BASEMENT IMPACT ASSESSMENT

97 COPSE WOOD WAY

NORTHWOOD

parmarbrook
URBAN

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1.0 INTRODUCTION

1.1 This document constitutes the construction approach and methodology for forming the new basement for the proposed development at 97 Copse Wood Way. The document is produced by Parmarbrook Urban Limited, Consulting Structural Engineers, at the request of Seabrook Architects to accompany the Planning application.

1.2 This Basement Impact Assessment is based upon drawings produced by Seabrooks Architects submitted for planning approval to the London Borough of Hillingdon reference 22144/APP/2020/2637

2.0 EXISTING SITE

2.1 The existing building is currently a single house dwelling.

3.0 PROPOSED DEVELOPMENT

3.1 The development involves the demolition of the existing building and the construction of a new 4 storey house, including the construction of a basement.

3.2 The scope of the development is shown on Seabrooks Architects drawings as submitted as part of the planning application noted above.

3.3 It is proposed to construct the basement retaining walls and slab using in situ reinforced concrete construction techniques. The excavation of the soil will require temporary earth support, prior to the construction of the slabs and walls. This will be provided by a contiguous piled concrete wall to all 4 sides of the basement.

3.4 This proposed method of construction has been employed successfully on subterranean developments in many London Boroughs and it is considered that the proposed works will have no impact on the structural stability of the adjoining buildings.

3.5 The subterranean development will be a Grade 3 water-resisting basement to provide a “dry environment” suitable for ventilated usage under BS 8102. The waterproofing details will be to a specialist’s specification, which will provide a 10-year warranty for the waterproofing works. It is understood that a Type A membrane will be provided on the internal face of the reinforced concrete basement. Additionally, a Type C wall and floor cavity waterproofing system with additional vapour barriers will be installed within the basement.

4.0 SITE INVESTIGATION AND GROUND CONDITIONS

The geological strata are expected to comprise made ground over Reading Beds. The Reading Beds, based on information gained from other boreholes in the vicinity suggests that strata will consist of a mixture of Clay and Sand and will sit over a Chalk stratum. Typically, this ground at depth will provide bearing values in the order of 150kN/m2 for the design of the basement raft. The heave at the formation level of approximately 3m below the existing ground level will be nominal.

4.1 Groundwater levels will be established prior to any works being carried out. Borehole records in the vicinity struck water at 25m below ground level, with standing water at completion of 12m below ground level. Also, some perched water maybe encountered in the excavations, which is common for this type of soil.

4.2 Any perched groundwater in the excavations if encountered will be removed by conventional internal pumping methods from open sumps.

4.3 A site investigation would be recommended prior to construction and should include the following;

- Recommendations for basement and foundation design, following consultation with the Engineer, including observations on the suitability of various types of temporary propping.
- Estimates of the short- and long-term settlements relevant to the various founding solutions considered.
- Recommendations for retaining wall design, following consultation with the Engineer, including observations on the suitability of various types of retaining wall.
- Recommendations on remediation measures for soil contamination and identification of hazards to be considered for handling and disposal of excavated material in relation to current practice and legislation

5.0 STRUCTURAL DESIGN

5.1 The works will be designed in accordance with current British Standards Codes of Practice, including but not limited to:

BS6399: Loading

BS8004: Foundations

BS8110: Concrete

BS5950: Steelwork

BS5628: Masonry

BS5268: Timber

6.0 ROBUSTNESS

6.1 The Building Regulations Approved Document A requires that buildings are sufficiently robust to sustain a limited extent of damage or failure, without collapse in the event of an accident.

6.2 The new development is a four storey single occupancy property (basement, ground, first and second floors) and defined as Building Class 2A.

6.3 Compliance with the robustness requirements for Building Class 2A is achieved by providing effective horizontal ties to all supporting floors and walls as described in the British Standards Codes of Practice.

7.0 TEMPORARY WORKS

7.1 The contractor is entirely responsible for all the temporary works from possession of the site until practical completion.

7.2 The contractor shall design, install and maintain all necessary temporary works.

7.3 The contractor shall submit detailed proposals for the temporary works to the Contract Administrator/ Architect and Parmarbrook Urban at least 10 working days before

commencing the works. The proposals shall include temporary works supports and a sequence of construction and shall be supported by calculations that have been carried out by a suitable Structural Engineer.

7.4 All temporary works to the side of excavations for new foundations shall be designed in accordance with BS 8000 Part 1: 1989 and any other approved documents.

7.5 All scaffolding required, whether for access or support, shall be designed for purpose, in accordance with relevant British Standards (e.g., BS 5973), and shall meet all requirements of The Construction (H, S & W) Regulations 1996.

7.6 The Contractor shall prepare a detailed method statement and sequence of construction for basement the works, at least ten working days before commencing the works.

7.7 Parmarbrook Urban shall review Contractor's temporary works, method statements and sequences of construction of all works on site.

8.0 CONSTRUCTION METHOD STATEMENT (GENERAL)

8.1 The subterranean basement development will be constructed by a competent and experienced Contractor.

8.2 The property is located within a residential area. The Contractor must employ appropriate methods of construction to minimise noise and nuisance to neighbours as far as reasonably practicable.

8.3 Access is only available from Copse Wood Way.

8.4 The Contractor shall obtain all necessary licences and approvals in respect of work on site, for example parking bay suspensions, yellow line dispensations and skips, disposal of specified wastes and noise notices.

8.5 The Contractor shall ensure that all plant or materials temporarily stored on the Public Highway/footway does not cause an obstruction or hazard to third parties.

8.6 The Contractor will be responsible for all matters in respect of loading, unloading, access, etc, and he shall agree all such matters with the Local Authority and Client. The Contractor shall ensure that safe access routes are provided along the public footway during loading/unloading operations if applicable.

9.0 CMS – BASEMENT WORKS (REFER TO DRAWING NUMBERS 21027 01-09 INC.)

9.1 Prior to the construction of the basement work, demolition of the property is to be carried out by a competent and experienced demolition contractor.

9.2 It is anticipated that basement excavation will be formed by installing a contiguous concrete piled wall to all 4 sides of the basement footprint, providing temporary support to the soil during the excavation process.

9.3 After the installation of the contiguous piled wall, a capping beam will be cast over the top of the piles.

9.4 Excavation of the main basement to formation level can then carried out, wailers, struts and props maybe required to temporarily support the piles, depending on the chosen

method carried out by the temporary works engineer. Once excavation to formation level is reached the base will be blinded with concrete blinding.

9.5 Excavate area to pool area cast slab and kickers to walls.

9.6 Cast swimming pool walls up to underside of basement slab.

9.5 The basement slab is then cast with kickers to form the concrete loadbearing walls.

9.6 The liner and internal walls are then cast to the underside of the proposed ground floor slab.

9.7 When the concrete walls reach their required strength, remove props then the ground floor slab can be cast. This slab will act as a horizontal prop to the concrete retaining walls in the permanent case.

9.8 The superstructure can then be built in the traditional manner from ground floor level upwards.

10. FLOOD RISK

10.1 The site is in Flood Zone 1. Flood Zone 1 is outside the extent of extreme flooding and the annual risk is less than 1:1000.

10.2 The proposed basements are expected to be constructed entirely within the clay/sand soils and above the ground water table, which will allow the free flow of ground water and therefore the impact of the basement on the groundwater regime at the site will be insignificant.

11. SUDS STATEMENT

11.1 There are surface water and foul sewers in the roadway, the depths of these sewers at this stage are unknown. A CCTV test will be carried out to establish the existing invert levels. In order to serve any waste/foul drainage requirement to the proposed Basement area a packaged sewage pumping chamber would be require to discharge the ground floor gravity drainage system. The proposed method of surface water disposal would be to discharge to the surface water sewer within the Roadway, via an attenuation system, utilizing storage crates. If the use of soakaways for the disposal of surface water is found to be unsatisfactory then a surface water attenuation system would be required. The allowable discharge rate from the surface water attenuation system would be agreed with Thames Water Developer Services. The site surface water system would be designed where practical to include SUDS recommendations; a 1:100-year storm event +40 % for climate change, whilst restricting stormwater run-off to 50% of pre-development levels, as required by the London Plan.