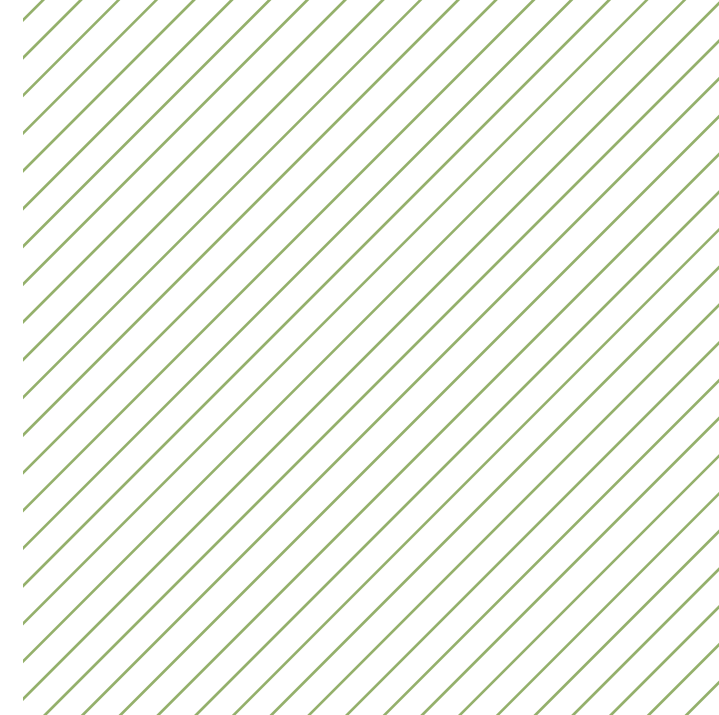




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2022.04

Lindencourt House,
34 Charlotte Street,
Manchester,
M1 4QU

Architectural Method Statement

March 2023



SCHEDULE OF WORKS - EXTERNAL

ROOF:

- Existing pitched roofs appear to be in a satisfactory condition. Localised repairs will need to be carried out in similar materials as necessary.
- Cut out any defective brickwork to parapet walls and replace with reclaimed bricks to match existing laid in 1:2:9 lime sand mortar.
- Re-line gutters at fourth floor level with appropriate product manufacturer approved system.

EXTERNAL WALLS:

- Make good any damaged brickwork in matching reclaimed bricks in 1:2:9 lime sand mortar.
- Carefully remove any redundant signage, pipework and service cables etc. from all elevations and make good brickwork pointing in 1:2:9 lime sand mortar.
- Examine any existing cast iron rain water pipes, re-caulk joints as necessary and repaint in approved colour.

WINDOWS AND DOORS:

- All windows to be examined and replaced or refurbished as follows:
- Examine each window frame and determine if any timber is defective.

All Top and bottom sash's to be surveyed properly to determine the quality of the timber. If necessary, any rotten timber sections will be cut out and replaced with suitable replacement/splicing of larger sections. All new timber section replacements will be redwood long grain sections with exact replica mouldings and profiles. Any replacements are to match existing on a like-for-like basis. This also includes any rotten cill sections.

Removal of sashes, Score paint line between staff bead and inner lining, remove existing staff bead using a hammer and chisel, cut existing sash cord using a stanley knife and tie a knot in the sash cord to ensure weights do not drop into cavity, place bottom sash to one side for work later. Then score both sides of the parting bead, remove using a hammer and chisel, once all remove dispose of old beading in designated skip. One parting bead removed all round the frame, free up the top sash placing a chisel between the outside of the sash and the outer face and break the paint seal, once loose slide sash down and cut existing sash cords, again tying a knot to stop the weights falling and place the bottom sash to one side for works later. Remove the weight box access panel and release the weights

- by untying the knot and lowering the weights out of the box, put to one side for use later.

Sash refurbishment, place sash on trestles. Remove old ironmongery, sash cord and existing draft proofing using. Sand both operational sides of the sash using 120 grit sanding pads on an orbital or pad sander to remove all excess paint. Remove excess paint from glass on both sides using a glass scraper and clean stanley blade. Then route an 8mm wide groove in the meeting rail ready to receive the brush pile carrier. Then repair any damaged putty on the outside using putty ensuring a smooth finish ready for decoration. Dust down sashes ready for priming. Move sashes to dust free zones and primer all areas that have been sanded. Allow sashes to dry.

Where replacement glass is required, place sash in trestles. Remove all putty from outside, remove any glazing pins then tap the glass loose from the putty bed ensuring goggles and gloves are worn during this process. Once glass is removed, dispose of it in a designated skip.

Remove all of the existing putty bed until you are left with a clean timber surface, if required route the final amount of putty to ensure a good glazing bed. Dust off and clean glazing rebate. Using silicone we apply a bed of silicone compound to the rebate for the pre cut glass to sit on. Place the 12mm heritage glass into frame and gentle apply pressure around edges of glass to ensure sufficient suction between glass and silicone compound, using a glass stapler fix the glass in position, then fill the gap between the glass and the rebate with silicone compound, turn over sash and remove excess silicone from the inside of the sash. Turn sash back over and apply a putty bead or timber glazing bead between the glass and the timber rebate using hands, once done flatten off using a putty knife ensuring a smooth angled finish.

Then clean the glass being careful not to go too close to the new putty and disturb it.

Refitting the refurbished sashes. Once dry insert pile carried into meeting rail, pinning in place as an addition to the self adhesive. Then weight the sash and the existing weights ensuring that they are balanced. If not cut lead add weight bar to the suitable size to ensure balancing.

Once weights are checked install sash cord through pulley wheels, then tie existing weights to the sash cord and pull sash cord down to place the weights inside the box ready for hang the sash. Once all weights are in the box, check all run freely and do not snag on anything on the inside of the box, if they do, ensure the problem is resolved before hanging sashes. Sash cord to be fixed to either side of the sashes using four 4x20mm screws at roughly 75mm centres

(at least 6 for the large windows on the project). Once top sash fixed to sash cord, check the sash runs freely and travels enough to ensure windows will pass each other for maintenance reasons. If all this is okay refit the weight box access panel using either 25mm pins or 25mm screws. Now all the staff and parting bead can be measured and cut. Once all beads cut to length, insert brush pile into every bead apart from the top staff bead. Once all draft proofing is in using super glue, glue all beads that sit vertically within the box sash. Then fit all top parting bead ensuring brush pile is facing the top sash, pilot drilling with a 2mm drill bit and pinning with 40mm pins. Once fitted push pins below surface and fill. Then insert draft proofing into meeting rail ensuring an over hand either side of at least 15mm, then fit bottom parting bead in the same way as the top ensuring the brush pile is facing inside. Once fitted seal all the parting bead on the inside and the bottom half of the parting bead on the outside using external acrylic frame sealant(white). Now hang the bottom sash in the same way the top sash was hung. Now put the staff bead around the box ensuring a gap of no more than 4/5mm between the bead and the sash using 40mm pins. Once all fixed ensure both top and bottom sash move freely, if they do, punch all pinheads and fill. Then seal around the inside joint between the staff bead and inner lining using internal frame sealant. Fitting ironmongery. Fit all ironmongery as per test window completed. Ironmongery to be fitted on each window is 1 x Brighton fastener, 2 uplifters and 1 sash eye, all in an antique brass finish. Once the window is completed, place a sign off sheet on the window to show the window is ready for checking and signing off by the site manager.

SCHEDULE OF WORKS - INTERNAL

REPAIRS AND RENOVATIONS:

- Carefully remove all redundant remaining fixtures, fittings, stairs and floor screed/finishes from previous offices use.
- Carefully cut back existing services to main incoming supply points.
- Make good any holes through existing timber floors formed by service penetrations with matching timber plugs glued and pinned in place, carefully sand flush with soffit.
- Carefully remove any damaged plaster to existing walls and replace with new plaster finish to match existing, sample to be examined and similar mix to be used.
- Carefully remove existing damaged/warped areas of flooring and replace with matching tight grain preservative treated softwood planks with tongued joints.
- Carefully remove all paint finishes to existing boarded floor soffits and timber beams.
- Apply intumescent coating providing 60 minutes fire resistance. Apply intumescent paint to steel and timber structure. Apply fire retardant varnish system to the timber beams and timber boards where they are to be left exposed.
- Existing plaster finished ceilings to be overboarded to provide 30 minutes fire resistance.
- Carefully repoint exposed brickwork as necessary in 1:2:9 lime sand mortar; apply clear dust proofing seal.

STAIRS:

- Examine existing main and secondary stair from ground to fourth floor and make all necessary repairs to timber flights, balustrade and handrail to put back to good repair and structural soundness. Remove any paint finishes and sand back to existing timber and treat.

NEW WORK:

- Provide full DDA compliant access to all floors of the building in accordance with Manchester City Council planning guidelines and the approved building regulation documents.
- Provide a disabled entrance at ground floor level.
- New lift shaft walls and reinstatement of the original lift within the building allowing for external access on the ground floor.
- Repair the existing redundant timber staircase to the rear of the building and associated reinstatement of floorboards.
- Reinstatement of sash windows to apertures that have previously been bricked up.
- Existing timber floorboards to be repaired/reinstated where necessary and covered with a suitable floor covering for office use as a sacrificial layer.
- Form new partitions in metal studding with plasterboard and skim finish with acoustic properties as necessary as shown on proposed floor plans.
- Installation of floor to ceiling glass partitions as show on the proposed floor plans.
- Provide new M&E supply to the building. New Plantroom to be created and plant to be stored to the rear of the building and hidden out of view to the back of the Reyner Street Elevation.

METHOD STATEMENT FOR THE INSTALLATION OF SLIMLINE DOUBLE GLAZING INTO EXISTING WINDOWS

It is apparent that numerous panes of glass have been reinstated into many of the windows, mainly on the Charlotte Street and Faulkner Street elevations of Lindencourt House. Any remaining original glass present within the windows are typically located on the Reyner Street elevation and to the rear of the site where they are less likely to be seen by the public eye, thus they have remained and over time, left to deteriorate into a state of disrepair in most circumstances. The glass in most of the sash windows to the rear of the building have either cracked, smashed or fallen out completely. Glass that does remain within their respective frames has cracked and discoloured beyond the point of repair.

The proposal seeks to replace the non-original glass panes and damaged original glass with Fineo Glass Ultrathin energy-efficient vacuum glazing, specially designed for replacing single glazed windows in listed buildings and conservation areas. This replacement and upgrade will significantly improve Lindencourt House's thermal performance by reduce heating bills and Co2 emissions, contributing towards a cleaner and greener city whilst bringing a historic building into the 21st century and preserving it's aesthetic appeal and character.

Conventional double glazed units are 22-28mm thick overall. The slimline Fineo Glass is Ultra-thin energy-efficient vacuum glazing , which has a miniscule cavity from which air is removed to create a vacuum.

The proposed works to the glazing within the existing sash windows are as follows:

- Previously refurbished timber sash windows carefully removed from existing openings
- Carefully remove existing timber beading and 6mm floatglass

- If required for minor cosmetic repairs, use "Windowcare Resin" system
- Re glaze with 6mm clear Fineo Glass Ultra-thin energy-efficient vacuum glazing
- Previously added timber packer, jamb detail, secondary glazing and frame to be removed

Consulting English Heritage 'Traditional Windows: their care, repair and upgrading', it is deemed appropriate to replace glazing with slim-line glazing units;

- where a historic window retains no significant glass and has sufficiently deep glazing rebates and is robust enough to accommodate the increased thickness and weight of insulated glass units,
- where an existing replacement window of sympathetic design is to be retained and is capable of accommodating insulated glass units

Consideration may be given to the installation of new slimprofile double-glazed replacement windows where:

- the new windows are of sympathetic and appropriate design, and used in locations where the significance of the building won't be harmed
- no incidental damage to the building fabric will result from the removal of the existing windows

In response to these key points: the current non-original glazing is not of historical value given it's modern intervention. There is no increase in thickness from the current float glass to proposed slimline double glazed units, having no impact on the glazing rebates which will be able to accommodate the slimline double glazed units without any alterations to the existing frame.

The double glazed unit itself is sympathetic to the existing building, given it's resemblance to the current single glazed panes within the windows.

Damage to the building fabric will be mitigated following the method statement provided, with the significance of the building not being harmed.

From this it can be deemed the installation of slimline double glazed units would not compromise the aesthetics nor compromise Lindencourt House itself during the installation process. The installation of slim profile double glazed units will have no adverse effects on the George Street Conservation Area and it's streetscape appearance.

METHOD STATEMENT FOR REPAIR AND RESTORATION OF INTERNAL LATH AND LIME PLASTER WALLS

Any non-original/non-historic items, objects or features protruding which have no heritage significance are to be carefully removed. Walls to be cleaned, painted and patched where necessary with lath and plaster using traditional techniques. Similarly with internal RWP access panels, lath and plaster or plasterboard repair works to be carried out as per the methodology in Schedule of Works document.

Preparation

- It is recommended to moisten new lath with water before fixing to avoid swelling when wet mortar is applied. It is also important to control suction from dry, already fixed timber lath by lightly spraying with water 30 minutes before the first coat and allow the water to be absorbed.

Premixing

- All pure lime putty plasters benefit from being pre-mixed for a minimum of a couple of weeks and then "knocked up" again prior to use to plasticise them - this reduces shrinkage in the plaster. Do not do this for hydraulic mortars.

Method

- Apply a first scratch coat of 3/1 haired lime mortar through the lath, leaving around 1/3" (8mm) on top of the lath itself. Do not over trowel this coat otherwise too much plaster may be lost through the lath. Do not trowel this coat too smooth but instead leave an open textured surface for extra key for the next coat of plaster.

- Lightly scratch this coat with a lath scratcher and leave to dry and cure until green hard. A lime mortar or plaster is green hard when it can only be marked with a metal tool. It is then dry enough for any shrinkage to have taken place without having to be completely dry. This is likely to take 7-14 days.

- Apply one float coat of 3/1 haired or unhaired lime mortar to straighten the surface as required. This coat may be 1/3" - 1/2" (8 - 12mm) thick. Float this coat with a wooden devil float to provide a suitable surface for the final skim coat and leave to dry and cure until green hard. This is likely to be 5-10 days.

- Trowel on a double top coat of our lime-rich plaster, 3/2 unhaired, based on a very fine sand and lime putty. This can be in a single coat or two very thin coats for a better finish. For the finest trowelled finishes use a maximum of 1mm of our Regency lime plaster for the final coat instead of a second coat of 3/2 plaster

Gauging

- Where it is a ceiling that is being reboarded and there is a floor above that will be walked on, sufficient time must be left for the plaster coats to carbonate to gain sufficient strength before using the room above.
- This time will depend on circumstances such as time of year, ventilation etc but may be a minimum of 6 months. This is especially true if there is any play in the joists that cannot be eradicated or if works are being undertaken above i.e. fixing floorboards. Then it is essential that the first scratch coat is double haired and that it is gauged with 10% Argical by volume to get an earlier set.
- Even so floorboards should be screwed rather than nailed down. Argical can also be added to the top coat plaster to ensure extra durability where knocks are expected.

METHOD STATEMENT FOR REPAIR AND REPLACEMENT
OF SKIRTING

Original skirting to be cleaned and painted where shown in Architectural Package. Any defects which compromise the heritage aesthetics of the skirting board, and missing boards, are to be replaced on a like for like basis. Missing and damaged lengths of original/historic skirting within the front half of the building to be identified and reinstated to match the adjacent existing original/historic skirting. Extensive repair are to be achieved by cutting and splicing in new matching timber to give an invisible repair. Where skirtings are indicated to be replaced, they should be replaced to match existing skirtings in the same room or type of room on the same floor having regard to the above comments.

METHOD STATEMENT FOR STRUCTURAL STEELWORK AND IRONCAST COLUMNS INTUMESCENT COATING

Original, structural steelwork to be fire-protected with intumescent coating. A relevant system needs to be chosen in regards to building environment classification (internal/external, humidity etc.).

Preparation

- Previous paint coatings are to be removed completely. Chemical methods are to be used, as described later on.
- Any remaining surface distortion or stains are to be removed completely (blast-cleaned locally where necessary) to the extent of original iron cast element surface is all that remains. It must be cleaned and free from grease, oil, rust, mill scale, dirt or any other contaminant that may inhibit the bonding. The item is then cleaned and dried thoroughly.

Application

- Anticorrosive, system compatible primer to be applied first in strict accordance to system Manufacturer's recommendations. Reassure relevant adhesion to the substrate to secure anti-corrosion protection and stickability, also prevent early degradation and inactivation of the intumescent layer.
- Top coats of intumescent coating are to be sprayed or rolled over the item. Two coats to be secured if system requirements are indicating it clearly.

METHOD STATEMENT FOR REPAIR AND REPLACEMENT EXISTING FLOOR BOARDS

Any non-original/non-historic items or objects protruding which have no heritage significance are to be carefully removed and re-patched as and where necessary. If any floorboards have been removed but are still within the room or building, they should be returned to their original location.

Existing original/historic floor boards are to be retained in situ. If floorboards are missing they should be replaced to match the existing original floorboards in the same room on a like-for-like basis including timber type and thickness. The width and overall length of such replacement boards should also match the existing except where these need to be tailored to fit a particular location.

- Using traditional tools and methods, carefully remove the existing finish - including paint, varnish or carpet adhesive, relying on the use of hand tools to prevent any damage to the wood.
- Gently remove the first layer, taking care of any carpet tacks or staples.
- Once top layer is removed, repeat process over again, one layer at a time slowly until the bare wood is showing.
- Use a soft nylon abrasive to remove any residual remnants of the finish that may be left on the floor.
- Work is to be done methodically and carefully so as not to cause any damage to the existing timber.
- After the floor is properly cleaned, apply a wax lacquer. The finish must be reversible in future case of needing to be removed. As such, natural finishes are favoured to preserve this reversible process.
- If floor boards have shrunk, the floor is to be relaid by taking up each board and pushing it to one side, reducing the size of individual gaps.
- Once each board is re-laid, the larger gap down one side of the room is to be re-fit using reclaimed wooden floor boards.

- Once each board is re-laid, the larger gap down one side of the room is to be re-fit using reclaimed wooden floor boards.
- The replacement of any floor board is to be sympathetically done by using reclaimed wooden floor boards of same characteristics and quality to the existing floor boards.

Repaired existing floor boards are to waxed on a like-for-like basis to their original appearance and then over-boarded with an acoustic layer and suitable office floor tile to be used as a sacrificial layer, thus protecting the newly repaired timber boards below. Over-boarding of floor boards will also have the added benefit of creating fire separation between floor levels as well as providing a good amount of acoustic insulation. The underside of existing timber floor boards are to be painted in a clear intumescent coating to further increase fire protection between floor levels from below the floor boards.

METHOD STATEMENT FOR REPAIR AND RESTORATION MORTAR BED & REPOINTING

Any repointing carried out will be carefully raked out joints using only hand-held, non-mechanical tools to protect adjacent masonry. [Either Plugging chisels, masonry chisels and old hacksaw blades used in conjunction with a club hammer. Tools to be smaller than existing mortar joint.] Joint to be cut to a depth which is approximately twice the height of joint.

Brush out joint with a small brush to remove loose mortar and dust. Once carried out, the joints should be flushed out with water. This must always proceed from the top, working down the building, ensuring all traces of debris are cleaned down.

Mortar is to be lime-based and match existing. Any previous repointing where cement-based mortar has been used is to be removed and replaced with lime-based mortar.

Before applying the re-pointing mortar, ensure that the joint is well damped down. The new mortar should be stiff and not sloppy, as this will result in shrinkage and leave a smudged and dirty finish. The new mortar should be placed into the joint using a pointing iron or a plasterer's small tool and well packed into the joint. Pointing trowels should be avoided, as this will not allow pressure to be applied across the whole of the joint.

Where there is evidence of stone pinnings or wide joints, the pinnings (small stone chips) should be packed into the new mortar. These will help to avoid overly large joints, which may result in shrinkage. Pinnings will also support weak areas of masonry.

The style of finish will match original mortar joints of the existing building. New pointing work should be protected from frost, rapid drying and direct rain for a minimum period of 7 days.

Where there is evidence of damage to the existing brick mortar or poor attempts of previous repair, the following works should be carried out:

- The proposed works specify that existing mortar is to be carefully raked out by hand to a minimum depth of 20mm.
- The application of hot lime mortar is to be mixed to a ratio of 1(lime): 2(aggregate) and applied with a slight recess.
- Argical M1000 pozzolanic additive to be added to the mix directly prior to application.
- Assume use of 10% Argical by volume of slaked lime (calcium hydroxide). The proposed lime mortar mix has been researched by a specialist contractor.
- The contractor will produce a test panel that will be kept separate from the main work to ensure that we have a sample panel to benchmark all work from.
- Where brickwork has spoiled, the area should be carefully inspected and assessed.
- Consideration should be taken with regards to the option of filling damaged faces with a like for like brick filler or cut away completely and reinstated with a reclaimed brick of similar age, size and colour.
- Mortar is to be applied to the reinstated brick as per the specification above.
- The removal of vegetation forms part of the general upkeep and maintenance regime of the building.
- Any chemicals used to kill or remove vegetation and other pests will be appropriately used to ensure that it does not stain or damage the surrounding built fabric.

- For this reason, no harsh chemicals will be used in sensitive areas that could be affected otherwise be affected.
- Where it is necessary to remove any masonry to clear vegetation to make good the building fabric, masonry will be replaced on a like for like basis using the dislodged elevation materials in its original location.

METHOD STATEMENT FOR REMOVAL OF PAINT

Paint removal methods fall into two main groups; abrasive and chemical.

- The removal of paint should be taken into great consideration as it can change the character of the building
- All works must be carried out by specialists to ensure that serious and irreversible damage does not occur to the fabric beneath
- Conservational approaches should generally resist any sort of abrasive methods (especially sandblasting) and as such, the approach of using chemical products should be taken
- Where paint is already flaking away from the timber below, a wet brush should suffice to remove most of the material without affecting the timber below
- DOFF system to be used and where not possible Poultice chemical paint remover is to be applied to paint surfaces that have resulted in thick layers over time and areas that obstruct window openings
- Paint remover is to be applied to the surface in Poultice at 3-6mm thick according to the thickness of paint layers
- The surface is then wrapped in cling film or a similar material and left over period of hours or days dependent upon the thickness of paint layers
- Being absorbent, the poultice draws off the paint layer, most of which peels off with the poultice
- The residue may then be removed with water and a scrubbing brush
- Because no scrapping is necessary, it is possible to completely remove paint even from ornate work without any damage and is a relatively effective method of drawing paint out of the wood grain.

METHOD STATEMENT FOR INSTALLATION OF METAL STUDWORK PARTITIONS

The new proposed metal studwork and plasterboard partitions will be constructed using Gypframe 92S 50 'C' studs at 600mm centres. Given the number of partitions and the limited number of fixings required, the works are completely reversible.

The works to construct the metal studwork partitions comprise of the following:

- Gypframe 94 FEC 50 Ceiling Channel suitably fixed to floor at 600mm centres to include Gyproc Fire Strip continuous sealing
- Gypframe 92S 50 'C' studs at 600mm centres (back-back sections at shadow gaps)
- Gypframe 94 FEC 50 Floor Channel suitably fixed to floor at 600mm centres to include Gyproc Fire Strip continuous sealing
- 50mm Isover APR 1200 insulation to cavity, set within newly installed metal studwork
- Gypframe RB1 resilient bars installed ready to receive plasterboard
- Gyproc Coreboard installed where metal studwork abuts existing structure, providing fire protection
- 2 layers 12.5mm Gyproc Soundbloc board fixed with Drywall screws at 300mm centres. Skim finish ready for decoration

The proposed works will be carried out in a sensitive manner to ensure the historic and architectural importance of the building is maintained, preserving its heritage asset. The frames would be constructed and fixed to the existing walls, floor and ceiling. They do not seek to remove any internal details or material, and all features that justify the building's designation as a Listed asset would be unaffected by the proposed metal studwork partitions.

PROPOSED WORKS TO STAIRS

The central staircase which is the primary means of traversing the upper floors of the building require some form of remedial support to enable the retention of the existing structure. The following are suggestions to improve its structural safety and heritage value:

CENTRAL STAIRCASE

The treads and risers of the staircase appear to be in a reasonable condition on the whole however care must be taken to ensure its safety and usability as it acts as the primary means of escape in the event of a fire. This means that all treads must be finished with a non-slip nosing and a suitable handrail should be present to prevent the risk of falling.

As such, the proposed works to the staircase are as follows: Staircase final finish to remain as exposed floorboards, sanded and waxed to renew the appearance of the timber. Handrail to be reinstated where missing to match existing formed timber railing on a like for like basis. Missing spindles are to be replaced to match existing and waxed. Staircase nosing to be finished with a formed stainless steel cap to protect from damage and to achieve a non-slip surface as per the approved building regulations Part K document.

REAR STAIRCASE

Exposure of the existing structure has revealed that the staircase has poor support below. This has led to parts of the staircase to subside at their respective landings and in more severe cases, collapsed entirely as can be seen between ground and first floor level. Details of the structural repair to be confirmed following investigation by CARE accredited Structural Engineer. The proposed works to the rear set of stairs includes the complete removal of the staircase and its associated partitions as follows:

- Using traditional tools and methods, carefully remove the existing finish - paint, varnish or carpet adhesive, relying on the use of hand tools to prevent any damage to the wood.
- Gently remove the first layer, taking care of any carpet tacks or staples.
- Once top layer is removed, repeat process over again, one layer at a time slowly until the bare wood is showing.
- Use a soft nylon abrasive to remove any residual remnants of the finish that may be left on the floor.
- Work is to be done methodically and carefully so as not to cause any damage to the existing timber.
- After the floor is properly cleaned, apply a wax lacquer. The finish must be reversible in future case of needing to be removed. As such, natural finishes are favoured to preserve this reversible process.
- If floor boards have shrunk, the floor is to be relaid by taking up each board and pushing it to one side, reducing the size of individual gaps.
- Once each board is re-laid, the larger gap down one side of the room is to be re-fit using reclaimed wooden floor boards.
- The replacement of any floor board is to be sympathetically done by using reclaimed wooden floor boards of same characteristics and quality to the existing floor boards.

CLEANING METHOD TO EXTERNAL ELEVATION

Any cleaning method on brickwork involving water alone will only remove loosely adherent dirt, unless excessively high pressures are used, as water cannot break the siliceous bond by which soiling adheres. The same applies to the use of nonionic soaps. Damage can take place if associated brushing is undertaken using brushes with bristles which are too harsh, too coarse or used too vigorously.

Abrasive cleaning systems are usually inappropriate on historic brickwork due to the nature and characteristics of the brickwork, even when undertaken extremely carefully. This is because these methods are unable to deal with the multitude of variations that can be present in a brick wall. Abrasive cleaning is particularly inappropriate for the removal of paint or graffiti on brickwork.

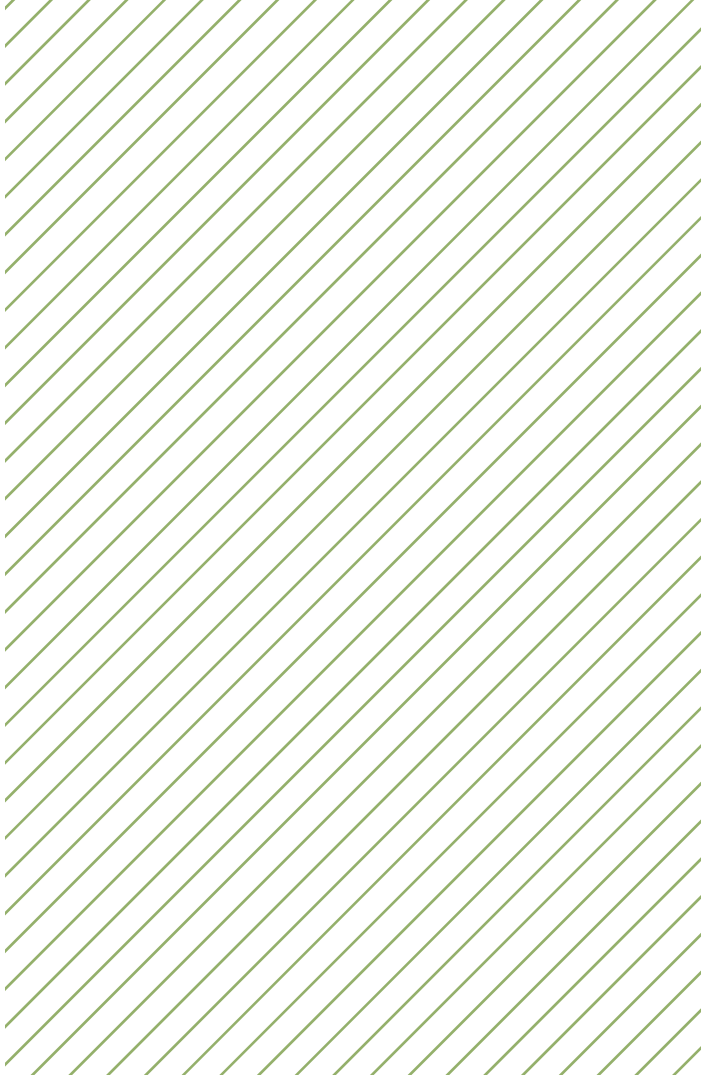
DOFF system preferred but where not possible Chemical cleaning is generally the most suitable approach as it is able to accommodate variations in texture, condition and hardness, and it is undoubtedly the best method for the removal of paint. For heavy soiling, cleaning can involve an alkali-based degreasant followed by an agent containing hydrofluoric acid or, if soiling is lighter, by the acidic agent alone. The brick surfaces must be thoroughly pre-wetted to limit the activity of cleaning agents to the surface. Thorough rinsing of the surface with is also critical.

Cleaning chemicals borne in a thixotropic gel or a poultice are preferred to liquid cleaners as their thicker consistency limits absorption. Clay-based alkaline poultices are particularly effective in this regard especially where a longer dwell time is necessary. Lime-based mortars are more highly absorbent and softer than the surrounding brick units: the strengths of chemicals, the length of dwell times, pre-wet and rinse water pressures must be kept low to avoid damage to the mortar.

Periods of saturation associated with water washing, chemical cleaning or wet abrasive cleaning can lead to the emergence of efflorescence. Inherent salts within the brick surface are dissolved and brought to the surface during the drying-out process. The efflorescence should be dry-brushed or vacuumed from the wall surface, taking care to ensure the salts are collected and not allowed to redeposit elsewhere on the masonry.

REPAIR / MAKING GOOD WORKS TO ROOF SLATES

- Individual slates can be successfully replaced by removing all the slates above the offending area and re-fixing in the same manner as they would have been originally fixed, usually with two clout nails.
- It's not always practical to remove large areas of roof to replace one or two slates near the eaves, so a little skill can be required to make a successful replacement.
- Successful, permanent and invisible slate repairs can be achieved in a number of ways. For example, copper straps can be threaded through pre-made slot in the slate and fashioned to create a wedge spring, which is flattened while the slate is being pushed up into place, the springs out behind the fixing batten when arriving at the correct position. Because the slate is not secured into the batten, as with nailing, it wouldn't be appropriate to fix a whole roof in this way but as an individual repair, it is effective because the surrounding nailed slates will prevent uplift.
- There are a number of products on the market that work in a similar way such as the 'Jenny-Twin' fixing, which consists of a pair of aluminium clips that clasp the sides of the slate and are secured by a tongue that passes through a drilled or punched hole in the slate and a swivel 'tail' that rests on the batten. Installation can be intricate but the clips are very effective once in place.
- While tingles have had a relatively useful role in signalling whether a roof needs replacing, they are only a temporary solution and need to be replaced by something more permanent. As long as repairs are recorded it will still be possible to monitor the overall condition of the roof and determine when replacement is necessary.



PARKdesigned

Leeds:	The Loft, 13 Carlton Mills, Pickering Street, Leeds, LS12 2QG
London:	Hamilton House, Mabledon Place, Bloomsbury, London, WC1H 9BB
Telephone:	0113 819 8057
Email:	info@parkdesigned.com
Website:	www.parkdesigned.com