KALEMINSTER LTD BARRIE HOUSE, 29 ST EDMUNDS TERRACE

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BASEMENT IMPACT ASSESSMENT

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1 Executive Summary

1.1 Project Description

It is proposed to develop the site adjacent to the Barrie House residential tower block at 29 St Edmunds Terrace. The project comprises a multi-storey residential development, which includes a basement below the total footprint and 3-4 levels above. In addition to the new basement, it is proposed to extend the existing basement (tank room) below the existing flats by utilising the existing under croft.

1.2 Report Content

The proposal complies with the Basement Impact Assessment requirements of Camden Planning Guidance CPG4 - Basements and Lightwells issued in July 2015. The information in this document and its appendices outlines the engineering and construction challenges specific to the site and proposal, which have been identified, carefully considered and mitigated. This document includes:

- 1. A detailed Desk Study including site history, utilities, and existing buildings and structures.
- 2. Summary of the site-specific Site Investigation including geology, hydrogeology, and hydrology. The full Investigation report can be found in Appendix D.
- 3. Appraisal of the impact of the proposed underground structures with the locality.
- Appraisal of the existing structure as it relates to the works and the final proposal. 4.
- Illustrative and quantitative details of the proposed structure to be further developed in the Detailed 5. design phase.
- 6. Outline construction sequence to be further developed by the Contractor
- Predicted ground movements, discussion of the implications, proposed monitoring regime, and 7. movement trigger levels.
- The Proposed Structural Drawings (Appendix 1) 8.
- CGL Site Investigation Report (Appendix 2) 9.
- 10. Results of the Thames Water Asset Search (Appendix 4)

Summary Screening Results 1.3

A screening exercise was carried out in accordance with recommendation of CPG4 in respect of groundwater flow, land stability, and surface flow/flooding. Reference was made to the Camden Geological, Hydrogeology, and Hydrological Study and other data sources. The full Screening Assessment can be seen in Appendix 2 – Section 4 and a summary of relevant topics can be seen below.

- 1. Subterranean (groundwater) flow: Investigation Groundwater levels across site have been found to be variable. Further monitoring visits will be undertaken to confirm the groundwater level at the existing monitoring wells. The proposed development will not increase the proportion of hardstanding on site and is therefore not anticipated to impact the amount of surface water able to drain into soils.
- 2. Slope/land stability: Assessment The proposed development is potentially at risk from shrink/swell of the London Clay Formation, however the proposed development is not anticipated to affect the shrink/swell capacity of the clay. The impact on the existing structure and nearby properties of unloading of the soils/re-loading with the proposed above ground extension will be considered in a ground movement assessment.
- Surface flow and flooding: None the proposed development will not increase the proportion of 3. hardstanding on site and is anticipated to have a negligible impact on surface water run-off or surface water attenuation characteristics.

Cumulative impacts: As groundwater flow would not be expected within the London Clay, it is expected that cumulative impacts from the construction of the basement will be negligible. As the proportion of hardstanding on the site will not change the proposed development is not anticipated to impact to surface water flow onsite. Based on the distance to neighbouring properties the ground movements are anticipated to have a negligible impact on the neighbouring structures.

1.4 Summary Scoping Results

The scoping exercise has been carried out in accordance with CPG4 and has identified the primary risks to be mitigated in the design. The full Scoping Assessment can be seen in Appendix 2 – Section 5.

1.5 Impact Assessment

An assessment of the potential impacts identified during the scoping process has been made with mitigation measures where required. The below information is extracted from Appendix 2 – Section 7.

2 Introduction

It is proposed develop the site adjacent to the existing residential tower block at Barrie House 29 St Edmunds Terrace. The site is currently occupied by a car park and an unoccupied 2 storey masonry structure in the western corner. Included in the proposal is the basement structure below the footprint of the proposed block, and the extension of the basement below the existing block, both of which are the focus of this Basement Impact Assessment as part of the planning application pack.

The existing properties on site consist of a two-storey masonry lodge (built in 1957, with 2nd storey added in 1966) and an 8-storey residential block (1957) with a single storey extension to the ground floor flat, constructed around 1960. The 8-storey residential block has a partial basement below its footprint, used as a tank room. The original structural drawings of the 8-storey block have been obtained from Samuely, the design engineer to identify the extent of the existing basement. The drawings highlighted an under-croft area, confirmed through opening up works, which will be used to facilitate the underpinning works and subsequently as a new basement area.

This report details the results of the site-specific desk study, ground investigation and basement impact assessment. The existing structure is outlined, and the proposed construction discussed. Details of the sequence of works and related construction activities are also shown in line with Camden's planning policy.

The basement will be designed using at rest (ko) earth pressures and will be constructed using techniques that limit vibration and ground movements as much as practically possible. The aim being to limit damage to surrounding properties and structures to category 1 (very slight) in accordance with BRE Digest 251 – Assessment of Damage in Low-rise Buildings.

A ground movement analysis has been undertaken to ensure that any potential ground movement effects can be assessed, and mitigation measures set out, so as to minimise the impact to damage category 1 with the scheme proposed for construction.

The philosophy outlined in this document relates to the project as it stands at planning stage. The philosophy should also be read in conjunction with the architects, service engineers and relevant consultant's drawings, specifications and reports.

Parmarbrook have been appointed as Consultant Structural Engineers by Kaleminster Limited for their development of the site adjacent to Barrie House at 29 St Edmunds Terrace, with Marek Wojciechowski appointed as Architects. This report has been verified by Ben Paterson (Chartered Structural Engineer) as a supporting document for the main planning application for the redevelopment of the site.

Parmarbrook have extensive experience in the design and monitoring of residential basement construction and are engaged for the duration of the project's civil and structural works. Parmarbrook's brief includes the review of the Contractors' construction proposal, method statements, and temporary works.



Figure 1 Aerial View of the Site



Figure 2 Record drawings basement layout

This document addresses the specific key issues in DPG4 as described in Camden Planning Guidance CPG4 (July 2015 edition).

As outlined, this BIA includes the information listed below to demonstrate that the engineering aspects have been carefully planned with proper consideration given to the site-specific geology, hydrology, and boundary conditions.

- 1. A detailed Desk Study including site history, utilities, and existing buildings and structures.
- 2. Summary of the site-specific Site Investigation including geology, hydrogeology, and hydrology. The full Investigation report can be found in Appendix 2.
- Appraisal of the impact of underground structures with the locality. 3.
- Appraisal of the existing structure as it relates to the works and the final proposal. 4.
- Illustrative and quantitative details of the proposed structure to be further developed in the Detailed 5. design phase.
- 6. Outline construction sequence to be further developed by the Contractor
- Predicted ground movements, discussion of the implications, proposed monitoring regime, and 7. movement trigger levels.

A site Investigation (SI) was carried out by Soil Consultants and later reviewed by CGL, and their findings summarised within this report. The full reports can be found in Appendix 3 and Appendix 2.

The consideration of Health and Safety, including all necessary risk assessments, will conform to the requirements of the Health and Safety Act 1974 and the Construction (Design and Management) Regulations 2015. The Planning Supervisor will be made aware of any consequences of the design to Health and Safety through risk assessments. The CDM risk register will be continuously updated during the project and in particular at key stages such package tenders and the issue of construction status information.





Figure 3 Indicative Existing and Proposed Section

3 Site Information and Desk Study

3.1 Site History

The site is currently occupied by an 8-storey detached residential block completed in 1957 and contains a single storey beneath part of its footprint. The building is surrounded by a paved parking area to the north of the building and landscaped gardens elsewhere. Prior to the construction of the Barrie House flats, the site was a greenfield up until 1894, where a small rectangular building is shown towards the south-eastern site boundary. Historic maps show that the building remained in place until at least 1912.



1866



3.2 Site Location

The site is located on St Edmund's Terrace, London, NW8 7QH in the London Borough of Camden. The area is a generally residential, with Regent's Park and Primrose Hill in the immediate vicinity. The site is on the corner of the St Edmund's Terrace (South-East) and Broxwood Way (South-West) intersection. The site neighbours residential tower blocks on the remaining North-Eastern and North-Western boundaries.





1958

3.3 Topography

The ground generally slopes from east to west and north to south. The highest point is in the in the north-eastern corner [about +48.6m OD] and the lowest is in the south-west corner [about +42.0m OD].



Figure 4 View of 29 St Edmund's Terrace terrain

4 Boundary Conditions

4.1 Existing Building



Figure 5 Existing Ground Floor Plan with approximate site boundary



Figure 6 Existing Basement Plan with approximate site boundary

4.2 Existing Structure

The site of the basement to the proposed multi-storey development is currently occupied by a hard surface car park. The larger site contains an unoccupied 2 storey masonry building and residential blocks of flats. The ground floor flat underwent an extension a single storey at a later stage. It is proposed to construct the new structure and basement adjacent to the existing 8 storey block within the boundary lines indicated in Figure 5 and Figure 6. Additionally, the proposal includes the extension of the existing basement shown in Figure 6.

From previous investigations, it has been found that the 8-storey block is supported by pad footings on the north western elevation, with a basement under part of the footprint. This information corresponds with the record drawings obtained from the Structural Engineer for Barrie House. The drawings also show that the remaining areas below the 8 storey block are infilled to support the higher level pads on the north western elevation, with the ground floor slab remaining suspended - see Figure 7 for clarity.

The proposed development will include the demolition of the existing 2-storey caretaker's building.

From visual inspection there is no evidence of significant distress or damage to the fabric of the existing building.



Figure 7 Section A-A from Samuely record drawings

4.3 Boundary Conditions

The boundary conditions are summarised below. Please refer to the structural drawings in Appendix 1 for further details.

4.3.1 North East Boundary

The north eastern-boundary meets Regency Heights residential block. The buildings are separated by over 15m of planted grounds.

4.3.2 South East Boundary

The entire south-eastern boundary of the Barrie House site is on a main road, St Edmund's Terrace. The existing block of flats is separated from the St Edmund's terrace by a footpath and surrounding greenery.

4.3.3 South West Boundary

The entire south-western boundary of the Barrie House site is on a main road, Broxwood way. This road provide entry on to the site. The existing block of flats is separated from Broxwood Way by a footpath, greenery and paved ground.



Figure 8 Approximate Site Boundary (Satellite view with overlay)

4.3.4 North West Boundary

The north eastern-boundary meets residential flats. The buildings are separated by a car park and planted ground. The proposed building is to be constructed over the existing car park area. The 2-storey caretaker's cottage on this boundary is proposed to be demolished.



Figure 9 Site view from Broxwood Way



Figure 10 Layout showing site boundary and adjacent buildings