Concept Consultancy
Chartered Civil & Structural Consulting Engineers

Basement Impact Report

58a King Henry's Road, London, NW3

Job No.: 2235
Client: Steven Pollock
Date: October 2012

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1.0 INTRODUCTION

Concept Consultancy has been commissioned by Steven Pollock to carry out a basement Impact Assessment for this site at, 58a King Henry's Road, London, NW3. There are some internal renovation works to be carried out but this report is solely for the construction of a new lower ground floor.

Regarding my qualifications and credentials, I am a chartered member of the institution of structural engineers with in excess of twenty years experience. My qualifications and affiliations are as follows in abbreviated form BEng, CEng, MIStructE, MIEI.

1.1 Site Location

The site is located at 58a King Henry's Road the Borough of Camden, London NW3. It is approximately centered at National Grid Reference TQ 257603 84224. The site is roughly rectangular in shape and measures approximately 18.5m x 5.4m. The site presently contains a four-storey terrace (3 storeys' over lower ground floor) residential building fronting onto King Henry's Road.

The house has been constructed on a manmade fill embankment behind a railway embankment cutting. The new basement which has been constructed is wholly within the made ground.

The site falls from South to North, with the ground level at the rear of the house lower than the ground floor by approx. 3.2m (see Fig 1). The rear boundary of the property is formed by a masonry retaining wall. The adjacent railway line is situated in a cutting approx. 9-10m below the ground floor of the property.

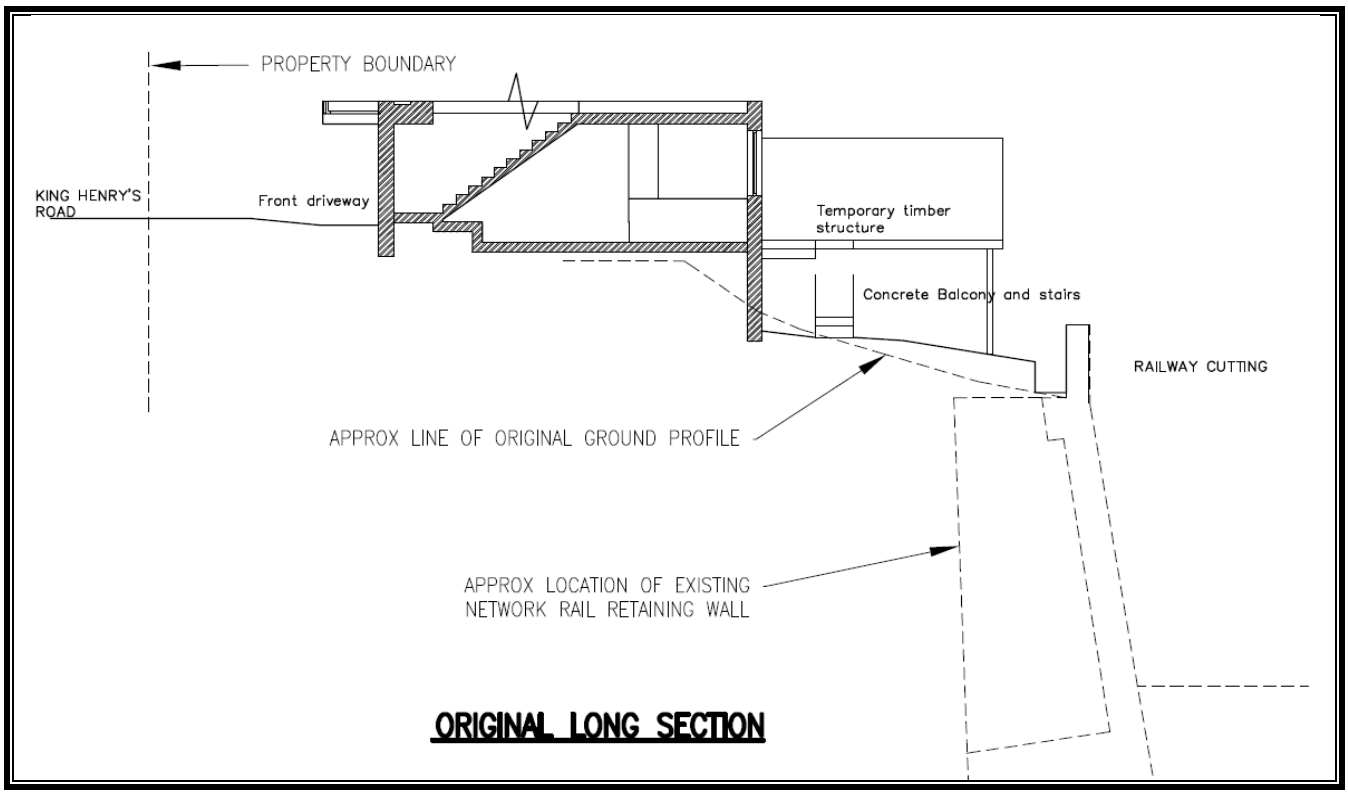

Fig 1: Original Long Section Through Property

1.2 Basement Works

A new single story lower ground floor has been constructed (planning ref 2012/2313/P) over the majority of the site footprint, approx. 12.5m long and 5.4m wide. The floor level of the lower ground floor is approx. 3.2m below the existing ground level at the front of the property (see Fig 2)

The existing building is supported on piled foundations along the line of the main walls at the front & rear and the party walls. The piles extend below the level of the new lower ground floor so no underpinning was required. The new lower ground floor was constructed by excavating the ground in front of the piles and constructing a new perimeter liner wall and lower ground floor slab (as shown in Fig 3). Where the new lower ground floor extends to the rear of the property the walls have been constructed using masonry cavity wall supported on a small retaining wall (as shown in Fig 4)

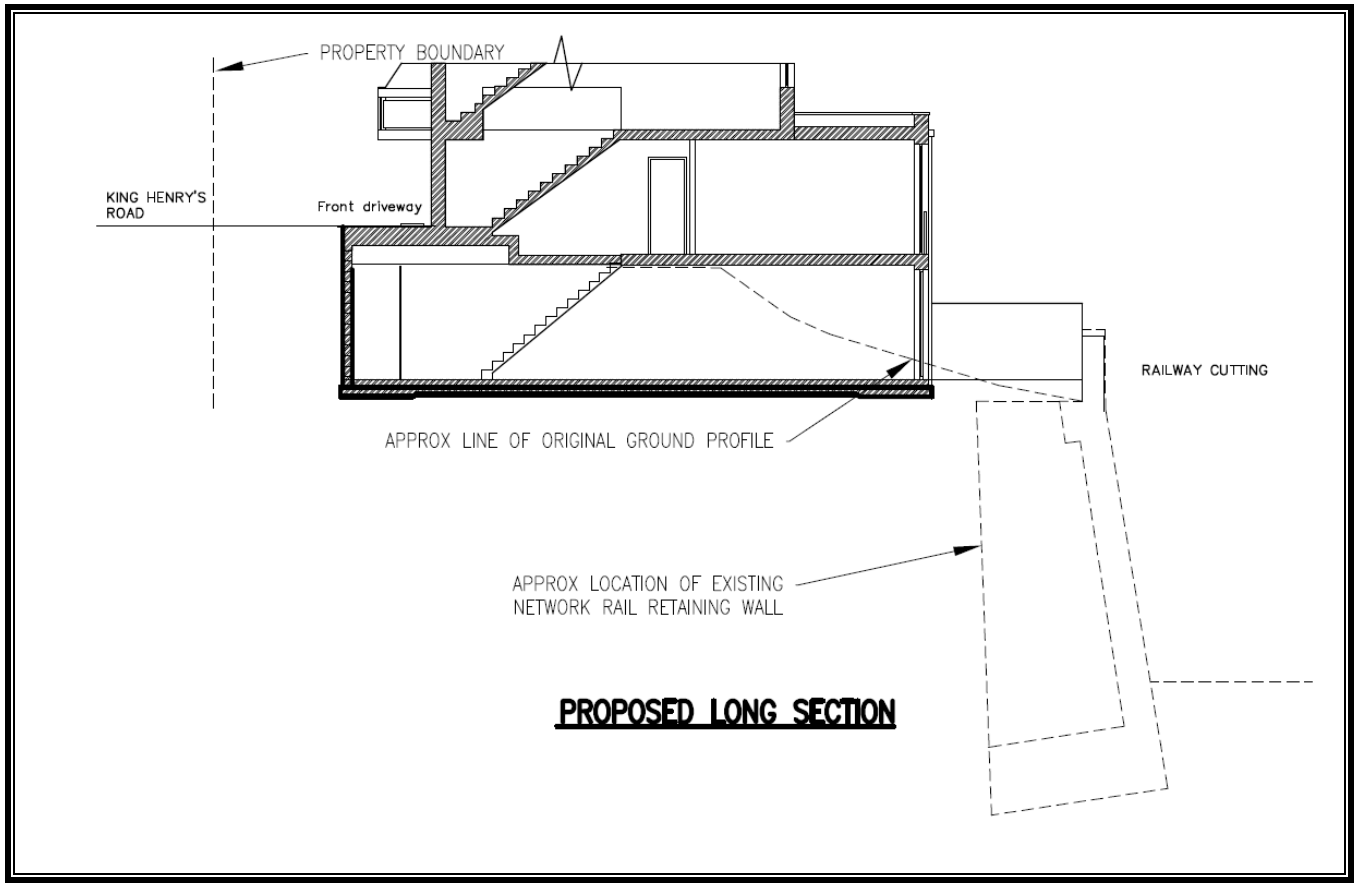

Fig 2: Proposed Long Section Through Property

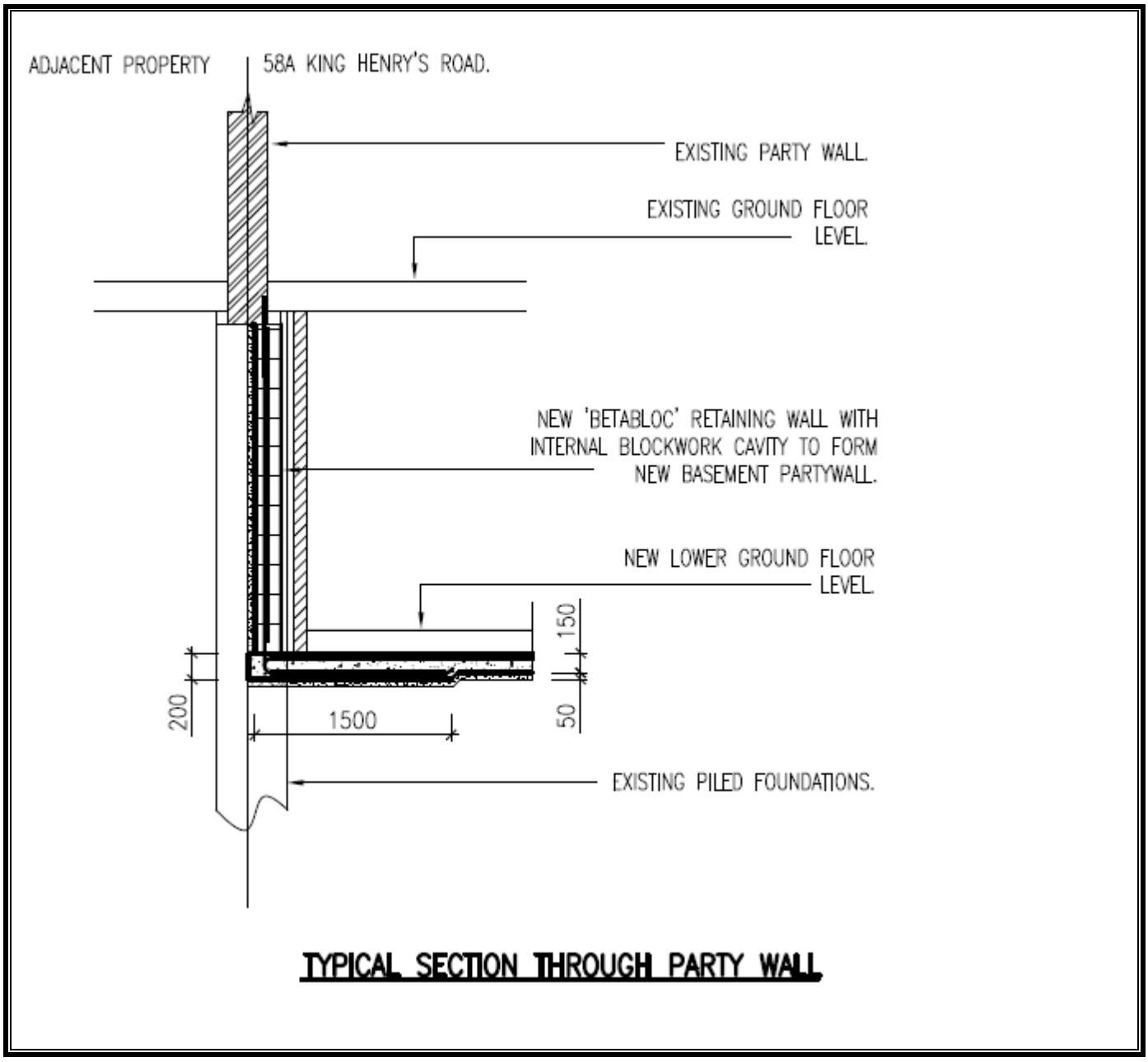

Fig 3: Typical Section Though Party Wall

The existing ground floor in property was retained. A new ground floor/roof was constructed over the basement extension to the rear. This will be of timber joist construction.

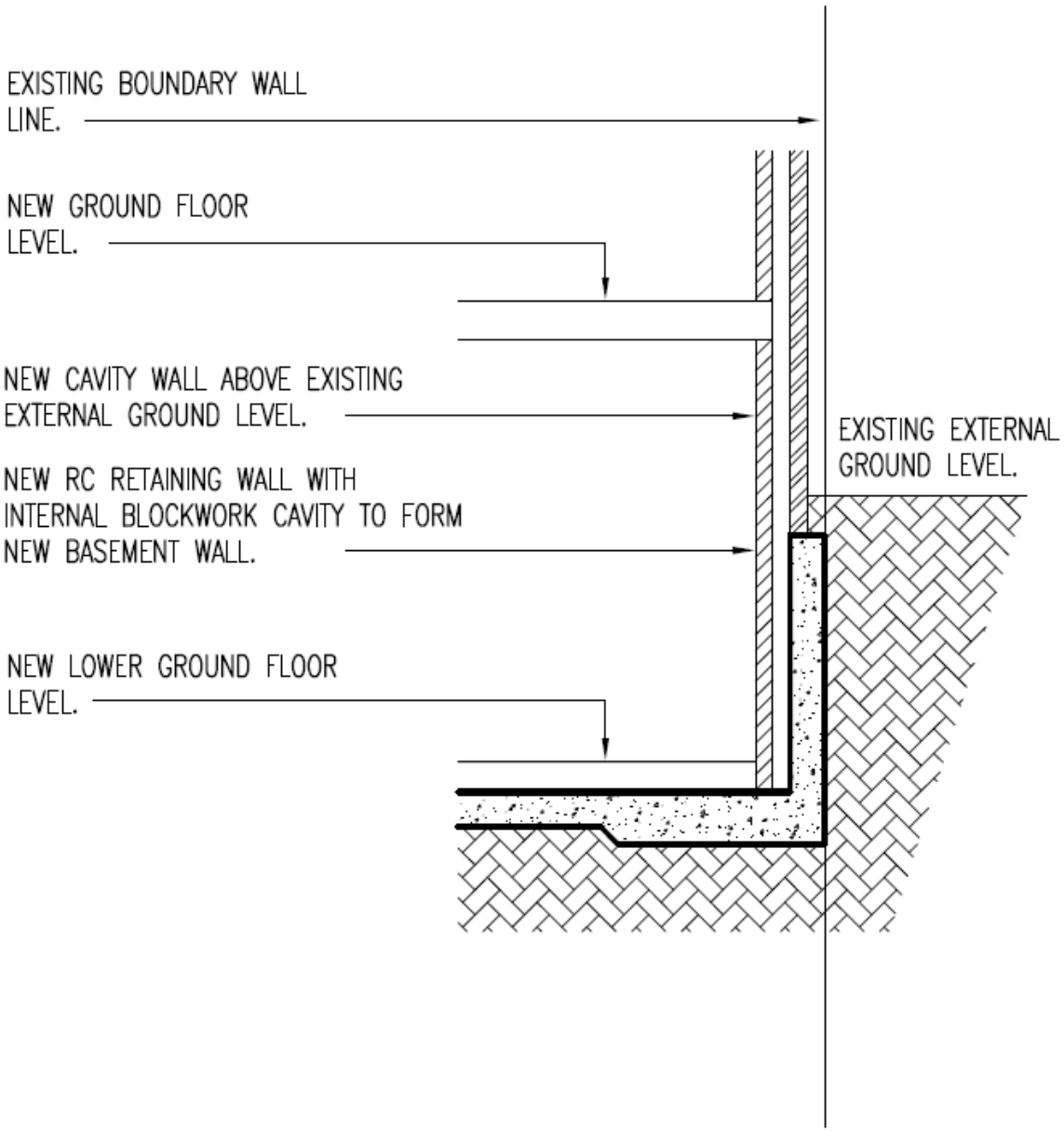

Fig 4 – Typical Section Through Rear Lower Ground Floor Extension

2.0 Stage 1 - Screening

The following screening is based on a series of questions as set out in the Camden Planning Guidance - Basement & Light Wells (CPG 4).

2.1 Ground Water Flow:

Question 1a: Is the site located directly above an aquifer?

No. The site is located in area designated as "Unproductive Strata" by the EA which they state are areas that "are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow".

Question 1b: Will the proposed basement extend beneath the water table surface?

No. The water table is below the level of the proposed lower ground floor.

Question 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?

No. There is no known watercourse, spring or well within 100 m of the site.

Question 3: Is the site within the catchment area of the pond chains on Hampstead Heath?

No.

Question 4: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?

No. The existing drive and rear garden are paved.

Question 5: As part of the site drainage, will more surface water (e.g. rainfall and run off) than at present be discharged to the ground (e.g. via soakaways and or SUDS)?

No. There will be no change in the catchment area for rain fall or to the existing surface drainage arrangement.

Question 6: Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath)?

No. There are no local ponds.

2.2 Slope Stability:

Question 1: Does the existing site include slopes, natural or manmade, greater than 7 degrees? (Approximately 1 in 8)

Yes. The original ground level drops approx. 3.2m from front to back (~1 in 6), see response and comments in section 3.2.

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7 degrees? (Approximately 1 in 8)

No.

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7degs? (Approximately 1 in 8)

Yes. The adjacent land to the sides & front is relative level and matches the level of this property. The railway line to the rear is approx. 9-10m below the ground level of this site. See response and comments in section 3.2.

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7degrees? (Approximately 1 in 8), see response and comments in section 3.2.

Yes. The site is located at the top of a railway cutting.

Question 5: Is the London Clay the shallowest strata at the site?

No. London Clay is below a layer of superficial Made Ground.

Question 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?

No. There are no trees on the site.

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?

No. We have no evidence indicating any possible shrink-swell subsidence in the local area.

Question 8: Is the site within 100m of a watercourse or a potential spring line?

No. There is no known watercourse, spring or well within 100 m of the site.

Question 9: Is the site within an area of previously worked ground?

No.

Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?

No.

Question 11: Is the site within 50m of the Hampstead Heath Ponds?

No.

Question 12: Is the site within 5m of a highway or pedestrian right of way?

Yes. The front wall of the basement is approx. 2.5m from the property boundary with King Henry's Road. See response and comments in section 3.2.

Question 13: Will the proposed basement significantly increase the differential depth of foundations relative to the neighboring properties

No. The existing party walls are founded on piles. No underpinning or under mining of the existing foundations has been carried out.

Question 14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?

Yes. There is a Network Rail line directly to the rear of the property.

2.3 Surface Flow & Flooding:

Question 1: Is the site within the catchment area of the pond chains on Hampstead Heath?

No.

Question 2: As part of the site drainage, will surface water flows (e.g. volume of rainfall and peak run off) be materially changed from the existing route?

No. There will be no change in the catchment area for rain fall or to the existing surface drainage arrangement.

Question 3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?

No. The existing drive and rear garden are paved.

Question 4: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream.

No. There will be no change in the catchment area for rain fall, existing surface drainage arrangement or area of hard standing areas.

Question 5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream water courses?

No.

Question 6: Is the site in an area known to be at risk from surface water flooding such as South Hampstead, West Hampstead, Gospel Oak and Kings Cross, or is it at risk from flooding, for example because the basement is below the static water level of a nearby surface water feature?

No.

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3.0 Stage 2 - Scoping

The screening stage in section 4 identified the following issues that need to be assessed:

3.1 Groundwater Flow:

No items were identified requiring further assessment.

3.2 Slope Stability:

Question 1 The site falls from north to south at approx. at about 1:6. The existing site slopes down to the existing Network Rail Retaining Wall at the rear of the site. With respect to the overall stability of the ground we are of the opinion that these works pose no risk to the overall ground stability for the following reasons:

1. The existing ground profile has not been altered by the works.
2. There has been no undermining, placing of additional loading or works impacting on the structural integrity of the existing Network Rail Retaining wall to the rear. In fact but excavating some of the ground to the rear of the wall will have reduced the loading on the wall.
3. The presence of the existing Network Rail retaining wall servers to provide stability to the ground in this area
4. The existing house (and all the houses in this block) are built on made ground. As such the houses are founded on plies which penetrate through the made ground in into the London Clay below (approx.3.6m below ground level). The new lower ground floor has been constructed wholly within the made ground with the formation level at the underside of the lower ground floor founded on the top of the London Clay. Therefore the house and new lower ground floor are founded on the more stable lower London Clay layer

Question 3 The adjacent land contains a railway cutting which is formed by an existing masonry and concrete gravity retaining wall. No works have been carried out which interfere with the structural stability of the wall and have all been agreed with Network Rail

Question 4 See response to Question 1. Within the wider setting the there is a significant difference between the ground level at the front of the house and the bottom of the railway cutting to the rear. However as noted in the response to Q1 above stability to the ground is provided by the Network Rail Retaining wall.

Question 12 The existing house is located approx. 4.65m from the public road (King Henry's Road) at the front of the property. The new lower ground floor wall at the front is located 2.5m from the property boundary. The new works have no impact on the right of way.

3.3 Surface Flow & Flooding:

No items were identified requiring further assessment.

4.0 Stage 3 – Site Investigations

4.1 Soil Conditions

Two Previous site investigations were carried out for an adjacent property (58E King Henry's Road) in July 2011. The first investigation included boreholes and the second dynamic probes. These types of investigations would be very detailed investigation for this type of project and usually only carried out on larger commercial projects.

This site investigation indicated that the existing ground was made ground between ground level and –approx. 3.6m BEGL. Below this was found approx. 2-3m of relatively soft London Clay.

This underlying London Clay formation is in line with the Geological Survey Map for the area which indicates same (see Fig 5) and we believe is a valid examination substitute for site investigation within this site. With reference to BS 5930:1999 – 'Code of practice for site investigations' clause 12.6 notes the following:

"Although no hard and fast rules can be laid down, a relatively close spacing between points of exploration, e.g. 10 m to 30 m, are often appropriate for structures. For structures small in plan area, exploration should be made at a minimum of three points, unless other reliable information is available in the immediate vicinity."

Given the close proximity of the nearby site investigation (~20m) we would expect the ground conditions to be consistent within this area

4.2 Groundwater Conditions

The Environmental Agency maps shows the site as being in area of "Unproductive Strata" which it defines as "rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow".

4.3 Surface Water Features

No culvert, rivers and or other water bodies are known within the immediate vicinity of the site.

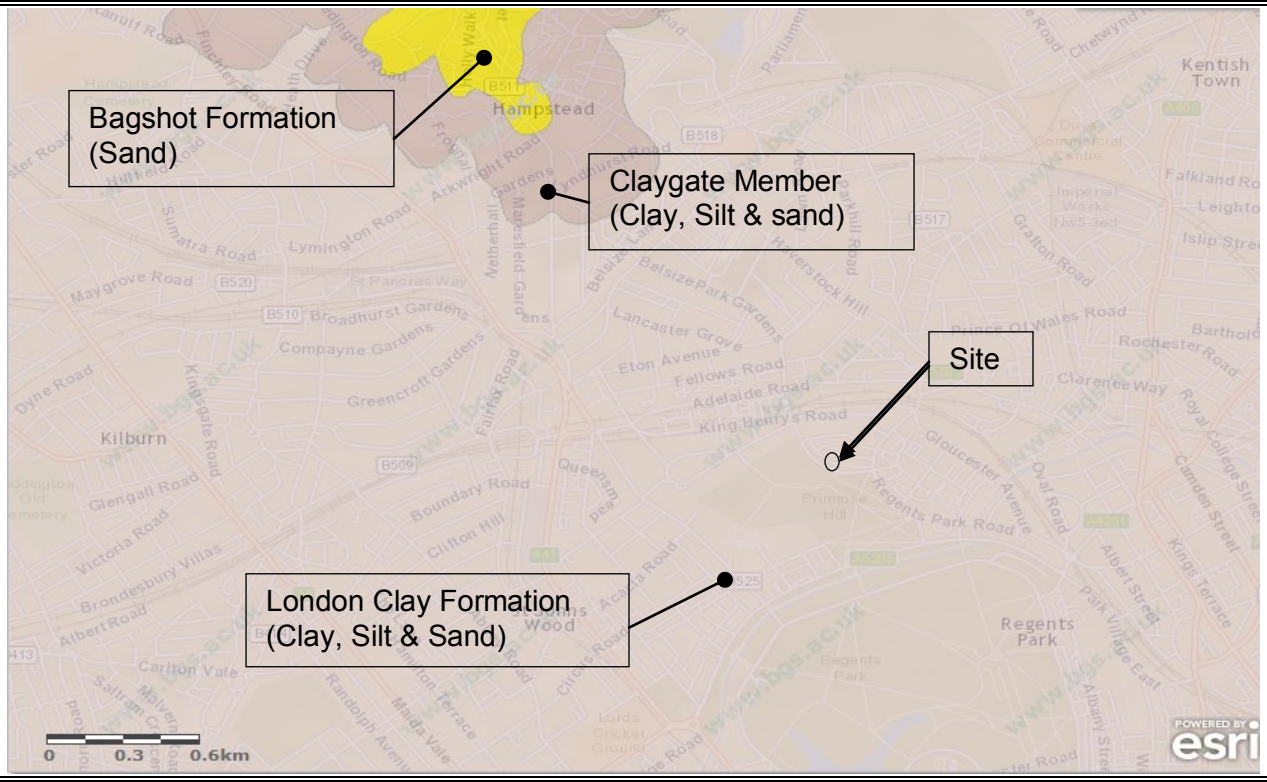

Fig 5 – Extract of British Geological Survey Map

On the basis of the results of the stage 1 (Screening), stage 2 (Scoping) and stage 3 (Site Investigation) it is concluded that no further investigation is required and that the proposed basement poses no risk to the built and natural environment and local amenity; no increased risk of flooding; or risk of ground instability.

Nothing further occurs.

Sincerely,

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