FENTON HOUSE, HIGHER ARDWICK, MANCHESTER

CONDITION COMPLIANCE:

Specification and Method Statements
(Conditions 3, 6, 8, 11-15, 17, 19 & 20)

[TO BE READ IN CONJUNCTION WITH INFORMATION FOR CONDITIONS 4, AND DRAWINGS]

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Fenton House, Ardwick Road

Discharge of Conditions

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Condition 3 - Specifications
Fenton House

Working through the Listed Building Report, below are the specifications and method statements for the recommendations within

Chimney Stacks

Recommendations

Create detailed photographic record of all three chimneys.
Remove render using hand tools to avoid damaging the brick work
Carefully remove all of the existing chimney pots.
Dismantle the chimneys and set aside any sound bricks for reuse.
Rebuild the chimneys to the original size and design using the existing bricks, making up any shortfall with good quality reclaimed or new to match from https://www.imperialhandmadebricks.co.uk/ all new lead soakers and flashings to be fitted.
Ideally the chimneys should incorporate a DPC and remain un-rendered.

Alternatively, if the brickwork is found to be reasonably well bonded this could be repaired and repointed, small cavities in the face of the brick can be repaired using a tinted repair mortar, more extensively damaged bricks should be replaced.

Method Statement for Pointing, including bedding during the rebuilding of stacks.

Wider joints of brick is often repointed in cement and while this is not an appropriate material for repointing stone, an assessment must be made whether removing it will cause more damage than leaving it place. If there are clear water ingress or damp issues internally, the brickwork surrounding the pointing is showing signs of decay or the mortar itself has failed, then it must be removed.

Carefully use hand tools to rake out the joints to a sound backing, or roughly twice the width of the joint i.e. a 10mm joint should be raked out to at least 20mm. All pinning material should be retained when raking out.

To clean down the stack, pre-wet the entire area before washing out each joint, chasing out debris with a hosepipe. Pre-dampening is to avoid staining of the wall from debris. Always work top down.

Allow stack to dry, but not completely before pointing can proceed. A fine mist of water prior to any application of lime mortar to a porous background is recommended. The substrate must be damp but not wet with running water. For impervious units, pre-dampening to the joints only is required; if the units themselves have standing water, chase water with compressed air.

Where impervious brick / stone units are mixed amongst pourus brick / stone, prepare the wall for the pourous material and individually check the impervious units. Use the same mortar mix throughout. However, if the wall is solely made up of impervious units, a more robust mortar may be required to allow a quicker set. Consult with CA before proceeding with pointing to impervious units such.

If joints are excessively wide or there are large areas of mortar, it is recommended to using pinning stones (off cuts of stone, brick or pieces of slate) to pack out the mortar.

Allow to cure with protection suitable for the weather conditions. This may be damp or dry hessian, tarpaulins for rain, or no protection if weather is fair. See guidance on lime works for curing regime.

Specification of Mortar to be used

Lime: Non Hydrated Lime as supplied from Ty Mawr or other agreed source

Aggregates: Sharp gritty sand which has been thorougly cleaned to remove silt and clay, Sand should be sourced to match the original mortar colour and size of aggregates, but allow for Bryncir Sand, dredged Mersey or Shropshire Blend.

Mix: Mortar to be carefully mixed to the following ratios; 1 part Non Hydrated Lime: 3 parts Aggregate. This mix will provide a finished ratio of 1:1.14

Re-haunching of chimney pots

Where chimney pots display cracked or missing mortar in the haunching (mortar) that secures their position, carefully chip away the old perished mortar down to its housing;

Using a modified hydraulic lime mortar or eminently hydraulic lime with water repellant and concrete sand, in a ratio of 1 part binder to 2.5 parts sand;

Place the mortar into the recessed housing and mount the chimney pot in place;

Mortar around the chimney pot making sure the profile is such that it encourages water run-off (and not ponding);

Provide sufficient protection such that the mortar does not dry out for the first 72 hours, or be disrupted by rainfall.

Protection can be left off if conditions are fair to avoid sweating of the mortar. See associated document on general guidance on lime works for curing regimes.

Condition 3 - Specifications
Fenton House
Specification for chimney haunching

Lime: Non Hydrated Lime as supplied from Ty Mawr or other agreed source

Aggregates: Sharp sand which has been thorougly cleaned to remove silt and clay, Sand should be sourced to match the original mortar colour and size of aggregates, but allow for Bryncir Sand, dredged Mersey.

Mix: Mortar to be carefully mixed to the following ratios; 1 part Non Hydrated Lime: 2.5 parts Aggregate. This mix will provide a finished ratio of approx 1:1

Roof

Recommendations

All roofs to be repaired or replaced in accordance with the detailed specifications.

Method Statement for repair / replacing the slate roofs

For the avoidance of doubt it is assumed that the roof will be stripped and relaid in order to assess any timber defects below. The contractor shall carefully strip the slates and lead flashings from each pitch and salvage as many slates as possible, sorting these and storing safely for reuse later. Once stripped the following method statement should be followed as well as guidance in the relevent British Standards stated.

SETTING OUT THE ROOF

For a detailed description of the process of roof slating, reference should be made to BS 5534: 2003 Code of Practice for Slating and Tiling.

1. Sort and hole slates where required.
2. Slates should be holed from the underside to the correct gauge measured from the tail of the slate using a threaded action slate holing machine. At the same time the slates should be sorted into groups of equal thickness where required.
3. Fix the underlay as specified.
4. Mark out the roof to the correct battening gauge.
5. The gauge may be adjusted to divide the slope length into equal margins provided the specified lap is not reduced.
6. Batten the roof (see Battening Gauges table).
7. Check the actual width of slates and mark out perpends on battens at correct centres allowing 5mm joint gaps.

Slating

1. Where required load out the slates on the roof so that thethickest slates are in the lowest courses and the thinnest near the ridge.

2. Fix undereaves courses bed up.

3. Fix the slates to perpend lines, cutting individual slates as necessary to fit hips and valleys. Each slate must be fixed with two nails.

4. Slate or clout nails should be aluminium to BS 1202: Part 3, copper to BS 1202: Part 2, or silicon-bronze.

In corrosive or marine atmospheres copper nails are preferable and in severe conditions silicon-bronze nails should be used.

Cutting Slates

1. In order to maintain adequate laps and allow proper fixing, slates must not be cut too narrow. In general no slates should be less than 150mm wide.

2. At all verges and abutments, alternate courses must be started either with half-width slates or with slate-and-a- half widths to maintain bond. If the half-slate would be less than 150mm, slate- and-a-half widths must be used.

3. At valleys, hips and other places where slates must be cut on the rake, it is essential that slates are of an adequate width to accommodate secure fixings.

Gutters And Valleys

All lead box gutters and valleys to be replaced with new in line with the Lead Sheet Association guidance. Allow for

Valleys to be Code 5,

Flashings to be Code 4

Gutters to be Code 6

Condition 3 - Specifications
Fenton House
Specification for Slate Roof

Slates: Welsh slate to match existing in size and gauge, use reclaimed if possible, but new Welsh slate can be sourced from Welsh Slate directly

Battens: treated timber battens, nominal 50 x 25mm

Underlay: provide breathable underlay to Building Regs requirements

Fixings: aluminium to BS 1202: Part 3, copper to BS 1202: Part 2, or silicon-bronze

Leadwork: As specified above

Condition 3 - Specifications
Fenton House
External Render

Recommendations

- *Remove all existing render.*
- *Remove all paint from lower sections of external walls.*
- *Remove render and paint from boundary wall.*
- *Assess condition of underlying bricks and pointing.*

Method Statement for removal of render and options recommended in report.

Carefully by hand remove all render and paint externally. Allow for inspection of brickwork below to ascertain condition.

All vegetation to be treated with proprietary weedkillr, allowed to die and remains to be removed.

All brickwork to then be repointed.

It is assumed that the soft brickwork below will have been damaged beyond repair / piecing in therefore allow for all external walls and chimney stacks to be re-rendered as specified:

Mix the lime and aggregate by volume, measuring of material must always be with a gauging box or bucket. The sand/aggregate should be sharp, well-graded and washed.

Two-coat work is common but three-coat is to be recommended for all but the smallest stucco repairs. Each coat should be thinner and either the same strength or weaker than the last. The first coat should be 9 -16mm thick and finishing coats no thicker than 6 - 10mm. The final coat should be finished using a wood float or given a lightly scrapped finish using a fine hacksaw blade. For maximum adhesion between coats, each coat must be applied onto the next whilst the base is still green. The base should be dampened lightly before the next coat is applied to reduce the suction of moisture from the subsequent coat. Polythene sheeting or intermittent spraying of the surface may assist in maintaining the work in a green state until the next coat is applied. This is particularly important during hot weather, as rapid drying can lead to cracking and weakening of the newly applied material. Day work joints can be difficult to disguise even on painted work. On lined out stucco the course lines should be used to mask them by cutting away some of the previous days work to 'key in ' the new work. Unlined work should be finished at some physical break in the building. If this is not possible true level lines should be struck off before continuing to prevent the appearance of any ragged edges.

Faux ashlar to be reinstated to match the original in height and length.

Condition 3 - Specifications
Fenton House
Specification for Lime Render

Lime: Hydraulic Lime Singleton Birch (Secil) NHL2

Aggregate: Washed sharp sand 5mm - 75 micron.

Ratio: Base Coat(s) NHL 2 : Sharp washed Sand (2:5)

Finish Coat NHL 2 : Sharp washed Sand (1:3)

Joinery (Windows)

Recommendations

Repair and upgrade any remaining historic sashes. Sound historic glass and fittings to be retained and existing windows to be fitted with discreet draft proofing measures.

Redecorate

Method Statement - Windows

1. Carefully dismantle the staff beads to allow the sashes to be removed from the frame
2. The glass is removed and the old putty can be scraped away
3. The joints are cleaned and any rotten wood is routed out
4. Any small areas of rot which have been removed can be filled with an Epoxy resin or if larger new timber is spliced in
5. The sash is scraped and all loose paintwork is removed, sanded and primed.
6. The glass is put back , pinned and puttied in place using linseed putty.
7. Old weatherstrips are replaced, if missing, new hardware is attached, new chain or cords are fitted, the pulleys are rebalanced or lubricated, and then the sashes are reinstated in the frames.

Draught Proofing

Sash windows can be draught proofed, brushes and draught strips can be routered into parting beads and staff beads to allow free movement and increased efficiency.

Upgrade

Upper level windows should be fitted with Simplex hinge system to allow maintenance from inside the building.

All windows to have secondary glazing fitted. Secondary glazing to be sliding sashes to match existing windows behind so as not to be noticable

Internal Walls

Recommendations

All plaster finishes should be allowed to dry. Any historic lime plaster should be retained and repaired using matching materials. Over skimming of poor quality lime plaster is possible using this product or similar http://www.anglialime.com/products/dry-ready-mix-mortars-renders- plasters/finelime

Method Statement for removal of internal plaster.

Carefully by hand remove all blown plaster and paint internally. Allow for inspection of brickwork below to ascertain condition.

All brickwork to then be repointed.

Mix the lime and aggregate by volume, measuring of material must always be with a gauging box or bucket. The sand/aggregate should be sharp, well-graded and washed.

Two-coat work is common but three-coat is to be recommended for all but the smallest stucco repairs. Each coat should be thinner and either the same strength or weaker than the last. The first coat should be 9 -16mm thick and finishing coats no thicker than 6 - 10mm. The final coat should be finished using a wood float or given a lightly scrapped finish using a fine hacksaw blade. For maximum adhesion between coats, each coat must be applied onto the next whilst the base is still green. The base should be dampened lightly before the next coat is applied to reduce the suction of moisture from the subsequent coat. Polythene sheeting or intermittent spraying of the surface may assist in maintaining the work in a green state until the next coat is applied. This is particularly important during hot weather, as rapid drying can lead to cracking and weakening of the newly applied material. Day work joints can be difficult to disguise even on painted work. On lined out stucco the course lines should be used to mask them by cutting away some of the previous days work to 'key in ' the new work. Unlined work should be finished at some physical break in the building. If this is not possible true level lines should be struck off before continuing to prevent the appearance of any ragged edges.

Specification for Lime Render

Lime: Hydraulic Lime Singleton Birch (Secil) NHL2 and Lime Putty

Aggregate: Washed sharp sand 5mm - 75 micron.

Ratio: Base Coat(s) NHL 2 : Sharp washed Sand (2:5)

Finish Coat Lime Putty : Sharp washed Sand (1:3)

Internal Joinery

Recommendations

Undertake all repairs exposure works and further investigations as previously described

Method Statement - Joinery

1. Assess all areas of joinery repair to be undertaken.
2. All repairs should be carried out using materials as originals.
3. Splice repairs are recommended rather than replacement, unless the damage to the joinery is so as it is not feasible to repair.
4. Mouldings of items such as architraves, skirting boards, staircase mouldings should be recorded and replicated identically where required
5. Carry out repairs to all window shutters so as to bring them back to full working order.
6. All joinery should be decorated fully and not left bare.

Specification for Joinery

Timber Species: FSC sourced softwood or hardwood to match existing

Finish: All joinery to be primed, undercoated and repainted in eggshell, colour TBA

Condition 8 - Rooflights
Fenton House

Please see attached technical drawings supplied by The Metal Rooflight Co. and Clement windows which show a cross section through their conservation rooflight as well as the recommended flashing detail and glazing bar as requested.

Lime Plaster Repairs to Laths in Existing Stud Partitions using St Astier NHL Using St. Astier NHL plastering mortars instead of non-hydraulic putty mortars reduces the working time by about 50%. NHL mortars offer similar vapour exchange qualities as putty mortars but are more robust, can be sprayed and used for decorative plasterwork without the addition of gypsum. Requiring less after care than putty, it can be applied in 2 coats on good level backgrounds.

Removal of lath and plaster

- Clean all old plaster from between the laths Check all timbers are free from rot, insect activity, and are generally sound.
- Use a brush to get rid of any residual materials and vacuum to remove dust.
- De- nail all timbers.

Repair

- With repair, cut the edges of any existing plaster to halfway of the nearest joist; angle the cut on the old plaster at 45 degrees so the new material is applied over the bevel holding the edge of the original plaster in place.
- Ensure that all laths are securely fixed, re-nail where necessary.
- Repairs would normally be carried out following the reinstatement of the key to the rest of the ceiling.
- *Reinstatement results in the original ceiling being up to three times stronger than the original ceiling and resistant to affects caused by water leaks.*

Laths

- Provide either oak or chestnut riven laths. The textured surface and exposed grain provides a better key.
- Thoroughly wet laths. To remove the absorption from the laths spray with "Westox RAP primer or similar" thoroughly wetting the laths top and bottom, also soak the exposed edges of the plaster around the repair with the primer to "kill" the suction. This also helps to remove the problem of warped laths when the wet plaster is applied.
    - *Soaking laths makes them easier to cut with a lath hammer, prevents splinters in the fingers during fixing, makes them easier to nail with less splitting and prevents the expansion of laths following the application of wet plaster which causes key breakage. Lime plasters are badly affected by too much suction so it is important that all suction is controlled.*
- Fix the lath at every fixing point (joist) using stainless steel fixings, such as nails, cup and screw, screw and washer or stainless steel brad nails. Make sure there is a 6mm – 10mm (3/8”) gap between each lath to ensure the lime mix can squeeze through and hook onto the back of the laths.
- Fix every lath the same way until you come to fix the eighth lath, move this one over one joist, to create a staggered joint, this will help prevent long, continuous cracks from developing.

- Once the whole ceiling or wall is lathed it should be dampened about 10minutes prior to the application of the first coat, this gives time for any excess of water to run off and gives you time to knock up the lime mix. There shouldn't be any droplets of water on the laths, as this will cause the plaster to slide across the laths rather than stick to them.

Building paper and insulation is occasionally placed between laths and outside walls to comply with current building control requirements, this will have an effect on the drying rate and prevent proper rivet formation when fixed hard against the back of the lath. If building paper and insulation are essential, use moderately (NHL 3.5) or eminently hydraulic lime (NHL 5) for the first coat as they have faster natural sets, maintaining at least a 20mm gap between the paper and the lath.

Mortar:
Plastering in hydraulic lime mortar normally consists of two or three-coat work. Lime plaster made with feebly or moderately hydraulic lime and sand is the basis for this guide. This type of lime sets and hardens predominantly by an hydraulic set and re-absorption of Carbon Dioxide from the air. By its nature the drying and absorption process is slower than gypsum plasters, therefore lime plaster curing should not be hurried allowing approximately 3-5 days per coat depending on the hydraulic lime used.

First coat or Render coat:
Rendering stuff is made with NHL 3.5 or NHL 2 in a 1:2 ratio with well-graded sharp sand 3.5mm down. Rendering stuff is mixed before use as described in the data sheet. Hair or fibre reinforcement (if desired, but not necessary with hydraulic limes, except on lath work) is teased into the mortar and repeatedly chopped and turned until a good even distribution is achieved. Fibre reinforcement should be alkali resistant. The hair should be long and strong, free from lumps and clumps It should be abundantly visible as a beard around the edge of an inverted trowel full of mortar.

For application onto laths, mortar should be trowel applied as evenly as possible and pressed home to form rivets between and behind the laths.

The coat should cover the lath by approximately 8-10mm. Any initial shrinkage that takes place in the drying out phase, should be lightly floated back. Tighten the entire surface in with a cross grained wood float, closing back by further dampening and tightening in a close circling motion. Key the surface with a comb, or with a lath scratcher for plaster on laths, taking care not to score too deeply. In the case of lath work ensure that scratching is across, not in line with the lath. Thereafter if necessary control the rate of drying out by misting the surface with clean water or lime water, until all shrinkage has stopped and the mortar has hardened sufficiently to receive the second coat. Do not over-wet the surface (if water droplets appear on the surface it is over-wet). Plastering on laths may take longer to dry as there is no suction of moisture into the background.

Second coat or Floating coat (this is the straightening coat):

Using the same mortar as the render coat and following the same method of mixing, apply with a laying-on trowel to a dampened background. At this stage, if straightening is necessary, fill out irregularities in thin layers and apply the floating coat to the desired line using rules or dabs. Maximum thickness should be 12- 16mm in one pass. Tighten in as before with a cross-grained wood float and key lightly to receive the finish. Any irregularities in the background must be made good at this stage as it will not be possible to straighten the finishing coat due to its thinness. On lath this coat should not be applied until the first coat is sufficiently hard (about 1 week, depending on curing conditions). Setting Stuff or Finishing coat (hair is not required).

The finishing coat is made with NHL2 in a 1:1 with fine silica sand 0.8 to 0.075mm, clean and free from silt or clays. Better finishing will be achieved by re-working the setting stuff the day after.
Apply with a laying-on trowel in two passes to an overall thickness of 2mm approx. Tighten in with a cross grained wooden float, dampening as necessary as the set takes up. Setting stuff sets by suction from the background. The final finish is produced by trowelling the surface with a steel float and dampening as necessary. Finish in one direction, usually top to bottom.
Patching finished lime plaster into a repair requires care. The finish is sand based and will abrade and degrade existing edges leading to a dull surface around the repair. A clean break of a few mm is necessary around the patch and this can be filled later with NHL 2 made into a putty (no sand added) when the patch is fully hardened.

Decoration: wallpaper or paint finishes should only be applied to fully dry and set work. Lime paint, lime wash, distemper and casein paints are traditional finishes for new work.

Protection: Work should never be undertaken in frosty conditions or where the temperature is likely to fall below 8oC during the execution of the work or until the mortar has hardened. Protection should remain in place for as long as necessary. Ensure that the rate of drying is consistent and that strong draughts are excluded from the working area. This is particularly important where a building has windows removed or doors open. Never force the drying by introducing forced or excessive heating. If heating is required to maintain a proper working temperature use propane heating, this has the effect of producing both moisture and heat simultaneously. Ensure the temperature is adequately controlled. See "Protecting Lime Mortar".

Good working practices: Adequate preparation and protection are essential. Due care and attention should be applied to all work. Sample panels should always be done, allow sufficient time.

See also Good working Practices within NHL Renders and Pointing with NHL More on Lime Plasters Shelter Coats/Consolidation.

It is our recommendation that the lath and plaster ceilings should only be reinstated on the ground and first floor, where the majority of original features remain. Whilst the attic and basement rooms may have had lathe and plaster ceilings, they have been modernised significantly and retain very little features.

Condition 11 – Lath and Plaster
Fenton House

Condition 12 - Floor Boards
Fenton House
Floorboards

The floor joists run front to back (East to West), with a central beam breaking the joist span. Boards will be lifted in two sections, firstly to the portion of the room closest to the front elevation and following reinstatement or new boards being laid in this area, the remaining area will be lifted and re-laid. This is being undertaken in this fashion to reduce any instability in the ceilings underneath etc. In addition to the above, it will be ensured there are minimal loadings on the floor structure during exposure works (2 persons maximum and not left open or unattended for prolonged periods).

Method Statement - as recommended by SPAB

Lifting floorboards

It is extremely easy to cause serious damage to floorboards by attempting to lift them – particularly when the board is decayed. Despite the pitfalls, there are numerous techniques for lifting floorboards successfully. Lifting the first board without damage is usually much more difficult than removing the remainder. It is not an operation which should be rushed into – it requires ingenuity, preparation, care and patience! If there is an opportunity to choose which board to lift first, select with care. The ideal is a shortish board, with at least one end in relatively good condition, not placed against a wall, and preferably with a gap big enough for the bolster to fit between boards.

1. Using a block of wood (or the steel plate) to protect the edge of the adjoining board, work around the board to be lifted with the bolster, levering from side to side slightly, to try to loosen the board)

2. Starting over a joist (by a nail) about a third of the way down the board (to avoid splitting the end), lever more vigorously with a pumping action first one side of the board and then the other, so as to raise the board by up to one-third of its thickness. Ensure the edge of the adjacent board is protected. Moving towards the middle, then back towards the end, repeat the process until one end of the board comes free. If this does not seem to be working or if the board is very decayed, resort to a nail punch and try to drive the nails down.

3. When one end has been freed, try placing the 13 mm (1⁄2”) batten underneath it, spanning the two adjacent boards, and gradually move this towards the next set of nails with gentle pressure applied onthe free part of the board (see figure 2(b)). The amount of pressure will depend on the condition of the board. This will normally ease the nails slightly out of the joists. Remove the batten and allow the board to drop to its original position to give access to the nail heads. If this does not succeed, try the bolster again or perhaps the crowbar–levering (pump action again) under the board near the position of the nail, but away from the edge of the board.

4. Particular care needs to be taken with the nails at the end of the board, as it is easy to split an old board unless these are removed gently.

5. Once the board is free, pull out the nails – pincers, hammer or crowbar, and store safely on site.

Condition 12 - Floor Boards
Fenton House

Relaying old boards

Considerable care needs to be taken when relaying old floorboards. In general it is easier to nail floorboards down, but there are a number of occasions when this should be avoided, and screws used instead. For example:

1. Over a decorative plaster ceiling or ceiling painting, which might be disturbed by nailing.

2. Over a lath and plaster or reed and plaster ceiling where the plaster key is suspect.

3. Over service runs etc, where frequent lifting and relaying of the board will be necessary.

Iron screws will eventually rust and become extremely difficult to remove (even if greased). In general, brass screws should be used and these should be lightly greased before fitting to aid removal. Where a board is likely to be lifted and relaid every few years (for example, over service runs), brass cups should be used to protect the board from any damage caused by the screw head.

Where walls may be damp, keep the edge board slightly away from the wall to reduce the risk of decay. Avoid placing fixings under the front edge of any skirting. This avoids the need for the skirting to be disturbed if the board needs to be lifted again.

Floor Joists

Any decaying floor joists beyond repair due to rot should be replaced with new treated timber to match or improve the current dimensions. Any repairable joists should be repaired as specification included in Condition 2, as well as doubling up of the joist to improve the structural stability of the floor above.

Rainwater Goods

Due to the current climate issues we are facing increased annual rainfall in the uk, coupled with heavier downpours which in turn cause water ingress into buildings as they have insuffient systems for disposing the water away from the structure. Our recommendation would be to assess the current rainwater system once it has been rodded and cleared of any debris. If the system is adequate and working all aspects of the rainwater goods will be thoroughly cleaned, and serviced. Any missing or broken sections would be replaced with new cast iron sections to match the original style and dimensions.

If the system is deemed as not working with the projected rainfall, it is recommended that the system should be fully replaced with new upgraded RWG's. We would recommend that the rainwater goods should be replaced with cast (not extruded) aluminium rainwater goods. These items would be upgraded to an increased size from the current gutters and downpipes, to allow for a greater and quicker dispersal of water away from the building. The RWG's will also be Powder Coated to an approved colour which will also give the system a much greater life expectancy and also reduce maintenance which could lead to a degradation of the appearance of the listed buildings

To the West elevation is a timber box gutter. A single central downpipe discharges to the left of the main entrance. It is proposed that the box gutter is carefully dismantled, and if possible, the timber reused to recreate. The new gutter will be lined with minimum 0.7mm Zinc sheet and laid as per recommendations from the Lead Sheet Association. The central discharge point will be moved to an area where there is a step back of the main elevation, allowing the RWG’s to be hidden from the principal elevation. The gutter will also return slightly along the North and South elevations and will also have a discharge at their termination. See drawing for more information.

To the East elevation a new parapet gutter will be formed as detailed in attached drawing, with a central outflow down-pipe as shown on the elevation drawings.

Condition 14 - Chimneys
Fenton House

<u>This has been reproduced of the specification and method statement within condition 3</u>

Method Statement for Pointing, including bedding during the rebuilding of stacks.

Wider joints of brick is often repointed in cement and while this is not an appropriate material for repointing stone, an assessment must be made whether removing it will cause more damage than leaving it place. If there are clear water ingress or damp issues internally, the brickwork surrounding the pointing is showing signs of decay or the mortar itself has failed, then it must be removed.

Carefully use hand tools to rake out the joints to a sound backing, or roughly twice the width of the joint i.e. a 10mm joint should be raked out to at least 20mm. All pinning material should be retained when raking out.

To clean down the stack, pre-wet the entire area before washing out each joint, chasing out debris with a hosepipe. Pre-dampening is to avoid staining of the wall from debris. Always work top down.

Allow stack to dry, but not completely before pointing can proceed. A fine mist of water prior to any application of lime mortar to a porous background is recommended. The substrate must be damp but not wet with running water. For impervious units, pre-dampening to the joints only is required; if the units themselves have standing water, chase water with compressed air.

Where impervious brick / stone units are mixed amongst pourus brick / stone, prepare the wall for the pourous material and individually check the impervious units. Use the same mortar mix throughout. However, if the wall is solely made up of impervious units, a more robust mortar may be required to allow a quicker set. Consult with CA before proceeding with pointing to impervious units such.

If joints are excessively wide or there are large areas of mortar, it is recommended to using pinning stones (off cuts of stone, brick or pieces of slate) to pack out the mortar.

Allow to cure with protection suitable for the weather conditions. This may be damp or dry hessian, tarpaulins for rain, or no protection if weather is fair. See guidance on lime works for curing regime.

Condition 14 - Chimneys
Fenton House

Specification of Mortar to be used

Lime: Non Hydrated Lime as supplied from Ty Mawr or other agreed source

Aggregates: Sharp gritty sand which has been thorougly cleaned to remove silt and clay, Sand should be sourced to match the original mortar colour and size of aggregates, but allow for Bryncir Sand, dredged Mersey or Shropshire Blend.

Mix: Mortar to be carefully mixed to the following ratios; 1 part Non Hydrated Lime: 3 parts Aggregate. This mix will provide a finished ratio of 1:1.14

Re-haunching of chimney pots

Where chimney pots display cracked or missing mortar in the haunching (mortar) that secures their position, carefully chip away the old perished mortar down to its housing;

Using a modified hydraulic lime mortar or eminently hydraulic lime with water repellant and concrete sand, in a ratio of 1 part binder to 2.5 parts sand;

Place the mortar into the recessed housing and mount the chimney pot in place;

Mortar around the chimney pot making sure the profile is such that it encourages water run-off (and not ponding);

Provide sufficient protection such that the mortar does not dry out for the first 72 hours, or be disrupted by rainfall.

Protection can be left off if conditions are fair to avoid sweating of the mortar. See associated document on general guidance on lime works for curing regimes.

Specification for chimney haunching

Lime: Non Hydrated Lime as supplied from Ty Mawr or other agreed source

Aggregates: Sharp sand which has been thoroughly cleaned to remove silt and clay, Sand should be sourced to match the original mortar colour and size of aggregates, but allow for Bryncir Sand, dredged Mersey.

Mix: Mortar to be carefully mixed to the following ratios; 1 part Non Hydrated Lime: 2.5 parts Aggregate. This mix will provide a finished ratio of approx 1:1

Condition 20 - Joinery
Fenton House
<u>This has been reproduced of the specification and method statement within condition 3</u>

Joinery Windows

Recommendations

Repair and upgrade any remaining historic sashes. Sound historic glass and fittings to be retained and existing windows to be fitted with discreet draft proofing measures.

Redecorate

Method Statement - Windows

1. Carefully dismantle the staff beads to allow the sashes to be removed from the frame
2. The glass is removed and the old putty can be scraped away
3. The joints are cleaned and any rotten wood is routed out
4. Any small areas of rot which have been removed can be filled with an Epoxy resin or if larger new timber is spliced in
5. The sash is scraped and all loose paintwork is removed, sanded and primed.
6. The glass is put back , pinned and puttied in place using linseed putty.
7. Old weatherstrips are replaced, if missing, new hardware is attached, new chain or cords are fitted, the pulleys are rebalanced or lubricated, and then the sashes are reinstated in the frames.

Draught Proofing

Sash windows can be draught proofed, brushes and draught strips can be routered into parting beads and staff beads to allow free movement and increased efficiency.

Upgrade

Upper level windows should be fitted with Simples hinge system to allow maintenance from inside the building.

Shutters

- All remaining shutters are to be carefully removed, paint is to be stripped and hinges cleaned and made good.
- Any new shutters will replicate the original style and incorporate identical mouldings.
- All shutters will then be decorated in an eggshell finish to a colour TBA.

Condition 20 - Joinery
Fenton House
Internal Joinery

Recommendations

Undertake all repairs exposure works and further investigations as previously described

Method Statement - Joinery

1. Assess all areas of joinery repair to be undertaken.
2. All repairs should be carried out using materials as originals.
3. Splice repairs are recommended rather than replacement, unless the damage to the joinery is so as it is not feasible to repair.
4. Mouldings of items such as architraves, skirting boards, staircase mouldings should be recorded and replicated identically where required
5. Carry out repairs to all window shutters so as to bring them back to full working order.
6. All joinery should be decorated fully and not left bare.

Specification for Joinery

Timber Species: FSC sourced softwood or hardwood to match existing

Finish: All joinery to be primed, undercoated and repainted in eggshell, colour TBA

Condition 6 - Services
Fenton House

In older buildings it's important that the lighting, power and heating systems remain safe, efficient and suit the current use.

When building uses change, or services come to the end of their life, they will need to be replaced. The removal and replacement must be done in a way that limits damage to the historic fabric of the building.

Within Fenton House there are several systems which will all be replaced as part of the approved scheme. In order to minimise and further interference with the fabric it is proposed that the installation of all services are done in line with Historic England's best practice guidance on installing new services as well as HE's Conservation Principals.

The design and installation of building services systems in historic buildings needs to be considered carefully. The historic interest of a building can be undermined by successive installations.

The design and installation should aim to protect the building and its setting with no loss of historic fabric, and follow the principles of mitigation, minimisation and reversibility.

Mitigation considers:
- reusing of existing services 'routes
- using existing features, such as mouldings or balustrades, to conceal services such as pipework and cabling
- using alternative routes for services through voids under floors or above ceilings
- locating discretely new or additional items where their function is not compromised
- using wireless technology for controls that can remove the need for hard-wired connections, however the heavy construction found in some historical buildings may limit the range and detailed signal strength surveys may be required
- choosing accessible service routes and locations to easily allow future maintenance, repair and eventual replacement

Minimisation considers:
- reducing or, better still, removing completely the likelihood of any permanent alterations or scarring to a building, especially those caused by installing heating services
- sharing common routes with other services
- allowing spare capacity in (new) service routes for future works
- routeing pipework, controls or cabling through buildings in ways that might not be the shortest or the most direct, or the simplest
- using the minimum number of fixings into historic fabric
- reducing the impact on historic fabric by making fixings into mortar joints between brickwork, stonework or where least visible
- carrying out the minimum amount of work that would disturb existing fabric and, where this is necessary, re-using as much as possible of the existing fabric as is appropriate and practical
- avoiding destructive chasing or cutting a groove into a surface to install cables or pipes

Condition 6 - Services
Fenton House

- installing services so that they don't cover up, damage or interrupt views of important building features and surfaces or create dirt traps or staining patterns from heat and air movement

Reversibility considers:

- planning for the removal of services at the end of their useful life as well as their installation, both to reduce the harm that could be done to historic fabric
- detailing each intervention such as holes and fixings, noting that fixings into mortar joints, which can be repaired by repointing, may be more appropriate than into brickwork or masonry which cannot be so readily repaired
- the difficulty of installing and eventually removing large items due to their size

Fire Separation
In our experience successful fire separation as requested by Building Regulations: Part B is virtually impossible to achieve in a historic building without causing serious damage to the fabric. We therefore advise that the following approach is adopted to improve the current situation:

1. New doors to match the style of what would have been in place are to be FD30 or greater timber door sets, which incorporates intumescent and smoke seals routered within the door and frame.

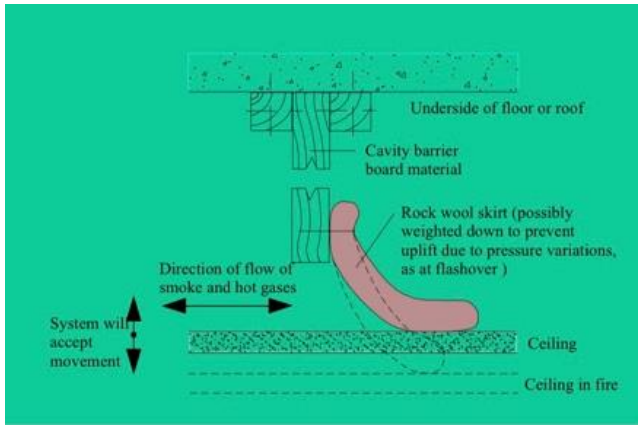
2. Once the floor has been lifted and the void exposed for works to the services, there is an opportunity to include some fire separation between floors. This could be achieved through the following methods

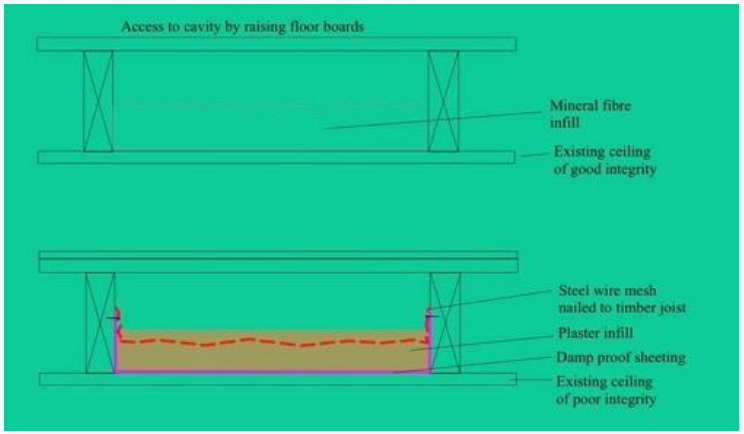
a) fill the void with Rockwool Flexi, Acoustic, or Thermal products in line with manufacturers guidelines
b) Insertion of 2 layers of 12.5mm plasterboard fixed to battens (which are fixed to the floor joists), if the space allows.
c) Alternatively when the floors are lifted an steel mesh can be fitted to the joists and the foils back filled with plaster (see below)

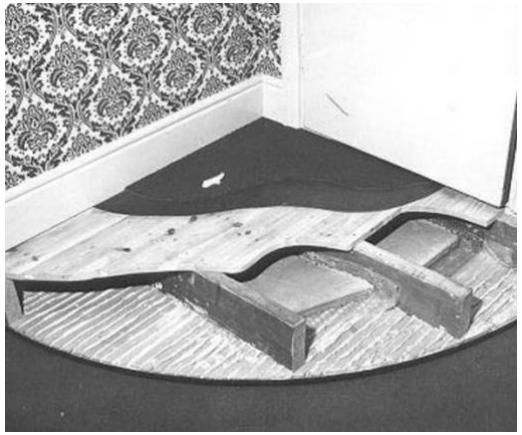
3. As part of the overall servicing scheme, it is advised a hardwired fire detection system is installed. These should be located as per manufacturer recommendations and shall incorporate both heat and smoke detection.

4. Within ceilings and floors between units, cavity barriers can be used, i.e. the use of rockwool within ceiling cavities and fire protection spray onto expanded metal mesh (shown below and within this document https://www.buildingproductsearch.co.uk/wp-content/uploads/2018/12/fire-barrier-systems.pdf)

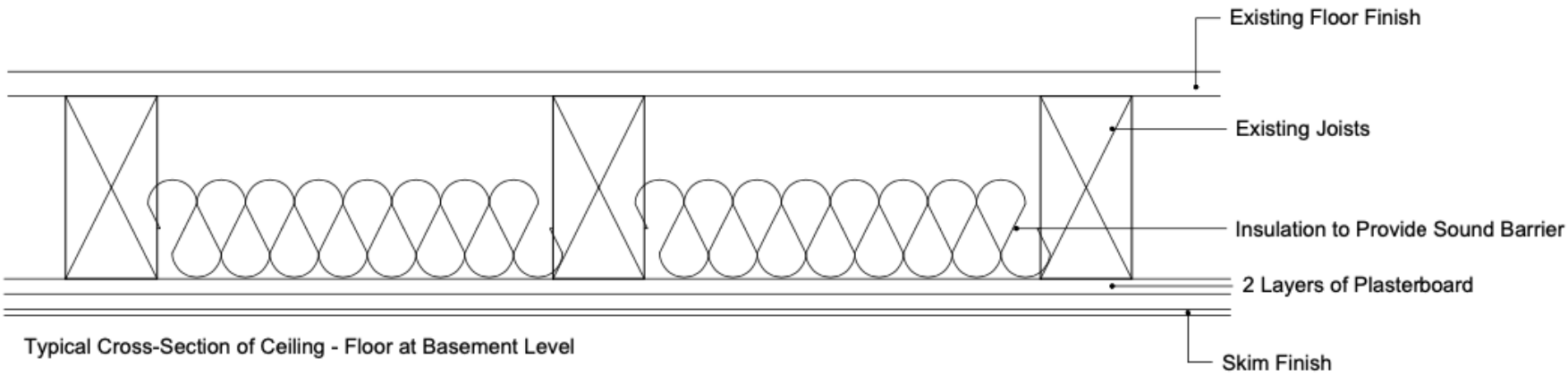
Condition 6 - Services
Fenton House



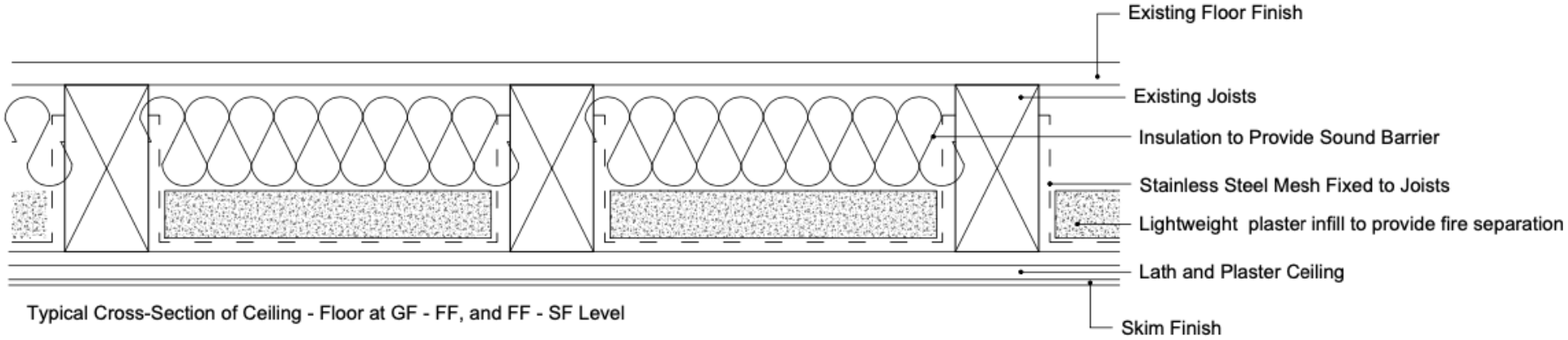




Condition 6 - Services
Fenton House



Typical Cross-Section of Ceiling - Floor at Basement Level



Typical Cross-Section of Ceiling - Floor at GF - FF, and FF - SF Level

Condition 22 - Rot and Treatment
Fenton House

At this moment the exact location of Rot is unknown without further investigative works, including the lifting of floor boards, removal of modern ceilings, removal of plaster and so forth. The wording of the condition does not allow this to happen therefore we hope the following strategy would alleviate any concerns the Planning Authority may have.

All works will be carried out by competent contractors or specialist sub contractors and shall be overseen by the CA.

The Listed Building Report identifies the possibility of Dry Rot within the building. 'Dry rot' is the decay of wood caused by the fungus Serpula lacrymans, the effects of which in buildings can be truly dramatic. Diagnosis of dry rot in a building, like the diagnosis of cancer in a patient, has the ability to strike terror into the heart of the recipient of this dire news. However, all wood-rotting fungi require both food (wood or other cellulosic material) and water, and the dry rot fungus is no exception; deprived of either, it cannot survive.

Much of the mythology surrounding dry rot is founded on the ability of its strands to penetrate through non-wood building materials, to transport water to otherwise dry areas and for the fungus to 'manufacture' its own water. In reality, the delicate hyphae are the primary colonisers and the ability to conduct water is limited and can be negated by good ventilation. The process of wood decay itself produces water but in this respect dry rot is no different from any other wood-rotting fungus and, likewise, its ability to produce moisture in this manner can be negated by ventilation. Decay will cease if the moisture content of the wood is reduced to below about 20 per cent, and many extinct outbreaks of dry rot are discovered in buildings where the fungus has died out as a result of this happening, probably following maintenance which has eliminated a water source.

Control Strategies

Because of the total dependency of dry rot on moisture, the primary control strategy must be based on environmental considerations aiming to restore and maintain dry conditions. However, in many cases drying will take a long time, often measured in years, especially where some types of historic buildings are affected. Therefore, secondary measures will often be required to prevent further damage by the fungus before it is effectively arrested by the drying.

Primary Control Measures

A detailed survey should be carried out to identify and locate sources of moisture ingress. Particular attention should be paid to roofs and rainwater systems with emphasis on gutters and downpipes, parapet roofs and roof coverings. Rain penetration can also be through renderings and flashings or around windows and doors. Rising dampness through missing, bridged or otherwise defective damp-proof courses must be rectified. Any plumbing should also be inspected for leaks.

Rapid drying should be encouraged through the provision of heating and ventilation which may also require specific building work to prevent moisture ingress and transfer, and to encourage aeration. Dehumidifiers can remove moisture from the air but their effectiveness in aiding drying of walls depends on the rate of evaporation from the wall surfaces.

Other Measures

Assessing the outbreak

It is necessary to determine how far the dry rot has spread. All woodwork in the vicinity of any outbreaks should be inspected carefully to assess the extent of decay and the current moisture content of the timber. Extensive removal of plaster is necessary only if it is suspected that timber is embedded in the walls and is at risk.

Removing affected timber

Removal of all timber affected by dry rot is destructive but necessary in principle. Retaining affected timber presents problems for the structural integrity of the building and falling debris can be a hazard to occupants and others if decay continues. Timber already below 20 per cent moisture content presents little risk of further decay but, at higher moisture contents, the level of risk depends upon the speed with which drying can be induced and the ease of monitoring the reducing moisture content. Higher risks may be acceptable where timbers are of historic value or where their removal cannot be achieved without damage to important historic fabric - for example, where they support a fine plaster ceiling. In such cases the retention of some timbers may be essential or at least highly desirable.

If the wood can be removed, it can be sterilised in a kiln. The temperature throughout the wood must be maintained at just over 40°C for 15 minutes. Care is needed to prevent splitting and distortion and this method provides no protection to the wood after reinstatement. Special building measures are necessary if timber is to be retained, including isolation from damp masonry.

Wood preservative treatments

Liquid preservatives can be applied to the surface of sound timbers left in situ to help prevent new infections developing during the drying process. However, they should not be used or regarded as an alternative to physical methods of protection.
If timber infected with dry rot has to be retained for special reasons and decay cannot be arrested in the short term by drying, preservative treatments that penetrate throughout the affected part of the timber can be used. For example:

- application of a preservative paste
- repeated addition of liquid preservative to sloping holes drilled into the wood or by pressure injection
- insertion of borate rods or tablets (these are only effective if the wood is wet).

Treatment of hardwoods must include an insecticide if there is a risk of infestation by death watch beetle.

All new timber used in repairs should be pre-treated with a wood preservative. Detailed guidance on the treatment required for various timber components is given in the British Standard BS 5268: Part 5, which deals specifically with structural timber, and BS 5589 which covers a wider range of uses. Guidance is also given on the use of naturally durable timbers (see also Digest 429 published by the Building Research Establishment Ltd).

Masonry Treatments

Although strands can grow through and across masonry, the dry rot fungus derives no nourishment from it. The concept of killing the fungus within masonry by wide-spread irrigation with a fungicide traditionally has provided a 'comfort factor', but it has to be questioned in each case whether this procedure can be justified. First, it is usually difficult to achieve a thorough treatment and, secondly, the treatments introduce large quantities of water which then need to be removed, increasing the risk of salt efflorescence and damage to the masonry, as well as prolonging the time it takes to dry the structure.

The most important role of chemical treatments of the masonry is to prevent the fungus from obtaining access to a fresh food supply in the form of timber in adjacent areas, or replacement timbers being introduced into the area. For this purpose, localised chemical treatments of the masonry can create a useful barrier between the fungus in the wall and the wood. Examples of such treatments are:

- surface application of fungicidal fluid (which also helps prevent fruit-body formation during the drying phase)
- use of fungicidal renderings
- insertion of preservative plugs or pastes
- localised irrigation treatments.

Whilst these localised treatments play a role in the overall control strategy, they must not be regarded as a substitute for getting the building dry.

Heat sterilisation of masonry walls and timber in situ

In the past, the use of heat to sterilise walls was condemned because it was too difficult to apply effectively and provided no residual protection. In the search for chemical-free control measures, sterilisation with hot air is now increasingly being used, particularly in Denmark. However, the process needs to be carefully controlled so as to prevent damage to the building as well as to ensure that the necessary temperature has been achieved deep in the affected area.

Monitoring

The importance of monitoring the conditions in buildings cannot be over-emphasised. Dry rot develops very slowly, so early detection and curing of moisture ingress will prevent decay occurring in the longer term. Routine monitoring can be as simple as regular visual inspection to check the integrity of the building fabric against ingress of moisture, and taking measurements of moisture content of vulnerable timbers with a hand-held probe. However, sophisticated permanent monitoring systems are now increasingly used involving computer-based equipment linked to probes permanently installed in timbers or other parts of the building fabric. Specific sensors can also be installed in rainwater goods to indicate overflows.

Dry rot is potentially a cause of seriously damaging decay for timber in historic buildings, but it does not have to be devastating or outrageously expensive to cure if caught in time. A careful diagnostic approach is required to identify and cure dampness, to treat in a very selective and targeted way and to re-instate with appropriately pre-treated or naturally durable replacement timber. Installation of monitoring systems to facilitate routine maintenance checks can enable massive economies compared with destructive re-build approaches and will provide greater assurance for the future.

Condition 15 - removal of paint and render
Fenton House

Our recommendation for the removal of paint from exposed brickwork would be to use a soda blasting method. Soda Blasting is a method of light, non-abrasive cleaning that uses compressed air to blast aerosolised particles of sodium bicarbonate (also known as baking soda) mixed with plain water onto a dirty or tarnished surface using a compressed air pump. The pressurised soda mix is sprayed through a hose and left to dry (as with power washing). It's typically used for surface damage removal (or stripping) on materials where grit blasting, acids, or chlorinated cleaners would be too damaging, invasive, or risky to use. Soda blasting is particularly effective at removing light rust, mill scale, spray-paint graffiti, and fire damage soot without damaging the base material underneath.

This method has been successfully used on other conservation projects in the past without causing any damage to the structure beneath.

It should be noted that Fenton House currently has a rendered main facade and painted end gable. There may be a reason for this as it currently looks to be a solution for concealing underlying issues. Considering the penetration of damp internally, our opinion is that the brickwork is over-porous due to its softness, and this issue was recognised sometime in the early 20th century. Therefore we would suggest that the render be carefully removed by hand, minimising damage to the brick beneath, and the substructure properly assessed for condition.

At this time, we would assume that the condition of the brick will be very poor, similar to the exposed brickwork on the gable end, the rear of parapet roofs and also the brickwork of the chimney stacks. Our recommendations would be to re-render each elevation as specified above without replacing any bricks, unless absolutely necessary. At that point we would recommend ascertaining specialist advice for the York Handmade Brick Company for matching the style.

Condition 17 - Repair of Metalwork
Fenton House

Condition 17 is worded in a way that does not allow us to assess the structure of the metalwork without failing to comply with said condition.

For the purpose of this condition we need to assume that the metalwork has deteriorated significantly in order to include as many possibilities as possible

Cleaning

As with condition 15, our recommendation for the removal of paint from exposed brickwork would be to use a soda blasting method. Soda Blasting is a method of light, non-abrasive cleaning that uses compressed air to blast aerosolised particles of sodium bicarbonate (also known as baking soda) mixed with plain water onto a dirty or tarnished surface using a compressed air pump. The pressurised soda mix is sprayed through a hose and left to dry (as with power washing). It's typically used for surface damage removal (or stripping) on materials where grit blasting, acids, or chlorinated cleaners would be too damaging, invasive, or risky to use. Soda blasting is particularly effective at removing light rust, mill scale, spray-paint graffiti, and fire damage soot without damaging the base material underneath.

Assessment and Repair

Post cleaning all elements of the metalwork shall be assessed for structural defects by the CA, Conservation Officer and specialist contractors carrying out the repairs. Repairs shall be carried out in materials that would match the existing and using methods as would have been used originally.

We would recommend the following contractors who would be capable of completing the works:

Barr and Grosvenor Ltd, Wolverhampton - http://weightsmanufacturer.co.uk/Welcome.html

Calibre Metalwork, Stockport - http://www.calibremetalwork.co.uk

The above companies may request that the metalwork be carefully removed and taken to their workshop for repair.

It is noted that a small section of the handrail has delaminated, it may be possible to weld these sections back, but in the worst case scenario these would be removed and a new matching section mechanically fixed to the remainder of the iron work and then soldered to provide a strong structure.

Condition 17 - Repair of Metalwork
Fenton House
Also, along the top balustrading, there is a missing section of steel plate which would have run across the back of the half round spindles. In our opinion this should be reinstated as it would prevent further damage to the hollow sections of the cast iron.

Following completion of the repairs, the metalwork should be decorated with the following specifications.

1 coat of high zinc undercoat
1 coat of primer
2 coats of gloss, colour TBA.

Condition 19 - Repair of Staircase
Fenton House

The main staircase from ground to 1st floor remains intact and it is proposed to be retained. There are minor repairs which need to be undertaken in order to achieve sufficient protection from falling and also secure the structure.

The works would comprise of the following

1. Removal of the modern spindle supporting the newel post at ground floor level and replacement with a new 15x20mm rectangular section to match the remaining existing spindles.
2. Every-other spindle has been removed, these should be replaced with new 5x20mm rectangular section to match the remaining existing ones.
3. There are 3 sections of nosing that have been broken and are missing. New sections should be made to match the remainder and fixed back into position.
4. At the half landing, the handrail has broken. This is due to the removal of a turned newel post. A new post should be made to match the original at ground floor and reinstated. The handrail can then be glued and secured.
5. There are no works to be done to the goings or risers apart from the removal of carpet gripper rods.
6. There is a small section of skirting board at the half landing that has been broken, this should be filled in situ and made good for decoration.

The photographs below show the location of repairs.

Condition 19 - Repair of Staircase
Fenton House

Removal of modern post

2. Replacing missing spindles

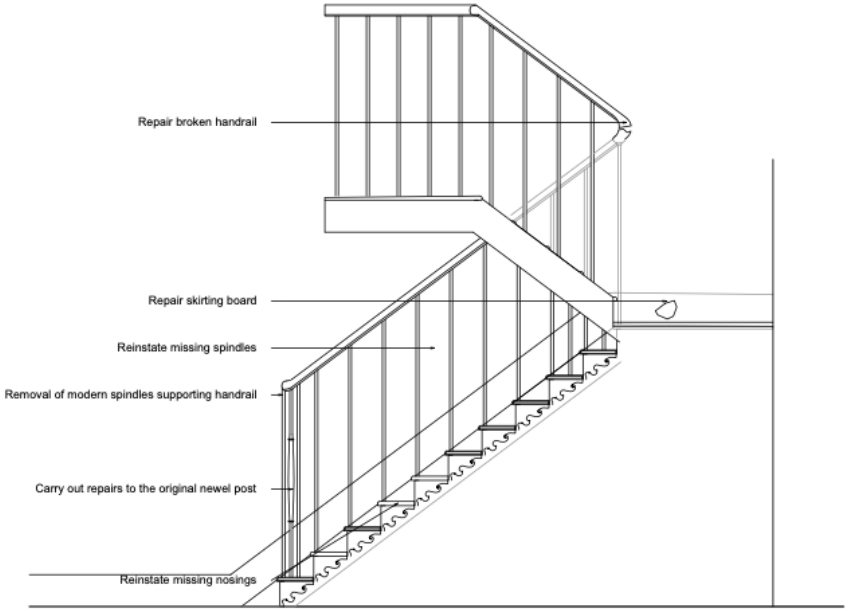
3. Replace missing nosings

4. Repair broken handrail and reinstate turned newel

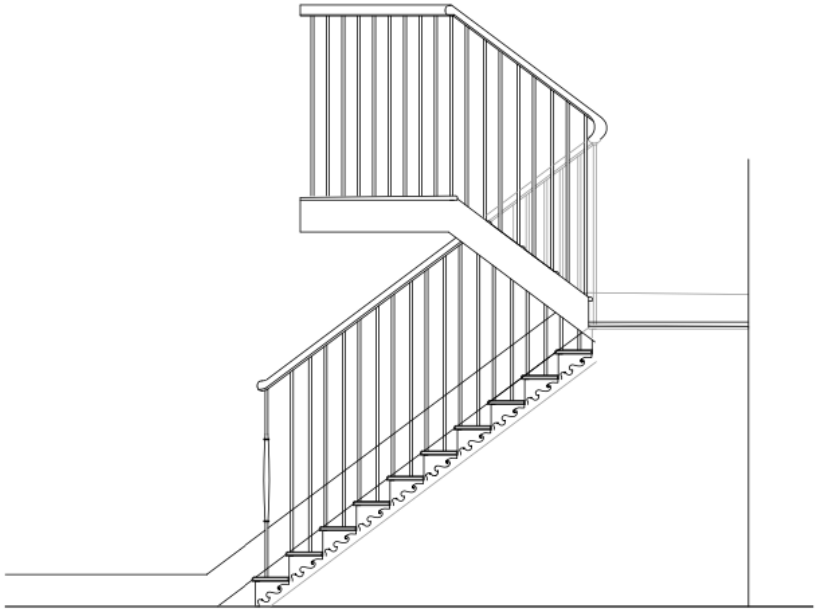
5. Repair section of skirting board

Condition 19 - Repair of Staircase
Fenton House

NOTE:
New timber staircase to match the original between Ground and First floors. Dimensions should be taken directly from the original staircase, including mouldings



Elevation of Existing Staircase



Elevation of Repaired Staircase

Fenton House, Ardwick Road
Drawing No: FH/CC/DWGXX
Proposed Repairs to Existing Staircase between First and Second Floor
Scale 1:20 @ A2