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Consideration of requirement for a Basement Impact Assessment

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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 is an existing 5 story detached house in a terrace of different properties. The property already has a lower ground floor and it is proposed to excavate down for a further 1710 mm's, in an extension beyond the rear of the property. The lower ground floor will be extended further back into the garden, as an area of private garden for the basement flats and is located at the centre of the development, away from the neighbours buildings. Small lightwells will be excavated to the front of the property.

May 2018

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 – Although some water from seepage has been detected in our trial holes, this is not considered to be the water table and is likely to be standing water in the top soil.
2: Is the site within 100 m of a watercourse, well (used/disused) or potential spring line?	No: The property is between Woodchurch Road and Compayne Gardens, to the South of West Hampstead tube station. Local records confirm that there are no nearby water courses – see item 6.3
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?	Yes: the front garden is already partly paved. The rear area is largely garden as existing - The extension will cover 21% of the garden, bearing in mind that the lower terrace area will comprise planting and grass areas.
5: As part of the site drainage, will more surface water (e.g. rainfall and run-off)	No: No additional surface water will be generated as the proposed basement is

than at present be discharged to the ground?	underground. Any underground surface water flow is already blocked by the existing retaining wall and the negligible permeability of the clay soils.
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, many of which already have basements, as does the adjacent Mansion Block.

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. Calculations for similar schemes have estimated that ground heave might be in the order of 10 mm's for single story basements. We have done a number of single story basements in clay with the reinforced concrete ground slab bearing straight onto the clay and have not experienced issues with differential movement once they are complete. In this case the new excavation is only 1.7 m deep and it is beyond the existing house.

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?	No: although some shrubs may be removed. The proposed basement is near to an existing tree in the garden of 2 Cleve Road. The guidelines of BS5737:2005 'Trees in relation to construction – Recommendations' will be followed during the works, to protect all mature trees – however given that the tree is on the neighbours land, access to it is very restricted.
7: Is there a history of seasonal shrink – swell subsidence in the local area and / or evidence of such effects at the site?	No: The subject building and its immediate neighbours show no signs of local subsidence.
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 any significant 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. The front of the existing property bay windows is approximately 7 metres from the back of the public pavement line. The new basement will project forward of the existing building line, meaning that the new basement will be approximately 5.0 metres at its closest point. 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 neighbours properties are detached from ours.
14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?	No: The West Thameslink line is clearly marked on local maps and page 7 of the appendix. It is over 200 metres away from the property, measured from Ordinance Data maps.

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?	Yes: see response to section 1 – item 4, below.
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. Its footprint is largely under the existing building, which would have historically controlled surface water anyway.
5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No: See Section 1: 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 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, that the proposed works are limited. All new works are confined to and are away from the boundaries of the existing front property and below the party walls. 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.

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 1 (4), Section 2 (5 & 12).**

Item	Area of concern	Impact Assessment
1(4): Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	Although the existing part paved area to the front of the property will remain approximately as existing, because of permeable paving to the garden and refuge area, about 21% of the existing rear garden area will be built over, creating additional hard areas.	We consider that the impact on the drainage to the rear area will be minimal as the majority (79%) of the original 400 m2 of garden will remain. New landscaping will include better drained grassed areas and further drainage in the form of rain water gullies against the new house.
2(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.	(i) We have done a number of basement designs in London Clay and our experience is that single story basements do not cause significant differential movement between the properties. In this case we are detached from the neighbours properties and the excavations are away from the neighbours buildings.
	(ii) As London Clay is impermeable Hydrological issues are not of concern in this case.	(iii)The works will be done by reducing the ground level locally and then excavating down individually to cast metre wide sections of retaining wall in a hit and miss sequence. The

	(iii) Consideration must be given to the stability of the ground during the works and the long term stability of the neighbouring properties.	retaining walls will be propped diagonally of the ground, until sufficient are cast to prevent any risk of lateral movement. The neighbours properties are distant from these excavations. We are not infact carrying out any underpinning.
2(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 to the front are being excavated to the finished depth of 1.6 below the pavement and away from the highway. The new retaining wall will be just under 5 metres away from the pavement and so a 45 degree spread line from the excavation up to inside the pavement line can easily be achieved. The property 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 – as above.