading any part of the structure which is not to be demolished.

C20/3.9 PARTLY DEMOLISHED STRUCTURE(S):

- Leave partly demolished structure(s) in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse.
- Prevent debris from overloading scaffolding platforms.
- Prevent access of unauthorised persons to partly demolished structure(s). Leave safe outside working hours.

C20/3.10 DANGEROUS OPENINGS: Illuminate and protect as necessary. Keep safe outside working hours.**C20/3.11 ASBESTOS ENCAPSULATION** of asbestos is not acceptable.**C20/3.12 UNFORESEEN HAZARDS:** Inform the CA of any unrecorded voids, tanks, chemicals, etc. discovered during demolition work. Agree with the CA, methods for safe removal, filling, etc.

- C20/3.13 RETAINING WALLS: Ensure that retaining and party walls always have sufficient buttressing; provide temporary supports as necessary to the approval of a suitable experience Structural Engineer (preferably conservation accredited).
- C20/4 MATERIALS ARISING
- C20/4.1 DEMOLITION MATERIALS are not to be sold direct from the site. Any sales of scrap metal are to be carried out strictly in accordance with the provisions of the Scrap Metal Dealers Act 2013.
- C20/4.2 EMPLOYERS PROPERTY: Agree with the CA, components and materials which are to remain the property of the client. Carefully remove and store on site where directed. Protect until removed by the client, reused in the works, or end of the Contract.
- C20/4.3 SURPLUS MATERIALS which are the property of the client are to be handed back to the client.

C30 SHORING AND SUPPORTS

- C30/1.1 LOADING AND MAINTAINING SUPPORT STRUCTURES:
Agree with the CA, and Structural Consultant the method statement for the loading and maintaining of support structures.
- C30/1.2 COMMENCEMENT CONDITION SURVEY:
 - Before starting work, survey the existing state of structure to be kept in place to locate and record the magnitude and extent of all cracks, spalling, flaking and other irregularities of the fabric.
 - Agree the commencement condition survey record with the CA.
- C30/1.3 RETENTION OF STRUCTURE:
 - Where structure is to be retained, agree details of supporting structure and structural monitoring procedures with the CA's Structural Consultant.

- C30/1.4 UNKNOWN HAZARDS: Inform the CA of any unrecorded voids, flues, services, etc. discovered during erection of support systems. Agree with the CA methods for infill, making good, relocation of support connections, etc.
- C30/1.5 DAMAGE: Promptly repair any damage caused to adjoining property by erection or connection of support systems. Make good to ensure safety, stability, weather protection and security.
- Report to the CA any damage caused to retained facades by erection or connection of support systems. Agree methods of repair with the CA.
- C30/1.6 COMPLETION CONDITION SURVEY:
- After disconnection of support systems, survey and record the state of structure kept in place.
 - Ensure that all defects caused by or due to support systems have been remedied.
 - Agree the completion condition survey record with the CA.
- C30/1.7 MAKING GOOD: Repair any connection holes made in the structure kept in place with methods and materials as agreed with the CA.

APPENDIX 1 – DOFF SYSTEM DATA SHEET

The following is referred to in the above report as an appropriate cleaning method but is included for information only.



The method of cleaning using superheated water/steam in a unique way - chemical free

Will Remove:

Most types of paint
 Algae, Moss & Lichens
 Moulds & Fungi etc
 Bitumen, Oil & Grease
 Chewing Gum
 Grime
 Asbestos Preparation
 And many other problems solved
 ... without damage

Use DOFF on:-

Most surfaces e.g. brick, stone, concrete, tiles (glazed, encaustic etc), faience, roof tiles, slates, terracotta, wood, stucco, cast stone, and render etc. Removal of soiling from floors, walls, machinery, appliances etc. Removal of barnacles from boat hulls. Cleaning and sterilising kitchens, toilets, wash-rooms, swimming pools, abattoirs, factories, asbestos and roofing, pigeon lofts, farm buildings, drains etc.

For use in:- Building restoration, Industry, Food production, Hygiene control, Hospitals, Factories, Transport & vehicle depots, Workshops etc.

How the DOFF works: A normal water supply is taken through the pump into the Hotbox, where a range of temperatures of up to 150° C can be achieved. The low volume of super heated water and steam (5 litres per minute) is then fed through heat resistant hoses to special nozzles where a genuine 150° C is delivered. The surface being cleaned does not suffer any damaging pressure, thermal shock or deep saturation and dries within minutes. A range of different lances and nozzles are available. Please ask for advice on specific applications.



Technical Specification

Power supply consumption

Water Consumption

Maximum operating pressure

Temperature range

Maximum water input temp.

Dry Weight Kg.

Measurement mm

Pump

Hotbox

Export packing:

DOFF Integra

230 volt 50 hz 13 amp or 6.0 Kva (generator)

50 hz 30 amp or 6.0 Kva (generator)

115 volt 60 hz 30 amp or 6.0 Kva (generator)

Min 3, max 5 litres per minute

Use only clean water supply – if bowser or other, consult our technical team for advice

100 bar 1450 psi

30°C to 150 °C

30 °C

89 (hotbox) + 34.5 (pump) = when loaded 123.5

length width height

500 282 310

680 630 1030

When pump loaded length = 960

1020 820 1150



APPENDIX 2 – TORC SYSTEM DATA SHEET

The following is referred to in the above report as an appropriate cleaning method but is included for information only.

TORC System

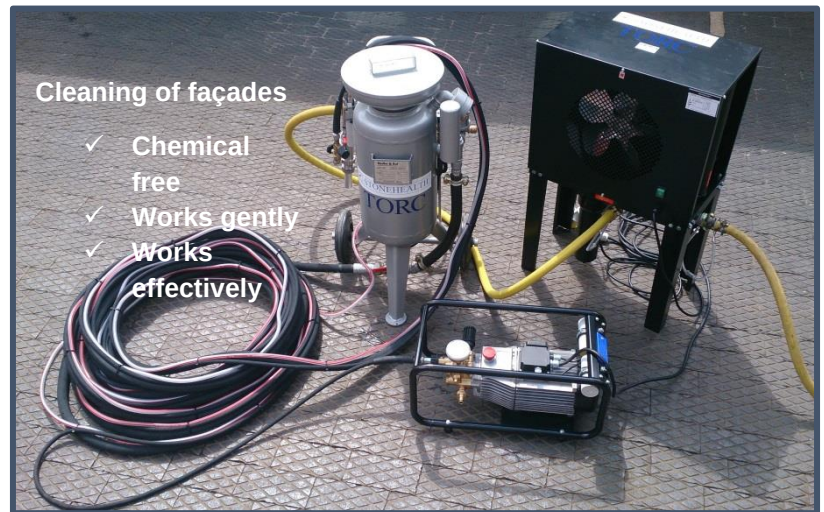
The Unique TORC formula = Low Pressure + Rotational Vortex

Use TORC on:

- ✓ Stone
- ✓ Brick
- ✓ Terracotta
- ✓ Ceramic Tiles
- ✓ Concrete
- ✓ Glass
- ✓ Bronze
- ✓ Brass
- ✓ Copper
- ✓ Anodised Aluminium & many other materials

Will Remove:

- ✓ Carbon sulphation
- ✓ Lime & Cement based paints
- ✓ Paint residues
- ✓ Some old Oil based paints
- ✓ Bitumen
- ✓ Lime scale



The **TORC** system being used to remove carbon sulphation from Canterbury Cathedral.

How the TORC works:

The **TORC** is supplied in the basic sizes: '**TORC**' and the '**TORC Studio**'. The **TORC** Head is modularised into separate components which results in an efficient and gentle swirling vortex using less water and granulate. The **TORC** has a removable nose section allowing choice of 5, 7, 9, 11 or 13mm apertures.

Some of the notable buildings where the TORC system has been used within the UK

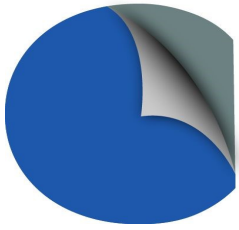
- ❖ Buckingham Palace, London
- ❖ Canterbury Cathedral
- ❖ Harrods Store, Knightsbridge, London
- ❖ Marine Barracks, Portsmouth
- ❖ Norwich Castle
- ❖ Royal Court Theatre, Sloane Square, London
- ❖ Turnpike Lane Underground Station & other London Underground Stations



The **TORC** being used to remove many layers of paint from inside Paddington Station

APPENDIX 3 – CLEAN-FILM DATA SHEET

The following is referred to in the above report as an appropriate cleaning method but is included for information only.



C L E A N F I L M

LATEX CLEANING PASTE

Film producing cleaning paste to remove soiling from substrates with no use of water, or risk of residues - Simply peel off to remove



Clean interior surfaces, simply, safely & effectively, Proven track record used for cleaning surfaces after fire & smoke damage restoration...



Simple Process

1. Apply film as paste
2. Leave 24-48 hrs
3. Peel off product



CLEAN & SIMPLE

- A cost effective, simple method for internal cleaning.
- Great for Soot, dust and dirt
- Easily removed by peeling away from the surface.
- No risk of residues
- No chemical after-effects
- No salts are absorbed into the substrate.

At Stonehealth the philosophy has always been; reliable solutions to responsible cleaning and the removal of unwanted matter, as well as supplying a wide range of surface treatments.

Clean-film is a product made from natural latex. Ammonia is added as a stabiliser when the latex is harvested from the tree, to prevent fermentation. The ammonia also acts a good cleaning agent in its own right and helps trigger the curing of the latex. This also allows the latex to be applied more thinly than with other additives. The ammonia fully evaporates safely from the surface, with no risk of any residues being left behind.



- Easy to apply with a variety of methods
- Dirt is absorbed into the product
- Remove the film, remove the dirt!
- No risk of contamination to adjacent areas



Cleanfilm has been used successfully in
House of Lords
Peterborough Cathedral
John Ryland Library
Bristol Central Library
Quarr Abbey
St John the Divine
Ripon Cathedral
St Mary's, Gateshead
St Albans Cathedral

... amongst many others

Supply: Clean-Film is only available from Stonehealth and is supplied directly from stock. Available in Clean-Film types; I, III & V. Standard Tub : 17KG