

**17 BRANCH HILL
LONDON NW3 7NA**

**JOB N° 1281
PLANNING APPLICATION N° 2015/3377/P**

STRUCTURAL REVIEW REPORT

Checked by: Stephen Haskins BSc CEng MIStructE

Date: 29.06.2017

1. Introduction

The review of the structural calculations and plans has been undertaken by a chartered structural engineer independent of the design team to satisfy paragraph 2.9 sub-point 4 of The Agreement between Adam Kaye and The Mayor and Burgesses of The London Borough of Camden relating to land known as Bagshot Sands, 17 Branch Hill, London NW3 7NA.

The review is to confirm that the design plans have been formulated in strict accordance with the terms of the Agreement and have appropriately and correctly incorporated the provisions of sub-clauses (i)-(vi) of paragraph 2.9 sub-point 2 of the Agreement and are sufficient to achieve the objectives of the Detailed Basement Construction Plan

2. Proposed structural works

The proposed development of the site involves the demolition of the existing three storey (inclusive of lower ground floor) building and construction of a new three storey property inclusive of a lower ground (rear garden level). Generally, the proposed depth of excavation below the existing ground level to the front of the property (high level) is to be a maximum of 4.0m, however in the area of the proposed study/games room to the rear of the property this will decrease to around 2.5m (circa 2.8m below existing garden level to the rear of the property). The existing ground level is to be raised in this area resulting in a final retained height of 5.5m against the northern boundary. The existing retained height at the boundary retaining wall is approximately 3.5m.

3. Structural review

The following structural design information has been reviewed:

- Structural Engineer's Calculation – eHRW ref. No 1281
- Structural Engineer's Specification – eHRW ref. No 1281
- Full set of eHRW structural drawings No: 1281/GA/000 – 009; 1281/SE/010-016; 1281/DE/020-027, 030, 035; 1281/EL/040-043; 1281/DR/050-052,55; 1281/N/070
- Temporary works drawings by Cranston Consulting: 170608-TW-01to05

The structural calculations have been undertaken in accordance with the following standards:

- BS EN 1990 Eurocode 0: Basis of Structural Design
- BS EN 1991 Eurocode 1: Actions on Structures
- BS EN 1992 Eurocode 2: Design of Concrete Structures
- BS EN 1993 Eurocode 3: Design of Steel Structures
- BS EN 1995 Eurocode 5 Design of Timber Structures
- BS EN 1996 Eurocode 6 Design of Masonry Structures
- BS EN 1997 Eurocode 7: Geotechnical Design

After review of the above structural information we would comment on sub-clauses (i)-(vi) of paragraph 2.9 sub-point 2 of the Agreement as follows:

- (i) *reasonable endeavours to access and prepare a detailed structural appraisal and conditions survey of all the Neighbouring Property 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);*

Schedules of Condition have been prepared of those parts of 1 The Chestnuts, of Holme Vale House and of Savoy Court which are on or close to the boundary with 17 Branch Hill.

Trial pit holes have been undertaken to the neighbouring boundary wall and neighbouring existing garden building to assess the existing foundations. Structural design of the new proposed 17 Branch Hill accounted for the exploratory holes findings.

- (ii) *a method statement detailing the proposed method of ensuring the safety and stability of Neighbouring Property 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;*

Temporary works drawings, temporary works calculations and sequence of works provided by Cranston Consulting have been reviewed and they are in accordance with assumptions assumed by eHRW. Basement Impact Assessment has been prepared by Site Analytical Services Ltd. ref: 15/23902-2 October 2015

- (iii) *detailed design drawings incorporating conservative modelling relating to the local ground conditions and local water environment and structural condition of the Neighbouring Property 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;*

Full, site specific Ground Investigation has been undertaken by Site Analytical Services Ltd. ref: 14/22714 November 2014. Review of the structural calculations and drawing confirms that they have been based on the existing ground and water environment conditions as per the Ground Investigation Report. The design of the substructure has been also carried out in accordance with the existing arrangement and conditions of the neighbouring properties.

- (iv) *the Basement Design Engineer to be retained at the Property throughout the relevant part of the Construction Phase relating to the basement to inspect and approve and undertaking 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;*

It has been confirmed by the Basement Design Engineer that his appointment includes allowance for the building site structural inspections on regular basis through the duration of the structural works to ensure that the works are in accordance with structural drawings and specifications.

- (v) *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 Property and the local water environment (surface and groundwater);*

Internal cavity drainage system and retaining walls forming the basement can be inspected as a part of on-going maintenance. The basement is designed to resist ground water loading and does not rely on water removal for structural stability. Tension piles have been utilized to ensure that there are no buoyancy issues. Full surface and foul drainage details have been provided with sufficient access for maintenance.

- (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);*

The ground investigation together with ground water monitoring was undertaken during the design stage. Ground water level readings during the investigation period confirmed that the water level is below the lowest formation level of the proposed basement. Given the results of the monitoring and the ground conditions on site, further monitoring is not considered necessary.

We confirm that we have undertaken an independent category 2 check in accordance with DMRB BD 2/05 Approval Procedures. We further confirm that the design meets the requirements of the agreement specifically sub-clauses (i)-(vi) of paragraph 2.9 sub-point 2.



Stephen Haskins BSc CEng MStructE