

15A Croftdown Road
NW5 1EL

Basement Impact Assessment
Audit

For

London Borough of Camden

Project Number: 12985-98
Revision: D1

February 2020

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1.0 NON-TECHNICAL SUMMARY

- 1.1. CampbellReith was instructed by London Borough of Camden, (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for 15A Croftdown Road, NW5 1EL (planning reference 2019/6007/P). The basement is considered to fall within Category B as defined by the Terms of Reference.
- 1.2. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.
- 1.3. CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and reviewed it against an agreed audit check list.
- 1.4. The Basement Impact Assessment has been prepared by Soiltechnics Ltd. The qualifications of the individuals satisfy the requirements of CPG: Basements.
- 1.5. The site is currently occupied by a three-storey semi-detached house, with a basement under one half and an under croft beneath the other half of the property. It is proposed to extend the existing basement and the under croft, to provide a single basement of constant level.
- 1.6. Underpinning is the proposed construction methodology for the basement.
- 1.7. Based on a site investigation at the adjacent plot, the proposed basement will be founded in the London Clay, which is designated as unproductive strata. Whilst it is indicated that perched water is likely to be encountered, the development will not impact the wider hydrogeological environment.
- 1.8. The site is generally flat with a slope gradient of 2 degrees and it is accepted that the proposed works will not result in unsupported slopes of greater than 7 degrees.
- 1.9. The development will increase the impermeable surface area and is within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment.
- 1.10. A ground movement assessment considers impact on adjacent properties and infrastructure. It is accepted that, considering the existing basements / lower ground floors of the adjacent properties, impacts will be limited to within Category 1 (Very Slight), assuming good workmanship.

- 1.11. Queries and requests for information are discussed in Section 4 and summarised in Appendix 2. Until the additional information requested has been presented, the BIA does not meet the requirements of CPG: Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 7th January 2020 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Flat A, 15 Croftdown Road.
- 2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.
- 2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
 - Camden Planning Guidance Basements. March 2018.
 - Camden Development Policy (DP) 27: Basements and Lightwells.
 - Camden Development Policy (DP) 23: Water.
 - Local Plan Policy A5 Basements.
- 2.4. The BIA should demonstrate that schemes:
- a) maintain the structural stability of the building and neighbouring properties;
 - b) avoid adversely affecting drainage and run off or causing other damage to the water environment;
 - c) avoid cumulative impacts upon structural stability or the water environment in the local area, and;
 - d) evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.
- 2.5. LBC's Audit Instruction described the planning proposal as *"Enlargement of existing basement including creation of front and rear lightwells; erection of replacement rear extension and other external alterations"*
- 2.6. CampbellReith accessed LBC's Planning Portal and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Report prepared by Soiltechnics Ltd (Reference No: STQ4636-BIA01, dated January 2019);
- Design and Access Statement prepared by KIMA Architecture and Interiors (Reference No: 1808, dated January 2019);
- Structural Engineers Report prepared by WCJ Ltd (dated February 2019);
- Planning Application Drawings consisting of:
 - Location Plan: A100_P01, dated 02 February 2019;
 - Existing and proposed plans: A100_P02, A101_P02, 17660/01_P2, 17660/02_P2, 17660/03_P2, 17660/07-P1;
 - Existing and proposed elevations and sections: A200_P02, A300_P02, A301_P02, A600-P0117660/04_P2, 17660/05_P2, 17660/06_P2;
- Planning Comments and Responses.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

| Item | Yes/No/NA | Comment |
|--|-----------|---------|
| Are BIA Author(s) credentials satisfactory? | Yes | |
| Is data required by Cl.233 of the GSD presented? | Yes | |
| Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology? | Yes | |
| Are suitable plan/maps included? | Yes | |
| Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail? | Yes | |
| Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers? | Yes | |
| Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers? | Yes | |
| Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers? | Yes | |
| Is a conceptual model presented? | Yes | |
| Land Stability Scoping Provided? Is scoping consistent with screening outcome? | Yes | |

| Item | Yes/No/NA | Comment |
|--|-----------|---|
| Hydrogeology Scoping Provided? Is scoping consistent with screening outcome? | Yes | |
| Hydrology Scoping Provided? Is scoping consistent with screening outcome? | No | The development will increase the impermeable surface area and is within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. |
| Is factual ground investigation data provided? | Yes | The ground investigation data presented is for the neighbouring site 17 Croftdown Road (Reference: STN3576D-G01, dated June 2016). |
| Is monitoring data presented? | Yes | Refer ground investigation report for 17 Croftdown Road (Reference: STN3576D-G01, dated June 2016). |
| Is the ground investigation informed by a desk study? | Yes | Carried out for adjacent property. |
| Has a site walkover been undertaken? | Yes | |
| Is the presence/absence of adjacent or nearby basements confirmed? | Yes | Refer Sections 7.3.7 and 7.3.8 of the BIA. |
| Is a geotechnical interpretation presented? | Yes | Refer Section 7 of the BIA. |
| Does the geotechnical interpretation include information on retaining wall design? | Yes | |
| Are reports on other investigations required by screening and scoping presented? | No | Drainage assessment required. |
| Are the baseline conditions described, based on the GSD? | Yes | |

| Item | Yes/No/NA | Comment |
|--|-----------|---|
| Do the base line conditions consider adjacent or nearby basements? | Yes | |
| Is an Impact Assessment provided? | Yes | Indicative values for variations in volume of surface water as a result of the proposed development is also required. |
| Are estimates of ground movement and structural impact presented? | Yes | |
| Is the Impact Assessment appropriate to the matters identified by screen and scoping? | No | The development will increase the impermeable surface area and is within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. |
| Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme? | No | Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. |
| Has the need for monitoring during construction been considered? | No | |
| Have the residual (after mitigation) impacts been clearly identified? | No | Drainage assessment required. |
| Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained? | Yes | |
| Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment? | No | Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. |
| Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area? | No | Drainage assessment required, as above. |
| Does report state that damage to surrounding buildings will be no worse than Burland Category 1? | Yes | |

| Item | Yes/No/NA | Comment |
|---------------------------------------|-----------|---------|
| Are non-technical summaries provided? | Yes | |

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by Soiltechnics Ltd. The author of the report is a Chartered Civil Engineer and the reviewer a Chartered Geologist with 20 years of experience as a hydrogeologist. The qualifications of the author and the reviewer conforms to the requirements of CPG: Basements.
- 4.2. The Design & Access Statement prepared by KIMA Architecture and Interiors, identified that 15A Croftdown Road is located in the Dartmouth Park Conservation area, and that the property is not listed.
- 4.3. The site is currently occupied by a three-storey semi-detached house, with a basement (formed at 2.0m below ground level (bgl)) under one half with an undercroft (formed at 1.1m bgl) beneath the other half of the property. It is proposed to extend the existing basement and the undercroft to 2.7m bgl, to provide a single basement of constant level. The maximum excavation depth is indicated to be no more than 3.0m bgl (Section 7.3.3).
- 4.4. The ground investigation data included in the BIA was undertaken for the neighbouring property 17 Croftdown Road in 2016. The proposed basement will be founded in the London Clay, which is designated as unproductive strata. Whilst it is indicated that perched water is likely to be encountered, the development will not impact the wider hydrogeological environment.
- 4.5. Underpinning is the proposed construction methodology for the basement. Outline structural information including proposed sequencing and propping is presented. The contractor will need to develop a temporary works strategy to deal with the inflow of perched water during construction to ensure stability.
- 4.6. The site is generally flat with a slope gradient of 2 degrees. It is accepted that the proposed works will not result in unsupported slopes of greater than 7 degrees.
- 4.7. It is stated that no trees will be removed as part of the scheme, that the site is remote from current watercourses, and that the site is not within an area of previously worked ground. The proximity of historic watercourses is discussed and assessed not to be impacted by the proposed development.
- 4.8. It is stated in the BIA that the proposed development results in an increase of 15m² of impermeable site area and is located within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. It is accepted that the London Clay is not suitable for infiltration of storm water.

However, In accordance with CPG Basements Section 4.54, an attenuation SUDS strategy will be required to suitably mitigate any increase in peak off-site flow rates.

- 4.9. The site is not considered to be at risk from surface water flooding although is at risk from reservoir flooding associated with the Hampstead Heath Ponds. It is stated in the BIA that the Hampstead Heath Ponds fall under the Reservoirs Act 1975 and is therefore subject to regular inspections and maintenance. It is therefore accepted that the probability of failure of the ponds is relatively low and that the proposed development does not increase the risk of flooding to neighbouring properties. The Design and Access Statement confirms the intention for an emergency escape ladder to be provided in the lighwell.
- 4.10. It is stated in the Design and Access statement that the current leaseholder has reported occasional flooding since December 2017, which is currently being controlled using a sump pit and pump. The cause for this flooding has not been identified and is not discussed in the BIA. The basement will require adequate waterproofing and drainage, as 4.8.
- 4.11. A ground movement assessment has been carried out to assess the potential impacts of the development on the stability of the surrounding structures and highways. The potential impacts to neighbouring structures are predicted to be a maximum of Category 1 (Very Slight), in accordance with the Burland Scale. The magnitude of movements predicted are within the range anticipated considering the proposed construction methodology, scale and depth of development. Its also noted that the adjoining 17 Croftdown Road has an existing basement at the same level as the proposed development, and that 13 Croftdown Road has a lower ground floor. It is accepted that, considering the existing basement and lower ground floor of the adjacent properties, impacts will be limited to within Category 1 (Very Slight), assuming good workmanship.
- 4.12. The BIA predicts very small amounts of settlement to impact the highway and underlying utilities. Asset owners should be consulted and asset protection agreements entered into, as applicable.
- 4.13. No proposals are provided for structural movement monitoring of adjacent structures or properties within the same building during excavation and construction. Criteria for limiting movements and impacts should be agreed under the Party Wall Act.
- 4.14. Further clarifications are required to confirm that the proposed development will not impact the hydrogeology, land stability and hydrology of the local area.

5.0 CONCLUSIONS

- 5.1. The qualifications of the BIA authors satisfy the requirements of CPG: Basements.
- 5.2. It is proposed to extend the existing basement and the undercroft, to provide a single basement of constant level.
- 5.3. Underpinning is the proposed construction methodology for the basement.
- 5.4. The proposed basement will be founded in the London Clay, which is designated as unproductive strata. The development will not impact the wider hydrogeological environment.
- 5.5. The proposed development will not impact upon slope stability.
- 5.6. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment.
- 5.7. It is accepted that impacts to structures will be limited to within Category 1 (Very Slight), assuming good workmanship.
- 5.8. Queries and requests for information are summarised in Appendix 2. Until the additional information requested has been presented, the BIA does not meet the requirements of CPG: Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

| Surname | Address | Date | Issue raised | Response |
|------------------|---------|------------|---|--|
| Cameron, Stephen | NA | 12.01.2020 | The proposed underpinning and footing encroaches into the neighbouring property - 13A Croftdown Road. | Not within remit of audit. Refer to LBC. |

Appendix 2: Audit Query Tracker

Audit Query Tracker

| Query No | Subject | Query | Status | Date closed out |
|----------|-----------|---|--------|-----------------|
| 1 | Hydrology | The development will increase the impermeable surface area and is within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment. | Open | |

Appendix 3: Supplementary Supporting Documents

London

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