

Wallace House

**Review of Engineering aspects of the
Proposed Extensions.**

Prepared for

Mr & Mrs Beare

September 2017

Wallace House

Review of Structural Engineering aspects of the Proposed Extensions

1.0 Introduction and Brief

A planning application has been submitted to carry out major alterations to the Wallace House. As part of this the existing ground level garage building is to be demolished and reconstructed with a habitable room under and bedrooms over. The works are close to the boundary with No. 49 Fitzroy Park which is slightly north east of the Wallace House.

Mr & Mrs Beare, the owners of No. 49 Fitzroy Park have instructed Alan Baxter Ltd to review and comment on the proposals, in relation to the impact on the boundary and compliance with London Borough of Camden's Planning Policy.

2.0 Information Received

The following information has been considered as part of this review.

- Site Investigation and Basement Impact Assessment Report by Geotechnical and Environmental Associates dated August 2017.
- Structural and Civil Engineering Planning Report by Elliot Wood dated August 2017
- Soup Architects existing and proposed drawings.

3.0 Proposals

The existing house on the site dates from 2002/2003.

The proposals include the demolition of the existing garage building and its reconstruction with a lower ground floor, rebuilt garage and bedrooms over. It also includes the removal of the existing internal pool and the reconstruction of a larger living area. It appears that parts of the proposals are similar to a previously consented scheme, which has since expired.

4.0 Geology and Site Investigation

The site is located close to the boundary between the Claygate beds and London Clay.

The site investigations (SI) indicate that there is 1-2m of Head Deposits over London Clay which is to be expected. The SI also recorded small amounts of water inflow in two of the three boreholes which is again typical of what is expected in the area.

The designers anticipate that there will be some small flows of ground water, which also occurred when the original house was constructed.

5.0 Key Points

5.1 The following points have been considered:

- Impact on ground water/hydrology of the area
- Overall slope stability/local slope stability
- Excavation and temporary works proposals
- Impact on trees
- Ground Movements
- Potential Contamination of the ponds during construction

5.2 Impact on ground water/hydrology of the area.

We have been advised that there were significant issues with the control of groundwater when the original house was constructed. Also we have been advised that there was surface water run off from the site during construction which led to contamination of the ponds on Hampstead Heath.

The current lower ground floor of the existing house acts as a barrier to any ground water flow in the Head Deposits and the upper levels of London Clay. The extended lower ground floor will cut slightly further into the slope but should not further impact on the ground water flow as it is already impacted. The proposals allow for any groundwater to drain around and under the new lower ground floor area. The engineering report notes that a Surface Water Management System was built as part of the construction of Wallace House. The report notes that "this system included a number of surface water drains that drain into a pond with an overflow into the ditch" (along Millfield Lane). "This replicates the original arrangement when excess water would have flowed into the ditch on Millfield Lane".

Details of the existing drainage system have not been provided and these should be requested.

5.3 Overall slope stability/Lower slope stability

The proposal should not impact on either overall slope stability or local slope stability after the construction is complete (see section 5.4 below).

5.4 Excavation and Temporary works proposals

From a construction viewpoint, the proposal is to construct the lower ground floor in an open excavation with 60° battered slopes. This is quite steep, but is probably acceptable in the short term if the excavation was well away from adjacent buildings. However, the "Little House" appears too close for this. Also, although the boundary structure with 49 Fitzroy Park is further away, it would be prudent to request that a degree of temporary works is provided given the condition of the boundary wall which is noted to be bowing in places.

There appears to be some confusion in the documents about how this excavation is to be constructed. In places the reports refer to the battered excavation and in others it is noted that "GEA (the Site Investigation Consultant) conclude ground movements will result in negligible damage if stiff propping/bracing is provided to the excavation". However, in another section GEA refer to open excavations. This needs to be clarified. Ideally, the excavation should be propped in the temporary case.

5.5 Impact on Trees

Based on the drawings provided, it appears that the extension to the summary pool area will impact on the root protection zone of a large tree on the boundary with Fitzroy Park.

An Arboricultural should review and comment on this.

5.6 Ground Movement

As noted in 5.4, there is some confusion on the ground movement assessment as to whether it relates to an open excavation or has a stiff propping system. This needs to be clarified and the potential impact on the Little House needs to be considered, particularly if an open excavation is proposed. If an open excavation is proposed, the impact on the boundary structures with 49 Fitzroy Park should also be considered.

5.7 Potential Contamination of the Ponds

As noted above, it has been reported that contamination of the ponds occurred due to surface water runoff when the original house was constructed. The engineering report for the proposed extensions notes that “temporary surface water flow will be dealt with via gravity drainage and temporary pumping from sumps”.

It is not clear if this is the existing gravity drains or temporary ones. However, it is highly likely that it will drain into the existing drains, leading to the pond and Millfield Lane, which could result in these areas being contaminated during the construction process.

Further details of the temporary drainage systems are required.

6.0 Conclusion

The general approach and details submitted general appear to comply with Camden’s Planning Policy. Overall, it appears that the proposed extension to the lower ground floor will not change the existing ground water flows after the works are complete.

However, there are potential issues relating to the lack of temporary works on local stability issues during construction and the assumptions made on the ground movement analysis need to be clarified.

The report notes that there is an existing ground water overflow into the ditch in Millfield Lane. While the proposals are unlikely to change the flows, more details are required of the measures put in place during construction to control run off and potential contamination.

The potential impact on the tree at the boundary with Fitzroy Park should also be assessed.