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STRUCTURAL STATEMENT

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~~2nd June 2021~~ Dec 2023

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REGISTERED IN ENGLAND 4173590

This Structural Statement has been prepared to assist with the Listed Building / Planning Permission application for the planned alteration and extension works to this early Victorian property.

The existing building is of traditional construction with solid brick external walls laid in a lime mortar, suspended timber upper floors, and a traditional timber framed roof, including slate covered mansard slopes to the front and rear.

The Basement floor construction is unknown at present, but it is considered likely that the original floor to the front rooms, including the two previously converted vaults to the North, have been replaced by a modern concrete slab. The rooms to the rear of the property are thought to consist of original flagstones.

1.0 Scope of the Structural Works

1.1 Carefully remove the modern glazed roof over the front lightwell, and undertake any necessary fabric repairs.

1.2 Carefully remove the modern concrete slab over the original rear lightwell around the curved bay, and undertake any necessary fabric repairs.

1.3 Erect a new single storey Boot Room extension at Ground Floor.

1.4 Subject to the results of the trial pit investigations, the removal of areas of modern concrete floor slabs to the Lower Entrance Hall and adjacent vault, to facilitate new finishes and the rationalisation of floor levels.

1.5 Carefully lift areas of flagstones to the rear rooms within the Basement, and relay them on a new limecrete / insulated slab, complete with Delta membrane and underfloor heating.

1.6 The reinstatement of 2No original window openings to the front elevation at Basement level.

1.7 The reinstatement of 1No original window openings to the flank wall at Basement level.

1.8 The reinstatement of 2No original window openings to the rear bay at Basement level.

1.9 The formation of 1No new door-width internal structural opening at Basement level.

1.10 The opening-up of fireplaces / recesses within 3No breasts at Basement level.

1.11 The reinstatement of the original lightwell wall to the Front Vault.

1.12 The provision of new retaining walls and new internal back stair, linking the existing Basement with the new Boot Room extension.

~~1.13 Create 1No new door width opening through the flank wall at Ground Floor, to link the original house with the new Boot Room extension~~.

1.14 The removal of modern blockwork partition walls at Ground Floor – to the Front Reception and the South Reception.

1.15 The formation of a structural opening through the spine wall at First Floor.

1.16 The removal of non-loadbearing internal partitions at First ~~and Second Floor~~, to re-establish the original room layout.

1.17 The removal of the internal contemporary staircase linking Second and Third Floors, and the installation of a new timber stair case in an enlarged well, to be created at Third Floor.

~~1.18 The formation of an enlarged structural opening through the original Party Wall at Third Floor~~.

~~1.19 The formation of a new structural opening through the original Party Wall at Third Floor, together with the support of the retained chimney stack above.~~

1.20 Undertake structural repairs / strengthening works as required; to include any floor strengthening works to the upper floors to support new partitions as necessary and the formation of new door openings within existing internal partitions.

1.21 The formation of a new attic access hatch through the ceiling above Third Floor, ~~together with the possible localised strengthening of the attic floor to facilitate the installation and access to new plant~~.

1.22 The formation of a new rooflight opening ~~with the flat roof~~, together with a new laylight opening through the ceiling above Third Floor.

1.23 The conversion of an existing inverted dormer to the rear elevation into a door opening, giving access to a new area of roof terrace, complete with raised parapet brickwork and associated guarding.

1.24 The conversion of an existing window to the flank wall at Third Floor into a door opening, giving access to a new area of roof terrace, complete with raised parapet brickwork and associated guarding.

1.25 The provision of new rear garden walls to facilitate an extended terrace.

1.26 The erection of a new freestanding single storey garden building to the rear.

2.0 Structural Approach to the Works

2.1 Investigative Works

Before any investigative works a Refurbishment & Demolition asbestos survey (type 3) is to be undertaken by a specialist.

2.1.1 Selected areas of floorboards are to be carefully lifted to assess the size and adequacy of the existing joists as well as their condition. Where possible, previously disturbed boards will be re-lifted, otherwise full boards requiring no cutting will be selected.

Any lifted boards will be refitted in their original location.

2.1.2 A series of hand excavated trial pits is to be excavated externally to establish the profile and depth of the existing foundations, together with the nature of the underlying ground conditions.

Any existing stone paving requiring removal to facilitate these trial holes, will be carefully lifted and stored on the site for future re-use.

2.1.3 Internal trial pits, including the breaking out of the modern concrete floor slabs to the Lower Ground floor and front vaults, will be undertaken to establish the floor construction and the condition of the sub-base / backfill beneath.

Some of these excavations will also determine the profile and depth of the existing foundations, and hence the viability of installing areas of new lower floor.

Holes can be left open for inspection by others if required.

2.1.4 Localised holes are to be carefully cut through modern plasterboard ceilings, dry-lining and service riser ducts.

2.1.5 A specialist may be required to undertake a small site investigation by the use of short bored auger to establish the ground conditions at depth. This will include sampling and testing to establish the soil condition and the impact that the existing trees on or adjacent to the site may have on any foundation design.

2.2 Structural Repairs to the Existing Fabric

2.2.1 Cracking and de-bonding of the historic brickwork will be repaired by the use of resin bonded stainless steel helical ties. Any cracked bricks externally will be carefully removed by hand tools and replaced with re-claimed bricks from the site laid to match the existing both in mortar and pointing.

2.2.2 Strengthening / repairs to defective or decayed timbers will be undertaken but the minimum cutting out of any historic timber and the bolting on of new timber sections as necessary. The use of steel flitch plates may also be employed.

2.2.3 Any defective timber lintels will be carefully removed, whilst retaining the original external arch brickwork, and replacing with new precast concrete sections.

2.3 Structural Works to Alterations and Extensions

2.3.1 Any new foundations will, where possible, be positioned remote from the existing foundations, by the use of cantilever beam / slab construction.

2.3.2 New walls, where they abut existing brickwork, will be straight-jointed using stainless steel starter tie systems. This will ensure that any new works will have limited impact on the existing and will be reversible.

2.3.3 Any new beam bearings into existing brickwork will be via the minimum removal of existing bricks and the use of steel bearing plates in lieu of concrete padstones. Again, this is considered to be a reversible intervention.

2.3.4 The formation of new openings within existing timber floors, ceiling and roof, will be undertaken by the minimum cutting back of original joists and by the installation of new timber trimmer joists – all connected via nailed proprietary hangers.

The use of steel flitch plates may also be employed.

Where required, any access and plant support platforms within the attic will be formed by new joists placed between and independent of the existing ceiling / roof structure.

2.3.5 Any new brickwork (to receive a rendered / stucco finish) will utilise new clay bricks laid in a lime-based mortar, and fully tooth bonded int the existing.

2.3.6 Areas of new accessible roof terrace at Third Floor may require the strengthening of the flat roof / floor structure. It is intended that this strengthening will be achieved by either bolting new timber joist to the side of the existing, or by introducing new independent joists, laid between the existing.

2.3.7 Whilst the existing parapet brickwork is to be locally raised in the areas of the new roof terraces at Third Floor, it is known that a 1B thick brick wall will not be sufficient to provide a safe system of guarding. This is to be achieved by new metal railings, which may require anchorage into the flat roof structure, rather than the parapet brickwork.

2.4 Sequencing

The final structural sequencing, together with the design, installation and maintaining of all necessary temporary works will be the responsibility of the Main Contractor. All such works will be subject to appraisal and comments by the professional team prior to any implementation.

John Edwards

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For Osborne Edwards Limited