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Ort House, 120-126 Albert Street,

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Basement Impact Assessment :

Structural Method Statement

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INVESTORS IN PEOPLE

1.0 INTRODUCTION

1.1 This report has been prepared by Helen Hawker MSc BEng (Hons) MIStructE of Conisbee for Montagu Evans LLP on behalf of the World Ort Trust. It is intended for the use of the client and related parties and submission to the London Borough of Camden as part of supporting documents for a planning application.

1.2 It is proposed to undertake alterations to 120-126 Albert Street, Camden, also known as 'ORT House'. This report covers aspects in relation to the alterations to the basement which is proposed to be extended to the rear to form a sunken landscaped area and allow natural light into an otherwise artificially lit area.

1.3 The Basement Impact Assessment also includes the following information which is to be read alongside this report:

- A Site Investigation Report by Ground Engineering, reference C14161, dated June 2017, which incorporates:

  A desk study and historical data of the site and surrounds;
  Assessment of the geological and hydro-geological impacts of the proposals in accordance with the London Borough of Camden PG4 requirements; and geological characteristics for the subsoil for foundation design and preliminary piling design (which addresses the main criteria as set out by CPG4 for the BIA)
  Interpretive commentary on the proposals.

Screening and Scoping flowcharts, as provided in CPG4 and the ARUP Camden geological, hydrogeological and hydrological study, have been filled in to highlight the information contained within the SI by Ground Engineering and are appended to this report.

This report outlines the structural engineering aspects of the works, with explanations to the existing and proposed construction, worked scheme design and temporary works proposals.

2.0 EXSITING CONSTRUCTION

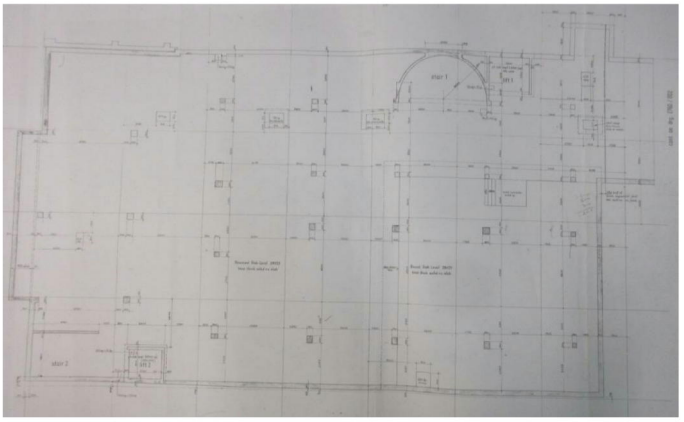
2.1 ORT House was built in 1974 on the site of traditional terrace houses, their gardens and a school.

2.1.1 The engineers were Clarke Nicholls Marcel, a firm formed in 1946 which is still in operation today. General arrangement drawings are kept in the ORT House archive, which have been useful for identifying the construction type with visual appraisal of the building, although it is noted these drawings are not 'final construction issue', and so any existing structure is to be verified on site.

2.1.2 ORT House is a reinforced concrete framed building with a reinforcement concrete basement, comprising typically of 1000mm thick ground bearing raft foundation and 300mm thick retaining walls, propped by the ground floor. The ground floor is a 300mm thick reinforced concrete slab, with upper floors being of reinforced concrete beam and hollow tile slab construction.

2.1.3 The ground condition comprises made ground to depths of between 0.7m to 3.1m, overlying solid geology London Clay formation.

2.1.4 Refer to existing drawing mark ups appended and Site Investigation Report C14161 by Ground Engineering.



Part of existing basement drawing held at ORT House.

3.0 PROPOSED

3.1 It is proposed to form a light-well to the rear of the property, to be created using a contiguous piled retaining wall with a reinforced concrete capping beam, tied in to the existing structure, with a reinforced concrete lining wall and base.

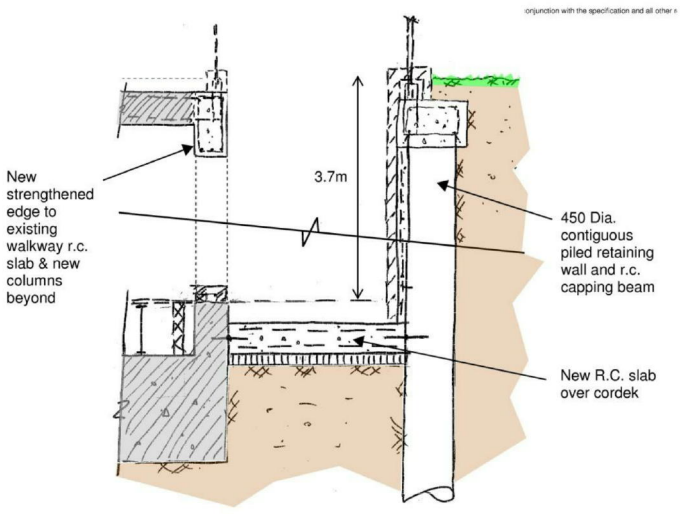
3.2 The existing external circular stairwell is to be removed, which will benefit the operational and safety aspects of the proposed construction, providing a clear site.

3.3 The existing reinforced retaining wall to the rear is to be carefully demolished to form an opening into the rear elevation, with new reinforced concrete columns and beams formed to support the existing structure above.

3.4 Temporary works will be required to support existing construction above ground floor as necessary, after the formation of the light-well. Existing loads will be given to the main contractor to enable their temporary works contractor to undertake detailed design of such elements. The existing and new foundations should be able to be used for the temporary works.

3.5 Other elements of opening up to form light-wells where the basement is not to be extended will also entail strengthening works; the sequencing of these and other works will be undertaken in a way that will not impinge on the structural integrity of the building presently, either with-or-without the proposed new light-well construction.

3.6 Refer to proposed scheme drawings, construction sequence sketches and calculations appended.



Sketch section to show proposed retaining wall arrangement

Part SK-S-500 & 501: Mark-up to show neighbouring properties (appended).Not to scale.

4.0 NEIGHBOURING PROPERTIES

4.1 The nearest property to the proposed excavation is Atlantic House, adjacent to Ort House, is over 8.4m away from the proposed light well.

4.2 The nearest other properties, without the existing Ort House basement between, are along Arlington Road, to the rear of Ort House. The nearest of these are 145 Arlington Road, which has a basement and is over 18 metres away from the proposed light-well.

4.3 The dig out for the basement construction will be less than 5m deep, therefore will not impact the structural integrity of these properties when considering a 45 degree line up from the base of the dig.

4.4 The neighbouring property on Albert Street is number 118, whose rear elevation is over 24 metres from the proposed light-well. The boundary garden fence is only just over 2m away, so will be within a distance where digging may have an impact, however the form of construction chosen – piles to form a cantilevered retaining wall will negate any impact that an open-dig might have had on the boundary fence.

4.5 Many, if not all, of the neighbouring properties have basements, although ORT House has a deeper basement than most. Given the relative size of the proposed and existing basement, and the excavation being in impermeable London clay, the additional area of the proposed basement will not affect the ground conditions to the existing nor planned basement about the area.

4.6 Refer to S500 and S501 attached.

4.7 The ground around the site and neighbouring areas is level.

5.0 STRUCTURAL METHOD STATEMENT

5.1 The flowing is a typical procedure that the contractor could use to form the proposed extended basement construction. The final sequence will need to be by themselves and will be agreed in advance with the structural engineer and principal designer.

a) Prepare site and ensure suitable mats are in place for piling rig, taking into consideration trees and protection of roots and upper branches.

b) Contiguous piled wall formed including any temporary piles if required.

c) Dig out to form capping beam and tie into existing reinforced concrete structure.

d) Dig out to formation level of light well.

e) Form base level

f) Form r.c. lining / supplementary r.c. retaining wall tied into base and capping beam.

g) Prepare temporary works to form openings in existing retaining wall.

h) Cut out existing reinforced concrete as necessary to form openings.

i) Prepare and cast new columns and beams to strengthening and support existing structure about new opening.

j) Once all concrete has reached a suitable strength and structure has been checked, remove temporary works.

k) Make good and applied finishes to Architects/ landscaping details

5.2 Refer to sequencing drawings appended

6.0 DRAINAGE

6.1 The light-well will be drained into the existing drainage of the (existing) plant room, which takes any seepage through the present retaining wall via a cavity drainage system.

6.2 Planting within the light-well will attenuate similar amounts as does existing planting over the site area, which is mainly hard-surfaced.

7.0 IMPACT ON SURROUNDING AND EXISTING STRUCTURES

7.1 From the site investigation, report prepared by Ground Engineering, and above information, it can be clearly seen that the location of the proposed works are well away from existing habitable structures and therefore do not risk movement to adjacent /nearby structures.

7.2 The form of construction, contiguous piles, has been chosen to perform both a temporary and permanent works solution, by a relatively quiet and non-percussive means.

7.3 Piling rigs can be obtained that fit into small spaces, through the access gates below 147 Arlington Grove, and are light enough to minimise impact on trees.

7.4 The arboriculturist, Andy Sherlock of the Barell Tree Consultancy, has been consulted and the temporary loading of the small piling rig on a pre-cast piling mat is understood to be satisfactory if over the root systems. Storing of site equipment, which may be longer term, will not be permissible on green areas and will be on existing areas of hard-standing.

7.5 The final pile design, by piling specialist, will ensure movement is limited as discussed in the Site Investigation Report.

7.6 The existing construction of Ort house, being a reinforced concrete frame on a one metre thick concrete base, is robust and the proposed alterations limited. Strengthening works are to be designed to ensure existing load-paths remain similar to existing such that bearing pressures are consistent, so that negligible movement may be expected to the existing structure. With correctly placed propping elements, any movement to the existing structure will be expected to be 0, negligible, according to the Burland categorisation table, below.

Damage category	Description of degree of damage	Description of typical damage and likely forms of repair for typical masonry buildings.	Approx. crack width (mm)	Max. tensile strain %
0	Negligible	Hairline cracks.		< 0.05
1	Very slight	Fine cracks easily treated during normal redecoration. Perhaps isolated slight fracture in building. Cracks in exterior visible upon close inspection.	0.1 to 1.0	0.05 to 0.075
2	Slight	Cracks easily filled. Redecoration probably required. Several slight fractures inside building. Exterior cracks visible; some repainting may be required for weather-tightness. Doors and windows may stick slightly.	1 to 5	0.075 to 0.15
3	Moderate	Cracks may require cutting out and patching. Recurrent cracks can be masked by suitable linings. Tuck pointing and possible replacement of a small amount of exterior brickwork may be required. Doors and windows sticking. Utility services may be interrupted. Weather tightness often impaired.	5 to 15 or a number of cracks > 3	0.15 to 0.3

*Part table of Damage Classification proposed by **Burland** (note however this is for traditional masonry structures)*

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8.0 CONCLUSION

8.1 The design of the proposed light-well to the rear of ORT House will have no negative impacts on the existing building and neighbouring properties, structurally or in relation to geotechnical and hydro-geological aspects. During construction it will be imperative on the construction company and specialist sub-consultants to adhere to method statements and designed elements to ensure this remains so during and after construction.

Signed by author

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Signed by reviewer

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