

**PROPOSED EXTERNAL SWIMMING POOL AT
NO.4 OAK HILL PARK CAMDEN LONDON NW3 7LG**
Basement Impact Assessment

26th November 2024

Our Ref: CL/lhp/7682

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1.0 Introduction

John Sime & Associates Limited (JSA Ltd) has been commissioned by Mr Althasen to carry out a Basement Impact Assessment on the site at **4 OAKHILL PARK CAMDEN LONDON NW3 7LG** in accordance with the guidelines from London Borough of Camden in support of a planning application for the external pool that to be set in the rear garden (Appendix I).

A desk top study and ground investigation has been undertaken (Appendix II) which has been referred to as necessary.

1.1 Proposed Development

It is proposed to develop the site by providing a detached two storey dwelling. In the rear garden it is proposed to create a external open air 9.0m long x 3.0m wide swimming pool situated within the site topography. The depth of the pool aligns 1.2m – 2.0m deep from ground level which would dictate a maximum construction excavation depth of 2.4m deep the impact of which is the focus of this report.

1.2 Scope and Purpose of Work

The Council stipulate that a Basement Impact Assessment (BIA) should be carried out encompassing Geotechnical Structural Engineering and hydrological investigations to ensure that the basement does not result in flooding or ground instability, harm the built and natural environment, threaten mature trees through changes to the hydrological conditions or severance of tree roots.

The aim of this report is to assess if the proposed basement will have a detrimental impact on the surroundings with respect to groundwater, land stability and, in particular, assess whether the development will affect the stability of neighbouring properties, local and regional hydrology and whether any identified impacts can be appropriately mitigated by the design on the developments.

1.3 Qualifications

The Assessment has been carried out by Charles Locke, a BEng in Civil Engineering of some 38 years experience in Structural and Civil Engineering. The Assessment was made in conjunction with Stephen Jacobs IEng AMI StructE, who has some 40 years experience in Structural and Civil Engineering. Both engineers are experienced in basement design and assessment.

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1.4 Limitations

The conclusion and recommendations made in this report are limited to those that can be made on the basis of the research carried out. The results of the research should be viewed in the context of the work that had been carried out and no liability can be accepted for matters outside of the stated scope of the research. Any comments made on the basis of the information obtained from third parties are given in good faith on the assumption that the information is accurate. No independent validation of third-party information has been made by JSA Ltd.

2.0 Site Location

2.1 Site Description

The site is situated to the northeast of Oak Hill Park and was accessed via a private gated tarmac drive which sloped steeply upwards to the northeast. The site is located at approximate Grid Reference TQ 260 858. The surrounding land use is given over to residential properties and gardens in all directions.

OS MasterMap site plan



Site Area: 0.2ha

The site is generally dropping from the North of the site to the south with a level at the existing house of 19.9 FFL of patio level with a fall of the garden through shrub planting to a Plato grass lawn which is at 16.7m which is where the pool is to be sited.

3.0 Ground Conditions

3.1 Soil Conditions

Reference to the British Geological Survey online geological map of the area indicates that the geology underlying the site comprises solid geology of the Bagshot Formation over the Claygate Member.

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Bagshot Formation

Most of the Bagshot Formation is composed of pale yellow-brown to pale grey or white, locally orange or crimson, fine- to coarse-grained sand that is frequently micaceous and locally clayey, with sparse glauconite and sparse seams of gravel. The sands are commonly cross-bedded but some are laminated. Thin beds and lenses of laminated pale grey to white sandy or silty clay or clay ('pipe-clay') occur sporadically, becoming thicker towards the top of the formation. A thick clay bed, the Swinley Clay Member, is included at the top. In places, there is a basal bed of gravelly coarse-grained sand.

Claygate Member

The Claygate Member comprises dark grey clays with sand laminae, passing up into thin alternations of clays, silts and fine-grained sand, with beds of bioturbated silt.

From investigation undertaken, the soils encountered during this investigation are described in the borehole logs presented in Appendix 4 of GEI report.

The ground profile encountered at the site comprised Made Ground over Bagshot Formation soils. Soils of the Claygate Member were encountered at depth.

Made Ground

Made Ground was found at all locations to depths of between 1.5 and 2.7m and variously comprised a surface covering of grass and topsoil, tarmac, brick pavers and concrete over broken concrete and brick fill, orangish brown, mid brown and dark greyish brown silty sand, with occasional gravel, clinker, wood, slate and red brick fragments. No visual or olfactory evidence of contamination was noted.

Bagshot Formation

Soils typical of the Bagshot Formation were encountered beneath the Made Ground in all locations comprising orangish brown and mid brown to reddish brown fine to coarse sand and occasional gravel.

The base of the formation was not encountered in locations BH2, BH3 and BH4. The formation was determined to a maximum depth of 6.5m in location BH1.

Claygate Member

Soils typical of the Claygate Member were encountered at location BH1 comprising firm light brown slightly sandy clay with occasional fine to medium gravel.

The base of the formation was not encountered.

- 3.2 Whilst ground water was not observed we would expect the flow would follow the general topography at the clay Sand/Gravel boundary.

4.0 Screening

The general guidance suggests that any development proposal that includes a subterranean basement, should be screened to determine whether or not a full BIA is required.

4.1 Screening Assessment

A number of screening tools are used and, in this instance, we have used a series of questions within a screening flow chart for three categories: Ground water flow, land stability and surface water flow.

Responses to these are set out below:

4.1.1 Subterranean (ground water) Screening Assessment

| | |
|-----|---|
| Q1a | Is the site directly above an aquifer? |
| A1a | No. |
| Q1b | Will the proposed Pool extend beneath the water table surface? |
| A1b | No. No water table found. |
| Q2 | Is the site within 100m of a water course, well (used/disused) or potential spring line? |
| A2 | No known spring or well is within 100m of the site. |
| Q3 | Is the site within a catchment of any pond drains? |
| A3 | No. |
| Q4 | Will the proposed pool development result in a change in proportion of hard surfaced/paved areas? |

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- A4 Yes , at present the site was covered by a similar degree of hard landscaping due to the original buildings. A combination of soft landscaping and permeable paving is used in the scheme to achieve greater amenity to rainwater dispersal.
- Q5 As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present, be discharged to the ground (e.g. via soakaway and/or SUDS)?
- A5 It is assured that the surface water will be discharged to existing surface water drainage but patio and other hardstanding will discharge to ground.
- Q6 Is the lowest point of the proposed excavation (allowing for any drainage and foundation space un the basement floor) close to or lower than the mean water level in any local pond or spring line?
- A6 No, there are no local ponds adjacent.

The above assessment has identified no potential issues that need to be addressed:

No issues.

4.1.2 Stability Screening Assessment

- Q1 Does the existing site include slopes, natural or man-made?
A1 Yes, natural.
- Q2 Will the proposed development change slopes on the site?
A2 No.
- Q3 Does the development neighbour land including railway cutting and the like?
A3 No.
- Q4 Is London Clay the shallowest strata on the site?
A4 No, Bagshot Formation soils is the shallowest strata.
- Q5 Will any trees be felled on part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?
A5 No trees will be felled adjacent the pool area.
- Q6 Is there any history of seasonal shrinkage or swelling i.e. subsidence/heave on the site or local area?
A6 As the sub-strata is non-plastic, no, this cannot occur.
- Q7 Is the site within an area of previously worked ground?
A7 No.

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Q8 Is the site near a highway or pedestrian right of way?
A8 No.

Q9 Will the proposed pool significantly increase the differential depth of foundations relative to neighbouring properties?
A9 No, the neighbour adjacent are believed to have a basement / deep foundations. The Pool width which is 3m long runs parallel to the boundary.

The above assessment has identified the following potential issues that need to be addressed:

No issues.

4.1.3 Surface Flow and Flooding Screen Assessment

This element of the BIA is provided for guidance only.

Q1 Is the site within a catchment of any water chain?
A1 No.

Q2 As part of the site drainage, will surface water flows (e.g. volume of rainfall and off-peak run off) be materially changed from the existing route?
A2 No, surface water will discharge to existing drainage / soakaway as the original buildings on the site.

Q3 Will the proposed basement development result in a change in the proportion of hard surfaced/paved surface areas?
A3 No, Land scaping i.e. patios, will be placed with a permeable finish to reduce the overall ratio of hard to soft landscaping to be less than the existing site coverage, thus, increasing the overall permeability of the overall site post development.

Q4 Will the proposed pool development result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourses?
A4 No.

Q5 Will the proposed pool result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?
A5 No.

The above assessment has identified no potential issues that need to be addressed.

5.0 Scoping and Site Investigation

The purpose of scoping is to assess in more detail the factors to be investigation in the impact assessment.

Potential consequences are assessed for each of the identified potential impact factors.

The investigation of the potential impacts is carried out through a suitable site investigation and this has been carried out by GEI Ltd in March 2024. It is considered that the scope of the investigation is suitable on which to assess the potential impacts.

5.1 Potential Impacts

| Potential Impact | Possible Consequence |
|--|---|
| i) Proposed pool construction may result is a change in proportion of hard standing/paved areas | A change in the proportion of hard surfacing or paved areas of a property will affect the way in which rainfall and surface water are transmitted away from the property. This includes changes to the surface water received by adjacent properties and nearby water courses. Changes could result in decreased flow, which may affect ecosystems or reduce amenity, or increased flow may additionally increase the risk of flooding. |
| ii) Proposed pool construction may increase the differential depth between neighbouring properties | Potentially additional settlement may occur as a result of the basement to neighbouring properties adjacent the site |

6.0 Basement Impact Assessment

The screening identified a number of potential impacts. The desk study and ground investigation information has been used below to review the potential impacts to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

The following information set out below summarises the previously identified potential impacts and the additional information that has been made available from the soil investigation in consideration of each impact.

Potential Impact

ii) Differential foundation depth between the new Pool and adjacent structure foundations.

Site Investigation Conclusion

The position of the width of the pool measures 3.0m parallel to the boundary of No.3 Oak Hill Park Mews (neighbouring property). Whilst most of the excavation is positioned over 6m distance from the property there is a projection of the neighbour that creates a pinch point which falls within 3m-6m. The boundary is within 3m distant to the pool and therefore temporary earthwork support would be required to maintain stability of the excavations while the pool is constructed.

The solution will need to form part of the party wall award between the neighbouring owners.

7.0 Conclusion

The local authority has set general guidance which we have taken on board and carried out a BIA following guidance set out by other London boroughs.

Information from the site investigation has been used to assess the potential impacts identified by the screening process.

It is concluded that the proposed development is unlikely to result in any specific issues relating to land or slope stability, the hydrogeology and hydrology of the site. Suitable construction methods will ensure that excavations and stability of adjacent structures are taken into consideration and there should be no negative impact on the groundwater.

John Sime & Associates Ltd

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Appendix I

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Basement Impact Assessment
EXTERNAL SWIMMING POOL NO.4 OAK HILL PARK CAMDEN LONDON NW3 7LG

[illegible]

No 3 Oak Hill
Park Mews

Notes

1. Do not scale from this drawing.
2. All dimensions are in millimeters unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work.
4. Robert Hirschfield Architects shall be notified in writing of any discrepancies.
5. All drawings, specifications and related documents are the copyright property of Robert Hirschfield Architects and must be returned upon request. Reproduction of drawings, specifications and related documents in part or in whole is forbidden without the written permission of Robert Hirschfield Architects.

Party wall act 1996

Note: If the project progresses onto site without the involvement of Robert Hirschfield Architects, the Client must seek advice prior to commencement of the planned works as detailed on the drawings to establish whether the works fall within the scope of the Act which require adjoining property owners to be served with a statutory notice.

C.D.M. regulations 2015

These drawings have been produced for the purpose of applying for Planning and Building Regulations only. If the project progresses on to site without the involvement of Robert Hirschfield Architects, the Client and Contractor must ensure that they fulfil the duties in respect of the Construction (Design and Management) Regulations 2015.



| Rev | Date | Amendment |
|-----|------------|------------------------------|
| - | 11/10/2024 | Building Control Draft Issue |
| A | 16/12/2024 | Tender- Groundworks/Frame |



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project
4 OAK HILL PARK LONDON NW3 7LG

drawing

SITE PLAN

| | | | |
|------------|--------------------------|-------|----------|
| scale-size | 1:250 · A3 1:125 · A1 | drawn | checked |
| project | drawing no. | MW | RH |
| 244 | P_TE_001 | | A |

