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247 Tottenham Court Road

Detailed Basement Construction Plan Review

For
London Borough of Camden

Project No. 12366-22

Date
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1.0 INTRODUCTION

1.1 CampbellReith was instructed by London Borough of Camden (LBC) to undertake a review of the Detailed Basement Construction Plan (DBCP) submitted by AKT-II for a project known as The Fitzrovia. It comprises 247 Tottenham Court Road, London W1T 7HH; 3 Bayley Street, London WC1B 3HA; 1 Morwell Street, London WC1B 3AR; 2-3 Morwell Street, London WC1B 3AR and 4 Morwell Street, London W1T 7QT with planning reference 2020/3583/P. The DBCP is a stipulated requirement of a Section 106 Agreement between Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 22 Limited, and the London Borough of Camden, dated 30th July 2021. The DBCP, its contents and obligations are described in the Section 106 Agreement in Section 2, Definitions, Item 2.24.

1.2 The Section 106 Agreement requires the owner should appoint an independent suitably certified engineer (qualified in the field of geotechnical and/or structural engineering from a recognized relevant professional body) to formulate the Detailed Basement Construction Plan (DBCP) and use reasonable endeavours to ensure:

- that the design plans have been undertaken in strict accordance with the terms of the 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 the Neighbouring Properties has been incorporated into the final design.
- 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.
- that the design plans have been undertaken in accordance with the Agreement, including a letter of professional certification confirming this and that the detailed measures set out in Definitions 2.24 sub-clause 2(c) items (i)-(vii) (presented below) have been incorporated correctly and appropriately and are sufficient to achieve the objectives of the Detailed Basement Construction Plan.

(i) Reasonable endeavours to access and prepare a detailed structural appraisal and condition survey of all 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).

(ii) A method statement detailing the proposed method of ensuring the safety and stability of all 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.

(iii) 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.

(iv) The Basement Design Engineer to be retained at the Property throughout the Construction Phase to inspect approve and undertake regular monitoring of both permanent and temporary basement construction works throughout their duration and to ensure compliance with the plans and drawings as approved by the building control body.

(v) Measures to ensure the on-going maintenance and upkeep of the basement forming part of the relevant phase of the Development and any and all associated drainage and/or ground water diversion measures in order to maintain structural stability of the Property the Neighbouring Properties and the local water environment (surface and groundwater).

(vi) 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).

(viii) 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 operations delivery schedules and amendments to normal traffic arrangements.

1.3 The Section 106 Agreement also 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 relevant phase of the Development (the Certifying Engineer) 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 report to the Council confirming the design plans have been formulated in strict accordance with the terms of this Agreement and have appropriately and correctly incorporated the provisions of sub-clauses 2.24 (2)(c) (i) – (vii) 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;
- a letter of professional certification from the Certifying Engineer with the DBCP confirming that it is in an approved from and has been formulated in strict accordance with the S106 Agreement shall be submitted.

1.4 The applicant is also required to meet the requirements of clause 2.24 (6) of the Section 106 Agreement and to answer any queries raised by LBC.

1.5 his report covers our review of the DBCP information submitted by AKT-II in response to the Section 106 Agreement. The final version of the DBCP and supporting information was issued by AKT-II on 17 February 2023 and comprises the following:

- Detailed Basement Construction Plan by AKT-II Rev 03 dated 16 February 2023 and listed Appendices A, B-1, B-2(a), B-2(b), B-2(c-i), B-2(c-ii), B-2(c-iii), B-2(c-iv), B-2(c-v), B-2(c-vi), B-3
- BCP Review by AKT-II Rev 00 dated 17 February 2023.
- Temporary works scheme review comprising
- Temporary Works Design by Conquip Rev C01 dated 11 July 2022 with mark up comments by AKT-II dated 3 February 2023
- Conquip temporary works drawings Rev C01 with mark up comments by AKT-II
- Contractor Temporary Works Scheme review by AKT-II Rev 00 dated 6 February 2023
- AKT-II letter dated 15 February 2023 confirming review of temporary works design and updated DBCP.
- Supplementary information comprising Schedule of Condition key plan.

2.0 BASEMENT CONSTRUCTION PLAN REVIEW

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

Condition Surveys	
• Plan drawing of surveyed buildings floors from basement level to roof level is presented in appendix B2a	✓
• Plan drawings with topographic survey	✓
• Condition survey report on the LUL Northern Line tunnels presented as visual report summary	✓
• Condition survey report on the Thames Water assets	✓
• Boundary report comprising of 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	
• Ground movement assessment using appropriately conservative modelling	✓
• Building damage assessment	✓
• Damage no worse than "Slight" according to Burland Category of Damage	✓
Movement Monitoring action Plan:	
• The trigger and action levels for horizontal, vertical and tilt movements	✓
• Monitoring targets to be indicated on the elevation drawings	✓
• The monitoring frequency	✓
• Installation phasing	✓
• Contingency plan	x
Temporary and Permanent works proposals	
• Method statement for basement works throughout construction phase including temporary works drawings, monitoring action plan, construction sequence and construction methodology	✓

• 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	✓
• Measures to monitor groundwater until issue of Practical Completion Certificate	✓
Engineering review	
1. Confirmation of suitably qualified Basement Design Engineer formulate the DBCP	✓
2. Basement Design Engineers certification that the DBCP is formulated in accordance with the Section 106 Agreement	✓
3. Provision to retain the Basement Design Engineer throughout the Construction Phase	✓
4. Details of review by suitably qualified and experienced certifying engineer who is independent of the design team.	✓
5. Evidence of comments raised by certifying engineer on design and review of calculations	✓
6. Certifying Engineers Report confirming BCP is in accordance with Section 106 agreement	✓

3.0 DISCUSSION

3.1 The following comments apply to the DBCP for the redevelopment at 247 Tottenham Court Road, 3 Bayley Street, 1 Morwell Street, 2-3 Morwell Street and 4 Morwell Street London.

3.2 The proposed development involves the demolition of the existing buildings currently occupying the site and the construction of a single mixed-use building comprising six above ground storeys, a single storey basement across the full footprint of the site, and an area with double storey basement occupying approximately one third of the site.

3.3 The DBCP is produced by AKT-II on behalf of Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 22 Limited, with AKT-II acting as Basement Design Engineer. Additional input is provided from enabling works engineer KIER and temporary works engineer, Conquip Engineering Group.

3.4 Professional qualifications associated with condition 7 planning application are contained in Appendix B1. The Basement Design Engineer is given Samuel Pickles MEng, CEng, MIStructE.

3.5 AKT-II letter confirms that team leader for structural team holds suitable professional qualifications.

3.6 Ground conditions are confirmed in the Ground Investigation data log issued by GEA contained within the BIA Report as appendix 10. The site ground conditions are described as Made ground underlain by Lunch Hill Gravels, London Clay and Lambeth Group. Groundwater was encounter between approx. +21.140m to +20.140m AOD that is approximately 3-4m below the exiting single level basement. A Flood Risk Assessment report, Site investigation report and measured surveys are presented in appendix B-2(a). There is no condition survey of neighbouring properties buildings completed to date.

3.7 A Ground Movement Assessment and a Building Damage Assessment are contained within the BIA Report as appendix 7. The excavation was modelled using Oasys XDisp software and the predicted movements were used to assess the impact of the works on the Neighbouring Properties. The GMA has confirmed the damage from the proposed basement development may be limited to Category 1: Slight, with reference to the Burland Category of Damage.

3.8 A Ground Movement Assessment for the proposed Crossrail 2 construction is presented for review. This document concludes that the risk of Crossrail 2 tunnelling damaging the new building is considered low. The GMA was extended to cover the third-party assets Thames Water and LUL and is in appendix B-2(b).

3.9 Condition surveys for the existing buildings and the third-party assets as well as a boundary wall report are included in appendix B-2(c-i).

3.10 A temporary propping scheme to provide support in the temporary condition it is issued by Conquip Engineering Group and comprises drawings for temporary propping layout. The package presented for review by AKT-II in February 2023 includes structural calculations.

3.11 The construction sequence has been defined by AKT-II and the construction methodology issued by KIER are included in appendix B-2(c-ii).

3.12 The permanent works calculations, drawings and specifications have been produced by AKT-II. All documents are included in appendix B-2(c-iii).

3.13 The method statement for piling the contiguous wall and secant wall for 247 Tottenham Court Road basement works was issued by Franki Foundations Group UK and is included in appendix B-2(c-iii).

3.14 A DBCP review by a suitably qualified and experienced certifying engineer who is independent of the design team is not included in appendix B3. It has been provided separately together with a CV for the certifying engineer.

3.15 The DBCP states that measures to ensure the ongoing maintenance and upkeep of the basement and associated drainage must be developed.

4.0 CONCLUSIONS

4.1 We are generally satisfied that the information provided within the Detailed Basement Construction Plan for our review (as detailed in Section 2) complies with the requirements of the relevant clauses of the Section 106 Agreement.

4.2 It is accepted that the professional requirements of the listed design team are in accordance with the Section 106 Agreement and letter confirming condition 7 has been presented.

4.3 The DBCP confirms that the basement design engineer AKT-II will be retained throughout the Construction Phase.

4.4 The Ground Movement Assessment contained within BIA indicates the anticipated impact on the Neighbouring Properties as no worse than Category 1 Slight with reference to the Burland Category of Damage. This is accepted.

4.5 The Ground Movement Assessment assesses the impact of the proposed demolition and construction works on Third Party assets as TW, LUL and Crossrail 2 to be acceptable.

4.6 Condition surveys of neighbouring properties have not been undertaken. The DBCP states "Investigations to all surrounding buildings will require consent of owners. As part of the information required to be supplied, a full report will be compiled and will include recommendations for repair or monitoring of defects that could adversely affect the structural adequacy of the existing buildings and facades while temporarily supported and for monitoring of crack widths."

4.7 It is accepted the DBCP contains detailed basement design drawings prepared by the Basement Design Engineer

4.8 It is accepted the DBCP contains a detailed method statement for demolishing existing buildings and constructs the basement for the proposed development. The DBCP also contains the temporary works method statements together with a monitoring action plan.

4.9 It is accepted the DBCP contains permanent works drawings, calculations, and specifications for substructure prepared by the relevant members of the design team.

4.10 Temporary works design calculations have been provided by Conquip prepared for DUK. The DBCP contains the drawings for propping scheme during the construction of the basement.

4.11 The BIA contains reference to the hydrology, and the site investigations confirm that the local ground conditions as Made Ground over River Terrace Deposits overlaying London Clay. It is accepted the basement should not have any impact on the local water environment and stability of the Neighbouring Buildings.

4.12 The DBCP contains the vehicle access strategy and a draft document for the Logistics Plan.

4.13 Evidence of a review by a second independent suitably certified engineer as per the Section 106 Agreement clause 2.24.3 has been provided.

4.14 In summary, it is considered that the information required by clause 2.24 of the Definitions contained within the S106 Agreement has been presented.

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