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Consideration of requirement for a Basement Impact Assessment

Prepared by

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Having worked through the guidance contained within CPG4, it is apparent that a full BIA is not required for this particular development. This existing 4 story detached house already has a basement. It is proposed to construct a buried reinforced concrete structure within the front garden, for use as a family room.

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The following tables relate to

Camden Planning Guidance 4 – Basements and Lightwells. STAGE 1 SCREENING REPORT

Section 1 Subterranean (ground water) flow screening chart

1a: Is the site located directly above an aquifer?	No: Property is founded on essentially impermeable London Clay – based on local knowledge and geological maps See attached appendix for 'Lost Rivers of London', 'Surface water features map' and geology.
1B: Will the proposed basement extend beneath the water table surface?	No: See Q1 – Also see the accompanying soils report that the water table (or standing water) is in the order of 4.7 metres below the pavement level.
2: Is the site within 100 m of a watercourse, well (used/disused) or potential spring line?	No: The property is to the North of Regents Park and is North of the train lines from Euston Station, which lead around to Hampstead. The nearest watercourse is Regents Canal some distance to the South. The Environment Agency's 'Risk of Flooding from Rivers and Sea' map shows that this immediate area is not a risk from river flooding as it is beyond the flood plain. See also mapping on the attached appendix.
3: Is the site within the catchment of the pond chains on Hampstead Heath?	No. See OS map on page 2 of appendix.
4: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No: the front garden is already paved for use as a parking area. The hard surfacing will remain unchanged.

5: As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground?	No: No additional surface water will be generated as the proposed basement is underground. Any underground surface water flow is already blocked by the existing retaining wall and the steps up to the main house. The proposed basement will simply move this boundary towards the pavement. The accompanying soils report discusses this further and concludes that any risk of 'damming' is negligible.
6: Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line?	No: Surface Water Features Map and Lost Rivers Map in the appendix show that no features are near to the property. This is a built up area of Victorian properties, most of which already have basements.

Section 2 Slope Stability Screening

1: Does the existing site include slopes, natural or manmade, greater than 1 in 8?	No: See the attached Slope Angle Map in the appendix and the widely spaced contours on the O S map. The ground slopes at approximately 2 degrees in the immediate area.
2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 1 in 8?	No: The landscaping will remain as existing.
3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 1 in 8?	No
4: Is the site within a wider hillside setting in which the general slope is greater than 1 in 8?	No: It is a residential area with very little slope to the adjacent ground / roads.
5: Is the London Clay the shallowest strata in the area?	Yes: The clay extends 'to depth' in the area as is shown on the local Geological Map. See our Impact Assessment at the end of this document and the attached soils report. The Soil report estimates that any heave will be 10 mm's or less. This very small possible movement will only affect our clients property.
6: Will any trees be felled as part of the proposed development and / or any works proposed within any tree protection zones where trees are to be retained?	Yes: A modest garden tree will be cut down; however the new scheme includes a recess in the new structure to allow for a replacement tree to be planted.

7: Is there a history of seasonal shrink - swell subsidence in the local area and / or evidence of such effects at the site?	No: Although founded in shrinkable London Clay, we are working to the front of an existing basement that is below the normal depth of seasonal ground movement as are the adjacent properties, which also include basements. The new structure is forward of our clients building and away from the neighbours buildings.
8: Is the site within 100 m of a watercourse or a potential spring line?	No: Nothing is shown on local maps (see appendix) - or from local knowledge. The property is founded in impermeable London Clay away from leakage resulting from sand or gravel layers.
9: Is the site within previously worked ground?	No
10: Is the site within an aquifer?	No: See answer to item 8.
11: Is the site within 50m of the Hampstead Heath Ponds?	No: See OS Map in the appendix.
12: Is the site within 5 m of a highway or pedestrian right of way?	Yes. However the minor works have no impact on the adjacent pedestrian footpaths. See our Impact Assessment at the end of this document.
13: Will the basement significantly increase the differential depth of foundations relative to neighbouring properties?	No: The proposed new structure is away from the neighbours foundations. Trial hole one shows our clients main building front elevation foundation to be 540 mm's below the light wells ground level. It is reasonable to consider that the neighbour's foundation will be at this depth. Our section F - F on drawing CA4297/B01 shows that we are above a 45 degree spread from the neighbours foundations.

14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?

No: The main railway line from Euston Station is clearly marked on local maps and page 7 of the appendix.

Section 3 Surface flow and flooding screening flowchart.

1: Is the site within the catchment areas of Hampstead Heath?	No, see OS Map on page 2 of appendix.
2: As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No: The area is currently hard standing and this will remain.
3: Will the proposed basement development result in a change in the proportion of hard / paved external areas?	No.
4: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream water courses?	No: The structure is fully underground in impermeable clay. The volume of the new 'box' is relatively small compared to the adjacent buildings.
5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No: See 4
6: Is the site in an area known to be at risk from surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and Kings Cross, or is it at risk from flooding, for example because the proposed basement is below the static water table of a nearby surface water feature?	No: The nearest watercourse is Regents Canal to the South. The Environment Agency's 'Risk of Flooding from Rivers and Sea' map shows that this immediate area is not at risk from river flooding as it is beyond the flood plain. See also the maps in the appendix.

CONCLUSION

It can be seen from the above assessment, the attached soils report from Southern Testing and our attached structural drawings, that the proposed works are limited in nature and make only a relatively small change to the existing basement footprint. All new works are confined to the footprint of the existing front garden and do not extend or underpin the neighbours buildings. As we have answered *Yes* to items 5 and 12 in Section 2, we attach a brief Basement Impact Assessment, following guidance given in Camden's Hydro-geological report by ARUP, at the end of this document. *Yes* to item 6 has been commented on in the above report.

Neighbouring properties will be protected by their rights under the Party Wall Act.

Works will be carried out by a Contractor with experience of work of this nature.

We consider that no further risk assessment is required and would comment that similar scale schemes in the Camden area have been approved with no additional assessment being required.

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Basement Impact Assessment in response to - **Section 2, Items 5 and 12.**

Item	Area of concern	Impact Assessment
5: Is the London Clay the shallowest strata in the area? (Yes)	(i) Forming basements in London Clay can mean that adjacent properties could suffer from differential ground movement as their shallow foundations could be in clay that is affected by seasonal ground movement. (ii) As London Clay is impermeable Hydrological issues are not of concern in this case. (iii) Consideration must be given to the stability of the ground during the works and the long term stability of the neighbouring properties.	(i) In this case the neighbouring properties already have basements. The proposed works do not underpin the neighbours buildings and so do not risk forming a hard spot below their foundations. (iii)The works will be done by reducing the ground level locally (by say a maximum of one metre) and then excavating down individually to cast metre wide sections of retaining wall in a hit and miss sequence. The retaining walls will be propped diagonally of the ground, until sufficient is cast to prevent any risk of lateral movement. This will minimise any disruption to adjacent properties. As we are not underpinning the neighbour's buildings and they are at a short distance from our proposed works, the neighbour's structures are not at risk. A Hit and Miss construction sequence plan accompanies this report.

12: Is the site within 5 m of a highway or pedestrian right of way? (Yes)	(i) Our works are being carried out in a front garden, that is adjacent to a pavement and hence a public road. (ii) Works close to the highway could have an impact on the stability of the highway or pedestrian right of way or on services in the public pavement.	(i) Our works are being excavated to a depth of 3 meters below the pavement and away from the highway. The pavement will be enclosed with hoarding to prevent public access near to the excavation. Sequential excavation and propped formwork will be used to prevent undermining of the pavement. A drainage survey will have established the location of any pipework and CAT scans will be done before any excavation. (ii) The permanent works will have no impact on the local highway or pedestrian right of way once complete - see (i).