SPECIFICATION INCLUDING GENERAL CLAUSES, WORKMANSHIP, MATERIALS FOR THE REPAIR OF HISTORIC BUILDING FABRIC

8 Withington Road

September 2019

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1 INTRODUCTION

8 Withington Road is an important historic building afforded legal protection as a Grade II listed building. The property was constructed during the 1845s in a polite architectural style using traditional materials and methods of construction including, solid walls, lime mortars, plasters and natural roofing materials.

The current owner wishes to adapt and extend the building.

Damage has occurred to the property as a result of neglect and poorly designed alterations.

Any repairs to the building must be executed to a high standard using appropriate materials and techniques. Where important historic fabric remains, this must be properly protected from further harm. Any replacements must match in all respects.

Intentionally damaging, removing or knowingly allowing historic building fabric to be harmed is a criminal offence.

The specification has been prepared in accordance with current best practice and conservation principles. Unless expressly stated, historic fabric is to be retained and repaired.

Due to the site specific requirements of 8 Withington Road, the specification is bespoke and does not necessarily follow the NBS format, although where appropriate some NBS clauses have been included.

The clauses in this specification refer to matters of conservation only and should be read in conjunction with all other documents.

2 PRELIMINARY MATTERS, GENERAL CLAUSES

2.1. CLIENT

Mr Kash Govind

2.2. CONTRACT ADMINISTRATOR

TBC

2.3. PROPERTY ADDRESS

8 Withington Road, M16 8AA, Manchester

2.4. VIEWING OF PROPERTY

By prior arrangement with the client or CA

2.5. SCOPE OF WORKS

Various repairs as described in sections 3 & 4 of this specification.

2.6. TYPE OF CONTRACT

TBC. Contractor to provide schedule of rates to be applied in the event of unplanned work, any additional work to be measured and agreed in writing with the CA prior to proceeding.

2.7. SITE VISITS

Contractors to inspect the site prior to pricing and agreeing works. Contractors are responsible for fully acquainting themselves with all matters that may affect the programme and cost of the works. Such matters include but are not confined to the following

· Planning, building heritage and other forms of legislation

· Ecological matters

· Site conditions

· Access restrictions

2.8. PROTECTION OF THE ENVIROMENT AND WILDLIFE

Care must be taken at all times to ensure the protection of the natural environment and its wildlife from pollution or any other type of harm.

2.9. ACCESS TO THE PROPERTY

TBC with CA

2.10. POTECTION OF EXISTING BUILDINGS AND STRUCTURES

Contractors to ensure that all building fabric is protected from harm. Fragile and vulnerable elements are to be properly protected before commencing work.

2.11. WASTE MANAGEMENT

Ensure all rubbish, debris and surplus materials are regularly removed and the site is kept clean and tidy. All rubbish and other residues are to be removed from construction cavities before closing up. All non-hazardous materials are to be removed to a local tip approved by The Environment Agency. Regularly remove all hazardous waste and surplus materials off site in a safe and competent manner.

2.12. AREA OF WORKS

Contractors are to confine themselves to as small an area as possible to complete the works. Buildings and land are to be used for the sole purpose of properly executing the prescribed works.

2.13. SUSPENSION OF WORK

The client or his agent reserves the right to instruct the contractor to suspend all work if their actions are considered to pose a serious threat to the safety or wellbeing of the public, site workers, land or buildings.

2.14. PROTECTION FROM WEATHER

Contractors to make proper provision for the protection of the works from the effects of the weather, and for making good or re-execution of works following damage or failure resulting from inadequate protection.

2.15. PROVISION OF SAMPLES

Contractors to make provision for the delivery of samples of materials, finishes or workmanship prior to execution of the works as required by the contract administrator, client or other agency including the Conservation Officer.

2.16. DEFECTS IN EXISTING STRUCTURE

Before completing any building in, covering up or otherwise rendering defects inaccessible for inspection and or repair, obtain instructions from the CA.

2.17. ARCHAEOLOGICAL DISCOVERIES

Discovery of any items of interest or value or of an archaeological nature are to be reported to the Client or the CA immediately. All such finds remain the property of the client unless deemed as treasure in which case the local coroner must be informed within 14 days.

2.18. HEALTH AND SAFETY COMPLIANCE

Contractors shall comply fully with all relevant Health and Safety legislation as set out in the current Act.

2.19. HEALTH AND SAFETY FILE

The contractor shall make available a copy of their current Health and Safety Policy before commencing work.

2.20. SUBMISSION OF RECORDS

- Details of materials and suppliers
- Photographic record of completed repairs including those to be concealed

2.21. HOT WORKS AND SMOKING

There shall be no Hot Works or Smoking inside the building or within 10 metres of the outside of the building.

Hot works are defined as all operations involving flame, hot air, cutting, welding, soldering or other operations producing heat or having naked flames.

2.22. CONTROL OF DUST

To be provided a method statement describing the measures to be taken to mitigate against any dust nuisance created by external works. This is to be agreed with the CA prior to commencing work. Works may include but are not confined to, grinding, drilling, or blast cleaning.

2.23. ASBESTOS OR OTHER DELETERIUS MATERIALS

If there is a discovery of asbestos based material or asbestos is suspected, all work is to cease and the CA notified before agreeing on the method of removal or encapsulation.

2.24. LEAD BASED PAINT

If sanding scraping or otherwise disturbing any lead based paints, this should be done in strict accordance with the HSE Approved Code of Practice. Any dust or paint scrapings containing lead are to be bagged separately and treated in accordance with HSE Special Waste Regulations.

2.25. FIX ONLY

Contractors should make allowance for accepting delivery, unloading, assembly, fitting and fixing as necessary of all goods delivered by nominated suppliers.

2.26. PERSONS IN CHARGE

Contractors are to nominate a competent person to act as site contact and liaise with the client his agents or other persons as required.

2.27. STATUTORY AUTHORITIES

Contractors are to make allowance for notifying all statutory Authorities unless otherwise directed by the CA.

2.28. INSURANCE

Contractors shall supply a copy of their current Public Liability Insurance policy which must include cover to a minimum of £2,000,000.

2.29. DIMENSIONS

Contractors are responsible for checking all dimensions prior to starting work or ordering of materials.

2.30. WATER

Water for the completion of the prescribed works will be provided free of charge. The contractor is to make allowance for any necessary temporary plumbing and its removal on completion.

2.31. ELECTRICITY

Electricity will be provided free of charge for the execution of the prescribed works. Supply to be from local power outlets and transformed down to 110 voltsfor all onsite plant and equipment. The contractor shall allow for any temporary wiring or other works including those carried out by the supply company to ensure continuation of supply to the occupants.

2.32. WATCHING AND LIGHTING

The contractor is to allow for any necessary watching lighting and safeguards at all times including weekends to ensure the protection and security of the works, property, the public and all persons visiting, using or occupying the premises during the program of works. The contractor is to provide all lighting necessary for the proper completion of the works and for inspection by the CA or others.

2.33. SCAFFOLDING AND LADDERS

All scaffolding to be erected by competent persons and inspected weekly. Ladders should be fitted with suitable devices to prevent damage to external surfaces and finishes. Step ladders to be fitted with 'No Mark' feet to prevent damage to floor finishes

3 WORKMANSHIP AND MATERIALS

3.1 SCAFFOLDING

Generally

3.1.1 All scaffolding to be erected maintained and inspected in accordance with prevailing Health and Safety Regulations.

3.1.2 Ties may be taken back to window openings, windows must be fully protected with foam or other material to prevent damage. Put Logs are not to be driven into the walls.

3.1.3 All poles to be fitted with plastic end caps.

3.1.4 If hoists are to be used these must be adequately supported and capable of lifting the heaviest anticipated loads, hoists to be cantilevered away from the building.

3.1.5 All boards are to be properly secured with no dead ends.

3.1.6 Ladders are to be properly secured to the scaffolding, bottom lift is to be removed and securely stored when the site is unattended.

3.2 SHORING AND SUPPORTS

Generally before starting work:

3.2.1 Examine all available information. Survey the structure, site and surrounding area. Submit method statements to the CA covering any relevant matters raised in the design brief.

3.2.2 Before starting work, survey the existing state of the structure and record any irregularities in the fabric.

3.2.3 Where a structure is to be retained, agree method of supporting structure and structural monitoring procedures with the CA.

Workmanship:

3.2.4 Carry out work in accordance with BS 5975.

3.2.5 Operatives must be appropriately skilled and experienced for the type of work and hold or be training to obtain relevant CITB Certificates of Competence.

3.2.6 Site staff responsible for supervision and control of the work are to be experienced in the methods of erection and maintenance of support systems to be used.

3.2.7 Inform the CA of any unrecorded voids, flues, services, etc. discovered during erection of support systems. Agree with the CA

3.2.8 Agree with the CA the method statement for the loading and maintaining of support structures.

3.2.9 After disconnection of support systems, allow for survey and record the state of structure kept in place.

3.2.10 Ensure that all defects caused by or due to support systems have been remedied.

3.2.11Agree with CA, repair method for any connection holes made in the supported structure.

3.3 DEMOLITION

Generally :

3.3.1 Care must be exercised to ensure that no damage occurs to the building that is avoidable.

3.3.2 Take down, remove or dismantle shall mean cart away unless otherwise stated.

Workmanship:

3.3.3 Pulling down is to be carried out in such a manner as to cause no damage to the surrounding building fabric and as little inconvenience as possible to the property owners or members of the public within the immediate vicinity.

3.3.4 All making good is to be carried out in such a way and using such materials and workmanship to match in every respect the surrounding work and is to be properly bonded thereto. Otherwise all new or replacement work is to be executed with materials and workmanship as described.

3.3.5 All timber, masonry or plaster that has become loose or otherwise defective due to damp or from other causes is to be removed and made good using materials as described in this document.

3.3.6 The contractor is responsible for all pinning, propping shoring or other works deemed necessary to ensure the stability of the building during any dismantling or demolition.

3.3.7 Any dismantling or demolition is to be carried out in such a sequence as to ensure the structure of the building is in no way compromised.

3.4 INTERNAL PROTECTION

Generally

3.4.1 Where historic fabric is to be retained in situ during the program of works, all floors, stairs, panelling doors or other vulnerable elements are to be protected with Correx sheeting and appropriate edge protectors.

3.4.2 When contractors are working on or around important or newly finished timber or plaster surfaces, contractors are to wear no mark shoes, metal tool boxes or other equipment likely to cause damage to interior surfaces should be carried and placed on a protected surface

3.4.3 Take all necessary steps to ensure dust is confined to the work area, remove immediately using vacuum cleaners.

3.5 LIME MORTARS BUILDING

3.5.1 Mortar mix proportions and other particular requirements are subject to planning permissions/listed building consents.

3.5.2 Sand for site mixed lime; sand mortars:

Sharp, well-graded, well washed with no silt or salt contamination and conforming to the methods of sampling and testing and quality requirements of ASTM C144-18

3.5.3 Ready prepared lime putty:

Use lime putty slaked directly from CL 90 (high calcium) quicklime to BS 890,using an excess of water and matured in pits/containers that allow excess water to drain away. Density of matured lime putty: 1.3 to 1.4 kg/litre. Maturity of lime putty before use: not less than 30 days after slaking.

3.5.4 Supplier of lime putty- contractors choice to be approved by CA.

3.5.5 Pozzolanic admixtures for non-hydraulic lime; sand mortars

3.5.6 Type and ratio as recommended by the lime manufacturer, who should be consulted for advice.

3.5.7 Site storage of lime: sand mortar materials:

Store different sands and aggregates in different stockpiles on hard clean bases which allow free drainage.

3.5.8 Store bags of hydraulic lime in dry conditions, raised off the ground and not touching damp surfaces. Do not use hydraulic lime affected by damp.

3.5.9 Store ready prepared non-hydraulic lime: sand mortar either on clean bases or in clean containers that allow free drainage. Keep covered to prevent drying out or wetting and protect from frost.

3.5.10 Avoid intermixing and contamination between stored materials and other building materials, debris and other deleterious matter.

3.5.11 Making lime: sand mortars generally:

3Use operatives who are skilled and experienced in the making and use of lime: sand mortars. Provide evidence of their experience to the CA on request.

3.5.12 Keep plant and banker boards clean at all times. Avoid contamination of lime:

sand mortar by other materials or by any set material (including Portland cement).

3.5.13 Measure materials accurately by volume using clean gauge boxes or clean undamaged buckets.

3.5.14 Do not mix mortar when the air temperature is at or below 5°C and falling or be low 3°C and rising.

3.5.15 Site preparation of non-hydraulic lime: sand mortar:

Lime putty: As clause 3.5.3

3.5.16 Thoroughly mix lime putty and sand together by compressing beating and chopping using a roller pan mixer, or other approved mixing method. Do not add water.

3.5.17 Store mortar in conditions that prevent drying out or wetting allow to mature for at least seven days

3.5.18 Ready mixed non-hydraulic lime: sand mortar.

3.5.19 Repointing mortar to be supplied by www.anglialime.com use pre-bagged pointing mortar, selection to suit colour and joint width, produce test panel for approval by CA and Conservation Officer. For copings, chimneys and other exposed areas use pre-bagged 'Above Roofline' products only or site prepared Hydraulic lime: sand mix.

3.5.20 Store prepared mortar in conditions that prevent drying out or wetting.

3.5.21 Knocking up non-hydraulic lime: sand mortar:

When required for use, thoroughly knock up mortar to a workable consistency by compressing, beating and chopping using a roller pan mixer, or other approved mixing method. Do not add water.

3.5.22 During use, prevent drying out or wetting. Retain workability by chopping and beating.

3.5.23 Site preparation of hydraulic lime: sand mortar: Rendering Only

3.5.24 Hydraulic lime: Generally NHL 3.5, use NHL 5 for exposed areas.

3.5.25 Manufacturer: St Astier

3.5.26 Thoroughly mix hydraulic lime powder with sand, first in the dry state and then with water. Follow the manufacturer's recommendations for each stage of the mix. Add only sufficient water to produce a workable mix.

3.5.27 Use mortar within the time limits recommended by the lime manufacturer, generally within 24 hours of mixing.

3.6 CLEANING AND REPAIRING OF BRICKWORK

3.6.1 Reclaimed bricks:

Facing bricks reclaimed from demolitions and cutting away on the site will be approved for re-use only if they are free from fungus, have no deep or extensive cracks, damaged corners or arrisses, and are free from old mortar.

3.6.2 Reclaimed bricks: must be suitable and fit for purpose. Internal bricks or others of inferior quality must not be used on exterior work.

3.6.3 Obtain samples of facing bricks and voussoirs to be used in external brickwork to CA's approval; keep samples on site.

3.6.4 Control sample panels:

Prepare sample panels of brickwork and pointing to match existing as required by the CA, for approval by the CA. Keep on site until completion of the Works or until instructed to remove by the CA. Give notice to CA of the removal of any sample panels.

3.6.5 Mortar: Pre-mixed pointing mortar supplied by Anglia Lime or site mixed hydraulic or non-hydraulic to be approved by Architect and CO see section 3.5

3.6.6 Ensure that the mortar for the repair is the same strength or weaker if appropriate than the existing pointing mortar.

3.6.7 Existing mortar samples: in cases of fine brickwork, take samples of mortar as directed by CA/Conservation Officer for analysis by others; record positions of each sample.

3.6.8 Cleaning: the method of cleaning brickwork depends upon the degree and nature of the soiling. Contractors must be experienced in cleaning historic buildings.- Present details of soiling and proposals for cleaning to CA/Conservation Officer for approval before commencing any work. Proposals must include details of collection of run -off and disposal/recycling of dirty water and blast medium.

3.6.9 Cleaning to be carried out in accordance with BS 8221-1

3.6.10 Blast cleaning of external masonry must only be undertaken using TORC supplied by www.stonehealth.com, works to be carried out by contractors approved by Stone health.

3.6.11 Test areas not less than 400 mm X 400 mm to be produced to establish appropriate blast medium and nozzle pressures, CA/CO to approve.

3.6.12 Contractor may propose alternative method of cleaning subject to production of test areas for approval by CA/CO

3.6.13 Remove any algae or lichens found in old weathered joints using Trisol23 supplied by www.tritonsystems.co.uk to be applied in accordance with manufactures instructions.

3.6.14 Rebuilding, Repairing and Pointing Existing and Reclaimed Bricks:

keep courses level and perpends vertical and in line with existing courses; plumb all wall faces, angles and features. Adjust joint thicknesses to match the existing.

3.6.15 Set out repairs carefully to achieve satisfactory junctions with existing brickwork / elements.

3.6.16 Repairs are to match the existing bond. Additional ties / reinforcement are to be inserted to ensure patched brickwork is securely integrated.

3.6.17 If Bedding mortar differs from pointing mortar, facing brickwork to be pointed later on a full bed of mortar, fill all frogs and joints and rake out to minimum depth of 20 mm as the work proceeds.

3.6.18 Point and form joints to profile and texture approved by CA/CO

3.6.19 Repairs: agree the extent and nature of all brickwork repairs with the CA/CO before

starting any cutting out or repointing.

3.6.20 Surface repairs to be completed using tinted repair mortar supplied by www.masonsmortar.co.uk, produce sample for approval by CA/CO

3.6.21 Repair of gauged brick arches is to be carried out by a qualified Craftsman bricklayer experienced in repair/renovation of historic gauged Brickwork.

3.6.22 Repair of gauged brick arches using whole voussoirs. Install temporary centring as necessary to support existing and new voussoirs, carefully cut out damaged voussoirs, bed new voussoirs with lime putty between them, and bedding mortar behind. Point with lime putty or TC/2CAV2 supplied by Anglia Lime.

3.6.23 Repair of dropped voussoirs: where one or two voussoirs have dropped but are still sound. Clean off the remaining mortar using a purpose made or hacksaw blade, ease the bricks back into position. Wedge with a sliver of lead or slate, point in lime putty.

3.6.24 Fine pointing: gauged brickwork and other fine joints. Lay a strip of carpet tape over the

joint to be pointed, slit the tape into the joint with a sharp knife, and press the edges of the tape into the cut, press the mortar home with a suitable pointing key until the joint is full, strike off and peel off the tape.

3.6.25 Re-pointing: Clean out joints to a minimum of 25 mm using hand, not power tools, do not use angle grinders for cutting back joints. An 'Arbortech Allsaw' with narrow heritage blades may be used by experienced operatives subject to approval by CA/CO

3.6.26 Hand grout empty joints with mortar to a depth of 25 mm from the face of the masonry. Clean the prepared face using a bristle brush, flush the joint out thoroughly with clean water, taking care to avoid saturation. Remove all dust and loose material working from the top to the bottom of the Wall.

3.6.27 Lightly wet the joints and point neatly in the appropriate mortar mix and strike off flush.

3.6.28 Tamp back with a stiff bristle churn brush after the initial set has taken to leave a slightly textured finish.

3.6.29 Additional Requirements:

Where reclaimed bricks are to be used for face work agree with supplier and CA methods for ensuring that the supply of facing bricks is of a consistent, even colour range, batch to batch and within batches. Check delivery for consistency of appearance with approved samples or

reference panels, do not use if variation is excessive.

3.6.30 Select bricks with unshaped arrisses. Cut with a masonry saw where cut edges will be exposed to view. Set out and lay bricks to match appearance of relevant approved reference panel(s). Keep courses evenly spaced using gauge rods. Set out carefully to ensure satisfactory junctions and joints with adjoining or built-in elements and components. Protect face work against damage and disfigurement during the course of the works, particularly arrisses of openings and corners.

3.6.31 Sills. Bed copings solidly in mortar with vertical joints completely filled. Press mortar firmly into exposed joints and finish neatly

3.6.32 Cracked bricks in existing face work to be cut out and replaced with matching bricks.

3.7 CARPENTRY, FRAMING FIRST FIXING

Materials:

3.7.1 All material shall be the best of its kind, dry, well-seasoned, sawn square and be free from sap, shakes, cracks loose or large dead knots or any other defects which may render the timber unfit for its purpose.

3.7.2 Stress grading of timber, to be carried out by companies or individuals properly trained to undertake visual strength grading as described by the UK Timber Grading Committee.

3.7.3 Timber of a basic thickness less than 100 mm and not specified for wet exposure to be stress graded at an average moisture content not exceeding20% with no reading being in excess of 24% and clearly marked as 'DRY' or'KD' (kiln dried).

3.7.4Graded softwood for structural members, stress graded to BS 4978:2007+A2:2017 or other national equivalent and so marked. Strength class to BS EN 1995-1-1:2004+A2:2014

3.7.5Ungraded softwood, free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.

3.7.6Hardwoods,do not use hardwoods from tropical rainforests, supply supporting documentation to indicate that each batch of hardwood comes from a renewable source managed in accordance with Forest Stewardship Council (FSC) standards or equivalent.

Workmanship Generally:

3.7.9Section dimensions of timber shown on drawings are basic sizes unless stated otherwise.

3.7.10Selection and use of timber, - Do not use timber members which are damaged, crushed or split beyond the limits permitted by their grading. Ensure that notches and holes are not so positioned in relation to knots or other defects that the strength of members will be reduced. Do not use scarf joints, finger joints or splice plates unless specified or without approval from CA

3.7.11 Processing treated timber, carry out as much cutting and machining as possible before treatment. Retreat all treated timber which is sawn along the length, ploughed, thicknessed, planed or otherwise extensively processed. Treat timber surfaces exposed by minor cutting and drilling with two flood coats of a solution recommended for the purpose by main treatment solution

3.7.12Moisture content of timber at time of erection to be not more than:

Under cover in generally unheated spaces: 24%

Under cover in generally heated spaces: 20%

Internal in continuously heated spaces: 20%

3.7.13Protection, keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.- Store timber and components under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.

3.7.14 Arrange sequence of construction and cover timber as necessary during and after erection to ensure that specified moisture content is not exceeded.

3.7.15Painted finishes, structural timber which is to be painted to be primed before delivery to site.

3.7.16Clear finishes, structural timber which to be clear finished is to be kept clean and first coat of specified finish applied before delivery to site.

3.7.17Exposed timber, prevent damage to and marking of surfaces and arrisses of planed structural timber which will be exposed to view in completed work.

3.7.18 Jointing timber, Replacement timbers are to be fixed in the same manneras the existing work. As a general rule, straps or joist hangers should not be used unless expressly specified or

instructed by the Architect or CA. If original construction cannot be determined, use alternative fixing and jointing methods, types, sizes and spacings specified by the Architect.

3.7.19Bolted joints, locate holes accurately and drill to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger. Place washers under all bolt heads and nuts which bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building. Tighten bolts so that washers just bite the surface of the timber and at least one complete thread protrudes from the nut. Check at agreed regular intervals up to Practical Completion and tighten as necessary to prevent slackening of joints

3.7.20 Wall plates, ensure that wall plates are positioned and aligned to give the correct span and level for joists, fully bedded in fresh mortar and in lengths of not less than 3 m with half lap joints.

3.7.21 All new wall plates to match existing work in species and size.

3.7.22 Installing joists generally, position at equal centres to match existing or as specified in Section 4, install bowed joists with positive camber. Position end joists approximately 50 mm from masonry walls.

3.7.23 Trimming openings, when not specified otherwise, trimmers and trimming joists to be not less than 25 mm wider than general joists.

3.7.24 Vertical restraint straps, to comply with the Building Regulations, all to be stainless steel.

3.7.25 Lateral restraint straps, to comply with the Building Regulations, all to be stainless steel

3.7.26 Strutting, as per existing work unless specified otherwise by architect

3.7.26 Fascias/barges/soffits, box guttering:

methods of fixing, materials, shape, size and finish to match existing in all respects unless otherwise specified.

3.8 REPAIRING HISTORIC JOINERY, WINDOWS, DOORS, SKIRTING, BOARDS, PANELLING

Window Repairs Generally:

3.8.1 All historic windows are to be surveyed by an independent historic building consultant and a detailed report prepared as described in the Schedule of Works.

3.8.2 Local repairs are to be carried out retaining the maximum amount of original timber. Sash box frames are not to be removed unless entire window is to be replaced.

3.8.3 Temporary plywood protection is to be fixed in place whilst the window or surrounding areas are being repaired.

3.8.4 All historic glazing as identified during the window survey is to be reused.

3.8.5 Carefully remove sashes from frames, remove sash cords and all face putty using sharp chisels or a 'Putty Lamp'

3.8.6 Carefully remove any glazing sprigs and set aside for re-use any historic glass identified in the window survey.

3.8.6 Clean out all bedding putty back to glazing rebate.

3.8.7 Small areas of decay not exceeding one CM3 to be filled with 'Dry Flex' two part resin in accordance with manufactures instructions.

3.8.8 Minor opening up at the joint between the stiles and rails should be opened up to 5mm using an electric die grinder. Brush or vacuum the joint clear and fill with Dry Flex filler, finish flush with surround face.

3.8.9 More extensive areas of decay or damage should be cut back sufficiently to allow new timber to be spliced in to match the surrounding.

3.8.9 Replacement timber to be slow grown softwood to match existing as closely as possible. Good Quality Reclaimed nineteenth century softwood, free from knots and other defects will be acceptable, alternatively slow grown Scandinavian Redwood or Douglas Fir can be used.

3.8.10 Historic glass to be fitted into original locations, missing glass to be replaced with restoration glass – Goethe 4.5 mm or De-Rest 3 mm supplied by https://www.tatra-glass.co.uk/

3.8.11 Bedding and face putty to be linseed oil putty or 'Dry Seal' supplied by https://www.repair-care.co.uk/product/dry-seal-mp-2/

3.8.12 Old pulleys to be removed and refurbished, any that do not run smoothly should be discarded and replaced with matching items.

3.8.13 Sash boxes to be thoroughly cleaned using appropriate brushes and or Vacuum cleaner.

3.8.14 Seriously decayed sills to be removed and replaced with matching hardwood.

3.8.15 Parting and staff beads to be removed and routed to accept brush seals, brush or compression seal to be fitted to meeting rails and bottom rail of lower sash. Or, subject to approval by CA and CO fit new matching beads incorporating carrier tracks and brush seals.

3.8.16Newpolyester or nylon sash cords to be fitted and existing weights to be reattached ensuring sashes are properly balanced and running freely, unbalanced sashes to have new weights fitted.

3.8.17 Existing catches should be thoroughly cleaned and reused where possible, otherwise fit new catches to match existing style and materials.

Replacement Windows

3.8.18 Generally.

The style and detail of the original windows is to be replicated in all respects. An initial assessment .....

3.8.19 New windows should be constructed from treated softwood with hardwood sills. The sashes and box frames should be an exact copy of the original in every respect apart from the inclusion of draft seals.

3.8.20 Junction between the box frame and the openings should be neatly pointed with Burnt Sand Mastic refer to section 4

3.8.21 For further details regarding the repair and manufacture of traditional sliding sash windows consult, https://historicengland.org.uk/images-books/publications/traditional-windows-care-repair-upgrading/heag039-traditional-windows-revfeb17/

Internal Joinery

3.8.22 ALL SOUND HISTORIC JOINERY IS TO BE RETAINED UNLESS OTHERWISE SPECIFIED

3.8.23 Skirting boards, panelling and shutters should be carefully repaired using timber to timber repair techniques.

3.8.24 Location and condition should be recorded prior to removal for repair and items clearly marked and referenced to a location plan.

3.8.25 Timber for replacement and patching in items to be slow grown Scandinavian Redwood or Douglas Fir, all to be free of defects and sapwood.

3.8.26 Joinery items fitted in areas that are likely to become or remain damp should be pressure treated after profiling, cut ends to be flood coated twice with same treatment solution.

3.9 PURPOSE MADE JOINERY

Fabrication Generally:

3.9.1 Fabricate joinery components to BS EN 942:2007.

3.9.2 Form sections out of solid timber when not specified otherwise. Carefully machine timber to accurate lengths and profiles free from twist and bowing. After machining, surfaces to be smooth and free from tearing, wooliness, chip, bruising and other machining defects.

3.9.3 Assemble with tight, close fitting joints to produce rigid components free from distortion. Screw heads to be countersunk not less than 2 mm below timber surface switch will be visible in completed work. All screws to have clearance holes.

3.9.4 Screws of 8 gauge or more and all screws into hardwood to have pilot holes.

3.9.5 Preservative treated timber: Carry out as much cutting and machining as possible before treatment.

Retreat all timber which is sawn along the length, ploughed, thicknessed, planed or otherwise extensively processed.- Treat surfaces exposed by minor cutting and drilling with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

3.9.6 Moisture content of timber and wood based sheets to be maintained during manufacture and storage, within the range specified for the component.

3.9.7 Finishing and protecting, Sand all joinery to give smooth, flat surfaces suitable to receive specified finishes. Arrises to be eased unless specified otherwise.- Before assembly, seal all end grains for external components with primer or sealer.

3.9.8 Protect completed joinery against damage, dirt, moisture and other deleterious material.

3.10 WOOD ROTTING FUNGUS AND WOOD BORING INSECT TREATMENT

3.10.1 Health and Safety:

Comply with the Health and Safety Executive Guide, 'Remedial Timber Treatment in Buildings:

A guide to good practice and the safe use of wood preservatives'

3.10.2 Preservatives to be approved and registered by the Health and Safety Executive (HSE) and listed in 'The Pesticides Register' or 'Reference Book 500'

3.10.3 Ensure that the works are carried out by a timber treatment specialist experienced in dealing with historic buildings.

3.10.4 Associated work:

Removal and replacement of timber and other builder's work are to be carried out by the Main Contractor.

3.10.5 Additional work:

As work proceeds, agree with CA the nature and amount of additional work to be carried out.

3.10.6 Opening up/cutting out:

Take care to minimise damage to sound building fabric and ensure adequate propping and shoring.

3.10.7 Drying out:

Ensure that effective measures to ventilate and dry out damp building fabric are commenced as soon as possible see Schedule of Works section 4.

Dry Rot / Wet Rot

3.10.8 Refer to Schedule of Works section 4 of this document for details

Wood Boring Insect Infestation

3.10.9 Refer to Schedule of Works Section 4 of this document for details

3.11 PLASTERWORK (LIME BASED MATERIALS) INTERNAL REPAIRS AND EXTERNAL RENDERING

Materials:

3.11.1 Internal plasters to be supplied by www.anglialime.com use the following for three coat work 'Base Coat', 'Second Coat' and 'Top Coat, alternatively use 'Thermaline' insulating plaster in place of base and second coats.

3.11.2 Plastering laths to be riven timber 6 mm x 32 mm species to match existing work, new work to be Oak or Scots Pine.

3.11.3 Nails for fixing laths to be stainless steel annular ring 30 mm x 2.65 mm

3.11.4 Scrim to be cotton minimum 75 mm wide.

3.11.5 Plastering hair to be white goat's hair

3.11.6 Expanded metal lath to be 304S15 stainless steel @1.15KG/M2

3.11.7 Alternative to plastering laths use 15 mm 'Savolit Plus Wood Wool Boards, fix according to manufactures instructions.

Workmanship

3.11.8 To comply with BS 8481:2006

3.11.9 All existing sound salt free lime plasters and renders are to be retained.

Solid Backgrounds

3.11.10 Ensure all solid backgrounds are stable, free from defects, well brushed down to remove any loose material and sufficiently dampened prior to plastering. Variations in thickness should be dubbed out before applying first coat. Each coat is to be applied evenly and firmly in order to achieve good adhesion, and be free from hollows ridges or cracks. If plaster extends over timber use expanding metal mesh to provide key.

3.11.11 Dubbing and scratch coats to contain animal hair/ fibres, second undercoat and finish coat to be free from hair. All undercoats to be provided with a suitable key. This should be a minimum 5 mm deep but not extend right through the plaster.

3.11.12 Finished plaster should be free from hollows, ridges, trowel marks or sudden changes in level. Plaster thickness should be uniform and follow the general character of any existing historic plaster.

3.11.13 Chalk lime plasters have little to no shrinkage but ensure each coat is green hard before applying subsequent coats

3.11.14 Plaster should not be over polished and should have a smooth eggshell type appearance free from cracks. Sharp metal beads should not be used, external angles should be rounded or fitted with timber bead to suit.

3.11.15 Overall thickness of plaster to suit location, no single coat to exceed manufacturers recommendations.

Lath Backgrounds

3.11.16 All existing undamaged Lath ceilings and partitions are to be retained. Areas of detached plaster are to be carefully removed and the perimeter of the remaining plaster secured using countersunk stainless steel washers secured to the laths and or joists at 150 mm centres using suitable stainless steel screws.

3.11.17 If laths are sound but detached from the supporting joists or studs these are to be reaffixed using stainless steel annular ring nails. Decayed or damaged laths are to be cut out and replaced with new riven laths. Where plaster has become detached due to incorrect spacing of the laths these should be carefully removed and re-fixed to leave a 7 mm gap between each lath.

3.11.18 All plaster on lath to be executed in three coats or to match surrounding work where patching in. The final coat to be worked to a matt eggshell type finish free from cracks ridges or trowel marks.

3.11.19 Existing tightly bonded undercoats or areas containing multiple shallow cosmetic defects can be over-skimmed using ‘Finelime’ supplied by Anglia Lime.

Rendering

Materials, see 3.5.24

Workmanship

3.11.20 Ensure background is stable, free from defects and well brushed down to remove any loose material and sufficiently dampened prior to plastering. Variations in thickness should be dubbed out before applying first coat. Each coat is to be applied evenly and firmly in order to

achieve good adhesion, and be free from hollows ridges or cracks. If plaster extends over timber use expanding metal mesh to provide key.

3.11.21 Rendering to be completed in two coats of hydraulic lime: sand with an overall thickness of 15 mm.

3.11.22 First coat to be one part NHL 3.5 two part sharp sand laid at 10 mm thick. This should be keyed and allowed to cure until green hard before applying the final coat.

3.11.23 Shrinkage is likely in the initial coat, dampen the render with clean water, tighten back and re-key where required.

3.11.24 Second coat to be one part NHL 3.5 three part clean sharp sand laid at 5 mm thick, maximum aggregate size of 2 mm, sieve if required.

3.11.25 Once mortar is sufficiently firm, use a wooden cross grain float to achieve a finely textured finish.

3.11.26 Render to be accurately incised before cured to simulate ashlar masonry. Detail to be agreed with CA/CO

3.11.27 Adequate protection is to be provided during the application and curing of the render. Render is to be protected from frost, rain, strong sun and wind. Contractor to provide method statement

3.12 PAINTING AND DECORATING

Materials:

3.12.1 Paint for external masonry and render, 'Earthborn' Silicate Masonry Paint and stabiliser or traditional lime wash.

3.12.2 Paint for exterior woodwork, Farrow and Ball or other good quality manufacturer 'Exterior Wood Primer and Undercoat, Farrow and Ball Exterior Water Based Eggshell finish, colours TBC.

3.12.3 Primers for metal shall be lead oxide primer.

3.12.4 Wood filler (very small defects only) Dry Fix

3.12.5 Knotting to be Rustins Knotting Sealer Solution.

3.12.6 Mastic for pointing around window frames shall be Burnt Sand Mastic obtainable from www.masonsmortar.co.uk

3.12.7 Alternatively, linseed oil paints may be used on external joinery, supplied by www.oricalcum.co.uk.

3.12.8 Paint for interior walls to be Earthborn Clay Paints. Paints containing vinyl should not be used in any areas that have been previously affected by damp, or in areas where laterally penetrating damp is likely

Workmanship

3.12.9 All work to comply with BS 6150:2006

3.12.10 No external painting is to take place in conditions likely to spoil or otherwise affect the quality or durability of the finish.

3.12.11 All window and door hardware to be removed prior to painting and re-fixed on completion.

3.12.12 Excess paint to be carefully removed from architectural hardware and all necessary adjustments made to ensure their satisfactory operation prior to re-fixing.

3.12.13 Rust, mill scale, grease or other unwanted coatings are to be removed from ferrous metals prior to re-coating.

3.12.14 Non-ferrous fittings are to be cleaned using chemical strippers, abrasive materials such as wire wool and metal scrapers are not to be used on any important objects.

3.12.15 All new and existing timber to be abraded to a smooth even finish, all loose flaking or blistered paint to be removed and any defects repaired to provide a sound surface ready for coating. Apply two coats of knotting solution to knots and exposed resinous areas. One coat of primer undercoat and two coats of eggshell paint to be applied to all new and existing surfaces.

3.7.14 *Lead may be present in the older paint coatings. Prepare a formal risk assessment and submit to the CA prior to starting any paint removal. Take all necessary precautions to protect workers, visitors and the public from contamination.*

3.13 ROOF SLATING

3.13.1 Details as included in the Schedule of Works

3.13.2 Pitch: as original

3.13.3 Slates: to comply with BS EN 12326-1:2014

3.13.4 Size and colour to match original

Workmanship:

3.13.5 Generally

Keep slates clean and dry until laid. Set out to give true lines and regular appearance, fitting neatly at all edges, junctions and features. Fix slate roofing to make the whole sound and weather tight at the earliest opportunity. Repair any defects as quickly as practicable to minimise damage and nuisance. Keep gutters and pipes free of debris and clean out at completion.

3.13.6 Existing natural slating:

Carefully remove slates and set aside for reuse.

3.13.7 Underlay

Handle carefully to prevent tears and punctures and repair with adhesive tape. Lay parallel to eaves, maintaining consistent tautness to minimise gaps. Vertical laps not less than 100 mm wide, coinciding with supports. Horizontal laps of the dimensions specified. Fix with copper or aluminium extra-large head felt nails.

3.13.8 Where pipes and other components penetrate the underlay, use proprietary underlay seals or cross cut neatly and accurately and turn flanges up to give at hight, water-shedding fit.

3.13.9 Ensure that underlay does not obstruct roof ventilation.

3.13.10 Battens/counter battens:

Sawn softwood, species to BS 5534. Grading: To BS 4978 Moisture content: not more than 22% at time of fixing.

Preservative treatment: CCA or OS double vacuum as Wood Preserving and Damp-proofing Association Commodity Specification C8.

3.13.11 Fixing battens on timber supports:

To be in straight horizontal lines, aligned on adjacent areas, with no batten less than 1200 mm long. Joints to be square cut, butted centrally on supports and must not occur more than once in any group of four battens on any one rafter. Provide an additional batten where an unsupported lap in the underlay occurs between battens.

3.13.12 Fix each batten to each support, splay nailing at ends.

3.13.13 Slate fixing:

Lay with an even overall appearance, with slightly open butt joints and tails of slates aligned. Use slates of consistent thickness in any one course laid with thicker end as tail. Use extra wide slates at ends of courses to maintain bond and ensure that cut slates are as large as possible. Do not use half slates.

3.13.14 Centre fix each slate with two copper nails to BS 1202: Part 2, 2.65 x 25 mm long for 19 mm thick battens, 30 mm long for 25 mm thick battens, through countersunk holes 20-25 mm from side edges. Fix slates wider than width and a third with three nails.

3.13.15 Atsprocketed changes of pitch increase length of nails as necessary to ensure full penetration of battens.

3.13.16 Mortar bedding/pointing: Mortareither 1:4 cement: sand with air entraining agent, or 1:3 NHL5: sand. Do not use in wet or frosty weather.

3.13.17 Clay tile accessories to be bedded must be pre-wetted and surface water allowed to drain before fixing. Finish neatly as work proceeds and remove any residue.

3.13.18 Roof slating edges/junctions/features

3.13.19 Generally: Form using the specified fittings and accessories; do not improvise without approval from CA/Architect

3.13.20 Cut slates only where necessary, with an appropriate tool, to give neat, closefitting joints and straight, clean edges. Fix edge slates and fittings securely to neat, true lines. Ensure that all flashings (specified in another section) are fixed with or immediately after the slating, and are neatly dressed down.

3.13.21 Fire separating walls: Ensure that separating wall is cut on the rake 25 mm to 50 mm below top of adjacent rafters.- Fill space over top of the wall with layer(s) of mineral fibre quilt so that, when underlay and battens are laid it is lightly compressed. Tuck edges of quilt between

edges of wall and adjoining rafters. Lay 300 mm wide pads of mineral fibre quilt thick enough to seal all gaps and cut to fit snugly between battens. Fix in position with continuous self-adhesive tape from ridge to eaves before slating. At boxed eaves completely seal air paths in the plane of the separating wall with wire reinforced mineral fibre, 50 mm thick, nailed to rafter and carefully cut to shape.

3.13.22 Eaves detail and box gutters. Record original construction and materials, repair and replace gutter box, supports and lining on a strict like for like basis or to architects details. Fix a 325 mm width of BS EN 13707:2004+A2:2009 type 5U felt under lapping first width of under layand dress down into gutter. Fix additional batten for under eaves course.- Fix slates with tails projecting to align with centre of gutter.

3.13.23 Side abutment: Turn underlay at least 100 mm up abutment. Cut slates as necessary and interleave with lead soakers to form a close weather tight abutment. Fix soakers by turning down over head of each slate. Ensure that stepped lead apron flashing is dressed closely over soakers with a lap of at least 50 mm.

3.13.24 Top edge abutment: Turn underlay at least 100 mm up abutment. Finish slating with head-nailed short course. Ensure that lead flashing is dressed down close to slates to retain the top course against wind uplift.

3.14 LEAD SHEET COVERING AND FLASHINGS

3.14.1 Type of lead: milled or machine cast as clause code 7

3.14.2 Lead gutter lining: lead to be code 5

3.14.3 Pitched lead valley gutter lining: to be lead code 6

3.14.4 Apron flashings Lead: Code 4 in lengths not exceeding 2250 mm End to end joints: Laps of not less than 100 mm. Up stand not less than 75 mm. Cover to abutment as recommended for roof pitch. Fixing in accordance with LSA Manual

3.14.5 Cover flashings Lead: Code 6 in lengths not exceeding 2250 mm. End to end joints: Laps of not less than 100 mm. Cover: Overlap to up stand of not less than 75 mm. Fixing in accordance with LSA Manual

3.14.6 Soakers and step flashings:

Soakers, Lead: Code 4 cut and dressed to shape for fixing by roofer. Dimensions, Length: Slate/tile gauge + lap + 25 mm. Up stand: Not less than 75 mm. Under lap: Not less than 100 mm. Step flashings, Lead: Code 5 in lengths not exceeding 2000 mm. End to end joints: Laps of not less than 100 mm. Cover , Overlap to soaker up stands of not less than 65 mm. Fixing: Lead wedges at every course.

3.14.7 Single step flashings for lead pitched roofs, Lead: Code 4 in lengths not exceeding 2000 mm. End to end joints: Laps of not less than 50 mm. Cover: Overlap to lead roof up stand of not less than 65 mm. Fixing: Lead wedges at every step.

3.14.8 Chimney flashings:

Front apron: Lead: Code 4, Length: Width of chimney plus not less than 150 mm under lap to each side flashing. Up stand: Not less than 75 mm. Cover to roof: to suit the pitch. Fixing: Lead wedges into bed joint.

3.14.9 Soakers:

Lead: Code 4 cut and dressed to shape for fixing by roofer. Dimensions: Length Slate/tile gauge + lap + 25 mm. Up stand, not less than 75 mm. Under lap not less than 100 mm.

3.14.10 Step flashings:

Lead: Code 5 in lengths not exceeding 1500 mm. End to end joints, laps of not less than 100 mm. Front end turn 75 mm around chimney over apron. Cover: Overlap to soaker up stands of not less than 65 mm. Fixing: Lead wedges at every course.

3.14.11 Back gutter:

Lead: Code 4 Length: Width of chimney plus not less than 100mm overlap to each side flashing. Up stand: Not less than 100 mm. Gutter sole not less than 150 mm. Cover up roof not less than 225 mm.

3.14.12 Back gutter cover flashing:

Lead: Code 4. Length: Width of chimney plus not less than 100 mm overlap to each side flashing. Cover: Overlap to back gutter up stand of not less than 75 mm.

3.14.13Llead slates:

Lead: Code 4 cut and dressed to shape for fixing by roofer. Base: Not less than 400 x 400 mm, up stand not less than 150 mm, to fit pipe and at angle to suit roof pitch.

3.14.14 Ridge/hip rolls to lead roofs: Core to be rounded timber size 75 mm or to architects detail. Fix with stainless steel screws at not more than 450 mm centres. Capping: Lead of the same code as the roof, in lengths. Intersections with rolls in the roofing to be lead welded off site and bossed to fit. All other lead roof details according to LSA manual unless otherwise specified in Schedule of Works

Workmanship Generally:

3.14.15 Cut, joint and dress lead neatly and accurately, to provide fully waterproof coverings/flashings, free from ripples, kinks, buckling and cracks. Comply with BS 6915 and current good practice as described in the latest editions of 'The Lead Sheet Manual' published by the Lead Sheet Association unless specified or agreed otherwise.

3.14.16 Do not use scribers or other sharp instruments to mark out lead. Use solder only where specified.

3.14.17 Ensure that finished lead work is fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.

3.14.18 Avoidance of lead corrosion: Increase the level of ventilation to the underside of the lead when renewing lead roofs, in accordance with the recommendations in Volume 3 of the Lead Sheet Manual. Check and follow the latest guidance of the Lead Sheet Association and English Heritage.

3.14.19 In situ lead welding is only permitted in exceptional circumstances, subject to completion of a 'hot work permit' form and compliance with its requirements.

3.14.20 Underlay To plywood, and similar smooth even substrates: Waterproof building paper to BS 1521 Class A. Proprietary Geotex tile underlay, weight 210gm/m² (± 5%) or greater,

3.14.21 Existing lead to be removed will remain the property of the client unless otherwise agreed in advance. To be stored in an approved place.

3.14.22 Replacement of existing lead must be carried out in small sections ata time to reduce the risk of weather damage. Provide and maintain temporary waterproof coverings to ensure that there is no damage to the existing base and building.

3.14.23 Suitability of bases: Bases to be dry and free of dust, debris, grease and other deleterious matter. Laying of lead will be taken as joint acceptance by the Main Contractor and Subcontractor of the suitability of bases.

3.14.24 Preparation of existing timber bases: Inform CA of any defective boards and comply with instructions for replacement. Ensure that all boards are securely fixed. Punch in any protruding fastenings and plane or sand as necessary to achieve an even surface.

3.14.25 Timber for use with lead work: Planed, free from wane, pitch pockets, decay and insect attack except pinhole borers. Moisture content: Not more than 22% at time of covering. Type to be softwood. Do not use timbers which give off acid vapours such as oak, sweet chestnut or similar woods.

3.14.26 Head fixing lead sheet: Where not specified otherwise, secure top edge of lead sheets with two rows of fixings, 25 mm and 50 mm from top edge of sheet, at 75 mm centres in each row, evenly spaced and staggered. Sheets less than 500 mm deep may be secured with one row of fixings, 25 mm from top edge of sheet and evenly spaced at 50 mm centres.

3.14.27 Fixings Where not specified otherwise, fix lead sheet to timber substrates with copper clout nails to BS 1202:Part 2, table 2, with annular ring, helical ring or serrated shank, length not less than 20 mm, shank diameter not less than 3.35mm and head diameter not less than 8 mm,

or Stainless steel (austenitic) clout nails with annular ring, helical ring or serrated shank, length not less than 19 mm, shank diameter not less than 2.65 mm and head diameter not less than 8 mm. Fix lead sheet to concrete or masonry substrates with, stainless steel screws to BS 1210, table 3, length not less than 19 mm and diameter not less than 3.35 mm, with washers of the same material and plastic plugs of length and diameter to suit screws.

3.14.28 Clips Generally 50 mm wide where not specified to be continuous, length to suit detail. Lead clips to be cut from sheets of same code as sheet being secured. Copper clips to be cut from 0.7 mm minimum thick sheet to BS 2870, temper grade 1/4H, dipped in solder if exposed to view. Stainless steel clips to be cut from 0.38 mm minimum thick sheet to BS1449:Part 2, grade 304, terne coated if exposed to view. Unless specified otherwise fix each clip with two fastenings not more than 50mm from edge of lead sheet. Clips welted around edges of sheets to be turned over 25 mm.

3.14.29 Screw fixing into joints/chases: Carefully rake out joint/chase to a depth of not less than 25 mm. Dress lead into joint/chase and up back face. Fix into back face with stainless steel screws and washers and plastics plugs at not more than 450 mm centres, at every change of direction, and with at least two fixings for each piece of lead. Introduce building paper between lead and mortar in accordance with Lead Sheet Association recommendations, and point with mortar to match adjacent.

3.14.30 Finishing: As soon as practical, apply a smear coating of patination oil, evenly in one direction and in dry conditions, to all lead work, except faces to be painted.

3.15 RAINWATER PIPES AND GUTTERS

Type(s) of pipework /gutter, existing timber box gutters to be retained and refurbished. Other gutters to be cast iron or aluminium as specified by architect in general specifications.

4 CONSERVATION AND RESTORATION WORKS TO BE COMPLETED

Section 4 is to read in conjunction with the rest of this document and the general specification of works produced by the architect. All general clauses included within the architects specification are applicable to this document.

Item	Description	Cost ex Vat
1	Undertake detailed condition survey of all windows and prepare proposal for repair and or replacement for submission to local planning authority. Survey to be completed by independent historic building consultant not manufacturer or others with vested interests.	
2	Erect perimeter scaffolding to all elevations. Scaffolding to be covered with Monarflex sheeting or similar and be suitable for undertaking all of the proposed external works. Allow for additional scaffolding to enable rebuilding or repair of chimneys.	
	Before undertaking any external works the following immediate actions are to be taken to help dry the building fabric.	
3	Remove all waste material and rubbish from each room and cart away	
4	Remove all existing plasterboard from lath and plaster ceilings, this is to be done using hand tools to carefully pry the boards away. Special care to be taken around any remaining plaster ceiling mouldings. Cart away debris	
5	Remove all damaged or unwanted plasterboard partitions and cart away	
6	Loose, damp, salt contaminated or addled wall plaster is to be carefully removed back to a well bonded edge using hand tools only and carted away.	
7	Remove builders and other debris from the exposed floor voids and cart away	
	Main Slate Roof	
8	Carefully remove all slates and ridge tiles from the roof, cart away any which are unfit for reuse, carefully stack all sound slates for reuse	
9	Remove all slating battens and cart away	
10	Remove all nails from sound rafters.	
11	**Hold and InspectionPoint**Architect to inspect condition of rafters, ridge board and wall plates.	
12	Cut out any damaged or rotten areas of the wall plate allowing for a half lap joint twice the width of the wall plate.	
13	Splice in any missing sections of wall plate using C24 timber of the same size. Bed and restrain wall plate as existing or as directed by the Architect.	
14	Replace any damaged rafters using C24 timber, sizes to match original. Allow for trimming to install new conservation roof lights to architects specification	
15	Repair and extend existing timber box gutter, details and materials to match existing in all respects.	
16	Fabricate and install a lead DPC tray using code 5 lead, paint lead with two coats of black jack bituminous paint, second coat to be blinded with sand. DPC to be tied into chimney flashings	
17	Ensure top of walls are stable, carry out any rebuilding as directed by the architect or CA	
18	Install code 5 lead sheet or other form of continuous DPC under all parapet wall copings to architects specifications. Lead sheet that is in contact with lime mortar to be given two coats of bituminous paint, second coat to be blinded with clean	

	sand.	
19	Fit ADB breathable membrane over rafters to NBT Specification see Appendix A	
20	Fit counter battens to each rafter	
21	Fit tiling battens to suit slate gauge	
22	Fit 375 mm wide type 5U felt, this is to underlap the first width of breathable underlay, dress 5U felt down intogutter. Incorporate discreet insect mesh at eaves, detail to architects specification	
23	Fix slates, any shortfall to be made up with good quality reclaimed or new Welsh slate to be approved by architect/ conservation officer. Any new slates to be mixed with original material, avoid isolated areas of contrasting colour.	
24	Bed original ridge tiles, short fall to be made up using good quality reclaimed tiles to match existing.	
25	Cut and fit new lead soakers to all chimneys, and abutments.	
26	Cut and fit new lead liners to repaired and extended box gutters.	
27	Fit new conservation roof lights and flashing kits to manufacturers specification, type and number to be confirmed by architect	
	Render Removal	
28	Existing cement render to be removed from all elevations. This is to be done using hand tools only holding a bolster or similar at an acute angle against the advancing edge of the render. PERCUSSION DRILLS MUST NOT BE USED. Cart away all debris	
29	**Hold and Inspection Point.** Architect and Conservation Officer to assess condition of brick. At this point a decision can be made whether to clean and repair the brick elevations and repoint, or alternatively re-render.	
	Windows	
	Any replacement windows as identified in the window survey are to be ..... **All to double glazed. Proportions and details to match control window in all respects. Control window (coeval with construction) to be identified in window survey by heritage consultant or surveyor. Window manufacturer to be nominated by architect. Construction and finishing in accordance with sections 3.8 and 3.9 of this report.**	
30	Repair and upgrade existing sash windows (to be identified in window survey) to incorporate discreet draft proofing seals, refer to section 3.8 for details	
31	Remove existing windows that are to be replaced and cart away. Where timber window linings remain in-situ take great care not to damage.	
32	Fit temporary plywood boarding to openings	
33	Take delivery of new sash windows and fit in specified locations. Widows to be mechanically fixed to openings with stainless steel fixings. Small gaps between box frame and brickwork to be neatly pointed using Burnt Sand Mastic see 3.8.20	
	Brickwork Cleaning, Repair and Repointing.	
	Depending on condition it may be necessary to clean the face of the brick prior to completing any repairs and re-pointing. All paint should be removed from the unrendered parts of the wall. Depending on the nature of the soiling, the most appropriate method of cleaning is likely to involve a micro-abrasive cleaning system with or without the use of high temperature steam. Stonehealth -https://www.stonehealth.com/services/ are the market leaders in the cleaning of historic building facades and provide a number of consultancy services to designers and contractors. In the first instance contact Stonehealth for further advice.	

34	Any seriously decayed bricks are to be cut out and replaced, minor defects in the face of the brick are to be repaired using Lithomex or similar tinted repair mortar. Samples are to be produced and approved by the architect/Conservation Officer prior to commencing the repairs.	
35	All mortar joints are to be raked out to a depth of not less than twice the joint width and not less than 25 mm. This is to be done with hand tools or an Arbortech Allsaw utilising fine 'Heritage Blades'. Joints to be cleared of debris and flushed with clean water.	
36	The condition of any natural stone elements including string courses, sills pillars and copings should also be carefully assessed after cleaning. Damaged areas to be repaired by indenting new matching stone or using Lithomex repair mortar.	
37	All brick and masonry joints to be re-pointed using premixed or site mixed lime mortars, refer to section 3.5. Contractor to produce test panel(s) for approval by Architect/CO prior to commencing any repointing	
	Rendering Advised only if the condition of the brick is deemed unsuitable, or the preference subject to LBC is to fully or partially re-render	
38	Two coats of hydraulic lime render to be applied to areas identified by architect, materials and workmanship as per clauses within sections 3.5 and 3.11. Pre-mixed self-coloured hydraulic lime render may be used subject to architect and CO approval, ensure all premixed coloured render is supplied from the same production batch.	
	Bay, Flat Roof	
	It is assumed that the underlying roof covering is in good as there are no signs of damage or water penetration	
	Internal Joinery	
	Some original as skirting boards, panelling, doors remain and where possible, this should be used as a pattern for any replacement items. If any of the skirting boards have been replaced, should be renewed using an appropriate accurate designe. Based on an initial assessment and historic precedents for similar buildings the predominant style is likely to be a Georgian Period Taurus style.	
39	Door frames, casings, architraves and panelling to be retained in situ unless damaged or affected by damp, otherwise carefully remove and set aside for reuse or pattern making. All items to be clearly marked and positions noted on floor plans	
40	All sound joinery is to be reused and fitted using original fixing methods unless directed otherwise by the architect. Contractor to nominate a contractor experienced in the manufacture of replacement historic joinery.	
	All skirting boards, panelling and other joinery fixtures are to be protected from damp prior to installation	
41	Joinery likely to come into contact with damp masonry is to be given a protective coating of oil based paint to all faces prior to installation. Additional measures such as isolating the timber from the wall with dpc or similar may be appropriate in the basement area, any such measures to be approved by the Architect.	

42	Contractor to supply and fit new purpose made internal doors. These are to be painted softwood, six panel beaded on both sides, price to include good quality period style hardware all to be approved by architect prior to ordering. Allow for making good or fitting new timber architraves to match original in all respects. Number and location of Fire doors to be provided by architect, suggest http://www.wessexrestoration.co.uk/timber-fire-doors-gallery/	
43	Contractor to carefully repair all other internal joinery elements including wall panelling, window shutters and the staircase. Repairs are to be conservative in nature, retaining **ALL** sound material. Materials, method of jointing and fixing must match the original in all respects.	
	Internal Plaster Flat and Decorative	
	The building retains significant amounts of historic wall and ceiling plaster, wherever possible this should be retained and repaired using similar and compatible materials. The quantities are to be established after the initial stripping out of damaged material and following a period of drying	
44	Subject to the walls being sufficiently dry, patch in all damaged and missing areas of wall plaster, see section 3.11 for details	
45	Missing areas of ceiling laths to renewed and ceilings re-plastered to match surrounding work **.**	
46	Damaged and missing plaster ceiling mouldings are to be reinstatedto match surrounding work, in all respects.	
	Timber Decay	
	A number of patent Dry Rot outbreaks were discovered during a recent Building Survey, the presence or development of further concealed decay is likely and every effort should be made to facilitate the drying of the building fabric. The removal of sound timber beyond the margin of any visible decay is not normally necessary. The following protocol assumes that all sources of moisture ingress have been removed but the building fabric will still be damp and may remain so for some time. **The use of chemicals is not to be considered a substitute for correcting the defects in the building that precipitated the timber decay The primary mechanism for eradicating wood rotting fungus is the removal of all unwanted sources of moisture, without water, wood rotting fungus is unable to sustain itself**	
47	If not already done, remove plaster from around any visible fungus starting at the centre of the outbreak and working outwards to the last visible sign of any infection.	
48	Expose and inspect any concealed timber bearings including but not confined to wall plates, joists, lintels, spreader plates etc.	
49	Cut back any decayed wood until sound timber is reached. Treat all exposed timber to 500 mm past decayed area with Tribor20 Gel or other similar product approved by Architect. Gel to be injected into predrilled holes if timber is thicker than 100 mm or very wet.	
50	All new timber in previously damp areas is to be isolated from the surrounding masonry by thoroughly wrapping in an impervious membrane.	
51	Short sections of bonding or levelling timbers located within the zone of decay should be removed and replaced with concrete or brick	
52	Any new sections of timber or timber splices should be pre-treated, any cut ends to be brush or spray coated with Tribor20 Gel.	
53	All important historic joinery such as window and door casings, panelling and other	

	items located within the zone of decay should be carefully removed and all exposed surfaces treated with Tribor20 gel before re-fitting.	
54	All masonry within the zone of decay is to be spray treated with Trisol23 sterilisation fluid. Unless there is unequivocal evidence that the fungus has migrated into the wall and that the wall is likely to remain permanently damp, deep irrigation of the wall with sterilising fluid is not necessary.	
55	Any active infestation by wood boring insects is to be treated locally with a contact spirit based insecticide. Blanket spraying should not be undertaken	
	Pitched Roof Insulation	
	In order to maintain the equilibrium moisture content of the building it is necessary to use moisture permeable materials wherever possible. A failure to do so can result in the development of surface and interstitial condensation which may impact on the wellbeing of the occupants and the historic fabric of the building. Whilst the Building Regulations do not fully apply to this building, it is incumbent on the developer to take all reasonable steps to minimise heat loss. The materials to be used in the pitched roofs provides an acceptable level of insulation and retain the 'breathable' characteristics required by a traditionally constructed property.	
56	Fit pavaflex insulation between all existing rafters, insulation will require cutting to fit unequal rafter spacings.https://www.natural-building.co.uk/product/pavaflex-375/	
57	Fit minimum 40 mm paver therm combi beneath existing rafters, this can be increased in depth if this does not impact on headroom. https://www.natural-building.co.uk/product/pavatherm-combi/	
58	Fit 12.5 mm plasterboard with skimmed finish or to Architects specification.	

5 APPENDICES

APPENDIX 'A'

Links to Specified Suppliers, Products Data Sheets and Installation Details

Supplier: Natural building Technologies Telephone 01844 338338; Technical director Andrew Mitchell, mobile telephone 07989 410883

- ADB breathable roofing membrane

  -https://www.natural-building.co.uk/product/breathable membrane-adb/

- Pavatherm Combi pitched roof insulation

  - https://www.natural-building.co.uk/product/pavatherm-combi/

- Pavaflex between rafter flexible insulation

  - https://www.natural-building.co.uk/product/pavaflex-375/

Supplier: Benring Limited Telephone Tony Grimes 01298 74026

- Resins and consolidant products

  - http://www.benring.co.uk/our-products.html

Supplier: Triton Systems Telephone 01322 318830

- Tribor20 Gel and Trisol23

  -https://www.tritonsystems.co.uk/category/products/timber-and-damp-proofing/timber-preservation-repair/

Supplier: Anglia Lime, Telephone Mathew 01787 313974

Supplier: Wessex Restoration Telephone 01275 810322

Supplier Tatra Glass: Telephone 01509 235387

- Restoration glass

  - https://www.tatra-glass.co.uk/restoration-glass/

Supplier: The Roof Light Company: Telephone 01993 833155

- Conservation roof lights

  - https://www.therooflightcompany.co.uk/all-products/conservation/