Basement Impact Assessment

110 Drummond St, London NW1 2HN

Stage 1 - Screening

This screening assessment is carried out in accordance to CPG4 'Basements and Lightwells'.

Answers to questions in Figure 1 - Subterranean (ground water) Flow

- NO: The site is not located above an aquifer, as confirmed by the interactive maps on the Environment Agency website. Drummond Street is located outside the boundary of a Secondary B aquifer. Local knowledge of the site (i.e. past basement excavation at 121-123 and 133-135 Drummond St which is across the road) confirms there is London Clay outcrop just below the made ground; hence the site cannot be considered to be above an aquifer.
- 1b **NO:** The proposed basement matches the level of the existing basement of the property and does not extend below the water table surface.
- 2 **NO:** The site is not within 100m of a watercourse.
- 3 **NO:** The site is not within the catchment of the pond chains in Hampstead Heath.
- 4 **NO:** The back garden where the new basement extension is proposed is currently hard surfaced so there will be no net change.
- NO: The will be no increase is rainfall run-off from surfaces than present. All foul and storm water drains on the site are gravity fed and will be maintained.
- 6 **NO:** The lowest level of the proposed basement including foundations will not be lower than the mean water level of a local pond.

Answers to questions in Figure 2 - Slope Stability

- 1 **NO:** There are not site slopes greater than 7 degrees.
- 2 **NO:** Proposed site re-profiling will not result in a slope greater that 7 degrees.
- 3 **NO:** The site does not neighbour land with slopes greater than 7 degrees.
- 4 **NO:** The site is not within a wider hillside setting, which in general has a slope greater than 7 degrees.
- 5 **NO:** London Clay is not the shallowest strata on site.

6 **NO:** No trees will be felled.

7 **NO:** There is no evidence of seasonal shrink-swell subsidence in the locality. Our local knowledge of Drummond Street confirms that none of the properties we

have been involved in suffer from subsidence.

8 **NO:** The site is not within 100m of a watercourse or spring line.

9 **NO:** The site is not within a previously worked ground, the area has a been

identified as historically residential.

10 **NO:** The site is not within an aquifer.

NO: The site is not within 50m of the Hampstead Heath ponds.

YES: The site is within 5m of a highway and pedestrian right of way. **The**

proposed basement retaining walls adjoining the highway and public right of way will be suitably structurally designed to resist surcharged loads as

prescribed by the Highway's Department.

13 NO: Neighbouring properties as well as the existing properties have existing

basements. The proposed extension will match these levels.

14 **NO:** The site is not over any tunnels or tube lines.

Answers to questions in Figure 3 - Surface Flow and Flooding

1 **NO:** The site is not within the catchment of the pond chains in Hampstead Heath.

2 NO: Proposed site drainage will be via the existing storm water sewers and the

site's volume of rainfall and peak run-off will not materially change from the

existing routes.

3 **NO:** The proposals will not result in a change in the proportion of hard surfaced

areas.

4 **NO:** The proposed basement will not result in changes to profiles of inflows of

surface water received by adjacent properties; the proposals are surrounded by development of similar construction on all sides.

5 **NO:** The proposed basement will not result in changes to the quality of surface

water received by adjacent properties.

6 **NO:** The site is not at risk from surface water flooding.

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Subterranean (ground water) flow screening chart Figure 1.

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1a: Is the site located directly above an aquifer? Question 1b: Will the proposed basement extend beneath the water table surface?

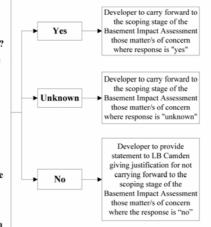
Ouestion 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line? Ouestion 3: Is the site within the catchment of the pond

chains on Hampstead Heath?

Question 4: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?

Question 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 (e.g. via soakaways and/or SUDS)?

Question 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.



Notes / sources of information

Question 1: In LB Camden, all areas where the London Clay does not outcrop at the surface are considered to be an aquifer. This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The location of the geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are

indicative and should be considered to be accurate to ±50m at best.

Additionally, the Environment Agency (EA) "Aquifer Designation Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environment-agency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater". Knowledge of the thickness of the geological strata present and the level of the groundwater table is required. This may be known from existing information (for example nearby site investigations), however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA.

Question 2: Watercourses, wells or spring lines may be identified from the following sources

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions). Current maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ± 50 m. Earlier geological maps (e.g. the 1920's 1:10560 scale) maps show the location of some wells
- Aerial photographs
- "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.
- The British Geological Survey (BGS) Geolndex includes "Water Well" records. See www.bgs.ac.uk and follow "Online data" > "GeoIndex" > "Onshore GeoIndex".
- The location of older wells can be found in well inventory/catalogue publications such as "Records of London Wells" by G. Barrow and L. J. Wills (1913) and "The Water Supply of the County of London from Underground Sources" by S
- The Environment Agency (EA) "Source Protection Zone Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environment-agency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater".
- The EA hold records of licensed groundwater abstraction boreholes. LB Camden is within the North East Area of the Thames Region. Details can be found on the EA website.

 LB Camden Environmental Health department may hold records of groundwater wells in the Borough.
 Where a groundwater well or borehole is identified, it will be necessary to determine if it is extending into the Lower Aquifer (Chalk) or the Upper Aquifer (River Terrace Deposits, Bagshot Formation, Claygate Member etc). It is water wells extending into the Upper Aquifer which are of concern with regard to basement development.

Question 3: Figure 14 in the attached study, (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath.

Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above

Question 5: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for

Question 6: The lowest point will be specific to the proposed development. Knowledge of local ponds may be taken from

- · Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- Aerial photographs

Slope stability screening flowchart Figure 2.

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1: Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7°? (approximately 1 in 8)

Question 5: Is the London Clay the shallowest strata at the site?

Question 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained? (Note that consent is required from LB Camden to undertake work to any tree's protected by a Tree Protection Order or to tree's in a Conservation Area if the tree is over certain dimensions).

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?

Question 8: Is the site within 100m of a watercourse or a potential spring

Question 9: Is the site within an area of previously worked ground?

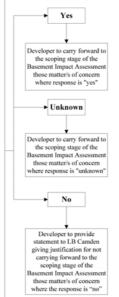
Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?

Question 11: Is the site within 50m of the Hampstead Heath ponds?

Question 12: Is the site within 5m of a highway or pedestrian right of way?

Question 13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?

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



Question 1, 3 & 4: The current surface slope can be determined by a site topographical survey. Slopes may be estimated from 1:25,000 OS maps, however in many urban areas such maps will not show sufficient detail to determine surface slopes on a property-by-property scale, just overall trends. With regard to slopes associated with infrastructure, e.g. cuttings, it should be

property-oy-property scare, just overall trends. With regard to slopes associated with infrastructure, e.g. cuttings, it should be ensured that any works do not impact on critical infrastructure.

Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement.

Question 5: The plan footprint of the outcropping geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at

best.

Question 6: this is a project specific determination, subject to relevant Tree Preservation Orders etc.

Question 7: this can be assessed from local knowledge and on-site observations of indicative features, such as cracking,
Insurance firms may also give guidance, based on post code. Soil maps can be used to identify high-risk soil types. Relev
guidance is presented in BRE Digest 28 "Low-rise building foundations: the influence of trees in elay soils" (1999); BRE
Digest 240 "Low-rise buildings on shrinkable clay soils: part 1" (1993); and BRE Digest 251 "Assessment of damage in lot

with the difference of the property of t rise buildings" (1995). Question 8: Watercou

ses or spring lines may be identified from the following so

- Local knowledge and/or site walkovers
- Ordanace Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbol may be present "Spr"; water is indicated by blue colouration. (check the key on the map being used)
 Geological maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ±50m at best. British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions).
- Aerial photographs

• Aerial photographs
• "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.
Question 9: Worked ground includes, for example, old pits, brickyards, cuttings etc. Information can be gained from local knowledge and/or site walkovers, and from historical Ordnance Survey maps (at 1:25,000 or 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale). This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The general footprint of the geological strata can be assessed from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.
The Environment Agency (EA) Aquifer Designation Maps can be used to identify aquifers. These are available from the EA website (towww.environment-agency.gov.uk), by clicking on 'At home & leisure' > 'What's in Your Backyard' > 'Interactive Maps' > Groundwater'.

wheshite (www.environment-agency.gov.uk), by clicking on 'At home & leisure' > Whats In 10th Date, which wheshite (www.environment-agency.gov.uk), by clicking on 'At home & leisure' > Whats In 10th Date, which Maps' > 'Groundwater', and the thickness of the geological strata present and the level or depth of the groundwater table. This may be known from existing information (for example nearby site investigations), however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA and may require specialist advice to answer. Depth of proposed development is project specific.

Question 11: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). In relation to the stability and integrity of the pond structures and dams, the guidance of a Panel Engineer should be sought. (Details of Panel Engineers sane be found on the Environment Agency website: http://www.environment-agency.gov.uk/ business/sectors/64253.aspv.). Duty of care needs to be undertaken during any site works in the vicinity of the ponds.

Question 12: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). Any works should not impact or critical infrastructure.

Question 13: From local knowledge and/or site walkovers. May find some details on neighbouring properties from searches of LB Council databases, e.g. planning applications and/or building control records.

Question 14: From local knowledge and/or site walkovers. Grom Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale) and directly from those responsible for tunnels (e.g. Tfl. or Network Rail). Any works should not impact on critical infrastructure.

Figure 3. Surface flow and flooding screening flowchart

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1: Is the site within the catchment of the pond chains on Hampstead Heath?

Question 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?

Question 3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?

Question 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 watercourses?

Question 5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?

Developer to carry forward to the scoping stage of the Basement Impact Assessment those matter/s of concern where response is "unknown"

Developer to provide statement to LB Camden giving justification for not carrying forward to the scoping stage of the Basement Impact Assessment those matter/s of concern where the response is "no"

Developer to undertake a Flood Risk Assessment in accordance with

Yes

▶ Unknown

No

Developer to carry forward to the

scoping stage of the Basement Impact

Assessment those matter/s of concern where response is "yes"

PPS25

Developer to undertake a Flood Risk

Assessment in accordance with

PPS25.

Flood Risk Assessment not required.

Question 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 King's Cross, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?

Notes / sources of information

Question 1: Figure 14 in the attached study (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath

Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement. The developer should provide documentation of discussion with Thames Water to confirm that the sewers have capacity to receive any increased wastewater flows.

Question 3: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for the property

Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 5: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 6: The principles outlined in PPS25 should be followed to ensure that flood risk is not increased.