

39-47 Gordon Sq. Birkbeck College University of London
Schedule of works to support Listed Building Consent application
information

Ref Description
0 Facilitating Works

- 0.1 Toxic/Hazardous Material Removal
Asbestos
An R&D survey will be undertaken prior to main contract works to establish potential presence of asbestos containing materials.

1.0 Demolition Works

- Please refer to Architectural Demolition drawings.
- 1.1 Minor demolition: Existing internal walls for the most part are none load bearing.
- 1.2 Demolition: Pitched roof coverings will be removed to allow for repairs and replacement of roof elements on a like-for like basis. Existing finishes to be reinstated as far as possible and any damaged slates to be replaced to match existing. Flat roof to be overlaid with additional insulation and new finishes. In building no. 43, there are major demolition works as the current stairs are to be removed. In this case, structural works consist of a new timber floor supported on steel beams at 1st, 2nd and 3rd floor.
- 1.3 Disconnecting Main Services: Isolating, Draining Down and Disconnecting Existing Mains Services; including Water, Gas, Electricity, Drainage, District Heating, Telecommunication Systems, Data Systems, etc. Phased as necessary.
- 1.3 Soft Strip Works: Generally removal of existing applied floor finishes, carpet etc. and removal of suspended ceilings. Also to include removal of non-original sanitary ware installations. Removal of Furnishings, Fixtures and Fittings.
- 1.4 Removal of Building Engineering Services; including Lift Installations.

2.0 Substructure & Drainage

- 2.1 Standard Foundations:
No alterations proposed the existing foundations and no proposed foundations.
- 2.2 Basement Slab Removal: Sections of slab are proposed to be removed for drainage works, replaced with 150mm thick concrete slab - 6m²
- 2.3 Drainage – Surface Water

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The existing development is served by a dedicated below ground drainage system, which takes run-off from roofs / external vaulted 'coal holes' and discharges from the existing building into the wider foul (combined) drainage network in Gordon Square. It is not anticipated that any of the surface water network will be altered, therefore the design will maintain as per the existing situation.

2.4	Drainage - Foul
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The existing development is served by a dedicated below ground foul water drainage system which discharges from the existing building into the wider foul drainage network in Gordon Square. Foul flows from the existing building are considered to be domestic. Existing drainage CCTV works were undertaken by WJ Shirley. Numerous 'moderate' defects along with one 'severe' defect were identified within the building extents. It is proposed to rectify these defects and create new connections to service new stack locations. Works include:

- 140m of new Foul Water; Drainage Pipework; 100mm dia. Unless agreed otherwise all new foul water drainage pipes will be vitrified clay and bedded in a Class S surround subject to location and limits of cover. Branch connections under buildings will be bedded in either a Class Z concrete surround or Class S granular surround, subject to cover depth. Pipes with shallow cover will be bedded in a Class Z concrete surround. Any old drainage or service trenches to be excavated to remove soft or degraded material and backfilled with specified granular sub-base material.
- 9 No. new Foul Water Inspection Chambers - Polypropylene inspection chambers will be utilised wherever possible to minimise excavation volumes and depths. All internal foul MH's and IC's to have recessed covers. Double sealed and locking to prevent odours and to allow floor finishes to conceal.
- New foul stacks serving refurbished areas / new areas will utilise as much as possible above ground drainage systems. Where this is not achievable, a new dedicated below ground drainage system is provided in the basement which connects new stack locations into the existing below ground drainage network. Foul flows from the new stack locations are anticipated to be 'domestic' in nature i.e. from WC's, sinks, wash basins etc. It is not expected there will be any trade effluent flows discharging into the wider drainage system. 18 No. Foul Water; Outlets/Stack Positions are provided. See Mechanical services drawings for proposed locations.
- 1 No. Foul Water; Floor Drain. Outlet for accessible shower facility for staff, located within the basement of No.45.

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3.0	Structure & Structural strengthening

The current building structure is described in recent opening up works by Chelmer Global Ltd, archive documents and visual inspections. It can be described and summarised as follows:

- Roof – timber purlins spanning between trusses that bear onto external walls.
- Floor – traditional timber joist and boarded floors are original to the building's construction in 1825. They usually span between party walls and load bearing walls although their directions are not consistent throughout the building. At ground floor, opening up works revealed the presence of steel/timber beams and concrete slabs which indicates historic strengthening works. Basement floor is believed to be a ground bearing concrete slab.
- Walls – External walls are original solid masonry walls while internal partitions are typically formed by timber truss studs. Internal load bearing walls are formed by timber truss studs or masonry.
- Foundations – Foundations are believed to be strip footing under load bearing walls.
- Rear Extension – The rear extension is believed to comprise of concrete floors on steel frame. During the visual inspections, concrete columns and beams have been noted in the basement but they are believed to be made of steel with concrete encasement rather than reinforced concrete structure

The buildings have been subjected to historic overloading of the floors. As a result of this, together with the normal deterioration of materials and water ingress, there have been/there are some structural defects present. The ceiling of no.42 in room 218 collapsed in 2017. The collapse is believed to be caused by overloading of the floor joists with water ingress along with temperature change weakening the ceiling's plaster. Bulges are also visible in the ceiling and cracks were observed in other areas of the building most notably Room 122. Inadequately supported partition walls, changes in ambient temperature occurring in rooms, and possible saturation of the plaster is generally considered to be the cause of cracks within the building. The capacity of some timber floor joists may also have been compromised by water ingress; with noted issues adjacent to Balconies on the rear which need structural repairs and waterproofing.

In order to safeguard against further structural deterioration, it is proposed to undertake floor strengthening works to make the building more suited to mixed use comprising office space and teaching spaces.

3.1 Strengthening works

There are several locations where the floor structures need strengthening works. Depending on the existing timber joists size and span, the extent of the strengthening varies. Generally, the proposal is to add an additional joist in the space between existing joists by either bolting it to the existing joist or supporting it via hangers in existing masonry walls.

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In a number of instances new steel beams are required. Where possible new steel beams are proposed to be installed beneath existing timber joists and packed tight. However, where this is not possible temporary work systems are required to facilitate installation of steel beams within the joist depth. This involves propping then cutting the existing joists, installing beams and re-supporting the joists on the newly installed beam. The latter, is more intrusive and requires temporary propping.

Whilst undertaking the works it may be found that existing floor joists have suffered from decay, cracking or damp due to previous leaks or overloading, we are anticipating a need to replace/ repair/ strengthen 5% of existing joists.

3.2 Sequence of works:

Please refer to Hydrock Structural drawings. The sequence of works is as follows:

1. The existing ground floor joists are strengthened with additional timber joists, Front rooms of No.s 39-47.
2. Temporary propping is installed to enable replacement of existing floor beams above on level 01 (see step 3 below)
3. New steel beams are installed to the base of load bearing stud walls at level 01. Generally, one location per house to support the stud wall spanning east to west from the stair well masonry wall to each of the houses party wall.
4. Strengthening works to 1st floor level floors (front rooms of 39-47) with additional joists is then completed.
5. Steps 2,3 and 4 are repeated for level 02.
6. Steps 2,3 and 4 are repeated for level 03. However, it should be noted that significantly less new timber floor strengthening works are proposed at level 03.
7. Steps 2,3 and 4 are repeated for level 03. However, it should be noted that significantly less new timber floor strengthening works are proposed at level 04.

Where new steel beams are proposed they will be bedded on new concrete Padstones, 440x215x215.

4.0 Superstructure

4.1 Roof:

The roofs to the main buildings are of pitched construction clad with slate, with projecting brickwork party walls, topped with a coping stone. Gutters are formed within parapets to the front and rear, consisting of asphalt, lead and liquid plastic across the building. The main roof is inhabited with office accommodation to numbers 39-46 with dormers constructed of timber, side cheeks and roofs finished in lead to the majority, although there are

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	<p>examples of a mixture of lead and mineral felt across the building. The roof to the rear extension is a flat roof, with a three-layer mineral felt system applied. All roofs feature rooflights of which none are original.</p> <p>Parapets: The parapet detail to the gutters incorporate a balustrade rail detail. This is exhibiting corrosion and would benefit from a redecoration/removal or replacement.</p>
4.1.1	<p>Flat roof extension - repairs</p> <p>It is proposed to install a new bitumen overlay system to the existing flat roof including 100mm of new insulation to meet Part L2B requirements.</p> <p>Existing finishes to receive localised repairs prior to overlay system being applied. Existing gullies kerbs and upstands are to be reformed and any design defects addressed including increasing the height of upstands to a minimum 150mm where possible. Rainwater goods are to be replaced where removal is possible or overhauled if remaining in-situ.</p>
4.1.2	<p>Original pitch roofs to main houses – Repairs:</p> <p>Generally, many of the roof finishes are reaching the end of their serviceable life. There are several internal leaks that can be attributed to the localised failure of the roof, such as slipped and damaged slates, failures of soaker and flashing details as well as a failure of the gutters. In addition to this, there is compromised access to the roof for maintenance. We are therefore proposing extensive repairs to these elements including the stripping and reinstatement of the slates to the roof pitches and renewing all flashing details. In all cases works will Re-use existing slates, substrates, supporting roof timbers and boarding where possible.</p>
4.1.2.1	<p>Slates:</p> <p>Slates to be from one quarry - not from several quarries in a generic deposit sold under one mark to match existing roof as closely as possible - matching samples to be utilised. Where condition allows, good slates from existing roof to be removed and retained to assess if sufficient numbers can be re-used for replacement of a substantial section e.g. the entire side of one pitch.</p> <p>Accessories include: New underlay to be provided, Copper nails, lead slates and soakers, lead apron flashings to match existing.</p>
4.1.2.2	<p>Replacement lead Roofs including covered dormer roof coverings:</p> <p>The dormer roofs are a mixture of lead and mineral felt. Some lead dormers and all the mineral felt roofs are approaching the end of their serviceable life, with evidence of moisture ingress. The replacement of any roof finish will be undertaken in lead rather than mineral felt, with re use existing lead covering where condition allows and re-use of flashings and supporting roof timbers and boarding where possible. New Lead to be Rolled Lead Sheet (Envirolead): Code 7. Generally, Batten roll joints with splash lap and Welded seam joints. Copper clips and nails.</p>
4.1.2.3	<p>Parapet Gutters:</p>

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A number of different dressings to the gutters are in evidence and it is considered that this is due to historic remedial works. There is evidence of ingress attributed to most of the guttering, further investigation is proposed to determine whether this is a failure in the material or the blocking of outlets. At this point, we have allowed for the relining of all gutters in lead subject to further investigation. New leaf guards are to be fitted to all outlets.

4.1.3 Rain water goods:

Generally original cast iron, retention and repair is preferred approach. Pipework will be removed locally where required to enable stucco render repairs to take place. Should investigations establish significant corrosion then replacement with matching cast iron pipework will be undertaken. There would appear to be some leaking joints, poor detailing and general deterioration to the rainwater goods. Although this was difficult to assess during our inspection there was evidence of moisture staining.

4.3 External walls – Repairs

4.3.1 Brickwork:

The brickwork, although suffering from carbon staining is generally in satisfactory condition. There are some areas requiring re-pointing works, particularly at high level to the rear elevation.

4.3.2 Render Stucco:

The render to the front elevation is a stucco render system that has been recently decorated. The render has been a source of moisture ingress to the first floor where patches of render have failed due to decoration trapping moisture within the render and the substrate. Render will be locally repaired where required and redecorated to match existing.

4.3.2.1 New render:

To be traditional fat lime stucco with lime wash - colours TBC.3 Coats comprising of a scratch base coat nominally 8mm thick, a float coat of 8mm and a finish coat, thickness to suit detail. Representative sample panels to be provided for approvals.

4.3.2.1 Render repairs:

Remove non-original, inappropriate materials and previous repairs to expose substrate and replace with the appropriate stucco/render. However, removal should only be carried out if this does not risk further damage to the original fabric. Cut out defective areas of original that cannot be saved. Cracks greater than 2mm in a lime-based stucco will be carefully cut out to form a slight undercut which will act as a key, and thoroughly flushed out with water to remove dust and loose debris before being filled with fresh mortar based on trial results. Hollow areas and voids flushed out likewise. A ten per cent solution of Primal WS24 may be injected into the void prior to grouting in order to increase the bond between grout and internal face, before injecting a fine grout based on lime putty or, in the case of a mastic, a similar mix

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	based on analysis results. Finally the surface of the stucco is reinstated to its original profile, where possible without causing loss. A suitable biocide should be applied to affected areas only, to remove remaining algae and prevent re-growth. Friable areas of a lime-based stucco may be consolidated with repeated applications of limewater.
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4.3.3	Party wall gables at roof and chimneys:
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	Brickwork protruding party walls and brickwork parapet wall details can be found at roof level. Walls at roof level are generally dressed with coping stones. There is a requirement to undertake some patch re-pointing works to brickwork. The coping stones are to be taken off, cleaned up and re-bedded on a suitable mortar then dressed in a suitable lead cloaking. On some houses the party walls are rendered in some instances the render is failing and it is proposed be hack off and re render these sections.
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4.6	Windows & Rooflights
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4.6.1	Windows: There is a mixture of windows in varying conditions throughout the building. Generally, the windows will be given a general service and redecoration. This would include replacement of cracked and missing panes, removal of unsightly ventilation louvres and grilles, servicing and replacement of damaged ironmongery and mechanisms. In some cases this work will need to go further to include the repairing or replacement of rotten sections of timber.
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	At ground floor missing fanlights are to be reinstated above two entrance doors.
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4.6.2	Balcony doors:
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	Generally, require a servicing of the mechanisms to ensure good operation going forward. Restrictors will be fitted to these windows to prevent access to the balconies.
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4.6.3	Rooflights - New
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	The aged rooflights in the main pitched roof have failed in a number of locations and are causing water ingress issues. The flat roof has a mixture of plastic glazed units and aluminium and glazed units. The plastic rooflights are thermally inefficient and their serviceable life is less than that of the proposed refurbished roof. The aluminium framed unit has failed and has been subject to repairs previously where liquid applied waterproofing has been applied to the frame and glazing. The proposal replaces all rooflights with proprietary aluminium double-glazed units to address the issues with poor condition, defects and limited life span. Where historic fabric permits upstands are to be increased in height to ensure minimum 150mm height above refurbished flat roof level to alleviate water ingress issues.
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4.8	External Doors – Repairs:
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	The external doors are generally in satisfactory condition, although in need of general maintenance to maintain their condition. The decorations are suffering from some UV degradation. New decoration is proposed.
4.9	<p>Balconies -</p> <p>Generally, the balconies are in poor condition and are believed to be contributing to the ingress of water, in part due to previously poorly executed asphalt repairs to balcony floors. The asphalt covering is at the end of its serviceable life and requires renewing. Balustrading to be cleaned with repairs and redecorations carried out where required.</p>
5.0	Internal works and finishes
5.1	<p>Internal doors:</p> <p>Internal doors are generally in satisfactory condition throughout. But decoration, localised damage and missing / damaged ironmongery, generally detract. The proposal is to review doors at the next design stage along the following principles.</p> <ol style="list-style-type: none"> 1. Original doors and replacement doors deemed visually similar and sympathetic are to be retained. 2. A scheme to improve and update the buildings fire strategy requires that some existing doors are upgraded to either half an hour or a one hour fire rating. This can only be achieved with the installation of a new door, designed to be sympathetic in design with correct historic features and materials, however signage, door closers, fire seals and push bars may be required for compliance with building control.
5.2	Floor finishes – timber floorboards
5.3	<p>Ceiling finishes – repairs:</p> <p>The internal ceilings are a mixture of traditional lathe and plaster and modern plasterboard replacements. Many of the lathe and plaster ceilings are suffering de-bonding from the substrate and require repair and re-plastering works. Please refer to Condition Survey works required for a schedule of where we believe this to be more than just general decorators' preparation. To the fourth, third and ground floors there is evidence of moisture staining. The Condition survey suggests remedial works depending on the severity of the ingress, from hacking off and re-plastering to treating with a stain block.</p>
5.4	<p>Ceiling finishes - new</p> <p>New plaster to be Lime plaster on existing retained lathe where condition allows.</p>
5.5	<p>Internal walls – repairs</p> <p>The internal walls are a mixture of traditional lathe and plaster, modern stud work and plastered masonry. Many of the lathe and plaster walls are suffering de-bonding from the substrate and require repair and re-plastering</p>

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	works. Please refer to Condition Survey works required for a schedule of where we believe this to be more than just general decorators' preparation
5.6	Internal walls – New New plaster to be Lime plaster on existing retained lathe where condition allows.
6.0	Mechanical & Electrical Plant
7.0	External areas
	Please refer to AHR external works plans: At the front of the building works are proposed to the steps leading down to the lightwells, in the form of repointing and concrete repairs. Stone flags to each of the properties entrances have in some areas been patched with concrete (46 and 47) some evidence off water ingress internally within basements points to failures in waterproofing where pavement 'bridges' meet the front facade. Flags are to be lifted and new mastic asphalt damp proofing applied, a limited number of replacement stone flags are to be provided, all flags are re-pointed.
7.1	Works to existing railings are proposed to treat corrosion, along with the base of the railings where the concrete bedding is degrading. Railings to be cleaned and redecorated where repaired.
7.2	External Cellar Area: Clean stone floor tiles, relay where necessary and replace where missing or broken (Area includes steps). Vault doors serving plant areas to be replaced with louvred doors with painted finish to match existing.