

85 Camden Mews
London NW1 9BU
Basement Construction Plan
Review

For
London Borough of Camden

Project Number: 12366-12

Revision F1

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1.0 INTRODUCTION

- 1.1. CampbellReith was instructed by London Borough of Camden (LBC) to undertake a review of the Basement Construction Plan (BCP) submitted by Axiom Structures Limited (ASL) following an audit of the Basement Impact Assessment (BIA) by LBH Wembley which was submitted as part of the Planning Submission documentation for 85 Camden Mews, planning reference **2014/4726/P**. The BCP is a stipulated requirement of the Section 106 Agreement between LBC, Whitehall Park Ltd and National Westminster Bank PLC dated 09 October 2017.
- 1.2. The Section 106 Agreement indicates the owner should appoint an independent suitably certified engineer (Basement Design Engineer) to formulate the BCP and it should include:
- Confirmation that the design plans have been undertaken in accordance with the terms of this agreement incorporating proper design and review input into the detailed design phase of the Development and ensuring that appropriately conservative modelling relating to the local ground conditions and local water environment and structural condition of Neighbouring Properties have been incorporated into the final design.
 - Confirmation that the result of these appropriately conservative figures ensure that the Development will be undertaken without any impact on the structural integrity of the Neighbouring Properties beyond 'slight' with reference to the Burland Category of Damage
 - Confirmation from the Basement Design Engineer that the design plans have been undertaken in accordance with this Agreement, including a letter of professional certification confirming this and that the detailed measures set out in sub-clauses (1)-(7) below have been incorporated correctly and appropriately and are sufficient in order to achieve the objectives of the Detailed Basement Construction Plan
 - (1) Reasonable endeavours to access and prepare a detailed structural appraisal and condition survey of all the Neighbouring Properties to be undertaken by an independent suitably qualified and experienced chartered surveyor (and for details to be offered if this is not undertaken in full or part).
 - (2) A method statement detailing the proposed method of ensuring the safety and stability of Neighbouring Properties throughout the Construction Phase including temporary works sequence drawings and assumptions with appropriate monitoring control risk assessment contingency measures and any other methodologies associated with the basement and the basement temporary works.
 - (3) Detailed design drawings incorporating conservative modelling relating to the local ground conditions and local water environment and structural condition of Neighbouring Properties prepared by the Basement Design Engineer for all elements of the groundworks and basement authorised by the Planning Permission together with specifications and supporting calculations for both the temporary and permanent basement construction works.
 - (4) The Basement Design Engineer to be retained throughout the Construction Phase to inspect approve and undertake regular monitoring of both permanent and temporary basement construction works throughout their duration to ensure compliance with the plans and drawings as approved by the building control body.

- (5) Measures to ensure the on-going maintenance and upkeep of the basement forming part of the Development and any and all associated drainage and/or ground water diversion measures order to maintain structural stability of the Property the Neighbouring Properties and the local water environment (surface and groundwater).
- (6) Measures to ensure ground water monitoring equipment shall be installed prior to Implementation and retained with monitoring continuing during the Construction Phase and not to terminate monitoring until the issue of the Certificate of Practical Completion (or other time agreed by the Council in writing).
- (7) Amelioration and monitoring measures of construction traffic including procedures for co-ordinating vehicular movement with other development taking place in the vicinity and notifying the owners and or occupiers of the residences and businesses in the locality in advance of major delivery schedules and amendments to normal traffic arrangements.

1.3. The Basement Construction Plan requires that:

- The Owner appoints a second independent suitably certified engineer (qualified in the fields of geotechnical and/or structural engineering) from a recognised relevant professional body having relevant experience of sub-ground level construction commensurate with the Development (the Certifying Engineer) (from the same company as the Basement Design Engineer if the Owner so thinks fit) and for details of the appointment of the Certifying Engineer to be submitted to the Council for written approval in advance.
- The Certifying Engineer reviews the design plans and offers a 2 page review report to the Council confirming the design plans have been formulated in accordance with the terms of this Agreement and have appropriately and correctly incorporated the provisions of sub-clauses (1) – (7) above and are sufficient to achieve the objectives of the Detailed Basement Construction Plan AND should any omissions, errors or discrepancies be raised by the Certifying Engineer then these to be clearly outlined in the report and thereafter be raised directly with the Basement Design Engineer with a view to addressing these matters in the revised design plans

1.4. The BCP is also required to meet the requirements of clause 2.11 of the Section 106 Agreement and to answer any queries raised by CampbellReith arising from this review.

1.5. This report covers our review of the BCP information submitted by Axiom Structures Limited for planning permission and includes the following:

- Detailed Construction Basement Plan rev B1, December 2018
- Certifying Engineer Checking Report rev B1, December 2018
- The Section 106 Agreement, 9 October 2017
- Review of BIA by LBH Wembley Ver 2.0, March 2015
- Structural Engineers Construction Method Statement rev P3 April 2015
- Construction Management Plan Ver 7, March 2019
- Supplementary structural drawings and calculations ref s106 uploaded 14/02/2019

- 1.6. In response to the initial review, additional documents were presented via email on 9th April 2019:
- Party Wall Award 85 Camden Mews/238 Camden Road and Garages 87 Camden Mews March 2019
 - Party Wall Award 85 Camden Mews/83 Camden Mews April 2018
- 1.7. In response to revision D1 of the BCP review the ground movement report was updated to rev 3 and provided via email on 05/06/2019. Additional documents regarding water monitoring were provided by email on 13/06/2019.
- 15005-MS-03 B1 Groundwater Monitoring
 - 15005-TW-420-B1 Dewatering

2.0 BASEMENT CONSTRUCTION PLAN REVIEW

The following information has been reviewed and found to comply with the requirements of the Section 106 Agreement.

Condition Surveys <ul style="list-style-type: none"> Plan drawing showing extent of condition surveys Photographic and descriptive record of existing conditions Condition Survey to be carried out by third party independent of the design and contractor team to be carried out prior to commencement of works. 	✓ ✓ ✓
GMA Report <ul style="list-style-type: none"> Ground movement assessment using appropriately conservative modelling Building damage assessment Damage no worse than "Slight" according to Burland Category of Damage 	✓ ✓ ✓
Movement Monitoring Proposals including drawings & specification to include: <ul style="list-style-type: none"> The trigger and action levels for horizontal, vertical and tilt movements Monitoring targets to be indicated on the elevation drawings The monitoring frequency 	✓ X ✓
Temporary and Permanent works proposals <ul style="list-style-type: none"> Method statement for retaining walls throughout construction phase including temporary works drawings, monitoring measures and contingency measures Detailed design drawings for all elements of groundworks and basement with specifications and supporting calculations for temporary and permanent case Measures for ongoing maintenance including groundwater monitoring and construction traffic 	✓ ✓ ✓
Engineering review <ul style="list-style-type: none"> Provision to retain the Basement Design Engineer throughout the Construction Phase Details of review by suitably qualified and experienced engineer who is independent of the design team Evidence of comments raised by certifying engineer on design and review of calculations Report confirming BCP is in accordance with Section 106 agreement 	✓ ✓ ✓ ✓

3.0 DISCUSSION

- 3.1. The following comments apply to the BCP for 85 Camden Mews London NW1 9BU.
- 3.2. The BCP confirms that Andrzej Plocieniak MStructE CEng from Axiom Structures has been appointed as the Basement Design Engineer and will be retained throughout the Construction Phase.
- 3.3. The Ground Movement Report by Geotechnical Consulting Group, dated 2015, has calculated the expected ground movements during the construction phase and confirmed the impact on the structural integrity of the Neighbouring Properties as Category 1: Very Slight with reference to the Burland Category of Damage. The GMA has been updated to (Rev 3) to contain the structural loads as provided by Axiom Structures.
- 3.4. (1) Party Wall Awards prepared by Anstey Horne Chartered Surveyors have been agreed for 87 Camden Mews/238 Camden Road and separately for 83 Camden Mews. Both Awards refer to a schedule of condition, however a photographic record is only presented for 87 Camden Mews/238 Camden Road.
- 3.5. (2) The Construction Method Statement from Axiom Structures, dated April 2015, details the proposed method of construction including temporary works sequence drawings and assumptions. Monitoring proposals are contained in the Monitoring Specification, prepared by Axiom Structures, dated November 2017.
- 3.6. (3) Documents uploaded to the LBC Planning Portal referenced S106 submission and dated 14/02/2019, include structural calculations and detailed drawings for both the temporary and permanent basement construction. The calculations are in accordance with the soil investigation and are considered to adopt a reasonably conservative approach to the water environment.
- 3.7. (4) The BCP confirms the Basement Design Engineer is to be retained throughout the Construction Phase to inspect approve and undertake regular monitoring of both permanent and temporary basement construction works throughout their duration to ensure compliance with the plans and drawings as approved by the building control body.
- 3.8. (5) It is accepted that reasonable measures are included to ensure the on-going maintenance and upkeep of the basement forming part of the Development and any and all associated drainage and/or ground water diversion measures order to maintain structural stability of the Property the Neighbouring Properties and the local water environment are included.
- 3.9. (6) Originally the Basement Construction Plan indicated the intent to monitor water levels during the construction phase via previously installed standpipes. The groundwater monitoring statement produced by Axiom Structures (15005-MS-03 B1) confirmed the original monitoring wall is obsolete. A new monitoring shaft is to be formed to allow monitoring prior and during construction.
- 3.10. (7) Monitoring and control of construction traffic is described in the Construction Management Plan this includes references to local residents, developments along with an estimate of vehicle numbers.

- 3.11. The Certifying Engineer has been confirmed as Kai Cheong (Ryan) Lee MStructE CEng from Axiom Structures.
- 3.12. The Certifying Engineer has produced a report indicating a review of the structural drawings and calculations has been carried out in addition to a review of the construction sequence and CMP.

4.0 CONCLUSIONS

- 4.1. We are generally satisfied that the information provided for our review complies with the requirements of CPG4 and the relevant clauses of 2.11 of the Section 106 Agreement.
- 4.2. Detailed design drawings for all elements of groundworks and basement together with specifications and supporting calculations were presented separately for both the temporary and permanent basement construction works.
- 4.3. The BCP describes the construction sequence for the basement including temporary works, these are highlighted on detailed sequenced sections through the basement.
- 4.4. The local water environment should not be adversely affected by the basement construction process.
- 4.5. Confirmation that the Basement Design Engineer is to be retained throughout the Construction Phase to monitor the works has been provided.
- 4.6. The Basement Construction Plan has been reviewed by a Certifying Engineer.
- 4.7. Full details of condition surveys carried out to the Neighbouring Properties have been provided.
- 4.8. The ground movement assessment has been updated to include the latest structural loading information. The predicted categories of damage for the neighbouring properties as category 1: very slight.
- 4.9. Details of ground water monitoring regime have been provided.

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