

**Basement Impact  
Assessment Audit**

33 – 35 Jamestown Road,  
London NW1 7DB

For  
London Borough of Camden

Project No.  
14406-99

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## CONTENTS

1.0	NON-TECHNICAL SUMMARY .....	4
2.0	INTRODUCTION.....	5
3.0	BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST .....	6
4.0	DISCUSSION .....	9
5.0	CONCLUSIONS.....	13

## APPENDICES

Appendix 1 Consultation Responses

Appendix 2 Audit Query Tracker

Appendix 3 Supplementary Supporting Documents

## **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 Pre-Planning Submission documentation for 33 – 35 Jamestown Road, London NW1 7DB (planning reference 2023/1140/PRE). The basement is considered to fall within Category C 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 reviewed the BIA documents against an agreed audit check list.
- 1.4 The BIA has been carried out by individuals who hold the qualifications required by CPG: Basements.
- 1.5 The BIA includes a screening and scoping assessment.
- 1.6 The BIA confirms the proposed basement will be founded within the London Clay Formation using a combination of pile walls and reinforced concrete retaining wall.
- 1.7 It is accepted that the development will not impact groundwater or surface water flows and is not in an area subject to flooding.
- 1.8 The building damage assessment states damage to the neighbouring structures can be limited to Burland Category 1 (Very Slight).
- 1.9 The BIA recommends movement monitoring during excavation and construction.
- 1.10 The impact to third party assets will be managed with asset protection agreements to be agreed with each asset owner.
- 1.11 The BIA complies with the requirements of CPG: Basements.

## 2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 25<sup>th</sup> September 2024 to carry out a Category C audit on the Basement Impact Assessment (BIA) submitted as part of the Pre-Planning Submission documentation for 33 – 35 Jamestown Road, London NW1 7DB and planning reference 2023/1140/PRE.

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

- Camden Local Plan 2017 - Policy A5 Basements.
- Camden Planning Guidance (CPG): Basements. January 2021.
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.

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 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 "Demolition of existing buildings and structures to facilitate redevelopment comprising a Purpose Built Student Accommodation (Sui Generis) block over the basement, ground, plus six storeys and seventh-floor plant room with flexible commercial (Class E) on the ground floor and a residential (Class C3) block over the ground plus five storeys. Each block has two private courtyards with hard and soft landscaping, cycle parking, and associated works."

2.6 The Audit Instruction confirmed does not state whether 33 – 35 Jamestown Road was involved or was a neighbour to, listed buildings.

2.7 CampbellReith was provided with the following relevant documents for audit purposes:

- Basement Impact Assessment (BIA) by A-squared Studio, ref. 3543-A2S-XX-XX-RP-Y-0002-01, rev. 00, dated 20<sup>th</sup> September 2024.

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	BIA section 2.2
Is data required by Cl.233 of the GSD presented?	Yes	BIA appendix A
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	BIA section 4.2
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA section 4.1
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA section 4.3
Is a conceptual model presented?	Yes	BIA section 6.1
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA section 5.1, 5.3 and 5.4
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA section 5.1 and 5.2

Item	Yes/No/NA	Comment
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	NA	
Is factual ground investigation data provided?	Yes	BIA appendix B
Is monitoring data presented?	Yes	BIA Table 6.2
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	No	However, BIA includes conservative assumptions
Is a geotechnical interpretation presented?	Yes	GMA report section 3.
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	Yes	BIA appendix C and E
Are the baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	Yes	BIA appendix C section 6.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	

Item	Yes/No/NA	Comment
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	
Has the need for monitoring during construction been considered?	Yes	BIA section 7.2
Have the residual (after mitigation) impacts been clearly identified?	Yes	BIA section 7.2
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	BIA section 7.2
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	BIA section 8.4
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	BIA section 8.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	BIA section 8.2
Are non-technical summaries provided?	Yes	BIA section 1.



## 4.0 DISCUSSION

- 4.1 The Basement Impact Assessment (BIA) has been carried out by engineering consultants A-squared Studio and the individuals concerned in its production have suitable qualifications required by CPG.
- 4.2 The site is currently occupied by two structures and areas of hardstanding with an approximate ground level of 29.0mOD. The BIA provides plans showing the existing structure and basement layout comprising:
- 33-35 Jamestown Road, with a single storey basement beneath most of the footprint and extending to the northwestern site boundary.
  - 211 Arlington Road, with a single storey basement beneath the eastern portion of the footprint.
- 4.3 The BIA identified the basement is adjacent to listed buildings and lists the closest considered within the zone of influence:
- Arlington House (220 Arlington Road), approximately 16m east of the site
  - 30 to 35 Gloucester Crescent, approximately 19m south of the site.
  - 38-46 Jamestown Road, 24, 26, and 28 Oval Road, approximately 31m northwest of the site.
- 4.4 In addition, the BIA notes underground services fall within the zone of influence. The BIA states the asset owners will be engaged and separate GMAs and asset protection agreements will be prepared to meet design assurance requirements.
- 4.5 This scheme involves the demolition of the existing structures and replacement with 3 no new structures including a 6- to 7-storey student accommodation block on the western area (PBSA), and a 2 no 6-storey affordable housing blocks on the eastern area (AHB\_JR & AH\_AR). The new structures will include a new single storey basement that will utilise part of the existing basement at 33-35 Jamestown Road, extending the basement both vertically and laterally to the south. The eastern part of the existing basement at 33-35 Jamestown Road and the existing basement at 211 Arlington Road will be backfilled to the new ground floor level. The proposed basement layout is illustrated in BIA Figure 2.4.
- 4.6 The BIA has been informed by a desktop study and a site-specific ground investigation comprising shallow windowless sample boreholes and deeper cable percussive boreholes, a foundation exposure pit, laboratory testing and groundwater monitoring.
- 4.7 BIA has identified that the site is underlain by Made Ground to a depth of 2.00m below which lies the London Clay Formation to the maximum depth of investigation (25.00m below ground level).

- 4.8 Groundwater was not encountered within the London Clay Formation during the ground investigation; however, perched water within the Made Ground is recorded in BH02 at 0.80m depth. The BIA interprets monitoring results as perched water within the Made Ground and groundwater in more permeable horizons of the London Clay Formation.
- 4.9 Foundation exposure pit TP01 shows the existing 57D building foundations comprise a shallow strip footing at 1.00m bgl, measuring 150mm thick and extending 150mm from the wall.
- 4.10 The BIA presents screening and scoping assessments. The Subterranean (Groundwater) Flow screening identifies the Regents Canal is located approximately 70m north of the site. The BIA states the impact of the proposed development on the groundwater flow is negligible due to the impermeable nature of the London Clay and that no further assessment necessary.
- 4.11 The Groundwater screening confirms the proposed development will include areas of soft landscaping, resulting in a net decrease in paved areas and greater surface water discharge into the ground. The BIA proposes attenuation SuDS and to discharge surface water run-off via two attenuation tanks and green roof area to reduce off-site drainage flow rates.
- 4.12 A flood risk assessment has been carried out for the site that states flood risk from fluvial and tidal flooding, surface water flooding, sewer flooding and groundwater are all low.
- 4.13 It is accepted the potential impact to surface water flow is negligible.
- 4.14 The Stability Screening notes there is evidence of soil shrinkage at the site and the ground investigation has proven the London Clay Formation is the shallowest strata. The BIA notes a piled basement box will provide a robust solution to mitigate against shrink swell movements due to the proximity of trees.
- 4.15 The BIA states no trees will be felled as part of the proposed development. Several trees are located close to the north-western and south-western boundaries, specifically the northern pile wall.
- 4.16 The BIA notes the site is relatively flat and slopes slightly from west to east with a gradient of approximately 1 in 57. It is not in an area with slope angles greater than 1 in 8 ( $>7^\circ$ ).
- 4.17 The response to Question 10 of the Stability Screening indicates the basement will not extend below the groundwater table; however, perched water was encountered within the Made Ground therefore some groundwater control measures during construction may be required. Based on the proposed method of construction, this should not impact stability, although battered slopes will require monitoring and protection from any water flow.
- 4.18 The stability screening confirms the site is <5m distance from a pedestrian right of way/ highway on the north, east and western boundaries. These are adjacent to the basement excavation.
- 4.19 The Stability Screening states the increase the differential depth of foundations relative to neighbouring properties neighbouring foundation depths is largely unknown. The subsequent Ground Movement Assessment assumes shallow foundation depths which is accepted as suitably conservative.

- 4.20 The BIA states the basement construction method includes a contiguous pile wall adjacent to the northern and southern site boundaries, and a 300mm thickness reinforced concrete retaining wall in the central area. Battered slopes will be required where pile walls are absent. The pile and retaining wall layout are illustrated in the construction sequence drawing (BIA Appendix D).
- 4.21 Structural information included with the BIA shows the basement excavation will be retained by the pile wall and temporary slopes battered back to a safe angle. The BIA outlines the construction sequence for the contiguous pile wall sections.
- 4.22 The proposed basement features two different finished floor levels as follows:
- Basement (PBSA): +26.13mOD
  - Basement (AHB\_JR): +25.38mOD
- 4.23 Geotechnical parameters are provided within Section 3. of the BIA which correspond with the ground investigation data and published literature.
- 4.24 A Ground Movement Assessment (GMA) has been undertaken to assess the potential impact to neighbouring properties, assuming a pile toe depth of +9.38mOD and maximum column load of 4MN.
- 4.25 The GMA uses PDisp and XDisp software to predict vertical (heave and settlement) and horizontal/lateral ground movements in two groups of construction stages as follows:
- Group A – Unloading/Loading ground movements:
    - A1. Existing buildings demolition and excavation for the new basements (short-term).
    - A2. Application of the proposed building's loading including the surcharge of the areas to be backfilled (long-term).
  - Group B – CIRIA based ground movements:
    - B1. Installation of the contiguous pile walls, use of battered slopes and excavation for the new basements.
    - B2. Installation of the contiguous pile walls, new basement excavation, and application of the proposed buildings loading including backfill surcharge (long-term).
- 4.26 Suitable CIRIA C760 normalised ground movement curves have been used for each basement construction method, including 'low stiffness' parameters where battered slopes are proposed. The ground movements predicted by the PDisp assessment have been imported into XDisp software to assess the horizontal and vertical ground movements around the development and their associated damage category for neighbouring structures.
- 4.27 Ground movement predictions indicate maximum vertical settlements in the magnitude of 40mm at localised sections from pile wall installation, and maximum horizontal movements <25mm.

- 4.28 The neighbouring structures assessed in the GMA comprise the building facades of the surrounding properties listed in the GMA report section 4.1. The building damage assessment results predict damage to neighbouring will not exceed Burland Damage Category 1 (Very Slight).
- 4.29 The BIA states the GMA results will enable design of the contiguous pile walls and any required temporary propping measures to limit ground movements and potential structural damage. The BIA recommends includes the following mitigation measures to reduce ground movements and potential damage:
- Retaining structure design in accordance with Eurocodes and best practice;
  - Assigning a competent ground engineering contractor;
  - Ground movement predictions should be checked by monitoring the existing structures and incorporating a monitoring-trigger-action plan;
  - Propping arrangements including localised stiff, high and intermediate level props during basement excavation.
- 4.30 Movements at the pavement, highway and local utilities/ third party assets have not been assessed. Asset protection agreements will be agreed with individual asset owners prior to construction commencing.

## **5.0 CONCLUSIONS**

- 5.1** The BIA has been carried out by individuals who hold the qualifications required by CPG: Basements.
- 5.2** The BIA has been informed by a desk study and site-specific ground investigation.
- 5.3** The BIA has confirmed that the proposed basement will be founded within the London Clay Formation.
- 5.4** It is accepted that no slope stability impacts will result from the proposed development.
- 5.5** It is accepted that the development will not impact on groundwater or surface water flows and is not in an area subject to flooding.
- 5.6** The building damage assessment states damage to the neighbouring buildings can be limited to Burland Category 1 (Very Slight).
- 5.7** The BIA recommends movement monitoring during excavation and construction.
- 5.8** Asset protection agreements will be required to prevent impacts to the identified infrastructure assets.
- 5.9** The BIA complies with the requirements of CPG: Basements.

## Appendix 1

### **Consultation Responses**

N/A

## Appendix 2

### **Audit Query Tracker**

None

## Appendix 3

### **Supplementary Supporting Documents**

None



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