THE TOWER, COMPTON MILL, LEEK

Schedule of Repair Work

Chambers Conservation Ltd, March 2018 – Issue 2

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1. Introductory Information

This Schedule of Works has been prepared by Chambers Conservation Ltd for the conservation and repair of the tower at Compton Mill, Compton, Leek, Staffordshire, ST13 5NJ

This schedule has been prepared initially in response to the requirements of condition 5 of Staffordshire Moorlands DC, full planning approval reference SMD/2017/0083, for the replacement of the mill buildings (other than the tower) and the creation of a scheme of proposed residential accommodation with care, comprising 57 apartments for persons aged 55 and over.

Condition 5 reads as follows;

> *5. Prior to the commencement of development a full Schedule of Repair for the stair tower (including its internal features and stairs) which is to be retained as shown on the approved drawings shall be submitted to and approved in writing by the Local Planning Authority. The agreed works shall be carried out before the building is first brought into use.*

This document will subsequently form the basis for repairs to the tower.

The Mill is not listed and sits just outside the Leek Conservation Area. The approved scheme includes the demolition of the majority of the mill, and the retention of the tower as part of the new development. The tower forms an important local landmark, especially on long-views from within and towards the Leek Conservation Area.

The tower is constructed primarily from red engineering brick with sandstone dressings, including band-courses, window surrounds, cornice and copings. The tower is terminated with a distinctive 4-sided lantern, with concave-pyramidal roof, capped with a ball finial. Internally the stair contains a stone staircase with distinctive stone carved newel post at low level terminating an iron balustrade with timber handrail. Internally the lantern has a panelled ceiling, with raised and fielded panels in a radial design, finished in green, red and gold. The walls are exposed brickwork, painted in a modern paint.

2. Background Information and General Matters:

The schedule of work provided is on the basis of a visual inspection only, high-level access only available from adjoining roofs. On completion of the scaffold for the tower, internal and external, arrangements shall be made for further inspection and opening-up (as referenced in the schedule) at the direction of an accredited conservation architect (AABC/RIBA SCA).

The works to the tower should be undertaken by a specialist contractor or sub-contractor with appropriate skills in the conservation of historic buildings and structures.

3. Exterior:

3.1. Lantern

3.1.1. Finial

The lantern finial comprises a spun (possibly zinc) painted ball finial, mounted on a central support, with projecting moulded cornice beneath, capped with a lead weathering. Provisional repair scope as outlined below.

3.1.1.1. Allow to carefully remove ball finial, set aside for reinstatement.

3.1.1.2. Carefully remove fragile cornices from below the ball finial, comprising timber profiled cornice, mitred, with lead weathering above. 2 no. sections of cornice remain, 2 no. missing. Set aside remaining sections for inspection. Remaining cornice sections are to be re-used if sound. Check adjoining gutters for remaining sections and set aside if discovered.

3.1.1.3. Provisionally allow to replace cornice sections to precisely match the existing, in treated douglas-fir, with new code 4 milled lead weathering above.

3.1.1.4. Prepare and decorate all timber elements and ball finial. For paint refer to window section.

3.1.2. Lantern Roof

Atop the glazed lantern, the roof sits above a moulded timber cornice and comprises a concave curved (4 sided) pyramid, tapering toward the central finial at the apex. The 4 facets were originally finished in lead, with small rolls at the hips. The leadwork to the S & E has been removed, perhaps stolen, and replaced with felt. To the East, the roof abuts a parapet upstand and a back-gutter is provided. Provisional repair scope as outlined below.

3.1.2.1. Remove roofing felt to S & E and tip.

3.1.2.2. Carefully lift lead to N & W to enable inspection of timber sarking boards beneath.

3.1.2.3. Replace 2 no. sawn boards (allow 75 x 12.5mm) to the base of each facet, full width. Screwed in place with stainless steel screws. Leave 'penny' gaps between each board. Timber for boards as specified in 3.2 Roof.

3.1.2.4. Replace supporting structure for back gutter (boarding, as above). Configuration to precisely match existing or adapted for improved drainage following provision of safe access for inspection.

3.1.2.5. Allow for complete renewal of leadwork to lantern roof to match existing, with small (non-standard) solid cored roles to the hips, new lead sleeve to finial upstand and lining to back gutter. Ventilation is to be introduced either via small lead ventilators (discreet slopes) or by introducing ventilation at eaves and apex. Final detail to be determined following opening up to view substrate.

3.1.2.6. Leadwork specification as roof, below. No hot-work will be permitted on site, a hot works permit system will be employed.

3.1.3. Lantern timber structure.

The superstructure of the lantern comprises a timber frame, supported on steel joists visible internally. Externally the timber frame projects above the roof deck, with the cheeks of the lantern clad in lead sheet, capped with a moulded timber profile and cill with lead weathering. The window casements sit on top of

the lead weathering, between the primary members. Above each window is a deep timber moulded cornice, supported at the corners by columns with recessed panels set at 45 degrees to the window alignment.

3.1.3.1. Remove all loose and flaking paint. Being mindful of the probable presence of lead in the paint.

3.1.3.2. Remove section of timber beneath the cill weathering. Set aside for inspection.

3.1.3.3. Carefully remove leadwork to upstands of lantern, allow for inspection of timberwork beneath. It is assumed that this is a timber boarding.

3.1.3.4. Allow to replace 10% of timber boarding to lantern upstands. Assume sawn boards (allow 75 x 12.5mm) full width. Screwed in place with stainless steel slot-head screws. Leave 'penny' gaps between each board. Boards to be treated douglas fir or equivalent.

3.1.3.5. Allow to undertake 1 no. 250mm splice repair to 150x150mm primary support. Provide temporary support as necessary whilst undertaking the work.

3.1.3.6. Renew leadwork to lantern upstands in code 6 lead, with welted joints (dividing the upstand into three equal bays). All in accordance with Lead Sheet Association details and guidance. *NB* the detail and interface between the curved parapet and the upstands and the upstand and the front elevation is not fully understood and will need to be finalised on erection of the scaffold and provision of full access.

3.1.3.7. Allow for the renewal (to match existing) of 100% the timber beneath the cill weathering.

3.1.3.8. Allow for piecing in 2 no. 250mm sections of new cornice to match existing where abutting tall parapet wall (some rot evident).

3.1.3.9. Fully prepare and redecorate (timberwork) refer to window section for paint specification.

3.1.4. Lantern Windows

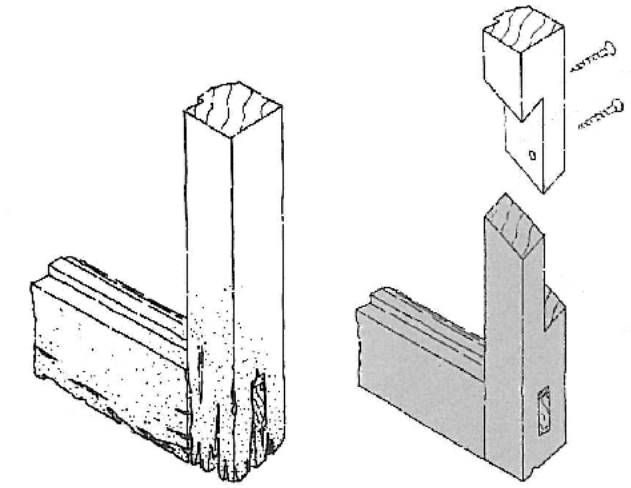
Each window comprises two fixed 9-light casements divided by a central timber mullion. The glass is puttied externally. The glazing is of a traditional hammered finish.

3.1.4.1. Carefully remove lead weathering where loose to base of each casement, to enable inspection of timber beneath.

3.1.4.2. Remove all loose and flaking paint. Being mindful of the probable presence of lead in the paint.

3.1.4.3. Allow to splice in 3 no. full width sections (approx. 60mm high, full width) to bottom rails of casements, returning 100mm up stiles for rigidity (refer to Fig 01, below). Allow to piece in 1 no. 100mm high section to mullion. Timber to be treated douglas fir (as specified in windows), all profiles (internally and externally) to precisely match the originals.

Fig 01 Repair to timber window frames as proposed.



3.1.4.4. Allow to carefully remove all defective, loose and failed putty (and to cracked or broken panes). Reinstate, including all areas of missing putty, with traditional linseed-oil putty, struck with a putty knife to match profile of the original.

3.1.4.5. Allow to completely replace 6 no. badly cracked panes and a further 9 where renewal of bottom rails to take place (careful removal of existing glass should be attempted in this instance). Minor cracks to be inspected following erection of scaffold and judged individually for weather-tightness, likelihood of deterioration or failure. The presumption is to retain original glass wherever possible.

Provide samples of the following glasses for inspection, decision and approval prior to ordering;

- Wissmach Clear Hammered Glass from Tempsford Stained Glass, The Old School, Tempsford, Beds, SG19 2AW Tel 01767 640235/ 641014

  or

- Spectrum Textured - Clear Hammered glass from Creative Glass Guild Unit 4 St. Philips Central, Albert Road, St Phillips, Bristol, BS2 0XJ

  Or alternative supplier/source equivalent to the above.

3.1.4.6. Prepare minor holes, close gaps in frames etc as outlined in windows (3.5.2).

3.1.4.7. Reinstate code 4 lead weathering (where removed) and abutment flashings between lantern and parapets to match original detail.

3.1.4.8. Fully prepare and redecorate refer to window section for paint specification.

3.2. Roof

The roof to the tower is divided into three distinct parts. The lantern roof (see above) and two sections of parapet gutter either side of the lantern, which currently drain onto the flat roof behind via two chutes through the tall parapet on the eastern side of the tower. These roofs are in poor condition and the drainage is ineffectual, which has resulted in water ingress. Viewed from below (where the plaster has failed), the roof structure appears to comprise a concrete filler-joist construction, from above it would appear to be asphalt liquid applied roofing with lead flashings to the perimeter.

The detailed design for the new build is currently being developed, which has an impact upon how the design of the two parapet gutters is to work. Therefore the outline scope below establishes a principle of how these areas are to be reinstated. It should have no impact on the appearance of the tower (externally or internally) but long term maintenance of these parapet gutters and consequent improved drainage arrangements is essential to protect the fabric of the tower, and enable safe access.

In principle it is proposed to create a raised deck of leadwork sitting above the current asphalt roof, with increased size outlets draining to the rear. The original asphalt remaining in-situ below.

3.2.1. For works to the lantern roof, refer to lantern, above.

3.2.2. Carefully remove lead flashings to perimeter and set aside.

3.2.3. Undertake repair works to parapets - see walls, below.

3.2.4. Provide new timber supporting structure, comprising 100 x 50mm treated sw joists @ 450mm cc's, spanning onto perimeter wall plate, or hangers (separated from masonry using an appropriate DPC). Form 150mm wide box-gutter and 150mm deep sump adjoining east parapet wall.

3.2.5. Overlay structure with sawn boards (allow 75 x 12.5mm) full width, specification as 3.2.7, cut to suit curve. Screwed in place with stainless steel screws. Leave 'penny' gaps between each board.

3.2.6. Provide new code 6 lead roof and linings to box gutter and sump. All sizes, drips and rolls to LSA requirements. No hot-work will be permitted on site, a hot works permit system will be employed.

3.2.7. Summary specification for leadwork.

- Substrate: 25x150mm regularized European white softwood boards unless specified otherwise, treated (50 year minimum desired service life for treatment).
- Underlay: Sisalkraft 234 building paper.
- Type of lead: Milled lead.
  - Thickness: Code 6 or as stated in schedule.
- Pre-treatment: Apply chalk slurry coat to underside of lead and allow to dry before laying, followed by chalk paste coat after bossing but before final fixing - manufacturer of chalk slurry: Rowan Technologies: 216 Church Road, Urmston, Manchester, M41 9DX, mail@rowantechnologies.co.uk, + 44 (0) 161 748 3644.
- Post-treatment: Patination Oil in accordance with manufacturer's instructions.
- Joints in direction of fall (roof): Wood cored rolls to LSA requirements. To hips of lantern, profile, size and shape to match existing.

- Spacing: As recommended in Lead Sheet Association guidelines – arrangement to be agreed on site prior to installation.

- Eaves detail: Lead clips as LSA detail.
- Cross joints: Drip min 65mm as indicated on drawings.
- Spacing: maximum as defined in Lead Sheet Association guidelines for code of lead specified.

Note – should not be a requirement for drips.

- Intermediate fixings: n/a.
- Ridge/ Hip detail: Capped roll as indicated on drawings.

Other requirements: Sacrificial sheets of code 4 lead clipped under all outlets.

3.3. Walls – Stonework

3.3.1. General & Specification Requirements

3.3.1.1. Cleaning

The stonework has extensive carboniferous staining. In order to achieve a satisfactory appearance and a cohesive scheme (with the context of the new-build adjacent and some repair work), carefully considered stone-cleaning is proposed. The outline specification, for gentle abrasive cleaning below is proposed to all stonework, including copings, cornices, band courses etc. Work is only to be undertaken by a Stonehealth approved contractor.

Removal of Sulphates and staining - "TORC (JOS)" SYSTEM. Stonehealth Ltd Bowers Court Broadwell Dursley GL11 4JE Tel (+44) (0)14S3-S40600 Fax (+44) (0)14S3 S40609 Email: workshop@stonehealth.co.uk www.stonehealth.com

a. This is to be carried out to all existing stone faces including copings, cornices, band courses and window surrounds.

Component specifications;

b. Water: Clean tap water only.

c. Abrasive: Calcite Powder (type as recommended by Stonehealth).

d. Sequence:

   a. Inspection with CA

   b. Recording

   c. Preparation (including protection to ALL adjacent surface)

   d. Treatment.

e. Recording:

   Photographic recording prior, after trials, during and post completion. Presented on disc with images cross-referenced to a key drawing.

f. Preparation:

   a. When it is agreed by the CA that washing is complete, remove all temporary protection,

plugging or masking and clear all waste and debris.

b. Open joints or cracks should be temporarily plugged in a method approved by the CA to avoid excessive ingress of water into the building fabric.

c. Protect surrounding surfaces that could be damaged by the subsequent treatment, including temporary masking of adjacent openings to avoid ingress of water into the interior of the building.

d. Methods of protection to be approved by the architect prior to commencement.

e. Obtain approval to temporary protection

f. Carry out a trial clean (according to 'Treatment' - below) to three separate locations of 0.5 m2 in locations agreed with the architect and obtain approval to this prior to commencement (locations pre-agreed with architect in discreet locations). This trial sample will then be considered as a 'control' for the general standard of clean.

g. Provide wind protection and control waste as necessary.

h. Undertake any preparation recommended by specialist operatives.

g. Treatment:

a. This operation is to be carried out by a Stonehealth Ltd approved specialist firm using identified and approved operatives that have demonstrated their ability to control the method to achieve the required level of clean but without damage to the stone face. The required level of clean is the removal of residual soot and sulphate stains to give a moderately even level of clean over the surface of the stone.

b. A control sample will be agreed on site to demonstrate the level of clean required.

c. Arrange for architect to inspect when the above stage is reached.

d. Receive further instructions.

e. When it is agreed by the architect that washing is complete, remove all temporary protection, plugging or masking and clear all waste and debris.

3.3.1.2. Stone Repairs

The stonework to the tower is generally a locally sourced sandstone with a pink-buff hue. As the remaining façade of the building (to the North of the tower) is due for careful demolition it is proposed to set aside stone from this work to enable the repairs required to the stone of the tower, ensuring a precise match.

This is to be carried out to repairs as indicated in the schedule of works.

a. Stone:

Salvaged from demolition of adjoining façade, as noted above.

b. Mortar:

1:2.5:0.5 NHL 3.5 : well graded local sands : stone dust (to match stone)

c. Archaeological attendance: n/a

d. Recording:

Photographic recording prior, after trials, during and post completion. Presented on disc with images cross-referenced to a key drawing

e. Cutting out:

Cut out single defective stones to 125mm depth measured on bed by adopting such methods necessary to prevent damage to surrounding stonework, starting from the centre and working outwards. Having drilled the whole face of the stone at 50mm horizontal and vertical centres to the required depth using **manual tools only**, i.e. bolster and chisel. Lay dust by adequate sprinkling with water;

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

f. Preparing Beds/Backing:

Thoroughly clear out void using hand tools and brushes. Treat voids with biocide. Temporarily support surrounding work. Cut out and remove, label and set aside in store any existing corroded cramp/cramps discovered. Provide new stainless-steel cramps to match those removed and fix.

g. Dressing:

Finish new stones on all exposed faces to achieve a finish to match the original finish of existing stonework, to the approval of the architect;

- Form all chamfers, mouldings, stoolings, shaped arises, and other such labours to match dimensions taken from site.
- Provide alternative tooled finish to replacement stones if required by the architect.
- No artificial distressing.
- Carve to accurate clean profiles before or after building in as agreed.

h. Laying/Bonding:

- In the exact position as previously occupied by the (original) stones and as recorded.
- Ensure that bond, joint size and any other special or unusual features are replicated as recorded and to match existing.
- Provide and insert stainless steel ties; cramps and dowels as necessary for bonding in the rebuilt work to the surrounding structure.
- Clean out and flush out or moisten with clean water voids left after removal of stonework (preparation of void) to remove dust and reduce suction.
- Dampen stones to be reset/rebuilt and tamp into place on a full and even bed of mortar, including any necessary temporary support shims (i.e. lead or slate).
- Pack remaining joint with mortar using a rammer and pointing key

i. Joint treatment/finish: to match existing

j. Grouting voids: n/a

k. Orientation of stone bed is to be appropriate to the location of stone to be repaired – seek agreement from architect prior to proceeding. Orientation as follows;

- In plain walling: Horizontal
- In projecting stones and copyings: Vertical and at right angles to wall face.
- In arches: At right angles to line of thrust.

3.3.1.3. Pointing Mix for Stonework.

- Provisionally: 1:2.5:0.5 NHL 3.5 : well graded local sands : stone dust (to match stone)
- Allow for 5 no. trials as directed by architect for approval using locally sourced sands.

3.3.2. Parapet coping stones.

The parapet coping stones are generally sandstone, however these have been replaced with concrete on the returns (presumably following the fire damage of c1963). There are two scrolled brackets, reducing the parapet in height across the front of the lantern.

3.3.2.1. Undertake cleaning to parapet coping stones as identified in 3.3.1.1 above.

3.3.2.2. Following cleaning, allow for further inspection with Architect to finally determine scope of repair works (provisional assessment follows, below).

3.3.2.3. Assess solidity of coping stones, thoroughly assess each one for stability. Allow to lift and re-bed 25% of coping stones.

3.3.2.4. Pin (diagonally with stainless-steel dowels and suitable resin), single cracked coping stone (south-west parapet). Pins to finish 15mm below surface, pointed above.

3.3.2.5. Rake-out (carefully, using hand-tools only) residual mortar to a depth not less than twice the joint width, both horizontal and vertical joints and re-point. Mortar as previously referenced.

3.3.3. Cornice

The projecting stone cornice extends around the tower, extending into the adjoining façade to the North and South. It is generally protected by a lead weathering, which appears to be in reasonable condition, it is proposed that this be retained in situ. There is some evidence of movement in the parapet to the south-eastern corner of the tower, which has extended into the cornice stone. It is not thought that this is progressive, but it will require further examination once access is provided, during and following the demolition of the adjoining building. The schedule of work to the cornice includes the frieze course below cornice level.

Provisional repair scope as outlined below.

3.3.3.1. Undertake cleaning as outlined in 3.3.1.1 above. (fully protect lead weathering).

3.3.3.2. Defrass cornice stones where loose and friable material exists (stiff bristle brush).

Fig 02
Potential evidence of past movement to cornice. Cementitious mortar repair visible between stones.

3.3.3.3. Allow to re-assess repair scope with architect following cleaning and de-frassing.

3.3.3.4. Carefully remove cementitious repair (as indicated in photo, above). Indent stone repair, profile to match cornice, full height of cornice stone, 150mm wide.

3.3.3.5. Allow to replace single cornice stone (there are areas of loose and friable stone visible from ground level). Full width, carved to precisely match radius and profile. Approx 500mm width.

3.3.3.6. At junction of new building, allow to remove two stones each end. Dress a return onto two salvaged cornice stones to return and provide a termination to the cornice, reinstate and point joints with adjoining stones.

3.3.3.7. Allow to rake out and re-point 75% of the cornice stones (where pointed in cementitious mortar).

3.3.3.8. Allow to re-point remaining 25% of cornice stones (where mortar missing).

3.3.4. Band courses

There are three band-courses of stone, flush with the adjoining brickwork. One forms a flush plinth, the second and third aligning with cill levels and window heads (top and bottom of the stone window surrounds, described below).

Provisional repair scope as outlined below.

3.3.4.1. Remove redundant light fitting and cabling (allow to point cable holes behind and on cable run).

3.3.4.2. Undertake cleaning as outlined in 3.3.1.1 above.

3.3.4.3. Allow to re-assess repair scope with architect following cleaning.

3.3.4.4. Allow to rake out and re-point 45% of the band course stones (where not part of window surrounds).

3.3.4.5. Allow to re-point remaining 10% of band-course stones (where mortar loose or missing).

3.3.4.6. Allow to undertake some small mortar repairs to the lower band course (over two stones), where natural defects in the stone have left some small fissures and indentations which could accumulate water. Provide trial for architect's inspection prior to proceeding with remaining repairs.

3.3.5. Window Surrounds

There are three different windows (aside from those in the lantern). Two rectilinear, fixed-light casement, and a circular oculus at high level. As indicated on the reference photo (see windows), these windows are identified, starting from the ground up, as W01, W02, W03. Works to surrounds are referenced accordingly.

3.3.5.1. Undertake cleaning as outlined in 3.3.1.1 above.

3.3.5.2. Allow to re-assess repair scope with architect following cleaning.

3.3.5.3. Allow to rake out and re-point 25% of the stone to the window surrounds.

3.3.5.4. Allow to re-point remaining 5% of stone ot the window surrounds (where mortar loose or missing).

3.3.5.5. To W02, cut out and replace section of surround to RH of window. Approx 375mm high x 150mm wide, with rebate, full height, to RH edge. Precisely to match existing.

3.4. Walls - Brickwork

The main facing work of the tower is engineering brick. This is generally in good order, with limited work required. There is an area of evident patching where the original entrance was removed in the 1960's. Whilst this is relatively obvious it is not intended to undertake significant work as it is in good condition and provides evidence of this significant change. The parapets however require more significant work as described below.

3.4.1. Tall Eastern Parapet Wall

3.4.1.1. Subject to scope of work for adjoining new construction (i.e. amount of parapet remaining exposed), carefully remove all cementitious render (cracked and delaminated) from the rear parapet to enable inspection of the brickwork. Allow to carefully dismantle parapet to reveal lantern timberwork (Lantern to be supported independently whilst this work is undertaken). Reconstruct parapet (with amended drainage detail). Allow to replace 25 no. bricks to match existing (salvaged from adjoining demolitions). On completion, cover whole in stainless steel expanded metal lath (to BS 1369), fixed with stainless steel screws and suitable large-diameter stainless steel washers. Fix with with all strands sloping downwards and inwards from the face of the coating. Ensure when fixing that allowance is made for overlapping sheets by 50mm lengthways and 25mm widthways.

3.4.1.2. Apply lime-sand render to metal lathing as following specification;

1. Location: rear of raised parapet
2. Background: existing/repaired brickwork.
3. Scratch coat: St Astier Natural Hydraulic Lime NHL 3.5 (moderately hydraulic) : sand mix

(coarse stuff). Mix proportions: 1:2. Applied with Tyrolean gun.

4. Backing coat(s): St Astier Natural Hydraulic Lime NHL 3.5 (moderately hydraulic): sand mix (coarse stuff). Mix proportions: 1:2.5

5. Thickness (excluding dubbing out): First undercoat 8-10mm, second undercoat 6-10mm. Overall thickness not to exceed depth of coping stones still allowing for overhang with drip.

6. Final coat: St Astier Natural Hydraulic Lime NHL 2 (feebly hydraulic) : sand mix (sieved to fines for smoother finish). Mix proportions: 1:2.5 Thickness: 5mm.

7. Finish: Wood float.

Fig 03
Rear of tall eastern parapet wall, with failing cementitious render. Corner bracing visible to left hand side.

3.4.2. Other Parapet Walls

There is evidence of some movement in the parapet to the SE corner of the tower, there are ad-hoc braces (evidently formed from scaffold poles). Whilst this is currently stable, it forms a junction which is likely to be disrupted on demolition of the adjoining mill building. Some repair or rebuilding is therefore likely to be necessary;

3.4.2.1. Allow to carefully dismantle 2 sq.m of parapet (part curved) salvaging bricks and coping, and rebuild. Allow for 5 no. new bricks, salvaged from adjacent demolitions to ensure good match.

3.4.2.2. Allow to rake out 100% of mortar to roof facing sides of parapets, treat with biocide and repoint as specified below.

3.4.2.3. Allow to rake-out (using hand tools only) mortar to 40% of the wall area to the external face of the parapet. Repoint as specification below.

3.4.2.4. Allow to point (where mortar loose or missing) a further 20% of the wall area. Repoint as specification below. Most of this missing mortar is at low level.

3.4.3. Facing Brickwork Repair Generally.

3.4.3.1. Allow to remove sundry metal fixings (screws, nails etc) from the brickwork. Point holes in

mortar mix with brick dust (not pigment).

3.4.3.2. Treat low level area (adjacent pavement) with biocide.

3.4.3.3. Allow to rake-out (using hand tools only) mortar to 10% of the wall area. Repoint as specification below.

3.4.3.4. Point (where mortar loose or missing) a further 20% of the wall area. Repoint as specification below. Most of this missing mortar is at low level.

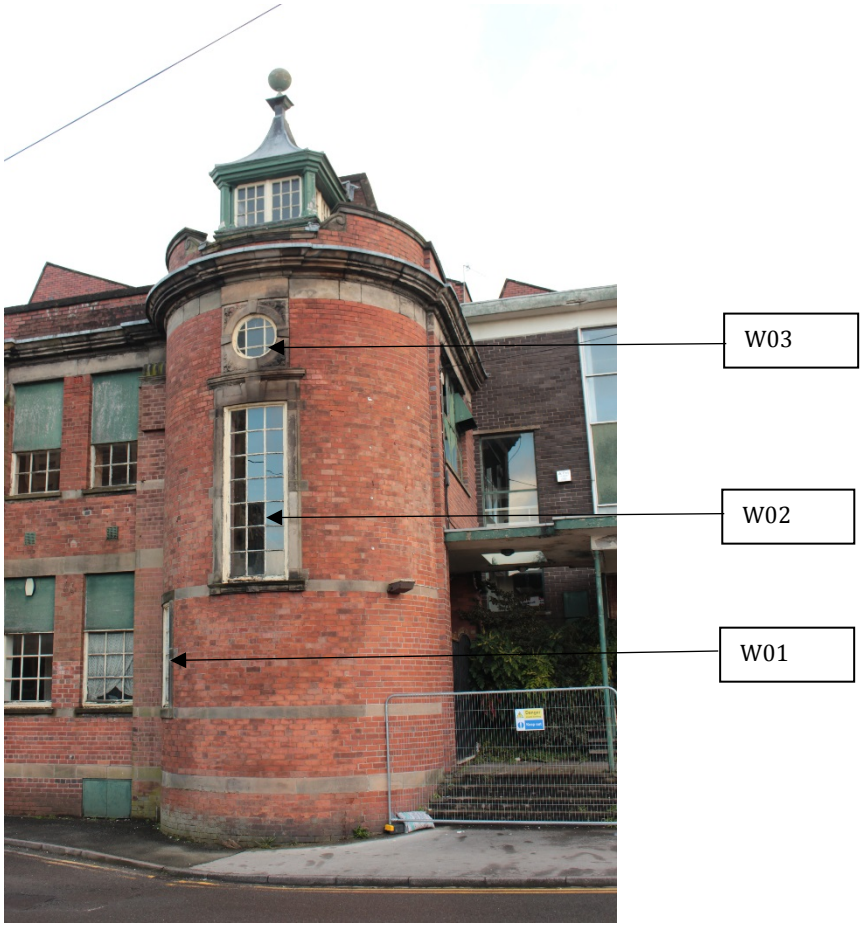
3.4.3.5. Carefully cut-out 5 no. damaged bricks and piece in new. Bricks to be carefully salvaged from adjacent demolitions to ensure a good match.

3.4.4. Re-pointing mortar for brickwork: 1:3 moderately hydraulic lime (NHL 3.5) : well graded sand. Sand to be sourced from local quarries. Aim to provide a good match with the existing (NB this appears to have a cementitious content, so trials including an amount of Pulverised Fuel Ash – PVA – may be undertaken to achieve the match). Complete removal of cementitious mortar (it is possible the original had a cement content) is not proposed as the likelihood of damage to adjoining brick is too high.

Provide 5 no. mortar samples for approval by architect prior to proceeding with repair, pointing/repointing works.

3.5. Windows

There are three different windows (aside from those in the lantern). Two rectilinear, fixed-light casement, and a circular oculus at high level. As indicated on the reference drawing, these windows are referenced, starting from the ground up, as W01, W02, W03. Works are referenced accordingly. Note W01 and W02 are **curved** and replacement sections will therefore have to follow the appropriate radius.



3.5.1. Timber for window repairs;

3.5.1.1. Douglas Fir or equal approved to BS EN 942.

3.5.1.2. Appearance class: J10 for glazing beads, drip mouldings and the like. J40 or better for all other members.

3.5.1.3. Moisture content on delivery: 12-19%.

3.5.2. Window Repair Methodology

3.5.2.1. Scope

Letting in new timber to repair damage, replace damaged or missing parts, plant on new timber to close gaps in frames, filling and patching.

3.5.2.2. Preparation

Clean out area of repair with brushes and scrapers.

Cut back damaged timber to neat sound straight edges on all sides and at back to provide smooth clean surfaces for new timber to adhere to.

3.5.2.3. Filling and patching

Fill small holes less than 3mm diameter and scratches Brummer interior stopping or equivalent

filler.

Fill larger holes with patches of identical timber let into surface. Patches must taper in depth and be glued and must be matched for grain size and direction. Finish flush with surface.

3.5.2.4. New timber sections

New items made to match must be copied exactly in all particulars. Carvings must be identical in all aspects to the original. New items must be finished by hand. All machine marks must be removed.

Control sample must be provided and agreed with architect before proceeding with all repair works

3.5.3. Window W01

3.5.3.1. Renew cill, full width to match existing profile. New cill to be sat on appropriate DPC on installation.

3.5.3.2. Splice in full width section (approx. 60mm high, full width) to bottom rail returning 100mm up stiles for rigidity (see Fig 01 for detail).

3.5.3.3. Carefully remove all defective, loose and failed putty (and to cracked or broken panes). Reinstate, including all areas of missing putty, with traditional linseed-oil putty, struck with a putty knife to match profile of the original.

3.5.3.4. Fill small holes as 3.5.2

3.5.3.5. Provide 3 no. replacement panes of glass to match existing, pinned and puttied (as above). Minor cracks to be inspected following erection of scaffold and judged individually for weather-tightness, likelihood of deterioration or failure. The presumption is to retain original glass wherever possible.Provide sample of the following glass for comparison before ordering;

- Restoration Glass – Liverpool, from Pearsons Glass, 0151 207 1474. sg@pearsons-glass.co.uk

3.5.4. Window W02

3.5.4.1. Allow to splice in full width section (approx. 60mm high, full width) to bottom rail returning 100mm up stiles for rigidity (see Fig 01 for detail).

3.5.4.2. Carefully remove all defective, loose and failed putty (and to cracked or broken panes). Reinstate, including all areas of missing putty, with traditional linseed-oil putty, struck with a putty knife to match profile of the original.

3.5.4.3. Fill small holes as 3.5.2

3.5.4.4. Provide 2 no. replacement panes of glass to match existing, pinned and puttied (as above). Minor cracks to be inspected following erection of scaffold and judged individually for weather-tightness, likelihood of deterioration or failure. The presumption is to retain original glass wherever possible. Glass as above.

3.5.5. Window W03 (no access for inspection)

3.5.5.1. Allow to splice in full width section (approx. 40mm high, full width) to bottom rail (beneath oculus) returning 100mm up stiles for rigidity (see Fig 01 for detail).

3.5.5.2. Carefully remove all defective, loose and failed putty (and to cracked or broken panes). Reinstate,

including all areas of missing putty, with traditional linseed-oil putty, struck with a putty knife to match profile of the original.

3.5.5.3. Fill small holes as 3.5.2

3.5.5.4. Provide 1 no. replacement pane of glass to match existing (curved edge), pinned and puttied (as above). Minor cracks to be inspected following erection of scaffold and judged individually for weather-tightness, likelihood of deterioration or failure. The presumption is to retain original glass wherever possible. Glass as above.

3.5.6. Carefully prepare windows as follows (following all relevant guidelines given the likely presence of lead paint);

a) Brush down: Clean off all loose material and dust with stiff brush.

b) Wash down previously decorated joinery:

Wash down painted surfaces with Sugar soap, to remove all traces of grease, taking care not to wet more than absolutely necessary areas of bare timber. Allow for following the manufacturer's instructions precisely. Dilute Sugar soap as required for the work in hand. Thoroughly rinse off residue with a wet cloth frequently rung out in clean water.

c) Remove loose paint from joinery:

Lift or scrape off all loose paint layers.

d) Rub down previously decorated joinery:

Feather out edges of remaining layers by rubbing down with fine glass paper, taking care not to damage adjacent areas of bare timber.

Rub down similarly all remaining areas of paint to provide a key.

Remove entirely by sanding and further scraping any small or excessively proud areas of remaining paint which might otherwise stand noticeably proud even after feathering out.

e) When removing old lead based paints comply with all relevant Health & Safety requirements.

f) Prime joinery for painting:

Prime bare spots and new lengths of timber fully. (Primer to CA's approval)

3.5.7. Redecorate windows using exterior gloss paint by Craig and Rose (or equal approved);

Craig and Rose

Unit 8
Halbeath Industrial Estate
Dunfermline
Fife
KY11 7EG

01383 740011

Provide undercoat appropriate to the paint being used. Apply 2 coats of undercoat and three full coats of gloss finish (internally and externally). Colour to be agreed with architect.

4. Interior

4.1. Ceiling & Soffit

The ceiling around the raised lantern is a simple flat, plastered soffit with small cornice. A section to the east has fallen, and the remainder is cracked and failing. Renewal is therefore proposed;

4.1.1. Following erection of scaffold, advise architect for inspection.

4.1.2. Carefully remove remaining ceiling. Set aside section of cornice for accurate reinstatement of profile (and to finally determine method of manufacture).

4.1.3. Allow deck to dry out. Treat any areas of organic growth with biocide.

4.1.4. Cover whole in stainless steel expanded metal lath (to BS 1369), fixed with stainless steel screws and suitable large-diameter stainless steel washers. Fix with with all strands sloping downwards and inwards from the face of the coating. Ensure when fixing that allowance is made for overlapping sheets by 50mm lengthways and 25mm widthways.

4.1.5. Re-plaster ceiling with Limelite renovating plaster;

Limelite - Tarmac Building Products Ltd
Swains Park Industrial Estate
Park Road
Overseal
Derbyshire
DE12 6JT

Prepare substrate and apply plaster in strict accordance with manufacturer's instructions. Apply in 2 coats to a minimum depth of 20mm.

4.1.6. Provide new cast plaster of paris cornice, using mould taken from salvaged sections, to entire ceiling perimeter. Plaster for casting - Gypsum plaster to BS1191: Part 1, Class A (Plaster of Paris); British Gypsum Fine Casting Plaster or similar approved.

4.1.7. Prepare and decorate (refer to walls for paint specification/requirements).

4.2. Lantern (Internal detail)

The lantern internally appears to be in good condition from ground level, however the supporting timberwork is secured to the concrete filler-joist deck, which is wet, making rot likely. Inspection of the primary supporting members will be required following erection of an internal scaffold.

4.2.1. Allow to support lantern and renew 2 no. primary members (approx. 150 x 150mm, full width) where secured to supporting steelwork.

4.2.2. Allow to splice repair 2 no. primary support posts (approx. 150 x 150mm x 300mm). Reinstate newel drops on completion.

4.2.3. Following exposure, allow for the inspection of the supporting steelwork by a suitably experienced engineer, treat exposed areas of rust with a rust inhibitor and decorate with a protective paint finish such as Rustoleum Alkythane 7500, with base coats and preparation all in strict accordance with the manufacturers instructions and recommendations.

4.2.4. Prepare and decorate scrolled wrought-iron or mild-steel support bracketry. (paint as above).

4.2.5. Make good decoration following external repair works and completion of ceiling and soffit works (above).

4.3. Walls

The walls have been painted and badly effected by water ingress, resulting in extensive damage by migrating salts. Removal of the paint is necessary to aid drying out of the substrate.

4.3.1. Remove redundant light fittings and make good.

4.3.2. Carefully remove paint using Langlow Peelaway 7;

Langlow Peelaway 7 UK Supplier: Barrettine Products Ltd

St Ivel Way

Warmley

Bristol BS30 8TY

Tel: 01179 600060

Fax: 01179 352437

email: sales@barrettine.co.uk

4.3.3. Methodology for paint removal.

Sequence and methodology in strict accordance with the manufacturer's instructions: Undertake trials to determine dwell period (see timing)

a) Protect surrounding areas including stairs, ceiling, lantern, balustrade, windows etc.

b) Stir PeelAway well before application.

c) Apply peelaway using brushes/spatulas, working well into areas, niches, details etc.

Cover: Cover the PeelAway with the PeelAway blanket after product has been spread evenly over the area to be treated. Do not press too hard and subsequently thin out the PeelAway.

Timing: Leave the PeelAway for as long as determined during the test patch application. Allow for temperature variations and check again before complete removal.

Removal: Once surface is free of paint and debris remove the PeelAway and the paint by using a spatula.

Cleaning: Clean surface using Doff system (hot steam) or equivalent agreed following trial areas.

4.3.4. Allow architect to inspect cleaned surface and repeat as necessary. Agree the timescale for drying of substrate following inspection.

4.3.5. Allow substrate to dry out, brush off migrating salts on a regular basis until dry-enough to receive finish.

4.3.6. Apply paint finish (including ceiling, not lantern or stair), colour to be confirmed;

Classidur Tradition

From;

Rustins Ltd

Waterloo Road

London, NW2 7TX

United Kingdom

Tel.: +44 (0)20 8450 4666

Web: www.rustins.co.uk

4.4. Stone Staircase.

The stone staircase is not intended to be used, other than to provide safe access for maintaining the tower. Repairs are therefore modest, indent repairs are not proposed to the stonework. Step numbers commence at ground level up to the landing, then two further steps above (1-22).

4.4.1. Remove all debris and clean staircase (including stone newel) thoroughly using neutral PH soap and water.

4.4.2. Prepare and mortar-repair chips to leading edge of steps. Generally chips are 50-100mm wide. Allow to repair chips as follows;

a) Steps 1-4, allow to repair 5 more significant chips (up to 100mm width).

b) First landing – point longitudinal joint.

c) Step 7 – pitting and holes to surface. Point in lime mortar (as specified for stone repair work externally).

d) Step 8 – 10, allow to repair 2 no. 100mm wide chips.

e) Step 17 – defrass loose surface and inspect.

f) Steps 19 & 20 – repair 2 no. chips, 150mm wide.

g) Landing – repair wide chip (c. 300mm wide) to face of landing around balustrade.

h) 21 – chip to leading edge.

i) Beyond step 22, concrete floor, no works required.

4.5. Balustrade

4.5.1. The wrought balustrade is in good condition, as is the stone newel post. Prepare and decorate ironwork with proprietary eggshell finish suitable for ironwork.

4.5.2. Polish handrail (by specialist).

5. Upon Completion:

The contractor is to remove all waste from the site. All areas are to be left clean. The contractor is to handover all manuals, product literature etc, together with as built drawings where applicable. A copy of relevant material should also be passed to the architect for insertion into a Health and Safety File.