



ANCOATS DISPENSARY

Retained Building Repairs

Specification

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DEFINITIONS

- 01 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.
- 02 KEEP FOR REUSE means during removal prevent damage to the stated components or materials, and clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.
- 03 REPLACE means remove the stated existing components, features and finishes. 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.
- 04 REPAIR means carry out local remedial work to components, features and finishes as found in the existing building, resecure or refix as necessary and leave in a sound and neat condition. It does not include:
Replacement of components or parts of components.
Redecoration.
- 05 MAKE GOOD means carry out local remedial work to components, features and finishes which have been disturbed by other, previous work under this Contract and leave in a sound and neat condition. It does not include:
Replacement of components or parts of components.
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.
- 06 EASE means make minor adjustments to moving parts of the stated component to achieve good fit in both open and closed positions and ensure free movement in relation to fixed surrounds. Make good as necessary.
- 07 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.
- 08 TO MATCH ADJACENT means that the component is to match existing components in that immediate vicinity, particular room or area.
- 09 SAVAGED refers to materials that have been removed and kept for re-use on this job: no second-hand or reclaimed material are to be used on this project.
- 10 APPRAISE means the contractor is to appraise and carry out own independent assessment of the works detailed here within and update the scope of works as is necessary through consultation with the Architect.
- A DRAWINGS Please note that this specification is to be read in conjunction with the drawing series (16) / (47). Any discrepancies between the documents or omissions from the specification are to be brought to the attention of the Architect at the time of tendering. Note that all specified products are to be installed to the manufacturer’s recommendations and by approved installers.

- B** **SPECIFICATION** Please note that this specification is for repairs and restoration of the existing building only. There is a separate NBS Specification which includes new elements of work to the building. There may be cross-referencing between the two documents.
- C** **SCHEDULE OF WORKS** Please note that there is a separate Schedule of Works document which should be read in conjunction with this Restoration Specification

1.0 PROTECTION OF HISTORIC FABRIC/FEATURES

1.1 WORK IN LISTED BUILDINGS

- 1.2 It is the responsibility of the Contractor to ensure that no disturbance of any fabric within the listed buildings takes place unless this is specifically detailed on the Architect's drawings and/or specification. The Architect's information is subject to listed building consent and any deviation from this is an offence under the Planning (Listed Buildings and Conservation Areas) Act 1990.
- 1.3 Should the Contractor be in doubt about the extent of works or protection required, he should consult with the Architect prior to those works being carried out. Agreement may also be required from the local authority Conservation Officer in some cases, and therefore the Contractor should make any queries to the Architect in a timely manner.
- 1.4 The Contractor is to provide adequate protection to any historic features which are to be retained in order to avoid damage as the works are in progress. The methods for protection should be agreed with the Architect prior to works being carried out.
- 1.5 Should it be the case that it is not possible to protect historic features without causing further damage to the building, it is the Contractor's responsibility to exercise maximum care to avoid disturbing any historic fabric during the course of the works. This may entail an approach of temporary protection with the agreement of the Architect.
- 1.6 It should be noted that damage to historic fabric cannot be made good in an acceptable manner and that the Contractor is to take all necessary measures to ensure damage does not occur.
- 1.7 The Contractor is to satisfy himself that he/she is in possession of adequate information prior to commencing any work.

Any discrepancies found within this document by the Contractor should be brought to the attention of the Architect at the time of tendering.

The Contractor is to be responsible for all on site measurement including setting out for new work, details and dimensions for any replacement or repair work.

All dimensions included on the drawings are to be checked for accuracy on site prior to commencing work and any discrepancies reported to the Architect immediately.

No work shall commence until any such discrepancies have been resolved.

1.8 Retain and salvage

- Carefully salvage, protect and label any materials, components and items which are to be temporarily removed and re-instated at a later date.
- Retain Samples of Hopper Heads for future replication of detail/ moulds in forming new Cast Iron rainwater goods.
- Retain samples of window framing to determine original paint colour using a suitable paint scrape analysis to be undertaken by specialist nominated by contractor.

2.0 MODIFICATION OF EXISTING ACCESS SCAFFOLD

2.1 DESIGN:

There is an existing retention scaffold. This will not be altered unless necessary to facilitate access or following completion of the façade retention.

The modification of scaffolding will be the responsibility of the Contractor and is to be in accordance with the recommendations of BS 5973: 1990 "Code of Practice for access and Working Scaffold and special scaffold staircases in Steel" or as updated.

As the work involved is to a listed building, the scaffold should essentially be regarded as independent of the existing structure and designed accordingly. Where tying to the existing structure cannot be avoided the positions and type of any such ties shall be submitted and agreed with the CA prior to the erection of any scaffold. No additional costs will be granted after the acceptance of any tender where this requirement has been overlooked.

Compliance with the various Acts and regulations listed in BS 5973 is the responsibility of the Contractor.

Compliance with all aspects of Health and Safety during erection, using and dismantling is the responsibility of the Contractor.

The design of the scaffold is to take account of the requirements of all trades which will require access, use as a working platform or storage. No claims will be entertained for additional scaffold or for amending scaffold already erected to suit the requirements of trades contained within the specification.

The modification of the scaffolding will take into account any specific requirements of any consulting structural engineer appointed to assess the proposals.

2.2 PROPOSALS:

The Contractor is to submit the proposals for modification of the scaffold on or before the date for possession and not less than 7 days before commencement of the scaffold.

The Contractor's proposals are to include clear drawings and structural calculations in duplicate, sufficient to prove the stability of the proposed temporary structures in accordance with BS 5973: 1990.

These drawings will clearly indicate positions where any scaffold is to be tied back to the fabric of the building.

No modification of scaffolding shall be commenced on site until the Contractors proposals have been submitted and agreed with the Architect / Structural Engineer. Agreement of the Contractor's proposals does not relieve the Contractor of their responsibilities to ensure full compliance of all requirements.

2.3 PROGRAMME:

Prior to commencement of any scaffolding the Contractor shall submit a programme indicating the commencement date, completion date, and period for dismantling for each area of scaffolding.

Scaffold may be required for inspection purposes prior to confirmation of scope of the work and the Contractor is to indicate this period on the programme and ensure that the proposals are submitted early enough to ensure that this period is not compromised.

The programme is to take account of all the requirements of the sub-contractors who require the use of the scaffold.

2.4 ERECTION REQUIREMENTS:

All replacement scaffold tubing and fittings are to be galvanised and in good condition and free from corrosion. Modifications using rusty components will not be accepted. No steel component (including capped tubes) is to be in contact with the fabric of the building except where specific approval has been given.

Where it is necessary to brace the scaffold from the masonry then timber packing of a minimum thickness of 20mm is to be placed between the scaffolding and the masonry. No scaffolding shall rest on any roof coverings unless agreed in writing prior to commencement. The ends of ALL scaffold tubes are to be protected with plastic caps, which are to be fitted prior to delivery to site. Where it is necessary to cut scaffold tubes during erection the end is to be re-capped immediately.

New scaffold tubes are not to encroach within 50mm of the surface of the building except where required for support, stabilising. This is to prevent accidental damage to the fabric by minor movement of the scaffold. Unless unavoidable it will not be permitted to brace scaffold through window or door openings. Should this prove necessary the existing finishes are to be protected with 20mm thick timber packers both internally and externally.

Where tying to the fabric of the building is unavoidable, ties should be into mortar joints. No fixings will be permitted into or adjacent terracotta units. If this is not possible the contractor should allow for the replacement of the terracotta unit(s) in question.

- 2.5

SUPERVISION:

The Contractor is to exercise particular care in supervising the erection and dismantling of the scaffold to ensure that no damage occurs to the fabric of the building. It should be noted that in many instances damage to the historic fabric cannot easily be rectified. Any damage due to the scaffold use, erection or dismantling will be rectified at the Contractor’s expense.
- 2.6

SECURITY:

Site hoardings shall be configured to prevent unauthorised access to scaffolding at all times Including any areas that may be accessible from adjoining structures, roofs, etc.
- 2.7

PROTECTION:

All surfaces at ground level are to be suitably protected to prevent the scaffold damaging existing external finishes.

Ensure any architectural features or areas prone to damage are suitably protected.

Where protection measures are considered inadequate the Contractor will, at their own expense, provide additional protection as directed by the Architect.

The scaffold is to be earthed.
- 2.8

DISMANTLING:

Ensure all necessary care is taken to ensure that no damage occurs to the fabric of the building. Any making that becomes necessary will be on a like for like basis at the expense of the contractor. Self-tapping fixing points are to be made good with a lime mortar repair, samples to be agreed.

Scaffold tubes should be carefully lowered to ground level and not thrown or dropped.

No dismantled components shall be left on site outside working hours.
- 2.9

CERTIFICATES

Copies of all handover certificates issued by the scaffolding sub-contractor shall be forwarded to the Architect upon receipt by the Main Contractor.

Copies of all test certificates for hoists shall be forwarded to the Architect on receipt by the Main Contractor.

No scaffolding shall be used unless handover certificates and test certificates have been issued.

3.0 **HYDRAULIC LIME MORTAR**

3.1 **PRODUCT:**
Hydraulic Lime Mortar mix to be confirmed (to match existing) with natural dye to match existing mortar, colour to be determined (or equal and approved).

Samples to be obtained by Contractor to match existing mortar. Mortar testing may be required. Sandberg etc (or equal and approved).

3.2 **MATERIALS:**
Hydraulic Lime or pre-mixed hydraulic lime mortar may be obtained from:

- a) Wormersley Associates
Walkley Lane
Heckmondwike
WF16 0PG
Tel: 01924 400651

- b) Wenlock Lime Ltd
The Coats Kiln
Stretton Road
Much Wenlock
TF13 6DG
Tel: 01952 728611

- c) Telling Lime Products Limited
Primrose Avenue
Fordhouses
Wolverhampton
WV10 8AW
Tel: 01902 709777

(or equal and approved).

3.3 **FINE AGGREGATES:**
All sand shall be to B.S. 1200, well-graded non-staining clean sharp coarse sand, uncontaminated by clay/silt. Sand shall be selected so that when the mortar has dried out the colour will match the colour and texture of the original mortar, unless instructed otherwise in writing by the Architect.
For work requiring very fine joints in the masonry sand grain size may impede filling the joints. In these instances fine stone dust should replace the sand as the fine aggregate.
Suppliers of lime to be consulted on suitability of sands proposed. Ideally sand to be obtained from the supplier of the lime.

3.4 **COLD WEATHER PROTECTION:**
No work involving the preparation of mortar or the laying of stonework shall be undertaken when the temperature is 5 degree centigrade falling or below 4 degrees centigrade when the temperature is rising, or if the temperature is forecast to fall below 5 degrees centigrade during the week following placement. If it is essential to carry out pointing works this may be carried out with the approval of the Architect so long as the Contractor provides additional heat to maintain a temperature above 5 degrees and ensures this is frequently monitored. Work should be exposed whenever it is sunny to take advantage of the warmer air temperatures to facilitate curing.

Temperatures within the working area should be recorded using maximum and minimum thermometers to ensure that adequate temperatures are maintained.

- 3.5
- PROTECTION:
All work is to be protected from the frost, warm weather and rain. This is to be achieved by covering the new work with hessian and plastic sheeting for a period of not less than 4 days. During this period the mortar must be regularly dampened.
During colder weather the length of time mortar should be protected will be much longer and may require protection for several months to avoid failure.
- 3.6
- DAMAGE DUE TO WEATHER:
Any work affected by the weather is to be cut out and replaced at the Contractor's expense.

4.0 POINTING OF BRICKWORK & ASHLAR STONE

4.1 GENERAL:

Contractor's attention is drawn to the fact that in some cases the joints between bricks and stones are extremely fine and will demand a great deal of care and attention on site to the preparation, filling and pointing.

Pointing should commence from the top of the building and work down.

4.2 SAMPLE PANELS:

The tenderer is to allow for carrying out two test panels each approximately 1 metre square under the direction of the Architect, using the methods described below. One panel should include fine joints. Each must be approved by the Conservation Officer and Architect before work is to commence. Work to the rest of the brickwork/stonework should not commence until the test panel has been approved by the Architect. The location of the test panels is to be agreed with the Architect prior to commencement.

Tenderer is to allow for several sample mixes using different coloured fine aggregate to obtain a satisfactory colour for the pointing.

4.3 PREPARATION:

All joints are to be raked out to a depth of 25mm using a fine toothed saw blade or hooked knife. Extreme care is to be taken to avoid damage to the arris of the brick. Under no circumstances shall chisel and bolsters be used.

Under no circumstances will the use of mechanical tools be permitted (disc cutters etc.)

Wash down after raking out the joints with clean water from a hose if possible or buckets, brushes and or sponges until the water runs clear.

4.4 FILLING AND POINTING:

Mortar is to be hydraulic lime mortar in accordance with the Mortar specification.

The mortar is to be introduced into damp joints and compressed with a purpose made pointing iron/key of approximately 30mm diameter giving a flush joint. Mortar is to be thoroughly compacted into the joints.

Care is to be taken to eliminate lines of mortar occurring on joint intersections, mortar should flow visually from perpend to bed joints.

Clean off any surplus or spread of mortar with a clean pointing trowel.

The joint is to be lightly brushed as mortar is achieving its first set to remove the mechanical smoothness left by the pointing iron. Protect pointing from over speedy drying during hot weather to the discretion of the architect.

4.5 PROGRESS

The works are to be co-ordinated such that preparation is carried out to agreed areas and made available for inspection by the Architect/Employer's Representative. The Contractor is to give at least 48 hours' notice for inspection.

No filling of joints is to proceed until preparation has been inspected and approved by Architect.

Filling and pointing is to be carried out in small areas such that all operations in one area can be completed within the working day with due notice being paid to any potential adverse weather conditions.

The work is to be kept clean from mortar spillage at all times.

When pointing commences only areas which can be successfully completed during the normal working day are to be attempted giving due regard to the weather conditions/forecast.

Completed areas are to be protected until cured.

4.6 CLEANING

Clean down all areas on completion using clean water and bristle brushes only. Beat mortar with a bristle brush with oblique bristles after a setting period of couple of hours to dispose of surplus mortar.

Acid cleaners should not be used when lime mortar is present.

5.0 **BRICK & TERRACOTTA**

5.1.1 BRICK

Bricks shall be sound reclaimed bricks selected to match existing in size, texture and colour. or new bricks as detailed in NBS F10. Samples shall be provided by the Contractor for approval and no final work shall be commenced on the repairs until the sample has been approved in writing.

Bricks shall be free from the presence of fungal attack, visible salts, paint, lime wash or other substances.

5.1.2 TERRACOTTA

Terracotta blocks shall be new terracotta manufactured by an approved manufacturer to match existing in size, texture and colour. Performance data and samples shall be provided by the Contractor for approval to confirm suitability and no final orders shall be confirmed until the sample has been approved in writing.

Darwen Terracotta and Faience (or equal and approved).

5.1.3 TIES

- Ties shall be as follows:
- a) where repair involves only the outer skin of cavity brickwork or solid masonry the ties shall be of a resin anchor type (Ancon ref. AC31) manufactured in austenitic stainless steel (or equal and approved).
 - b) where repair involves both skins of cavity brickwork then ties shall be stainless steel fish tail ties to BS 1245 : 1978) (Acnon ref. FVF) (or equal and approved).
 - c) where repair involves cavity wall tie replacement ties shall be stainless steel anchor resin ties of an approved type.
 - d) where repair involves rebuilding of solid masonry ties shall be stainless steel fish tail ties except where the existing bonding pattern allows header bricks to be used.

All ties are to be manufactured in austenitic stainless steel by:

Ancon Building Products Ltd
President Way, President Park
Sheffield
S4 7UR.

(or equal and approved).

Bed joint reinforcement to North East Elevation (corner of Old Mill Street and Lampwick lane). Threaded Stainless Steel bar to be used at 300mm centres to a depth of 50mm and a distance of 500mm either side of the crack.

5.1.4 WATER

Water for the works shall be clean and fresh without pollutants. Where existing water supply is available within the building this may only be used with the Employers permission. In other cases a lockable standpipe is to be erected to the approval of the Local Water Authority.

5.1.5 MORTAR

Shall be hydraulic lime mortar in accordance with specification.

5.2 INSPECTION

5.2.1 The Contractor should note that the tender documentation has been prepared based on visual inspection from ground level or from easily accessible parts, without the benefit of access scaffold. Further inspection will be required on completion of the access scaffold and the Contractor is allowed a period of 1 week for inspection and confirmation of the scope of the work in the programme.

The Contractor is encouraged to be represented during the inspection in order that he may contribute in any discussion regarding alternative methods of repair.

5.2.2 NOTICE

The Contractor is to give 48 hours' notice to the Architect of the completion of the access scaffold to each area.

5.2.3 CONFIRMATION

Confirmation of the scope of the work will be the issue of revised drawings and confirmed by an Architects Instruction following completion of the inspection from the access scaffold.

5.2.4 SCAFFOLD

The Contractor shall ensure that all access scaffold is complete and in accordance with the specification and that handover certificates have been issued before inviting inspection. Inspection will not be carried out if the scaffold is not in accordance with the specification.

5.2.5 DRAWINGS

In most cases all working drawings will be provided by the Architect. Where fabrication drawings are required to be prepared by the Contractor for specialist areas the Contractor shall submit duplicate copies of the drawings at least two weeks before confirmation of the order for terracotta is required. No work shall commence until the drawings have been approved in writing by the Architect.

5.2.6 PROGRAMME

The Contractor shall provide a programme of work based on the tender drawings before commencement of work on site. This programme shall indicate separately the erection sequence for access scaffold, inspection period, order period and works on site for each area of work.

5.3 PROTECTION AND STORAGE

5.3.1 PROTECTION OF WORK AREA

Where large areas of masonry repairs are to be undertaken the scaffold is to be fully protected using a translucent non-combustible sheet such as Monaflex fixed to the outside of the scaffold.

5.3.2 PROTECTION OF THE FABRIC

Any existing features are to be protected with ply or particle board, in the areas adjacent to any area of work.

Where scaffold is erected internally or where scaffolding penetrates through into the building internal fittings shall be adequately protected.

5.3.3 STORAGE

Bricks should be stored in stacks on battens protected from moisture and freezing. Adequate care is to be taken to ensure that no damage occurs to the bricks during storage or handling.

5.3.4 STORAGE ON SCAFFOLDING

Only bricks for immediate use shall be stored on the scaffold.

5.3.5 PROTECTION OF FINISHED WORK

Protect all work from the weather and to ensure satisfactory curing of the mortar. Protection is to be maintained until completion of all work in that vicinity.

5.4 CUTTING OUT OF DEFECTIVE BRICKWORK OR TERRACOTTA

The areas to be cut out shall be marked on site and approved/confirmed by the Architect prior to commencement of cutting out.

The brickwork shall be carefully cut out with chisels taking extreme care not to damage the arises of adjoining brickwork which may be being retained.

Any damage to adjoining areas will be made good at the contractor's expense.

The area is to be cleared of any mortar, debris etc. and any defect in the backing masonry is to be reported to the Architect.

Where large areas of brick or block are to be removed the opening is to be propped with timber props ensuring that no damage is caused to adjoining brickwork.

Cut out individual chamfered brick special, remove mortar from surrounding brickwork & insert suitable new/reclaimed replacement brick to match existing as closely as possible, bedded & pointed in designated mortar.

Replace brick within dark banding to match existing. Cut out individual brick, remove mortar from surrounding brickwork & insert suitable new/reclaimed replacement brick to match existing as closely as possible, bedded & pointed in designated mortar.

Allow for replacing spalled, cracked or missing bricks across elevation. Cut out individual brick, remove mortar from surrounding brickwork & insert suitable new/reclaimed replacement brick to match existing as closely as possible.

Ornate air bricks to be removed and stored for future sampling. Infill opening with masonry to match existing. Carefully remove air bricks & hand over to Main Contractor for storage, infill resulting void in new brickwork toothed in to existing, bedded & pointed in designated mortar.

5.5 INSERTING NEW BRICKWORK AND TERRACOTTA

The recess is to be thoroughly cleaned out and the adjoining brickwork is to be moistened to prevent the mortar "snatching".

New bricks or blocks are to be bedded on a bed (and backing where solid walls are involved) of hydraulic lime mortar.

New brickwork is to be installed flush with the face of the building and ensuring that the bed joints and perp joints are maintained consistent with the existing bricks/blocks.

The mortar is to be kept back 25mm from the face to facilitate later pointing.

Where brickwork is being inserted into worn areas of brickwork the new brick is to be set such that the face is in the line of the original face of the brickwork.

Where individual bricks or blocks are being replaced ties are not necessary.

Where larger areas of brickwork or terracotta blocks are to be removed then ties will be required to be located at centres as follows:

- a) 900 mm centres horizontally and 450mm centres vertically with rows staggered.
- b) 225 centres vertically within 300mm of any opening.
- c) At closer centres if specified by the Structural Engineer or indicated on the drawings.

5.6 CRACK INJECTION / RESIN REPAIR

5.6.1 GENERAL

Resin repairs will only be used in limited areas where the blocks exhibit minor cracks that do not warrant the replacement of the whole block

5.6.2 MATERIALS

Resin: Resin shall be Jolly Stone Filler / Glue as manufactured by Ilpa, (or equal and approved) colour to match existing terracotta blocks.

Natural Pigments– obtainable from Womersley’s of Heckmondwike (or equal and approved).

5.6.3 PREPARATION

Any loose material is to be scraped away using a hacksaw blade and the joint widened sufficiently to accept the resin and wash down after raking out the joints with clean water from a hose if possible or buckets, brushes and or sponges to remove all dust and debris

5.6.4 REPAIR

Resin is to be applied into the crack and finished flush with the surface of the terracotta unit. It is important to ensure that the resin is applied to the full depth of the crack and that it is completely filled. The block is then to be lightly polished using carborundum pads to provide a smooth finish. If the colour of the block is lost through this process a natural pigment in a dilute of water is to be applied to the block to re-establish the colour.

A sample of the above process is to be prepared on a defective cut out block for the approval by the Architect prior to commencing this type of repair.

6.0 **POINTING OF ASHLAR**

6.1 GENERAL

6.1.1 Contractor's attention is drawn to the fact that the joints between stones are extremely fine and will demand a great deal of care and attention on site to the preparation, filling and pointing.

6.2 SAMPLE PANELS

6.2.1 The contractor is to allow for carrying out two test panels each approximately 1 metre square under the direction of the Architect, using the methods described below. Work to the rest of the stonework should not commence until the test panel has been approved by the Architect. The location of the test panels is to be agreed with the Architect prior to commencement.

The contractor is to allow for several sample mixes using different coloured fine aggregate to obtain a satisfactory colour for the pointing.

6.3 PREPARATION

6.3.1 All joints are to be raked out to a depth of 25mm using a fine-toothed saw blade or hooked knife. Extreme care is to be taken to avoid damage to the arris or dislocation of the stone. Under no circumstances shall chisel and bolsters be used.

6.3.2 Under no circumstances will the use of mechanical tools be permitted (disc cutters etc.)

6.3.3 There are power tools that use oscillating blades (fein saw type) to clean out joints; care must be taken with these, especially if the stone is softer than the mortar, as the blade can slide off the mortar and cut into the stone.

6.3.4 Joints are to be washed down after raking out the joints with clean water from a hose if possible or buckets, brushes and or sponges.

6.4 FILLING AND POINTING

6.4.1 Mortar is to be as described in the mortar specification section.

6.4.2 Filling is to be by the taping and pointing method.

6.4.3 The prepared joints are to be covered with 50mm heavy duty carpet tape applied to the stone. The tape is to be slit along the joint line with a sharp knife. It should be noted that the stone will need to be dry for the tape to adhere.

6.4.4 The mortar is to be introduced into damp joints and compressed with a purpose made pointing iron/key. Mortar is to be thoroughly compacted into the joints.

6.4.5 The mortar is to be pointed firmly into the joints and finished with a very slight recess (not more than 1mm deep).

6.4.6 Adhesive tape is to be carefully removed ensuring that no residue of adhesive is left on the stone.

6.4.7 Clean off any surplus or spread of mortar with a clean pointing trowel.

- 6.5 PROGRESS
- 6.5.1 The works are to be co-ordinated such that preparation is carried out to agreed areas and made available for inspection by the Architect/Employer's Representative. The Contractor is to give at least 48 hours' notice for inspection.
- 6.5.2 No taping or filling of joints is to proceed until preparation has been inspected and approved by Architect.
- 6.5.3 Taping, filling and pointing is to be carried out in small areas such that all operations in one area can be completed within the working day with due notice being paid to any potential adverse weather conditions.
- 6.5.4 The work is to be kept clean from mortar spillage at all times.
- 6.5.5 When pointing commences only area which can be successfully completed during the normal working day are to be attempted giving due regard to the weather conditions/forecast.
- 6.5.6 Completed areas are to be protected until cured.

7.0 ASHLAR STONE

- 7.1.1 Stone is to be selected to match existing in texture and colour by Matching services: <https://www2.bgs.ac.uk/mineralsuk/buildingStones/services.html>.

Representative samples shall be provided prior to final order. Samples should be weathered samples from all areas of the quarry currently being exploited as there may be colour/texture variations between beds within the quarry. Where dressed stone is to be used then samples of new stone with a dressed face shall also be provided for approval. Whilst provisional orders may be placed no confirmation shall be issued until samples have been approved by the Architect.

All stone shall be free from vents, cracks, fissures, mineral veins, discoloration and clay pockets. No stone for the project should contain any defect which will adversely effect the strength or appearance of the stone.

- 7.1.2 DOWELS AND CRAMPS

All dowels and cramps are to be as manufactured by Ancon Clarke Ltd., Olive Grove Road, Sheffield S2 3GB and are to be manufactured in austenitic stainless steel to B.S. 1449 Part 2 1983 (or equal and approved). Typical details for cramping are contained in the appendix to the specification.

Bronze cramps may also be used subject to prior written approval.

- 7.1.3 RESIN

All resins shall be approved in writing before use. The Contractor is to supply full technical details of proposed resins with the tender or where the work is additional to the contract, not less than 2 weeks before intended use.

- 7.1.4 WATER

Water for the works shall be clean and fresh without pollutants. Where existing water supply is available within the building this may only be used with the Employers permission. In other cases a lockable stand pipe shall be erected to the approval of the local water authority.

- 7.1.5 MORTAR

Lime mortar as specification.

7.2.0 LAYING OF STONE

- 7.2.1 NATURAL BED

New stonework shall be prepared such that the natural bed is:

- Horizontal for plain walling works.
- Vertical and at right angles to wall face for cornices and other projecting stones.
- Horizontal in quoin stones or end stones. These shall be specially selected to ensure that they are compact non laminated stones.

Further bedding details are contained in B.R.E. publications for the relevant type of stone. These are summarised in diagrammatic form in the appendices.

7.2.2 BEDDING

All stones shall be laid on a full and even bed of lime mortar based on "coarse stuff" unless specified elsewhere.

7.2.3 JOINTS

Horizontal and vertical joints are to match the existing joint size unless instructed differently by the Architect.

7.2.4 FACE

Stones are to be placed such that their face is flush with the plane of the original stonework. Where new stone is being inserted adjacent to old worn surfaces the new stone shall be set to the face of the nearest unworn surface.

7.2.5 WORKMANSHIP

All work shall comply with the general recommendations of B.S. 5390 section 5 Work on Site.

Mason repairs are to be undertaken only by an approved stone mason who is a member of The Heritage Contractors Section of the Stone Federation. Non-registered companies or unqualified personnel will not be permitted to work on site.

7.3.0 REPAIRS TO STONework

7.3.1 GENERAL

All repairs will be identified during the inspection and will be indicated on the drawings.

All areas for repair are to be marked up from the drawings on site by the Contractor and agreed with the Architect prior to commencing cutting out.

7.3.2 REPAIR TECHNIQUES

Repairs to stonework will be one of the following as noted on the drawings.

- A. Full block replacement.
- B. Part block replacement.
- C. Full face replacement.
- D. Partial face replacement.
- E. Carved work replacement.
- F. Carved item replacement.
- G. Indent repair.
- H. Crack injection/resin repair.
- I. Redressing.

Each repair technique is described below.

7.3.3 CUTTING OUT

Cutting out decayed stonework to permit new stones of the specified depth for the appropriate repair to be inserted. Cutting out can be carried out by mechanical means provided that extreme care is taken to ensure that the adjoining stones are not damaged. The stones should be cut to the central sections only by mechanical means ensuring that the perimeter is undamaged. The stone is then to be cut back by hand to the required depth.

If any damage occurs to adjoining stones then the stone is to be replaced at the Contractors expense at the discretion of the Architect.

In certain areas previous plastic repairs may have to be removed. In this case the Contractor should note that the plastic repair may be harder than the original stonework and great care is to be exercised to ensure no unnecessary damage occurs to the existing stone.

7.3.4 TEMPORARY SUPPORT

Stonework above the course being cut out or dressed back shall be fully supported during the course of the works. Support should be by adequately sized timber props secured and wedged. Care should be taken to ensure that no damage is caused by the props to the adjoining stonework.

7.3.5 EXISTING FERROUS CRAMPS

Where iron cramps are encountered during the course of the works they are to be brought to the attention of the Architect. Unless instructed otherwise they are to be removed and replaced with non ferrous cramps.

7.3.6 CLEANING OUT

All areas cut out to be cleared of debris mortar etc and washed clean. Care is to be taken not to saturate the stone.

Any defects noted in the stone after cutting back or in the masonry backing are to be reported to the Architect.

7.3.7 MOISTENING

Wherever new masonry is to be inserted the adjoining stones are to be moistened to ensure that the mortar does not "snatch". Do not saturate the stone.

7.4.0 WHOLE BLOCK REPLACEMENT

7.4.1 PREPARATION

The existing stone block is to be cut out to its full depth and the backing masonry inspected.

7.4.2 INSTALLATION

New stone is to be inserted on a bed and backing of lime mortar. Mortar is to be kept back 25mm from the face of the stone to allow for later pointing.

7.5.0 **REPLACEMENT OF PART OR FULL BLOCK**

7.5.1 PREPARATION

The existing stone block is to be cut out to an agreed line or as shown on the drawing to its full depth. The remaining edge of the block is to be hand dressed to form a new arris ensuring that the adjoining stones are not damaged in any way for ashlar work. The arris is to be formed perfectly plumb and true and at right angles to the face of the block. The backing masonry is to be inspected and any defects reported to the Architect. The backing masonry is to be drilled to receive resin anchors and the adjoining stones drilled to receive dowels.

7.5.2 INSTALLATION

New stone is to be bedded in lime mortar and cramped and doweled in position as detailed below.

7.5.3 Relace/repair string course. Cut out damaged section of string course & indent new section of stone moulded to existing profile, bonded with epoxy resin & fixed with stainless steel dowels

7.6.0 **FULL FACE REPLACEMENT**

7.6.1 GENERAL

Where the stone is of sufficient thickness a 100mm indent repair is to be used. This repair may not be used on stone less than 200mm thick and in circumstances where the existing stone thickness varies the Contractor is to inform the Architect when the remaining thickness of the stone after removal of the face is less than 100mm.

7.6.2 PREPARATION

Existing block is to be cut back to a depth of 100mm from the front face of the surrounding stonework.

The existing stone is to be drilled to receive resin anchors and the adjoining stones drilled to receive dowels.

7.6.3 INSTALLATION

The new stone slab is to be bedded in lime mortar and cramped and doweled in position as detailed below. The mortar bed is to be kept back 25mm to allow for pointing.

7.7.0 **PARTIAL FACE REPLACEMENT**

7.7.1 GENERAL

Where the stone is of sufficient thickness a 100mm indent repair is to be used. This repair may not be used on stone less than 200mm thick and in circumstances where the existing stone thickness varies the Contractor is to inform the Architect when the remaining thickness of the stone after removal of the face is less than 100mm.

7.7.2 PREPARATION

The existing block is to be cut back as agreed with the Architect or as indicated on the drawings to a depth of 100mm from the face of the surrounding stonework. A new arris is to be formed by hand in the position agreed for ashlar work. The arris is to be plumb and true and square to the face of the stone.

7.7.3 INSTALLATION

The existing stone is to be drilled to receive resin anchors and the adjoining stones drilled to receive dowels.

New stone slab is to be bedded in lime mortar and cramped and doweled in position as detailed below. The mortar bed is to be kept back 25mm to allow for pointing.

7.8.0 CARVED WORK REPLACEMENT

7.8.1 GENERAL

Where carved or projecting stones are identified for replacement, the decayed stone shall be cut back to a depth which will ensure that the centre of gravity of the stone to be inserted is contained within the line of the masonry wall. The minimum depth is to be 100mm, but the Contractor is to allow within the rates for any increased depth required to suit individual profiles.

7.8.2 PREPARATION

The section of decayed stonework is to be cut back to the lines agreed with the Architect and cleaned out of all debris and mortar and rinsed out with clean water.

Any defect in the remaining stone is to be reported to the Architect.

7.8.3 INSTALLATION

New stone may be carved prior to placing but must be finished after placing to ensure satisfactory junction with the adjoining stones. Stone is to be bedded in lime mortar unless specified elsewhere and mortar is to be kept back 25mm from the face to facilitate later pointing.

Backing stone is to be drilled to receive resin anchors and stainless-steel cramps and adjoining stones are to be drilled to receive dowels as detailed below. If the specified cramps and dowels cannot be achieved the Contractor is to advise the Architect is to instruct on alternatives after the decayed area has been cut out

Carefully take up existing coping, clean off mortar, prepare wall head and where required rebuild lower brick courses, re-bed & point in designated mortar incorporating 2 No stainless steel dowel & restraint fixings. Allow for stabilising brickwork below copings. Take up & re-bed top 2 courses to assumed 2bk thick wall

7.9.0 CARVED ITEM REPLACEMENT

7.9.1 GENERAL

Where an entire item of carved work is specified for replacement then the original decayed item shall be carefully cut out, any existing dowels, cramps, etc are to be removed.

New stone is to be specially selected for its compactness and is to be worked to the required profiles.

7.9.2 INSTALLATION

New stone may be carved prior to placing but must be finished after placing to ensure satisfactory junction with adjoining stones. Stone is to be bedded in lime mortar unless specified elsewhere and the mortar is to be kept back 25mm from the face to facilitate later pointing.

7.9.3 Where Lower column shaft to is be replaced to match existing profile. Carefully remove existing column, set aside upper section for re-use, re-fix column allowing for supply & fix new lower column section 200 x 200 x 1500mm, circular shaft with, square moulded base, bedded & pointed in designated mortar incorporating stainless steel dowel fixings.

7.10.0 INDENT REPAIR

7.10.1 GENERAL

Cut out area of stone identified to a depth of 50mm for indents of 100mm, 65mm for indents up to 150mm and 75mm for indent repairs to a maximum of 300mm.

7.10.2 PREPARATION

Carefully form neat arrises to all sides ensuring that no damage occurs to the adjoining stones. Carefully square off the back of the recess and clean out all debris, mortar etc.

7.10.3 INSTALLATION

New stone is to be inserted on a bed of resin with arrises tight to the original stone. Joint thickness to the original arrises of the block are to be consistent with the original mortar joints.

Ensure that resin is kept back from the mortar joint positions by 25mm to facilitate later pointing.

Indent repair is to be fully supported until the resin has cured.

7.11.0 CRACK INJECTION

7.11.1 GENERAL

Crack injection will only be used in limited areas where other forms of repair cannot satisfactorily be executed without significant loss of the historic fabric.

7.11.2 PREPARATION

Any loose material is to be scraped away using a hacksaw blade and the joint washed out with clean water to remove all dust and debris.

7.11.3 INSTALLATION

Resin is to be injected into the crack and finished flush to the stonework. It is important to ensure that the resin is injected to the full depth of the crack and that it is completely filled. No resin should be visible on the surface of the stonework.

A cured sample of the resin is to be approved by the Architect prior to commencing repair.

Where the crack is too wide to be repaired with resin then the crack shall be filled with lime mortar pushed back firmly into the crack ensuring that the crack is completely filled.

The use of mortar repairs rather than resin is to be subject to the Architects approval.

At 300mm centres mechanically rake out joints to a depth of 50mm to a distance of 500mm either side of the crack, brush & flush the raked joint with clean water to remove dust & debris, inject a bead of epoxy mortar to back of the joint & insert & press home a 1m long, 6mm diameter threaded stainless steel stitching bar, re-point open joint in designated mortar. Replacement of cracked bricks to be allowed. (TBC By Structural Engineer)

Allowance made where required for bending of the stitching bar for external & internal corners.

Allow for resin repair to section of string course. Drill 2 No 6mm diameter holes diagonally across line of crack at eccentric opposing angles ensuring a minimum penetration of 100mm beyond the line of the crack, insert 4mm diameter threaded stainless steel dowels bedded in epoxy resin ensuring top of dowel sits below the surface, rake out & flush crack with clean water to remove any dust or debris & point together with dowel holes in lime based restoration mortar colour toned to match surrounding masonry.

Allow for stitch repairs to vertical joint between brick types. Rake out joints to a depth of 50mm to a distance of 500mm either side of the crack, brush & flush the raked joint with clean water to remove dust & debris, inject a bead of epoxy mortar to back of the joint & insert & press home a 1m long, 6mm diameter threaded stainless steel stitching bar, re-point open joint in designated mortar.

7.12.0 REDRESSING

7.12.1 GENERAL

Where damage to stone is superficial this can be rectified by redressing the stone. The area to be redressed is to be agreed with the Architect on site.

7.12.2 PREPARATION

The stone is to be taken back the minimum possible to achieve a sound free draining surface using mechanical tools and hand tools as appropriate. Surface de-lamination -remove all loose de-laminating stone and rub down a smooth surface with carborundum pads.

7.12.3 INSTALLATION

The redressed stone shall be finished to a smooth texture with no machine marks or tooling marks visible.

Where it is agreed that only part of the stone is to be redressed the redressed area is to be feathered neatly into the untreated area.

8.0 MASONRY CLEANING: GENERAL REQUIREMENTS

8.1 GENERAL

8.1.1 The cleaning of masonry on any part of this project shall only be undertaken by experienced operatives who have regularly been engaged in, or specialise in restorative cleaning of external and internal masonry and shall produce references of such activity with the tender return. The sub-contractor shall be a member of the Stone Federation's surface cleaning contractors.

The operatives shall be fully conversant with the method of cleaning specified and have had previous experience and knowledge of the system. The operatives shall have attended training sessions on the use of all items of equipment or chemicals contained in the specification.

8.1.2 The scope of the work is clearly identified on the drawings and the tenderers are to visit the site to confirm for himself the difficulties in executing the work as specified and is to include for such within his tender.

Refer to drawing series 8803 (20) for further information.

No claim will be entertained for failure to appreciate the difficulties in executing the works.

8.1.3 Except where the cleaning is let as a main contract all access scaffolding will be provided by the main contractor. The sub-contractor is to advise the main contractor of their requirements during the tender stage (if known) or immediately on nomination.

Any alterations required to the scaffold to suit the sub-contractors needs arising out of their failure to inform the contractor in accordance with this clause will be charged to the sub-contractor.

8.2 PREPARATION

8.2.1 SCOPE OF WORK

Stonework and masonry to exterior / interior elevations as indicated on marked up elevations.

8.2.2 RELATED REPAIR / REMEDIAL WORKS

Are specified elsewhere. Ensure the following work has been carried out before the cleaning works commences: appropriate access and protection of windows / fixtures and fittings etc.

8.2.3 REMOVAL OF FITTINGS

Timing: before commencement of cleaning works.
Disturbance to surfaces: minimise.
Items for disposal: as noted on marked up elevations.
Items to be kept for reuse: as noted on marked up elevations.

8.2.4 VENTS AND GRILLES

Protect but do not seal up ventilation grilles, air bricks, or other ventilation opening without first seeking instructions.

8.2.5 Control and Disposal of Wash Water and Detritus

Disposal: Safely. Obtain approvals from relevant authority.

8.2.6 CONTROL OF WATER

Collect and divert to prevent ingress and damage to building fabric and adjacent areas. Provide suitable temporary catchment boards / sheeting, gutters etc. to collect wash water and divert it to suitable discharge points.

Do not let wash water build up at outlets or above levels of flashings or anywhere where there is risk of it penetrating and causing damage to the building fabric.

Ensure that water does not penetrate interiors and damage finishes, etc. Monitor interior building and seek instructions when any signs of damp appear internally.

Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

8.2.7 BRUSHING AND SCRAPING

Before commencing any other methods of cleaning, remove loosely adhered deposits and heavy deposits of biological matter using suitable corrosion resistant brushes and scrapers / spatulas that do not abrade or gouge the surface. Do not use brushes with steel bristles.

8.2.8 TOOLING

To remove thick encrustations of dirt carbon and limescale etc. it is recommended, providing that:

- The works is carried out by skilled and experienced stone masons.
- None of the original surface / detail is removed unless agreed with the CA.

8.2.9 COLD WEATHER

Cleaning procedures using water: Do not use when air temperature is at or below 5°C. Protect damp surfaces from frost.

Chemical cleaning agents: Do not use when surface temperatures are below those recommended by manufacturer.

8.2.10 CLEANING GENERALLY

Operatives: Appropriately trained and experienced for each type of cleaning works.

- 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.

8.2.11 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 temperature.

Additional Documentation: General photographic survey before cleaning to identify heavy soiling.

Submission: At completion of cleaning works.

8.2.12 TRIAL SAMPLES

Trial Samples reference is required for all cleaning methods.
Surface: Masonry and stonework.
Location / Size: Location to be agreed but no less than 2sq.m per sample.
Type of soiling:
- Atmospheric soiling.
- Biological growth
- Bird droppings
- Fire damage
Cleaning Methods: As specified below.
Records: Maintain written records for each trial area, including cleaning methods and conditions, to enable replication of results elsewhere.

8.2.13 CLEANING GENERALLY
Use operatives who are skilled Stonehealth Approved, having been trained and experienced with the equipment, materials and procedures for the type(s) of cleaning and surfaces specified. Provide evidence of their training and experience to the CA on request.

Confine cleaning to designated area(s) / surfaces. Do not allow cleaning agents or residues to stray onto adjacent or protected surfaces.
Clean, collect and safely dispose of debris from scaffolding, ledges, etc. at the end of each day. Prevent debris falling to lower levels.
Prevent marking of cleaned areas from dirt and debris splashing up from scaffold boards.

8.2.14 MONITORING
Regularly monitor effects of each cleaning procedure against the degree of cleaning established by approval trial sample(s). Seek instructions immediately, wherever:
- Disruption to the surface occurs
- Anticipated level of surface cleaning is not being achieved.
- Discolouration or stains are revealed by cleaning.
Do not modify cleaning procedures or materials without approval from the CA.

8.3.1 REMOVAL OF ORGANIC GROWTH

8.3.2 METHOD

The extent of masonry cleaning / organic growth removal is identified on the drawings. The primary purpose is the removal of organic growth and carbon deposits/staining.

8.3.3 WATER

Water for the works shall be clean and fresh without pollutants. Where existing water supply is available within the building this may only be used with the Employers permission. In other cases a lockable standpipe shall be erected to the approval of the local water authority.

8.3.4 PREPARATION

Remove as much plant growth, moss, lichens etc. with a knife blade and wire brush as necessary.

Ensure that no damage is caused to the brick and terracotta by the removal of plant growth. If any damage is encountered restrict removal to the removal of moss only.

Allow for removal of established vegetation from within joints allowing for removal of roots where practical or treatment with suitable herbicide where not.

8.4 HEALTH AND SAFETY

8.4.1 The Contractor shall be responsible for ensuring that all products used and all procedures adopted comply in full with current Health and Safety requirements.

8.4.2 Ensure that all operations carried out in such a way that they do not represent a risk to health and safety of the general public or other operatives on site.

8.5 SAMPLE PANELS

8.5.1 Although the basic cleaning method has been established there is a requirement for sample panels to be carried out to ensure that the Contractor is aware of the standard required. 3 sample panels of each substrate to be cleaned are to be carried out under the direction of the Architect in locations previously agreed with the Architect. Each sample panel will be approximately 2 square metre as item 1.2.12.

8.5.2 Sample panels will be executed prior to commencement of the works and will be carried out by experienced operatives who will be working on the project. The purpose of the sample panels is:

- a) to confirm the method, working pressures etc to be used and
- b) to ensure that the site operatives are familiar from the start with the project requirements. For this reason, it is imperative that the operative executing the trials should be actively involved in the works.

8.5.3 Area around sample panels shall be protected as required for the main works.

8.6 PROTECTION

8.6.1 All surfaces not being cleaned shall be fully protected to ensure that no accidental over spray of cleaning occurs.

8.6.2 Where different cleaning techniques are specified for adjoining surfaces the surfaces not being cleaned during either operation shall be fully protected.

8.6.3 Protection of surfaces shall include the following:

- a) Windows to be boarded up with ply and covered in heavy duty polythene securely taped at all edges.
- b) Painted surfaces not being redecorated shall be protected with heavy duty polythene and securely taped.

8.6.4 Where cleaning is internal all fixtures and fittings which cannot be removed are to be fully protected. Statues and any areas of ornate carving are to be protected with ply box covers and heavy-duty polythene.

- 8.6.5 Decorative ironwork is to be fully protected. Where ironwork would puncture polythene a protective layer of expanded polystyrene, foam or similar approved material is to be taped in position prior to installing heavy duty polythene which shall be fully taped.

Furniture and fixtures are to be protected against damage with ply or MDF boards and covered with heavy duty polythene fully taped. Where loose furniture is involved it may be moved to a central point(s) but will still require full protection.

- 8.6.6 The Contractor is to allow for all protection. Where the Architect considers the protection to be inadequate, the protection shall be augmented as directed at the Contractors own cost.

- 8.6.7 Protection shall be inspected at the start of each working day to ensure its integrity. Any defects noted shall be rectified by the Contractor prior to commencement of work.

- 8.6.8 No cleaning operations shall commence until all protection is in place.

- 8.6.9 No protection shall be removed until cleaning operations have been completed and have been inspected and approved by the Architect. Protection is to remain in place until "snagging" items have been completed and approved.

8.7 PRODUCTS / EQUIPMENT

- 8.7.1 Compatibility of Chemical Products
Products: Compatible and produced by the same manufacturer.

- 8.7.2 Surface Biocides
Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.

- 8.7.3 DOFF STEAM CLEANING
Equipment Type: Stonehealth DOFF with DRS steam / water vacuum recovery unit (or equal and approved).
Apply steam at the lowest pressure and allow when removing paint, the appropriate temperature that will remove/soften/loosen deposits without abrading or disrupting the surface(s). If removing biological growth, it may be possible to be removed at a lower temperature but to ensure that the re-growth does not occur, the full temperature of 150°C should be applied over the whole surface in order to kill off the spores. In such instances, there is no need to use a chemical biocide.

For each area / surface, establish the optimum settings (temperature, volume and pressure), nozzle type and distance of nozzle from substrate. Keep a written record of these variables but allow an operator to vary.

Assist removal of softened deposits with suitable corrosion resistant brushes and scrapers / spatulas that do not abrade or gouge the surface.

Method statements and Risk Assessments are appended to this document for information.



DOFF Method
Statement 05.2015.p



DOFF Risk
Assesment for site -



DRS Instructions
for use.pdf

8.7.4

TORC ABRASIVE CLEANING

NB: Only to be used by prior consent with the Architect & Conservation officer

Equipment type: Stonehealth TORC (or equal and approved)

Apply abrasive at the lowest pressure that will remove deposits whilst causing the minimum of abrasion to the surfaces(s). where deposits are ingrained seek instructions.

For each surface, establish the optimum settings (pressure and abrasive volume), nozzle type and distance of nozzle from the surface. Keep a written record of these variables.

Remove and collect dust and debris from each completed surface as work proceeds and finish by rinsing off thoroughly with clean water using a suitable low-pressure spray equipment.

Rinse debris / slurry thoroughly from each completed surface with clean water using suitable low-pressure spray equipment. Do not allow slurry to dry out on the surface.

Method statements and Risk Assessments are appended to this document for information.



TORC Method
Statement 05.2015.p



TORC Risk
Assesment for site -



HSD - Dolomite
05-15.pdf

8.7.4

REMOVING PAINTWORK FROM MASONRY

Paint-Rid by Stonehealth (or equal and approved) followed by Doff clean to remove residue.

Application: Protect adjacent surfaces particularly plastics e.g. PVC window/door frames. Apply a thick coat (2-3 mm) of Paint-Rid using a brush (can be spray applied). Protect from rain but allow the air to circulate and the product to breathe. Ensure that people or their clothing do not come into contact. Can soften and breakdown paints within hours, possibly leave overnight.

Check the sample in the morning if it has not penetrated all of the coats remove what can be removed and then re-apply. The ideal temperature is circa 15 degrees C but please note that Paint-Rid is slower to work when temperatures are low and becomes inactive if temperatures are below 5 degrees C. Will also dry out too quickly if exposed to sun or heat.

8.8

APPLICATION

8.8.1

Removal of Loosely Adhered Deposits

Timing: Before commencement of other cleaning methods.

Surfaces: Prevent damage, including abrasion.

8.8.2

Biocide Application

Preparation: Remove loose growths.

Surfaces: Prevent damage, including abrasion.
Biocide Treatment: Appropriate solutions to kill growths and inhibit further growths.
- Dead growths: Remove.

8.8.3 Abrasive Blocks
Types: Suitable grades of carborundum or gritstone.
Application: Lubricate with water. Remove detritus.
Abrasive Power Tools: Prohibited.

8.8.4 Abrasives Cleaning
Surfaces: Minimise abrasion.
- Ingrained deposits: Seek instructions.
Equipment Settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.
Detritus: Remove with clean water.

8.9 COMPLETION

8.9.1 Obtain CA’s approval of cleaning to each area / surface and before of temporary protection.
After removal of temporary protection, thoroughly clean all glazing, window frames, doors, sills and other affected surfaces.
Check that all gutters, hoppers, downpipes and gullies are free from obstruction and debris arising from cleaning works.
Give the CA two weeks’ notice before striking each stage of scaffolding, to allow for final inspections.
Refix the following fittings: all items temporally removed and stored.
Complete all necessary documentation, review and record final results with supportive drawings and photographs.

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9.0 LEADWORK

General

Lead work includes the installation of new code 5 flat roof to the tower and code 5 lead flashings to the dormer roofs

9.1 REQUIREMENTS

All work shall be undertaken by trained operatives employed by a contractor who is a member of Lead Contractors Association.

All workmanship shall be in accordance with the Lead Sheet Association’s recommendations, as contained in ‘The Lead Sheet Manual - a guide to good building practice’, Volume 1 to 3 and latest updates.

Working Practices shall comply with the Health and Safety Executive COP2 "Control of lead at work - approved code of practice".

All work shall comply with BS 5250 "Code of Practice for control of construction in buildings".

9.2 MATERIALS

Lead Sheet:
Lead sheet shall be milled lead sheet to BS 1178 unless stated otherwise, code 5 for gutter linings and overflow chute outlets, and code 5 for all cover flashings. The minimum weight of lead shall not be less than that recommended in BS 6915 "Specification for design and construction of fully supported lead sheet roofs and wall coverings". The lead shall be colour coded for thickness and weight.

9.2.1 UNDERLAY:
To lead shall be non woven needle punched polyester geotextile that has a weight of between 200 and 220g/m2.

9.2.2 COPPER NAILS:
Copper nails for fixing lead shall be in accordance with BS1202 part 2.

9.2.3 WOOD SCREWS: shall be stainless steel in accordance with BS 1210.

9.3.0 WORKMANSHIP

9.3.1 GENERAL

Cut, joint and dress lead neatly and consistently to provide fully waterproof coverings and flashings free from ripples kinks, buckling and cracks.

Comply with BS 6915 and current good practice as described in the latest edition of "The Lead Sheet Manual" published by the Lead Sheet Association unless specifically instructed in writing.

Do not use screws or other sharp instruments to mark out lead. Use solder only where specified and not in any other location.

Ensure that finished leadwork is fully supported and adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or distress.

9.3.2 LEAD WELDING:
In situ lead welding is permitted where specified subject to completion of a "hot work permit" form and compliance with its requirements.

9.3.3 LAYOUT:
Agree setting out of joints drips and laps with the Architect prior to commencing work.

9.3.4 CONTROL SAMPLES:
Complete an agreed area of finished work and obtain approval of appearance and detail from the Architect before proceeding with the remainder of the works. The sample area(s) shall be selected so as to reflect the problems likely to be encountered on the majority of the work.

9.3.5 EXISTING LEAD TO BE REMOVED:
Lead specified to be stripped shall become the property of the contractor. The contractor shall allow a credit in the tender for the scrap value of all such lead.

9.3.6 REPLACEMENT OF EXISTING LEAD:
Replacement of existing lead will not be carried out under the protection of a temporary roof. The work must be carried out in small sections at a time to reduce the risk of weather damage.

9.3.7 EXISTING BASES:
In areas where existing substrate is to be recovered in lead, remove all existing leadwork and brush clean of all debris, dust etc. Inspect all timbers for condition and level. Replace as necessary any rotten boards with timber to match existing. Ensure that where boarding is straight edged the gaps are cleaned of dust to permit ventilation. Where boarding is tongued and grooved seek instruction prior to drilling ventilation holes in an agreed pattern.

Ensure that all boards are securely fixed. Punch in any protruding fastenings and plane or sand as necessary to achieve an even surface.

9.3.8 ALL BASES:

All bases shall be dry, free from dust debris grease and other deleterious material with all nails punched home and free from all protrusions, unevenness etc prior to laying lead.

Laying of underlay and lead will be taken as a joint acceptance of the Main Contractor and sub-contractor of the suitability of the base.

9.4.0 **FIXING AND JOINTING**

9.4.1 HEAD FIXING OF LEAD SHEET:
Unless specified elsewhere secure top edge of lead sheets with two rows of fixings 25mm and 50mm from the top edge of the sheet at 75mm centres to each row and evenly spaced and staggered. Additional fixings may be required in the top third of larger sheets, in accordance with the recommendations of the Lead Sheet Association

9.4.2 FIXINGS:

Fix lead sheet to timber substrates using copper clout nails to BS 1202 part 2 table 2 with annular ring, helical ring or serrated shank, length not less than 20mm, shank diameter not less than 3.35mm and head diameter not less than 8mm, or similar stainless steel (austenitic) clout nails with diameter not less than 2.65mm.

Where lead is to be fixed to concrete or masonry substrates use stainless steel screws to BS 1210 table 3, not less than 19mm in length and not less than 3.35mm diameter, with stainless steel washers and plastic plugs of length and diameter to suit the screws.

9.4.3 CLIPS:

Clips shall generally be 50mm wide unless specified otherwise. Lead clips shall be cut from sheets of one code heavier than the code of the sheet being secured. Alternatively use copper or stainless steel clips in accordance with the recommendations of the LSA.

Each clip shall be secured with 2 fastenings not more than 50mm from the edge of the lead sheet. Clips shall be welted around the edges of sheets and turned over 25mm.

9.4.4 WELTED JOINTS:

Form with a 50mm overlap, 25mm underlap and copper or stainless steel clips at not more than 450mm centres.

Welt overlap and clips around underlap loosely turn over and lightly dress down.

9.4.5 DRIPS – Roofs up to 3 degree pitch : Dress underlap into rebate along top edge of drip and fix with one row of nails at 50mm centres on centre line of rebate. Dress overlap over drip and form a 40mm splash lap.

Dress over lap over drip and form a 75mm splash lap. Secure with lead clips lead welded to underlap with not less than one per bay

9.4.6 FORMING DETAILS:

Details may be formed by bossing or lead welding except where specified. Lead welded seams must be neatly and consistently formed. Do not undercut or otherwise reduce the thickness of the sheets at the seams. Filler strips are to be of the same composition as the sheets being joined. Butt joints are to be formed to a thickness one third more than the sheets being joined. Lap joints are to be formed with 25mm laps and two loadings to the edge of the overlap.

Bossing must be carried out without thinning cutting or otherwise splitting the lead sheet.

9.4.7 FIXING INTO JOINTS

Carefully rake out joint/chase to a depth of 25mm. Dress lead into joint/chase and fix with lead wedges at not more than 450mm centres, and to the recommendations of the LSA. Max. length of cover flashing to be 1500mm with minimum laps of 100mm, to the recommendations of the LSA. Back point with 1:3 lime : sand mortar.

9.4.8 FINISHING:

As soon as practical apply a smear coating of patination oil evenly in one direction. Apply only in dry conditions.

- 9.4.9 COVER FLASHINGS:
 Lead: Code 5 in lengths not exceeding 1500 mm.
 End to end joints: Laps of not less than 100 mm.
 Cover: Overlap to upstand of not less than 75 mm.
 Fixing: Lead wedges into bed joint and clips to bottom edge at laps and 450 mm centres.
- 9.4.10 FLASHINGS & SOAKERS AT CHANGES TO ROOF PITCH
 Thickness: Code 5
 Dimensions: Allow for a 150mm extension over the slates on the lower roof and 150-200mm up the slope of the upper roof.
 Lengths: Should not exceed 1.5m and each piece is copper nailed at the top at about 150mm centres. Laps between pieces should not be less than 150mm.
 Allow for installation of a treated timber lay board and timber fillet to provide support for the lead and for the bottom row of slates
- 9.4.11 WEATHERINGS TO LEDGES, CORNICES
 Thickness: Code 5
 Underlay: Building paper to BS 1521, Class A.
 Laps / welts should be spaced at no more than 1.5m centres with clips positioned along the front edge to suit exposure of building.
 For projections of more than 200mm the back of the weathering is normally turned up the wall not less than 75mm and covered with separate flashing. Cover flashings should be fitted in lengths not exceeding 1.5m with 100 – 150mm lap joints. In this instance, the lead weathering will be installed to match existing arrangement. The top edge of the flashing is turned not less than 25mm into the masonry joint and wedged at about 450mm centres.
 Welts are used for the end-to-end joints incorporating continuous stainless-steel fixing clip. Fixed at 100mm max centres into the masonry.
 External corners are to be welded.
- 9.4.12 ROOFING: NEW LEAD ROOFS WITH WOOD ROLLS & FINIALS
 Note: Roof is exposed and detailing of leadwork should account for this by use of additional clips where necessary.
 Substrate:
 New 100x25 treated softwood boards and firrings inc supporting structure to match existing roof pitches – refer to drawing(s) proposed roof plan for locations.
 New wood rolls as 1.4.6 above.
 Preparation: Remove all latents.
 Underlay: Building paper to BS 1521, Class A. - Type of lead: Rolled to BS EN 12588.
 Thickness: Code 5. Refer to drawings.
 Pre-treatment: Chalk emulsion to underside of lead as supplied by Rowan Technologies Ltd. Tel: 0161-748-3644, applied to manufacturers recommendations.
 Joints in direction of fall: New wood cored rolls with splash lap.
 Spacing: Regular, See drawings. 675mm maximum spacing of joints with the fall. 2500mm maximum distance between drips.
 Eaves detail: See drawings. Lead to be dressed over timber fascia with continuous stainless-steel clip allowing for 6mm min movement for lead.
 Cross joints: 150 mm laps with lead clips.
 Spacing: Dependant of code of lead. Follow LSA recommendations.
 Alignment: Half staggered and in line on alternate bays.
 Intermediate fixings: Brass cup and screw with die-cast lead dome where required. Note intermediate fixings do not allow the lead to move. Ridge/ Hip detail: n/a.
 Other requirements: Stainless steel insect mesh at eaves where ventilation present. Finials to match existing.

10.0 RAINWATER DRAINAGE SYSTEMS

10.1.0 REQUIREMENTS

- 10.1.2 Removal of redundant RWP goods and installation of Cast Iron pipes and hoppers to match existing design.

Hoppers to be removed and stored for future sampling. Infill opening with masonry to match existing. Carefully remove & hand over to Main Contractor for storage.

10.2.0 MATERIALS

- 10.2.1 Cast-iron Rainwater goods Options <https://longbottomfoundry.co.uk/> OR <https://www.hargreavesfoundry.co.uk/> (or equal and approved).

- 10.2.2 FITTINGS:
Include for all necessary fittings to each section of pipework, including square and obtuse bends, union sockets with fixing ears, shoes, side and anti-splash shoes, single branch fittings, offsets, holderbats, inspection pieces, end caps and rainwater hoppers.

- 10.2.3 JOINTS:
Joints at the sockets of the components should incorporate a hemp gasket, and be sealed with a bedding of red lead and white putty (or approved polysulphide sealant). Where pipes / components are cut on site, the ends shall be cut clean and square with burrs removed.

All cut ends shall be made good/recoated in accordance with the manufacturer's recommendations prior to decoration and fixing.

- 10.2.4 FIXING:
Socketed rainwater and soil pipes are to have hardwood bobbins fitted behind ears to give 38mm projection from wall face to facilitate decoration. Fixing to the walls is by means of 8mm stainless steel screws through ears and bobbins into plastic plugs in the walls.

- 10.2.5 FINISH:
After cutting to finished installed sizes all components are to be primed, and painted. Colour to match existing.

Gutters and RWPs internally are to receive 2 coats of bitumen paint.

10.3.0 WORKMANSHIP

- 10.3.1 Removal of redundant RWP goods. Cut out individual brick, remove mortar from surrounding brickwork & insert suitable new/reclaimed replacement brick to match existing as closely as possible, bedded & pointed in designated mortar.

Redundant RWP clips, telephone brackets, scaffold fixings & general fixings evident within brickwork. Carefully remove existing fixing from face of brickwork, clean out fixing holes to remove dust & debris, infill hole using a lime based restoration mortar colour toned to match brickwork

10.4.1 INSTALLATION GENERALLY (downpipes)

- 10.4.2 Install to ensure the complete discharge of rainwater from the building without leaking.
- 10.4.3 Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.
- 10.4.4 Provide for thermal and building movement when fixing and jointing and ensure that clearances are not reduced as fixing proceeds.
- 10.4.5 Where not specified, use plated, sherardized, galvanized or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed or fixed to.
- 10.5.1 PIPEWORK
- 10.5.2 Fix securely at specified centres plumb and/or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
- 10.5.3 Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.
- 10.6.1 TESTING
- 10.6.2 Before striking the scaffold test all downpipes and hoppers by blocking outlets and filling to overflow level. Leave filled hopper head for 5 minutes and then inspect for leaks. Inform architects one week in advance of testing so as they may be present

11.0 PAINT

11.01 REQUIREMENTS

11.02 MINERAL PAINT Restoration of entrance signage:
Manufacturer
<https://www.keimpaintshop.co.uk/> (or equal and approved).

11.03 SATIN PAINT: [NEW EXTERNAL METALWORK

Manufacturer:

Dulux Trade

Akzonobel

Wexham Road

Slough

Berkshire

SL2 5DS

E: duluxtrade.advice@akzonoble.com

Tel: 0333 222 7070

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Product reference:

Finishing Coat - [Dulux Trade Metalshield Satin].

Colour: TBC with Architect.

Undercoat – [Dulux Trade Metalshield Primer].

Apply 1 coat of the Metalshield primer followed by 2 coats of Metalshield Satin

11.04 GENERALLY

11.05 HANDLING AND STORAGE

Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number. Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

11.06 COMPATIBILITY

Coating materials selected by contractor:

- Recommended by their manufacturers for the particular surface and conditions of exposure.

- Compatible with each other

- Compatible with and not inhibiting performance of preservative/fire retardant pre-treatments.

11.07 PROTECTION

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

11.08 INSPECTION BY COATING MANUFACTURERS

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

11.09 PREPARATION

11.10 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: Abrade 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, particles and residues from abrasion: Remove.
-Fill with stoppers/ fillers. Work well in and finish off flush with surface.
-Abrade to a smooth finish.
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.

- 11.11 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.
- 11.12 PREVIOUSLY COATED WOOD
Degraded or weathered surface wood: Abrade to remove.
Degraded substrate wood: Repair with sound material of same species.
Exposed resinous areas and knots: Apply two coats of knotting.
- 11.13 PREPRIMED WOOD
Areas of defective primer: Abrade back to bare wood and reprime.
- 11.14 UNCOATED WOOD
General: Abrade to a smooth, even finish with arrises and moulding edges lightly rounded or eased.
Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
Resinous areas and knots: Apply two coats of knotting.
- 11.15 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.

- 11.16 APPLICATION
- 11.17 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.
- 11.18 PRIMING JOINERY
Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
End grain: Coat liberally allow to soak in, and recoat.
- 11.19 WORKSHOP COATING OF CONCEALED JOINERY SURFACES
General: Apply coatings to all surfaces of components.
- 11.20 CONCEALED METAL SURFACES
General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
-Components: Backs of rainwater pipes.
Additional coatings: n/a.