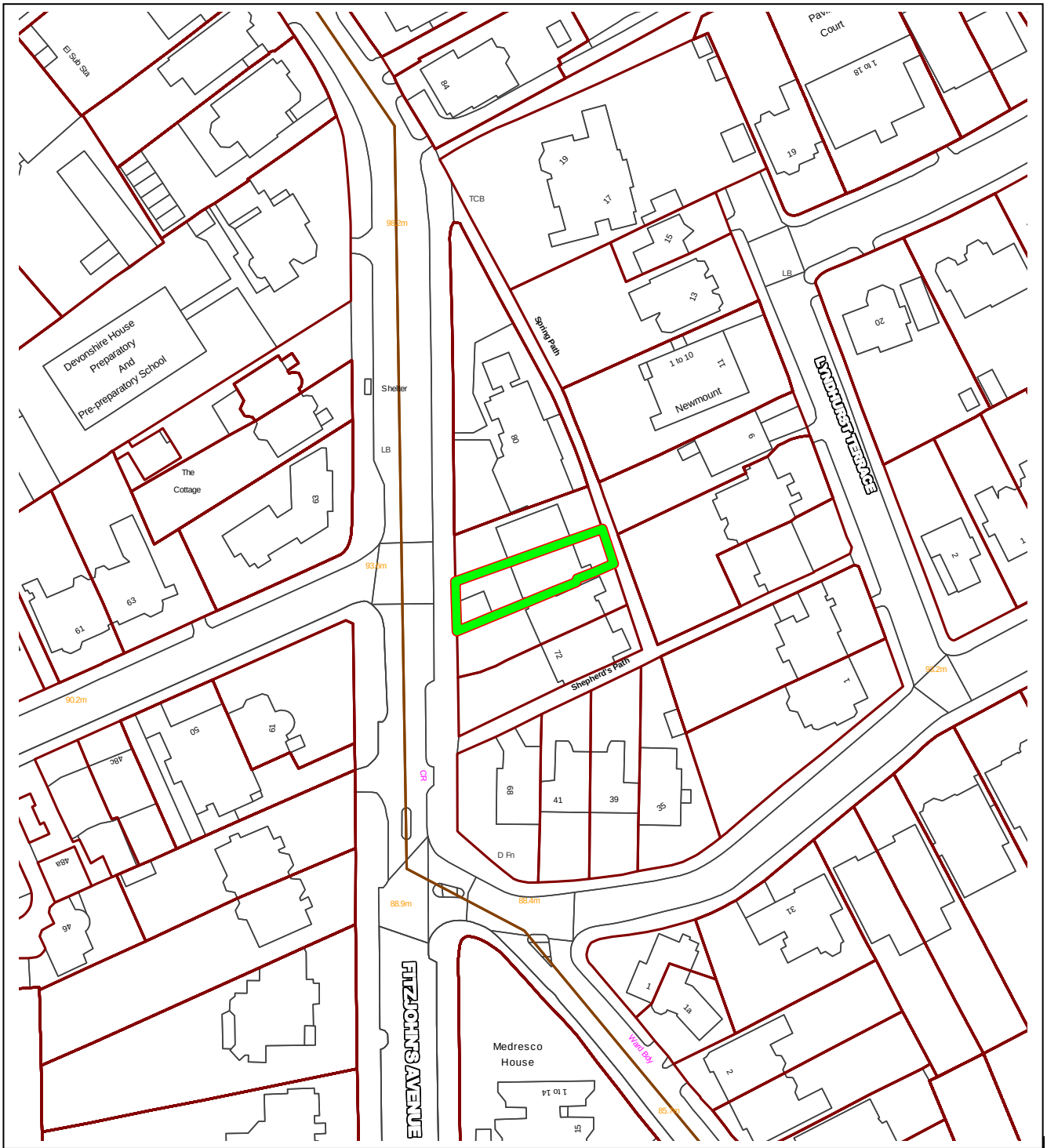
# 76 Fitzjohn's Avenue, London NW3 5LS ref. 2017/1047/P



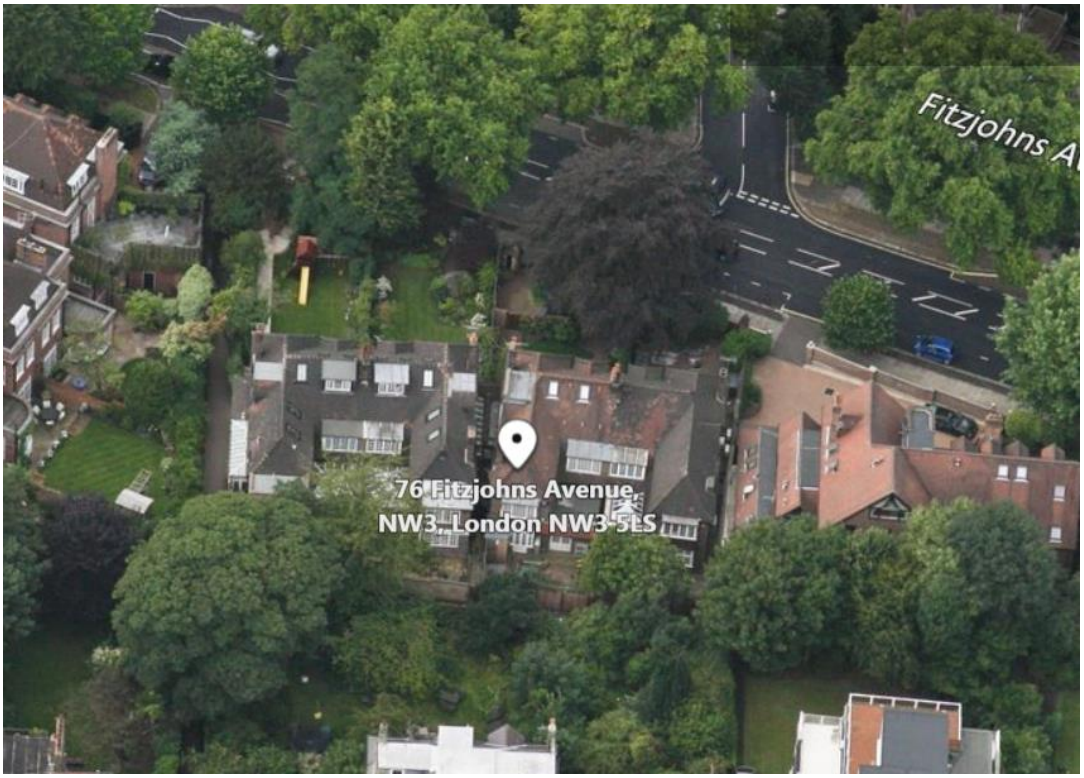



**Photo 1 (above):** Aerial view of rear elevation


**Photo 2 (above):** Street view of application site, showing existing front boundary wall (not proposed to be altered)

**Photo 3 (above):** View of front garden and location of proposed fencing

**Photo 4 (above):** Existing fencing within front garden

**Photo 5 (above):** Front elevation

**Photo 6 (above):** View towards neighbouring property no.74

**Photo 7 (above):** View towards no.78

**Photo 8 (above):** Rear elevation – view of existing two storey projection

**Photo 9 (above):** Rear elevation

| Delegated Report<br><br>(Members Briefing) | Analysis sheet | Expiry Date: | 11/05/2017 |
|---|---|---|---|
| | N/A / attached | Consultation Expiry Date: | 17/05/2017 |

| Officer | Application Number(s) |
|---|---|
| Laura Hazelton | 2017/1047/P |
| **Application Address** | **Drawing Numbers** |
| 76 Fitzjohn's Avenue<br>London<br>NW3 5LS | See draft decision notice |

| PO 3/4 | Area Team Signature | C&UD | Authorised Officer Signature |
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**Proposal(s)**

Creation of a single storey basement with lightwell to front and rear, installation of 1 x AC unit within front garden, installation of 3 x rooflights, removal of 1 x palm tree from front garden, alterations to side elevation fenestration, alterations to rear ground floor patio doors and erection of a new fence in the front garden.

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| **Recommendation(s):** | **Grant Conditional Planning Permission Subject to S106 Legal Agreement** |
| **Application Type:** | **Householder Application** |

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| **Conditions or Reasons for Refusal:** | **Refer to Draft Decision Notice** | | | | | |
| **Informatives:** | | | | | | |
| **Consultations** | | | | | | |
| **Adjoining Occupiers:** | No. notified | **00** | No. of responses<br>No. Electronic | **13**<br>**00** | No. of objections | **13** |
| **Summary of consultation responses:** | The application was advertised in the local press on 23/03/2017 and 3 site notices were displayed between 24/03/2017.<br><br>**13 objections** were received from the owners/occupiers of the following addresses: Fitzjohn's primary School, 86a Fitzjohn's Ave; 26 Redington Road; 12 Pattison Road; 13 Lyndhurst Terrace; Flat 9, 11 Lyndhurst Terrace; Flat 10, 55 Fitzjohn's Avenue; Flat 2, 80 Fitzjohn's Avenue; 56, 73 Fitzjohn's Avenue; 74 Fitzjohn's Avenue; 72 Fitzjohn's Avenue (x 2); No address given (x 2).<br><br>The objections from neighbouring residents are summarised below:<br><br>**Amenity**<br><br>• The basement would be detrimental to all the neighbours and schoolchildren who use the area.<br>• The proposed large windows to the south side of 76 are unacceptably large and will directly overlook my property including windows to my lobby, kitchen, two bathrooms and loft living area.<br>• Noise disturbance from the proposed AC unit.<br>• The noise report does not address noise generated by the plant and machinery to be sited in the basement.<br>• The lightwell at the front of the building extends beyond the footprint of the building and it will be situated too close to my property.<br>• Noise and disruption from excavation works.<br><br>*<u>Officer Response</u>*<br><br>• *The basement itself would have very limited impact on neighbouring amenity given that it would be subterranean. The impacts of basement excavation and construction are discussed further in the 'Basement' and 'Construction Impacts' sections below.*<br>• *Although two large windows would be introduced to the south elevation, they would replace and be located in a similar position as six existing windows. They would serve a stairwell and internal void rather than habitable rooms, and as such would not cause demonstrable harm to neighbouring privacy compared to the existing situation.*<br>• *Please refer to paragraphs 4.4 – 4.7 for assessment of noise impact from the proposed AC unit.*<br>• *Internal plant and machinery does not require planning permission (as it is not development), nor the submission of a noise impact assessment.*<br>• *The front lightwell has been reduced in size during the course of the current application to measure 1.1m wide. It would be covered with a metal grille and given its location at basement level, would not cause harm to neighbouring outlook, privacy or daylight.* | | | | | |

- *Please refer to construction impacts section below and section 6 of this report for an assessment of disruption from excavation works.*

**Design**

- Hampstead is a conservation area and the proposed windows are not in keeping with the rest of the house and neighbouring properties.
- Any noise mitigation enclosure for the AC unit is not suitable for a garden scene.
- There are no details to ensure the front boundary wall is kept intact. Heavy machinery would be likely to damage it.
- The windows to the rear are different to the windows at 72 and 74 and will impact the character and appearance of the building and conservation area.

*Officer Response*

- *The design of the new and replacement windows were amended during the application to match the existing fenestration.*
- *Please refer to paragraph 3.12 for a full assessment on this matter.*
- *Full demolition of the front wall would require planning permission, and is not included in the current proposals.*
- *The design of the windows to the front and rear elevations was amended to a multi-paned design to match the fenestration of the neighbouring properties.*

**Construction Impacts**

- The CMP does not comply with Camden's proposed policies.
- The site is in area of heavy pedestrian and motor traffic. There are 4 primary schools within a very short distance of the proposed site and as a consequence over 1000 school children will pass the site each day and feel the impact of the noise pollution, consequential dust and vibrations produced by heavy equipment such as excavators, heavy breakers, sizable trucks.
- Noise and vibrations could affect autistic school children.
- The area is already very congested given how many schools there are, and there are already safety concerns for the children in terms of the heavy traffic and parking issues on Fitzjohns Avenue and the surrounding smaller streets. Substantial building works will and construction traffic will increase the safety risk for the large numbers of children in the area.
- The proposed works will undoubtedly cause harm to my property. We share a common wall for part of our boundary and there is only a small gap for the remainder of the boundary. Number 76 has not yet commenced any party wall related discussion. This planning application should not be approved until and unless a specific party wall award has been agreed.
- Dust and pollution from the excavation and deliveries/machinery.

*Officer Response*

- *A full CMP would be secured by S106 Legal Agreement to be submitted and approved by the Council's Transport, Highways and Environmental Health teams prior to commencement of works. The CMP would be expected to take account of the local transport*

*network and school times, and the applicant is required to submit details of the environmental protection, highways safety and community liaison measures proposed in order to mitigate and offset potential effects and impacts arising from the development. The CMP would also include details of how the applicant will monitor effects on the health and amenity of local residences, construction workers and local businesses.*

- *Party Wall matters are not controlled by the Planning regime and are a civil matter conducted outside of the planning process.*

**Transport/Highways**

- The site is within 5m of a public highway and may lead to structural damage of the road and footway.
- Fitzjohns Avenue is very busy and often congested, and construction vehicles and machinery will considerably aggravate these problems.
- The site is very near 3 schools, Fitzjohns Primary, Devonshire House and St Antony's; there are already considerable parking problems at set down and pickup time, and these will be exacerbated.
- Heavy machines, trucks and skips, etc. would have a negative effect on road congestion and parking in the area.
- The Camden Local Plan states that “Major developments dependent upon large goods vehicle deliveries will also be resisted in predominantly residential areas”.

*Officer Response*

- *Please refer to section 8 of the assessment below which provides an assessment of Transport/Highways impacts.*
- *The planning application is a householder application relating to a single residential dwelling. It is not classed as a major application, which would involve the creation of ten or more residential dwellings and/or more than 1000sqm of new floorspace.*

**Trees**

- There is a specimen tree within a few yards of the proposed development which will undoubtedly be affected by these proposals.
- The proposals include cutting down a palm tree in the front garden. It is a reasonably tall and apparently healthy tree; its branches and leaves provide some cover and privacy to my home. The street has a number of palm trees and I think it is a pleasant and remarkable feature of the street scene.
- The tree report for the application does not consider the impact of the ramp proposed to be excavated in the front garden. There is a large mature beech tree in the front garden The tree report considers only the impact of the actual finished basement / proposed light-wells and does not address potential harm (which could be very significant) to the tree from the construction process itself, specifically the excavation of a ramp.
- The tree report does not consider the potential impact of cabling/a trench to connect the new AC unit.
- The excavation could result in water logging to neighbouring gardens damaging trees and plants.
- A 4.5 m height restrictor at access to the site was stipulated in both the arboricultural report and the BIA. The applicant needs to make sure the contractors keep to this. It is not sufficient to make it a s. 106

condition of the permission. This would leave us, the neighbours, having to make sure this condition is enforced.

*Officer Response*

- Please refer to section 7 of the report for a full assessment of the impact to existing trees.
- The proposal to excavate a ramp within the front garden was removed from the proposals.
- Any cabling required for the AC would be very shallow and would be dug by hand to ensure there was no impact on tree roots.

**Basement**

- Information provided on the water table and possible disturbance is flawed.
- Ground water monitoring was done on one day only which would not give reliable or adequate readings.
- The boreholes for the ground water analysis were c.750 metres away – they should be made near the boundaries with neighbours.
- The draft Hampstead Neighbourhood Plan – Policy BA2: Local Requirements for Basement Impact Assessments states at para 5.17 that "hydrological borehole measurements to sample soil near boundaries with neighbours to a depth of at least 6m should be conducted in periods of contrasting rainfall and over a period of no less than 6 months (ref CPG4 and para. 291 to 294 of the Camden Geological, Hydrogeological and Hydrological Study) with meteorological data to establish a realistic model of existing ground water regime. Water was found at 1.05 m on 30 November 2016 – a dry day with 0% rainfall.
- The basement development could have a significant impact on children at Fitzjohn's primary school due to elevated lead in the soil, disrupted water supply, hydrogeological impact, structural damage from subsidence.
- There may be long term, delayed impacts as a result of local soil conditions.
- It is totally unacceptable to rely on "future work" to assess and address disturbance to other properties.
- The construction of the basement may cause significant hydrogeological problems for the neighbours.
- The planning application ignores the cumulative impact of building both a double storey extension and basement.
- The basement development will give rise to significant costs for cleaning and repair and the run-off mud will block gullies and dirty the pavements and streets.
- I believe the terrace of houses was built on shallow foundations and rely on the neighbouring buildings mutually supporting each other. The proposals will undoubtedly undermine the structural stability of both adjoining neighbours as a result of ground movement and subsidence, vibration, as well as the delayed 'heave' after completion of the works.
- Insufficient evidence relating to the ground movement, jeopardizing the structural soundness of the excavation itself and the neighbouring properties
- Groundwater and ground movement – the applicants have not satisfied planning requirements as ground movement assessment

has still to be done to ensure the structural soundness of the building and neighbouring properties. It is unacceptable to leave this to S106.

- The BIA is highly deficient and needs to be revised. It states that ground water monitoring standpipes "has been monitored on a single occasion to date" (BIA, page 10). This is totally against good practice. The BIA needs to include seasonal testing to monitor the water levels at several points in time and continuously for an extended period of time especially during the rainy season to accurately measure the change in water flow and identify the potential for ground water surges following heavy rainfall.
- It is not clear where the boreholes were dug.
- There is very little information about how the railway tunnel running under 78 Fitzjohn's Avenue is going to be dealt with.
- Ground water and ground movement would result in subsidence.
- The CMS uses Burland Scale trigger levels of 3mm and 5mm, when it should be no more than 1mm.
- The basement excavation could affect the stability of neighbouring boundary walls.
- The CMS is inaccurate – none of the neighbouring buildings have basements.
- The CMS is full of mistakes, is inconsistent with the BIA and uses a Burland Scale Level incompatible with planning policy.
- The BIA is too limited to comply with Camden's planning requirements: it is limited by budgetary constraints, makes references to documents which do not exist and makes recommendations which have not been followed, be it on possible lead contamination, ground movement analysis or ground water seasonal testing.
- The BIA does recommend that it would be prudent to carry out additional analysis in order to determine the likely heave/settlements associated with the use of a raft foundation. There does not seem to be any record of such additional analysis being made.

Two technical reports were commissioned by neighbouring residents which are attached at appendix 1:

- Technical review of the submitted BIA, prepared by Dr Michael Henry de Freitas, a Chartered Geologist. The report came to the following conclusions:
    - The ground investigation contains a BIA that fails to properly address groundwater and as such misses a very substantial hazard.
    - Not only does it miss this hazard but it encourages a contractor to believe the hazard does not exist.
    - Ground water has not been properly investigated at this site and needs to be. Given the criticality of ground water to ground stability the investigations required should not be relegated to S106 conditionality.

- Technical report prepared by Eldred Geotechnics Ltd reviewing the application and reporting on its compliance with the engineering requirements of Policy DP27. The report came to the following conclusions:
    - The application does not demonstrate that the scheme will maintain the structural stability of the neighbouring property, does not assess the risk of damage, the CMS is false and without justification.

- The application does not demonstrate that the scheme proposed will avoid adversely affecting drainage and runoff or causing other damage to the water environment.
- The basement impact assessment does not demonstrate that the groundwater regime in the immediate region has been researched and adequately interpreted.

*Officer response:*

Campbell Reith issued their first BIA Audit Report in May 2017. Technical details are provided in the body of the officer report below, but in response to the objections received from neighbouring residents, Campbell Reith provided the following comments:

- *A ground movement assessment has been produced, of which further clarification has been requested. Ground water monitoring has been carried out with assumptions made where it was believed anomalous readings were taken. However it has been requested that further water level monitoring be carried out prior to construction.*
- *Disturbance of lead is not pertinent to BIA (**Officer Response: please refer to paragraphs 4.8 – 4.11 for discussion**).*
- *An appropriate desktop study and site investigation was undertaken that found no evidence of a watercourse directly below the property. However it has been requested that further water level monitoring be carried out prior to construction.*
- *The BIA has adequately screened for slope instability issues.*
- *A ground movement assessment has been produced by the applicant. Clarification of parameters used has been requested to allow detailed review of this assessment.*
- *Details of existing impermeable areas have been requested to clarify the impact of the basement construction on water runoff and drainage.*
- *Further ground water monitoring has been requested due to a high ground water level being recorded in one of the standpipes, the possible presence of a spring and impacts for construction.*
- *CPG4 does not stipulate that the impact on unplanned basements needs to be considered (In response to comment that the works will make it difficult for no.78 to carry out similar basement construction).*
- *Further monitoring of ground water levels has been requested. The presence of ground water would provide the greatest risk to erosion of soils beneath existing neighbouring foundations.*
- *Further assessment of the foundation solution is requested.*
- *An Arboricultural report has been produced that confirms that all trees both on and off site were surveyed that may be of significance to the proposed development.*
- *While the Burland crack width does not correspond to the wall displacements monitored during construction, it is accepted that the trigger values should be linked to the wall movements predicted from the GMA which has been raised as a query.*

The applicant provided additional information in October 2017. In response, two neighbouring objections were received (with the request that their addresses were not made public). Their objections again expressed concern with the accuracy and standard of the BIA. The following additional points were raised:

- The new Local Plan is now in place. The revised CMS does not comply with the Local Plan in several respects.
- The CMS has not shown that damage will be no higher than Burland 1.
- It seems that the CMS has been recycled from a previous project.
- The draft Hampstead Plan states that high impact works should be limited to the hours of 9 am to 12 pm and 2 pm to 5.30 pm and never during the week-ends. The applicant has ignored this Local Plan thereby showing a clear lack of neighbourly concern.
- Insufficient ground water testing - Once again the modified BIA does not provide any further clarity on the effects of the ground water flow.
- The railway network needs to give its approval before work can commence.

*Campbell Reith issued their second BIA Audit Report in November 2017 and provided the following responses to the additional neighbour objections:*

- *The presence of ground water would provide the greatest risk to erosion of soils beneath existing neighbouring foundations. The applicant has carried out further ground water monitoring which to date has indicated a ground water level below the basement level. Ground water monitoring to continue until construction.*
- *Details of existing impermeable areas have been provided which indicate a modest increase in surface water drainage only. However further clarification has been requested.*
- *Further assessment of the foundation solution is requested to determine impact of heave on neighbouring properties.*
- *While the Burland crack width does not correspond to the wall displacements monitored during construction, it is accepted that the trigger values should be linked to the wall movements predicted from the GMA which has been raised as a query.*
- *It is no longer proposed to form a ramp to the front of the property during construction.*

*<u>Officer response:</u>*

- *Noise from demolition and construction works is subject to control under the Control of Pollution Act 1974. An informative would be added to the decision notice if the proposals were approved to advise the applicant that they must carry out any building works that can be heard at the boundary of the site only between 08.00 and 18.00 hours Monday to Friday and 08.00 to 13.00 on Saturday and not at all on Sundays and Public Holidays. The Construction Management Plan would also be expected to include limits on hours of construction, to reflect the requirements of the Hampstead Neighbourhood Plan which seeks to limit high impact activities to 9 am-noon and 2pm-5.30pm on weekdays.*
- *A condition would be imposed if the application was approved to state that no construction shall take place until a detailed design and method statement for all foundations and other development proposed below ground level which takes account of the nearby Network Rail asset, has been submitted to and approved by the local planning authority in consultation with the relevant rail infrastructure undertaker.*

The applicant provided additional information in December 2017. In response, the same two objectors submitted the following additional

objections relating to the basement development:

- Concerns about Campbell Reith report not taking into account the new Local Plan basement policies, specifically the requirement to cause no harm to neighbouring properties. *Officer Response: A revised audit report was issued by Campbell Reith to refer to the new Local Plan which was adopted during the course of the application. Campbell Reith responded to the neighbour objection by highlighting that "CPG4 notes 'The purpose of a BIA is to enable the Council to 'assess whether any predicted damage to neighbouring properties and the water environment is acceptable or can be satisfactorily ameliorated by the developer'. We have reviewed the text of our audit report and believe that it captures the purpose of the BIA as it is".*
- The Party Wall Act should be included in the S106 Construction Plan. *Officer response: Party Wall matters are not controlled by the Planning regime and are a civil matter conducted outside of the planning process.*
- We are particularly concerned with the lack of seasonal ground testing, especially during the wetter seasons.

Their responses were accompanied by a report prepared by Eldreds Geotechnics Consulting Engineers, a summary of which is provided below:

1. Ground movement assessment not justified.
2. Query 4 should not be closed out - The applicant's CMS does not address Campbell Reith's query regarding design of continuity reinforcement and the fact that it is required if propping is not provided to each underpinning bay.
3. Query 5 (Section 7 of the construction method statement requires amendment to be consistent with the rest of the submitted information with regard to geological conditions and damage category) shouldn't be closed out.
4. Query 6 relating to heave analysis should not be closed out. The revised CMS does not address the issue.
5. Closing of query 8 relating the creation of a ramp at the front of the property.
6. Structural stability and movements of the basement walls during construction.
7. Inconsistent depth of wall between drawings and structural calculations.
8. Buoyancy not considered in structural design.
9. CMS incorrectly states that the basement is founded on dense gravels.
10. Inadequate temporary works proposals.

*Campbell Reith issued their third BIA Audit Report in March 2018 and provided the following responses to the additional neighbour objections and Eldred's report:*

- *The applicant has carried out further ground water monitoring to indicate that the ground level is not likely to be significantly above the proposed basement level. It has been recommended that further monitoring be carried out however this is not deemed critical to obtaining compliance with CPG4.*

1. *Further clarification has been requested regarding the calculation of the ground movement assessment*

2. *Providing continuity reinforcement is an acceptable solution and, in light of detailed temporary work proposals not being required for planning submission, it has been accepted that the detail may form part of detailed design.*
3. *It was concluded that the screening and scoping was carried out in consideration of the relevant geological data/interpretation therefore satisfying the requirements of CPG4. However it is accepted that the CMS remains inconsistent.*
4. *It was concluded that the feasibility of designing the basement to accommodate heave forces could be accepted by inspection and is not critical to demonstrating the feasibility of the proposal at this stage. However it is accepted that the applicant did not provide any formal evidence to resolve this query.*
5. *Confirmation was received by the applicant that the proposal is no longer to form a slope at the front of the property within document "Campbell Reith Audit query tracker – applicant responses 25 September 2017".*
6. *The applicant has provided appropriate temporary works details. Clarification regarding the GMA has been requested.*
7. *Inconsistency does not prevent the demonstration of the feasibility of the proposal with respect to construction or structural adequacy.*
8. *Additional groundwater monitoring has shown that buoyancy not critical.*
9. *Agreed, however, the screening and scoping study has been carried out with consideration of the correct geology.*
10. *The applicant has demonstrated the feasibility of constructing the basement by providing outline temporary works details and construction methodology.*

The applicant submitted Issue 2 of their BIA and a revised Construction Method Statement in May 2018, and Issue 3 of their BIA was submitted in July 2018.

Two objections were received relating to the following additional issues:

- Differences in Burland Scale figure in different documents.
- Why doesn't Campbell Reith question the assumption that the soils behave elastically.

Campbell Reith provided the following responses

- *In the first CMS, the damage was predicted to be Burland Cat 1 or 2, but no justification was provided. We therefore asked for a full GMA. A GMA was subsequently presented which stated damage would not exceed Burland Cat 1. We had some initial queries about the assumptions made in the GMA and, having received various clarifications, were satisfied this prediction was reasonable (subject to a Basement Construction Plan). It is possible that there is some confusion between crack width and building movement. The Burland categories are related to crack width and for damage to be classed no worse that Cat 1, cracks must be no more than 1mm. The building movement that might cause these cracks could be much greater. For example, building movements of 10 or 15mm might not result in cracks wider than 1mm. It depends on how the movement occurs; whether for example it causes a wall to sag. The CMS refers to possible settlement of 15mm.*
- *For the ground movement analyses and preliminary designs that are*

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| | *carried out for a BIA, it is normal to assume that soils behave elastically.*<br><br>**Other issues**<br><br>• The basement will set a precedent for all the houses along the road to do so.<br>• The owners are likely to be out of the country during construction – who will be supervising the project and what recourse there will be in the event of have any objections during the course of the building works or having to seek an immediate injunction?<br>• I believe the wall on Fitzjohn's Avenue at the front of 76 is protected. I did not see any proposal to protect the wall from the works.<br>• Security for expenses - Policy A5 states "Given the complex nature of basement development, the Council encourages developers to offer security for expenses for basement development to adjoining neighbours". The owners have not mentioned that this would be put in place, and we may have no recourse against them should damage occur.<br>• Have the Council's Environmental Health department been involved in reviewing the land contamination issues?<br>• There is an elevated concentration of lead in the soil that may be poisonous and with rain, particles can creep into the water table below.<br><br>*Officer Response*<br><br>• *Other proposals for basement development would require the submission of a full planning application which would be assessed on their own merits.*<br>• *Supervision of construction is not a planning consideration, but would be dealt with as part of the Construction Management Plan, secured by legal agreement.*<br>• *Although the front boundary treatment makes a positive contribution to the conservation area, it is not afforded any specific protection as it is not a listed structure. Planning permission would not be required for minor repairs; however, full demolition of the front wall would require planning permission, and is not included in the current proposals.*<br>• *Although the Council may encourage the applicant to offer security where basement schemes have a risk of causing damage to neighbouring properties, it does not have the power to insist on this. Furthermore, under the Party Wall Act (separate from the planning system) adjoining owners may request the building owner to provide a bond or insurances to provide security in the event of a dispute. Security bonds may be provided either as part of a party wall agreement or as a separate private arrangement between the developer or owner and the neighbour.*<br>• *Please refer to paragraphs 4.8 – 4.11 for an assessment of ground contamination.* |

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| **CAAC/Local groups comments:** | **Heath and Hampstead Society** objected to the application on the following grounds:<br><br>• Size/Bulk - The main part of this basement is beneath the footprint of the host house, but the two large light wells, front and back, enlarge the excavated area considerably. The depth of the basement is also disproportionate to scale of the existing house. The overall excavation depth exceeds the suggested maximum in Policy DP27 and Guidance Note CPG/4.<br>• Windows - The two giant new windows proposed for the side elevation facing No 74 are completely unacceptable. The neighbouring house is less than a metre from the boundary, and overlooking, noise and light pollution and general intrusion would occur.<br>• Basement Impact Assessment - No assessment of possible damage to adjoining properties, by Burland Scale or other means, is made.<br><br>*Officer Response:*<br><br>• *The proposed lightwells were reduced in size during the application, as was the depth of the basement. The basement would measure a maximum depth of 3.8m which complies with the specifications of the Basement CPG for a single storey basement, which states that a single storey is approximately 3 to 4m in height.*<br>• *Although two large windows would be introduced to the south elevation, they would replace and be located in a similar position as six existing windows. They would serve a stairwell and internal void rather than habitable rooms, and as such would not cause demonstrable harm to neighbouring privacy compared to the existing situation.*<br>• *Campbell Reith confirmed in their first audit report that a ground movement assessment has been produced, of which further clarification has been requested.*<br><br>**Netherhall Neighbourhood Association** objected to the application, a summary of which is provided below:<br><br>Basement Impact<br><br>• Likelihood of Natural Watercourses below or directly next to No 76 Fitzjohn's Avenue – The BIA is misleading. The depth of the basement is likely to encounter and disturb natural watercourses causing ground water problems on the property and to adjacent properties and land.<br>• The BIA does not fully address the impact of the underground Tunnel, which runs beneath the directly adjacent property on its northern side.<br>• The excavation and new basement foundations for 76 may adversely affect the stability of no 78.<br>• The proposals show, in addition to a basement beneath the property, light wells at front and rear that will result in excessive excavation of the site. The new basement is unusually tall.<br>• There is no reference in the BIA to the impact on the structures nor measures to prevent damage to the adjacent properties as a result of the excavation work and construction of the basement.<br><br>*Officer Response* |

- *Please see Officer Response to Basement Impact section above which responds to these points.*
- *The proposed lightwells were reduced in size following negotiations with officers, as was the depth of the basement. The basement would measure a maximum depth of 3.8m which complies with the specifications of the Basement CPG for a single storey basement, which states that a single storey is approximately 3 to 4m in height.*

Amenity

- The proposals show two large side windows facing no 74 which is less than a metre from the boundary. This will result in overlooking and risk the spread of fire between properties.

*Officer Response*

- *Although two large windows would be introduced to the south elevation, they would replace and be located in a similar position as six existing windows. They would serve a stairwell and internal void rather than habitable rooms, and as such would not cause demonstrable harm to neighbouring privacy compared to the existing situation nor impact fire risk.*

**Thurlow Road Neighbourhood Association** objected to the application on the following grounds:

- The proposal is over-development of the site, which is already approximately 50% covered with building as well as hard surfacing for parking.
- The site has springs and other water courses under it and the sub-soil is not stable, so the site is totally unsuitable for excavation of a basement. Neighbouring properties have already had problems with water springing up under the buildings (e.g. 11 Lyndhurst Terrace).
- There is little space around the site and the necessary lorries to facilitate removal of the soil and to supply the construction goods will further block Fitzjohn's Ave. and cause chaos during the school runs to the 2 schools very near it and the 5 schools serviced by Fitzjohn's Ave.
- The concomitant air pollution will be appalling.

*Officer Response*

- *The proposed basement would sit beneath the footprint of the building with lightwells to the front and rear of the building. They are not considered excessively large nor overdevelopment of the site, and would comply with the specifications set out in policy A5 (Basements).*
- *Please see Officer Response to Basement Impact section above which responds to these points.*
- *A full CMP would be secured by S106 Legal Agreement to be submitted and approved by the Council's Transport, Highways and Environmental Health teams prior to commencement of works. The CMP would be expected to take account of the local transport network and school times, and the applicant is required to submit details of the environmental protection, highways safety and community liaison measures proposed in order to mitigate and offset potential effects and impacts arising from the development. The CMP*

*would also include details of how the developer will monitor effects on the health and amenity of local residences, construction workers and local businesses.*

**Councillor Spinella** (Councillor for Frognal & Fitzjohn's ward) objected to the proposed basement excavation and raised the following points:

- Page 9 of the Basement Impact Assessment states that "it is possible that the basement excavation will extend below the water table".
- Page 10 of the BIA states that ground water monitoring standpipes "has been monitored on a single occasion to date". This not consistent with Camden's policies which recommend seasonal monitoring (CPG 4 July 2015 2.26). Seasonal monitoring is also recommended as "prudent" in the BIA itself (Section 8.1.1).
- Moreover, Section 3.0 of the Construction Method Statement states that the soil analysis was done in three boreholes within 750m of the site. Section 5.17a. of the draft Hampstead Neighbourhood Plan states that hydrological borehole measurements to sample soil should be made near the boundaries with neighbours to a depth of at least 6m.
- The BIA report (Section 1.3) states that soil analysis was done in three boreholes on site. This is inconsistent with Section 3.0 of the CMS.
- The BIA report (Section 1.4) expressly admits its scope is limited "to the number of locations where the ground was sampled" and the "range of data sources consulted". The report recommends that "groundwater monitoring should be continued out to confirm that significant groundwater inflows will not be encountered during basement excavation as well as trial excavations, ideally, to depths as close to the full basement depth as possible". There is no evidence this has been done.
- Section 1.3.0 of the BIA found water at a depth of 1.05m. However, this was rejected as "anomalous" in the reports. Given the presence of a spring near the property, as well as the Tyburn, it is quite conceivable that groundwater is at a much more shallow level on the site itself, as compared to the location of the boreholes. Yet the CMS states that the November 2016 GEA investigation only investigated the "near surface" of actual site and claims that this is sufficient confirmation of similarity to an 18m borehole. The CMS states that "groundwater was established 7m below ground level in one borehole"- which contradicts the findings of the BIA mentioned above (at 1.05m and 4.5m). The inconsistencies between the BIA and the CMS are confusing.
- BIA 3.1.1 states that the proposed basement will "possibly" extend beneath the water table surface.
- They conclude that nearby investigations mean it is considered "relatively unlikely". This cannot satisfy the requirements of DP27/CPG4 or Camden's Local Plan to demonstrate that the proposal "would not cause harm to the water conditions of the area".
- A draft report from Dr De Freitas dated 12 April 2017 (the report) states that the BIA fails to reflect the risk shallow groundwater at this site can present to a contractor excavating a basement using the "hit and miss" method, as advocated in the CMS. (para 4)
- Dr De Freitas also clarifies (para 28.1) that the site is not far downslope from Shepherds Well and the former spring line at that elevation. Shallow ground water is to be expected.
- Dr De Freitas concludes (para 35 onwards) that the very substantial

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| | investigation that is submitted in support of the application and its BIA misses a very substantial hazard, viz that from ground water. Not only does it miss this hazard but it encourages a contractor to believe the hazard does not exist. Ground water has not been properly investigated at this site and needs to be. Given the criticality of ground water to ground stability the investigations required should not be relegated to 106 conditionality where they remain unpoliced. As it stands the application fails to provide Camden with the assurances Camden requires as a basis for providing planning approval until ground water is properly investigated.<br>• As a separate matter, the Camden Local Plan states that the Council encourages security for expenses for basement developments to adjoining neighbours. The application has no evidence of anything being put in place. The applicant is apparently intending to move back to the United States soon. The works are not being carried out for the purposes of the applicant or his family continuing to live in the property – they are being done to achieve maximum profit on a sale of the property. There is potentially significant difficulty in taking any necessary enforcement action or seeking redress against the proprietor in the future.<br><br><u>*Officer Response*</u><br><br>*In addition to the responses to neighbour objections set about above, Campbell Reith provided the following additional comments in response to Councillor Spinella:*<br><br>• *The applicant has carried out further ground water monitoring which to date has indicated a ground water level below the basement level. Ground water monitoring to continue until construction.*<br>• *A site specific investigation was carried out, with some desk study information also taken from existing nearby boreholes*<br><br>**Councillor Baillie** (Councillor for Frognal & Fitzjohn's ward at the time of the application submission) objected to the application and requested that it is progressed to full planning committee.<br><br><u>*Officer Response*</u><br><br>*An application cannot be automatically referred to Planning Committee unless the Director of Regeneration and Planning has referred the application for consideration after briefing members.* |

**Site Description**

The application site comprises a large three-storey semi-detached dwellinghouse located on the eastern side of Fitzjohn's Avenue setback behind a large front garden. The property features a small rear garden which backs onto Spring Path, a pedestrian pathway connecting Spring Walk to the north with Shepherd's Path to the South.

The application building is not listed, but is located within the Fitzjohns and Netherhall Conservation Area, where it is described as making a positive contribution to the special character and appearance of the area in the Conservation Area Statement. The nearest listed building is no.3 Lyndhurst Terrace, approximately 40 metres to the south east. The site is also located within the Hampstead Neighbourhood Plan Area.

**Relevant History**

Application site

**9501069** – Erection of new double timber gates to a height of 2.4 metres, granted August 1995.

**2013/0413/P –** Erection of a two storey rear extension, replacement of rear patio doors, erection of a rear dormer and installation of 4 x new rooflights, Granted march 2013. Works have been implemented but not completed.

72 Fitzjohn's Avenue

**2007/3542/P** - Excavation of basement and creation of an open front lightwell with staircase and two rear lightwells enclosed by grilles, Granted November 2010.

**2010/1828/P** - Renewal of planning permission granted on 10/10/2007 (2007/3542/P) for excavation of basement and creation of an open front lightwell with staircase and two rear lightwells enclosed by grilles (Class C3), Granted May 2010. Proposals not implemented.

74 Fitzjohn's Avenue

**2007/6170/P** - Excavation to create a new basement storey with lightwells to front and rear elevations to single-family dwellinghouse, Granted March 2008. Proposals not implemented.

**Relevant policies**

**National Planning Policy Framework 2018**

**The London Plan 2016**
**Draft New London Plan showing Minor Suggested Changes (13 August 2018)**

**Camden Local Plan 2017**
A1 Managing the impact of development
A3 Biodiversity
A4 Noise and vibration
A5 Basements
D1 Design
D2 Heritage
T4 Sustainable movement of goods and materials

**Hampstead Neighbourhood Plan adopted 8 October 2018**
DH1 Design
DH2 Conservation areas and listed buildings
BA1: Basement Impact Assessments
BA2: Basement Construction Plans
BA3: Construction Management Plans
NE2: Trees

**Camden Planning Guidance (CPG)**
CPG 1 Design (2015, updated March 2018)
CPG 6 Amenity (2011, updated March 2018)
CPG Amenity
CPG Basements
CPG 7 Transport (2011)
CPG 8 Planning obligations (2015, updated March 2018)

**Fitzjohns and Netherhall conservation area appraisal and management strategy 2001**

**Assessment**

**1.0 Proposal**

1.1 Planning permission is sought for the following:

- The excavation of a new single storey basement with lightwells to the front and rear. The basement would extend underneath the entire footprint of the building, as well as beneath a previously approved (and partially implemented) two storey rear extension (see history section above). The basement floor would measure approximately 152sqm and would be excavated to a depth of 3.8m below ground level. The front lightwell would be full width, measuring 7.4m x 1.1m covered with a metal grille. The rear lightwell would be half-width, measuring 3.2m x 1.7m surrounded by planters.
- Installation of one rooflight to pitched roof of previously approved two storey rear extension, and one rooflight to south facing roof slope, both measuring 0.8m x 0.7m.
- Replacement of one rear window and two front windows at first floor level with new timber-framed windows to match existing windows.
- New rear window to existing single storey side infill extension to match existing fenestration.
- Alterations to side (south) elevation fenestration, including infill of six window openings and installation of three new windows (two of which would be double storey).
- Replacement first floor window to side (north) elevation to match existing fenestration.
- Removal of one palm tree to front garden.
- Installation of 1.8m timber fence within front garden to screen existing parking area and new bin store/plant area.
- Installation of one air conditioning unit to front garden.

1.2 The following revisions were made to the proposals throughout the course of the application:

- Reduction in size of front lightwell from 2.1m to 1.2m wide.
- Changes to design of replacement windows to match existing fenestration.
- Reduction in depth of basement excavation from 4.1m deep to 3.8m deep.

## 2.0 Assessment

2.1 The principle considerations in the determination of the application are as follows:

- Design and Conservation
- Impact on neighbouring amenity (Amenity)
- Basement Development (Basement)
- Transport Considerations (Transport)
- Trees and Landscaping (Landscaping)

## 3.0 Design and Conservation

3.1 The Council's design policies are aimed at achieving the highest standard of design in all developments, including where alterations and extensions are proposed. Policy D1 of the Local Plan requires development to be of the highest architectural and urban design quality, which improves the function, appearance and character of the area; and Policy D2 states that the Council will preserve, and where appropriate, enhance Camden's rich and diverse heritage assets and their settings, including conservation areas and listed buildings. Camden's Local Plan is supported by CPG1 (Design) and the Fitzjohn's and Netherhall Conservation Area Statement.

3.2 Policy DH1 of the Hampstead Neighbourhood Plan expects development proposals to demonstrate how they respond and contribute positively to the distinctiveness and history of the area and should respect and enhance the character and local context of the relevant character area. Policy DH2 states that new development should take advantage of opportunities to enhance the Conservation Area by protecting and, where appropriate, restoring original architectural features, including walls, windows, doors, etc., that would make a positive contribution to the Conservation Area.

3.3 Section 72(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 ("the Listed Buildings Act") is relevant, which requires that special attention be paid to the desirability of preserving or enhancing the character or appearance of a Conservation Area when considering applications relating to land or buildings within that Area.

Basement

3.4 The only external manifestations of the proposed basement would be the front and rear lightwells. The front lightwell would extend the full width of the building, measuring 7.4m long and 1.2m wide. It would be covered with a metal grill. The lightwell to the rear would be open, and surrounded by planters. It would measure 3.2m x 1.7m.

3.5 The conservation area statement advises that basement extensions will only be acceptable where it would not involve harm to the character of the building or its setting. The Council's Basement CPG and policy A5 advise that where visible lightwells are not part of the prevailing character of a street, new lightwells should be discreet and not harm the architectural character of the host building, or the character and appearance of the surrounding area, or the relationship between the building and the street. For example lightwells may need to be covered by a grille, have no railing, and be of a size appropriate to the host building and garden. Lightwells to the rear of a property should be set away from the boundary of a neighbouring property.

3.6 The proposed front lightwell would be fairly small in size, having been reduced in width at the request of officers. It would be covered by a metal grille, and surrounded by planting (details of which would be secured by condition). Furthermore, the existing tall boundary treatment to the property blocks views of the front garden from the public realm. Therefore, the proposed lightwell is considered to be sensitively designed and would preserve the character and appearance of the host building and the conservation area. Likewise, the rear lightwell would be fairly discreet, and would not cause harm to the appearance of the building or wider area.

3.7 To the rear, the new basement family room would feature full height glazed doors, which open onto the rear lightwell, with a double height void above. At ground floor level, similar glazed doors would be installed to the previously approved rear extension. As such, the proposed alterations would preserve the character of the host building and the more contemporary glazing is considered to differentiate the works as recent additions to the host building. The lightwell would be surrounded by planters which would reduce its visibility and also set it away from the boundary of no.78.

3.8 Policy A5 provides guidance on the siting, location, scale and design of basements, stating that basements must have minimal impact on, and be subordinate to, the host building and property. In particular, it states that basement development should:

a. Not comprise of more than one storey;
b. Not be built under an existing basement;
c. Not exceed 50% of each garden within the property;
d. Be less than 1.5 times the footprint of the host building in area;
e. Extend into the garden no further than 50% of the depth of the host building measured from the principal rear elevation;
f. Not extend into or underneath the garden further than 50% of the depth of the garden;
g. Be set back from neighbouring property boundaries where it extends beyond the footprint of the host building; and
h. Avoid the loss of garden space or trees of townscape or amenity value.

3.9 The proposed basement would comply with these requirements, as detailed below:

a. <u>Not comprise of more than one storey</u>
The basement floor would be single storey, excavated to a total depth of 3.8m. The Basement CPG states that the Council considers a single storey for a basement to be approximately 3 to 4 metres in height. This measurement refers to the total depth of the excavation (the external dimensions).

b. <u>Not be built under an existing basement</u>
The existing building does not include an existing basement.

c. <u>Not exceed 50% of each garden within the property</u>
The front lightwell would measure 8sqm, and would be located in the front garden measuring 142sqm, which constitutes 5.6% of the garden area. The rear basement development would measure 17sqm within the rear garden which measures 52sqm (32%). The Basement CPG advises that this criterion (to not exceed 50% of each garden) applies to gardens as they currently exist and not the gardens of the proposed development. The existing garden measurement therefore does not include the previously approved rear ground floor extension footprint. Officers note that the proposal would also comply if the

garden area of the approved development were to be applied.

d. Be less than 1.5 times the footprint of the host building in area
The existing building footprint (not including the previously approved rear extension) measures 130sqm, and the proposed basement floor would measure 152sqm, which is less than 1.5 times the footprint of the building (which would be 195sqm). It is noted that if the approved rear extension were to be applied the proposal would comply to a greater extent (i.e. it would be further below 1.5 times the extended building).

e. Extend into the garden no further than 50% of the depth of the host building
The proposed basement would extend into the garden 15% of the depth of the host building when measured from the principal rear elevation.

f. Not extend into or underneath the garden further than 50% of the depth of the garden
The rear garden measures 6.7m deep, and the basement would extend into the garden by 2.1m (31%).

g. Be setback from neighbouring property boundaries
The basement would be setback from the boundary of no.74 by a minimum of 2m, and from the boundary of no.78 by 0.27mm.

h. Avoid the loss of garden space or trees of townscape or amenity value
Although one tree would be removed from the front garden, a replacement tree would be planted following excavation, details of which would be secured by condition.

3.10 As such, the siting, location, scale and design of the proposed basement is considered to be acceptable and would remain subordinate to the host building in accordance with the requirements of policy A5 and CPG: Basements.

Window replacements and rooflights

3.11 The proposed window replacements would be white timber-framed windows with glazing bars to match the existing fenestration. As such, there would be minimal impact on the appearance of the building. Where new windows are installed, they would feature the same design, materials and glazing bars which would ensure they would be sympathetic additions to the host building.

3.12 The new rooflights would be sensitive in size and scale and installed to the rear and side roof slopes. The rooflight to the side roofslope would sit behind the existing side dormer window, so that neither rooflight would be visually prominent from within the wider public realm.

Works to front garden

3.13 The proposals include the erection of a new 1.8m timber fence which would dissect the front garden in half. The front portion would house a parking area (as existing) and a new bin store and plant area housing one air conditioning unit. The new fence would not be visible from Fitzjohn's Avenue due to the existing tall front boundary treatment which measures 2.4m high. The front garden is fairly verdant in nature, and the timber fencing is considered appropriate in this setting. The new air conditioning unit and enclosure would sit within the screened bin store area where it would be subject to limited views. As such it would not cause harm to the character and appearance of the house and would preserve the character and appearance of

the conservation area.

3.14 The conservation area statement describes how alterations to the front boundaries can dramatically affect and harm the character of the conservation area. The proposed timber fence would sit behind and lower than the existing boundary wall and would not harm the contribution that it makes to the conservation area. The proposals do not include any alterations to the existing front boundary wall.

Removal of palm tree

3.15 The existing palm tree to the front garden is proposed to be removed to facilitate the proposed basement development. An Arboricultural Impact Assessment has been submitted in support of the application which states that the 6m high palm tree is not a significant feature in the street scene or typical of the local landscape features. It is classed as a Category C tree, meaning that it is a tree of low quality.

3.16 The Conservation Area Statement describes the mature, imposing trees along Fitzjohn's Avenue as being part of the original street design and adding to the dramatic scale of the Avenue. The Hampstead Neighbourhood Plan discusses the main tree species that define the area as including the taller limes, London planes, oaks, willows, black and Lombardy poplars, beech, horse chestnut and Scots pine, most of which take several decades to reach maturity.

3.17 The palm tree is not an original tree nor is it considered to make a significant contribution to the visual amenity of the area. Officers consider that its removal would not detract from the character or appearance of the area. The Council's Tree Officer has confirmed that there is no objection to the loss of this tree, subject to a condition securing full details of the proposed landscaping including details of a replacement tree (details of which would need to be reviewed and agreed, to ensure a suitable replacement is secured).

Conclusion

3.18 Overall, the proposed development would preserve the character and appearance of the host building and Fitzjohn's and Netherhall Conservation Area in accordance with policies D1 and D2 of the Local Plan and policies DH1 and DH2 of the Hampstead Neighbourhood Plan. The replacement windows and new windows would be sympathetic to the building and neighbouring properties and would match the existing fenestration in appearance. The basement works would be subject to limited private views, and the external lightwells would be discreet. Owing to the distance between the application site and the nearest listed building, no.3 Lyndhurst Terrace, the works would not impact the setting of this listed building nor cause harm to the designated heritage asset.

3.19 Special regard has been attached to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses under s.66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended by the Enterprise and Regulatory Reform Act [ERR] 2013.

**4.0 Amenity**

4.1 Policies A1 and A4 of the Local Plan and policy DH1 of the Hampstead Neighbourhood Plan seek to protect the amenity of Camden's residents by ensuring the impact of development is

fully considered and would not harm the amenity of neighbouring residents. This includes privacy, outlook, noise, daylight and sunlight.

4.2 The proposed basement would not cause harm to neighbouring amenity in terms of outlook, privacy or daylight owing to its location beneath ground level and proximity to neighbouring properties. The new and replacement windows would all be located in a similar location as existing windows, serving the same rooms as existing. As such, they would not materially increase opportunities for overlooking. Although two large windows would be introduced to the south elevation, they would replace and be located in a similar position as six existing windows. They would serve a stairwell and internal void rather than habitable rooms, and as such would not cause demonstrable harm to neighbouring privacy compared to the existing situation.

4.3 Likewise, the new rooflights would not harm neighbouring privacy due to their location at roof level facing skywards.

Noise Disturbance

4.4 The proposals include the installation of an air conditioning unit within the front garden area. An Environmental Noise Survey and Plant Noise Assessment Report has been submitted with the application which outlines details of the environmental noise survey undertaken and an assessment of the environmental plant noise emissions from the proposed air conditioning unit.

4.5 Background noise levels were monitored over a 24 hour period to determine the lowest noise levels at the application site to determine subsequent plant noise emission criteria. The assessment found the lowest day time (07:00 – 23:00) noise levels to be 42dba and the lowest night time (23:00 – 07:00) noise levels to be 33dba.

4.6 Camden's noise standards require noise levels at a point 1 metre external to sensitive facades to be at least 10dB(A) less than the existing background measurement when all plant/equipment are in operation. Where it is anticipated that any plant/equipment will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps) special attention should be given to reducing the noise levels from that piece of plant/equipment at any sensitive façade to at least 15dB(A) below lowest background noise levels. Consequently, the noise emissions should be limited to 32dba during the day time and 23dba during the night time when measured from the nearest noise-sensitive window.

4.7 The closest noise-sensitive window has been identified as the ground floor window to the front elevation of neighbouring property no.78 Fitzjohn's Avenue. The noise assessment has identified that the noise level of the proposed plant when measured from this window would be 47dba. As the proposed unit would potentially be in use 24 hours a day, acoustic mitigation measures would therefore be required offering at least 24dba attenuation.

4.8 Details of the proposed acoustic enclosure have been provided with the application and the Council's Environmental Health Officer has confirmed that it would achieve the necessary levels of noise attenuation to ensure the use of the AC would not result in noise disturbance to neighbouring properties. Planning permission would be subject to the condition that noise levels comply with Camden's standards as described in paragraph 4.6.

Ground Contamination

4.9 The applicant's Basement Impact Assessment highlighted that ground testing indicated that two of four samples tested contained elevated concentrations of lead, while all other contaminant concentrations were found to be below the respective guideline values.

4.10 The BIA discusses how the exact source of the contamination is unknown, however the made ground was noted as containing variable inclusions of extraneous material such as ash, which if present in the samples tested may have accounted for the elevated concentrations. In addition, in view of the age of the site and its location on Fitzjohn's Avenue it is possible that the elevated concentrations have been caused by the emissions of cars using leaded fuel. The report concludes that the contamination is not considered likely to be in a soluble form, as if it were soluble it would not be likely to be present, and therefore does not pose a risk to groundwater and thus neighbouring sites.

4.11 The majority of the soil is likely to be excavated and removed from site in any case as part of reducing the level of the site to that of the proposed basement but could pose a risk to end users in areas of soft landscaping. In addition, the contamination poses a risk to site workers during the groundworks. As such, the BIA recommends that remedial measures may be required in any proposed areas of soft landscaping.

4.12 Given the potential risk arising from lead contamination, the following conditional shall be secured to any planning permission, requiring a contaminated land assessment:

*Prior to commencement of any works on site, a written programme of ground investigation for the presence of soil and groundwater contamination shall be submitted to and approved by the local planning authority in writing.*

*Site investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures [if necessary] shall be submitted to and approved by the local planning authority in writing.*

*The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior to occupation.*

*Reason: To protect future occupiers of the development from the possible presence of ground contamination arising in connection with the previous industrial/storage use of the site in accordance with policies G1, D1, A1, and DM1 of the London Borough of Camden Local Plan 2017.*

**5.0 Basement**

5.1 Policy A5 states that the Council will only permit basement development where it is demonstrated to its satisfaction that the proposal would not cause harm to:

a. Neighbouring properties;
b. The structural, ground, or water conditions of the area;
c. The character and amenity of the area;
d. The architectural character of the building; and
e. The significance of heritage assets.

5.2 In determining proposals for basement and other underground development, the Council requires an assessment of the scheme's impact on drainage, flooding, groundwater conditions and structural stability in the form of a Basement Impact Assessment, and where appropriate, a Basement Construction Plan.

5.3 The Council requires applicants to demonstrate that proposals for basements:

a. Do not harm neighbouring properties, including requiring the provision of a Basement Impact Assessment which shows that the scheme poses a risk of damage to neighbouring properties no higher than Burland Scale 1 'very slight';
b. Avoid adversely affecting drainage and run-off or causing other damage to the water environment;
c. Avoid cumulative impacts;
d. Do not harm the amenity of neighbours;
e. Provide satisfactory landscaping, including adequate soil depth;
f. Do not harm the appearance or setting of the property or the established character of the surrounding area;
g. Protect important archaeological remains; and
h. Do not prejudice the ability of the garden to support trees where they are part of the character of the area.

5.4 The Council requires evidence of the impact of basement schemes in the form of a Basement Impact Assessment to be carried out by appropriately qualified professionals. Basement Impact Assessments must include geotechnical, structural engineering, and hydrological investigations and modelling to ensure that basement developments do not harm the built and natural environment or local amenity. Basement Impact Assessments must be prepared according the specifications set out in our supplementary planning document Camden Planning Guidance on basements and the Camden Geological, Hydrogeological and Geological Study (ARUP 2010).

5.5 The Hampstead Neighbourhood Plan supports the requirements of policy A5 and the Basement CPG, and adds that for developments whose conditions require investigations beyond the screening stage, attention should be given to the additional steps outlines in paragraph 5.12 of the Neighbourhood Plan (policy BA1).

5.6 A Site Investigation and Basement Impact Assessment Report was submitted with the application dated February 2017 prepared by Geotechnical & Environmental Associates Limited (GEA), as well as a Construction Method Statement for Subterranean Development dated February 2017 prepared by Michael Barclay Partnership.

5.7 In accordance with Policy A5, the BIA was audited by Campbell Reith, a firm of independent, professionally qualified auditors of BIAs, acting on behalf of The Council. Their first audit report confirmed the following:

- The Basement Impact Assessment (BIA) and supporting documents have been carried out by well-known firms holding the required qualifications.
- The geology was found to be made ground overlaying sandy clay with layers of sand. Further water level monitoring is required to establish the groundwater regime and confirm its impact on basement construction and vice versa.
- The basement is proposed to be constructed of reinforced concrete using established

design principles and following a conventional construction method.

- Two aspects of how the basement walls have been designed requires further calculation and clarification. Additionally the viability of the proposed methodology is to be confirmed once the groundwater regime has been established.
- A slope is proposed during the construction at the front of the basement to allow access and to facilitate construction.
- A ground movement assessment has been produced that concludes category 1 (very slight) damage to the neighbouring properties. However clarification is required as to how this calculation has been carried out.
- Confirmation that discharge to the existing sewer system will not increase is required.
- It is proposed to remove one of the two trees in the front garden, with the larger higher quality tree retained. However the impact on the tree from the proposed front slope during the construction phase has not been considered.
- A movement monitoring strategy has been proposed, although alterations are required in order to make the monitoring strategy bespoke to this specific project.
- It is accepted that there are no slope stability concerns regarding the proposed development and it is not in an area prone to flooding.
- The property is located close to a Network Rail asset, of which further information is required.
- An outline works programme is required.

5.8 Following this, the applicant submitted a Basement Schedule of Works, an 'Audit Query Tracker' to respond to the points raised by Campbell Reith, and a revised Construction Method Statement in October 2017. Campbell Reith issued their second audit report in November 2017 and confirmed that the proposed BIA still was not in accordance with Camden's policy and guidance. The following elements were still considered unsatisfactory:

- The underpinning has been designed to be propped at the head by the new ground floor slab, however there are some concerns regarding how the shear force generated by the propping will transfer via the existing masonry wall to the head of the wall. Calculations are to be provided for this connection or the underpinning is to be designed as un-propped.
- A ground movement assessment has been produced that predicts a worst case damage category of 1 (very slight), however no information of the parameters used or detailed output is provided. This information is required so that the ground movement assessment can be checked for its appropriateness.
- Appropriate site investigations have been carried out with boreholes and trial pits have been carried out. Ongoing water monitoring has indicated that the ground water level is located beneath the proposed basement level, however it is recommended this continue in order to determine the seasonal high level.
- It has been identified that the property is located close to the underground river Tyburn and a spring line. The possible location of the spring line very close to the property adds further suggestion that water level monitoring should continue until construction commences.
- The Construction Method Statement states that the damage to neighbouring buildings will be no worse than Burland category 2, which is in contradiction to the ground movement assessment section of the BIA. Although this error remains in the construction method statement it has been clarified that the damage category will not be greater than 1. Notwithstanding this, details of the ground movement assessment are required.

- Details of the impact on surface water drainage to the existing sewer system has not been clearly identified, in order to assess the requirement for SUDs.
- A movement monitoring strategy has been proposed, although the trigger values of which require co-ordination with the ground movement assessment results.
- The property is located close to a Network Rail tunnel. Evidence of correspondence with Network Rail has been provided and Network Rail approval will be required prior to construction.

5.9 Following the issue of Campbell Reith's 2nd Audit Report, the applicant submitted PDISP short and long term tabular results and an updated Audit Query Tracker form. Campbell Reith issued their third audit report in March 2018 and again confirmed that the proposed BIA and updated details were not in accordance with Camden's policy and guidance. The following elements were still considered unsatisfactory, a number of which remain the same as the previous audit:

- The underpinning has been designed to be propped at the head by the new ground floor slab, however there are some concerns regarding how the shear force generated by the propping will transfer via the existing masonry wall to the head of the wall. Calculations are to be provided for this connection or the underpinning is to be designed as un-propped.
- A ground movement assessment has been produced that predicts a worst case damage category of 1 (very slight), however adequate details of how this analysis has been carried out have not been provided. This information is required so that the ground movement assessment can be checked for its appropriateness.
- Appropriate site investigations have been carried out with boreholes and trial pits. Ongoing water monitoring has indicated that the ground water level is located beneath the proposed basement level, however it is recommended this continue in order to determine the seasonal high level. It has been identified that the property is located close to the underground river Tyburn and a spring line. The possible location of the spring line very close to the property adds further suggestion that water level monitoring should continue until construction commences.
- The Construction Method Statement states that the damage to neighbouring buildings will be no worse than Burland category 2, which is in contradiction to the ground movement assessment section of the BIA. Although this error remains in the construction method statement it has been clarified that the damage category will not be greater than 1. Notwithstanding this details of the ground movement assessment are required.
- Details of the impact on surface water drainage to the existing sewer system has not been clearly identified, in order to assess the requirement for SUDs.
- A movement monitoring strategy has been proposed, although the trigger values of which require co-ordination with the ground movement assessment results.

5.10 The applicant issued a revised Basement Impact Assessment and Construction Method Statement in July 2018. Following additional email correspondence between Campbell Reith and the applicant's engineers, Campbell Reith issued their final audit report in September 2018. Following the receipt of this additional information, it was confirmed that the basement proposals comply with the requirements of CPG: Basements and policy A5. Campbell Reith's audit report concluded that:

- The basement is proposed to be constructed by reinforced concrete underpins with a reinforced concrete raft basement slab and foundation. A new ground floor structure is to

be constructed as a reinforced concrete slab.

- The underpinning has been designed to be propped at the head by the new ground floor slab; however, there are some concerns regarding how the shear force generated by the propping will transfer via the existing masonry wall to the head of the wall. Calculations are to be provided for this connection or the underpinning is to be designed as un-propped.
- It is proposed to reduce the amount of lateral propping to every 2-3m rather than every underpin, with continuity reinforcement between the underpins allowing the underpins to span laterally between lateral props. The design of which should be considered in the detailed design stage.
- The construction method comprises underpins to be formed in a hit and miss sequence.
- A ground movement assessment has been produced that predicts a worst case damage category of 1 (very slight). Following the receipt of clarifications, this is accepted.
- Appropriate site investigations have been carried out with boreholes and trial pits have been carried out. Ongoing water monitoring has indicated that the ground water level is located beneath the proposed basement level, however it is recommended this continue in order to determine the seasonal high level. Trial excavations are also recommended in the BIA.
- It has been identified that the property is located close to the underground river Tyburn and a spring line. The possible location of the spring line very close to the property adds further suggestion that water level monitoring should continue until construction commences.
- The Construction Method Statement has been revised to accord with the ground movement assessment which predicts that the damage to neighbouring buildings will be no worse than Burland category 1.
- The impact on surface water drainage to the existing sewer system has been considered and the requirement for SUDs recognised. Elements of SUDs including an attenuation tank beneath the front drive, permeable paving and a valve to limit the discharge rate to 5 l/s to the combined sewage network are proposed.
- Excavation is required within the root protection area of a tree in the front garden. However, the proposal to form a battered soil slope in this area is no longer proposed limiting the excavation required within the RPA.
- A movement monitoring strategy has been proposed, although the trigger values of which require co-ordination with the ground movement assessment results.
- The property is located close to a Network Rail tunnel. Evidence of correspondence with Network Rail has been provided and Network Rail approval will be required prior to construction.
- It is accepted that there are no slope stability concerns regarding the proposed development and it is not in an area prone to flooding.
- An outline works programme has been provided.
- Whilst the documentation presented confirms that the proposal can meet the requirements of CPG: Basements, due to a number of minor discrepancies, and recommendations in the documentation for further work, a Basement Construction Plan is recommended. This should cover, as a minimum:

    - The results of (and impact of) further groundwater monitoring.
    - The results of trial excavations.
    - Confirmation of changes to impermeable areas and design of mitigation.
    - Confirmation of omission of ramped access at front of property and impact to trees.

- Further development of retaining wall design to confirm feasibility of reduced temporary propping and proposals for resisting shear.
- A detailed monitoring strategy.

5.11 A Basement Construction Plan (BCP) sets out detailed information relating to the design and construction of the basement with a view to minimising the impacts of the development on neighbouring properties and the water environment and provides a programme of measures to be undertaken by the owner with the objective of maintaining the structural stability of the property and neighbouring properties. The developer must also ensure that throughout the construction phase a suitably qualified engineer from a recognised relevant professional body is engaged to monitor, inspect and approve the construction works (policy A5 para 6.128).

5.12 A BCP would be secured by S106 Legal Agreement and in addition to the specific details requested by Campbell Reith, would be required to contain the following information:

- 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
- appropriate monitoring including details of risk assessment thresholds and contingency measures
- details demonstrating that the basement has been designed using evidence of local factors including ground conditions, the local water environment and the structural condition of neighbouring properties, in order to minimise the impact on them
- to retain at the property throughout the construction phase a suitably qualified engineer from a recognised relevant professional body to monitor, inspect, and approve the permanent and temporary basement construction works, and measures to ensure the ongoing maintenance and upkeep of the basement.

5.13 As set out in the Council's Basement CPG, the BCP should ensure that:

- a suitably qualified and experienced engineer has agreed the design
- the modelling of ground conditions and water environment is appropriately conservative
- best endeavours are undertaken to prevent any impact on the structural integrity of the neighbouring properties (paragraph 4.41).

5.14 Prior to final submission to the Council for approval, BCPs need to be certified by a suitably qualified and experienced engineer who is independent of the design team. The certification would need to be funded by the applicant.

## 6.0 Transport

Managing the impacts of construction on the surrounding highway network

6.1 Policies A1 and T4 of the Local Plan state that Construction Management Plans (CMPs) should be secured to demonstrate how a development will minimise impacts from the movement of goods and materials during the construction process. The policies also relate to how development is connected to the highway network. For some developments, this may require control over how the development is implemented. Policy BA3 of the Hampstead Neighbourhood Plan sets out a number of local requirements which the CMP would be expected

to comply with.

6.2 While the development is not considered to be a large scale development, due to the location of the site on the busy Fitzjohn's Avenue in the vicinity of a number of schools, and the nature of the works, a CMP would be secured as a Section 106 planning obligation. A CMP (in the Council's pro-forma) would need to be submitted once a Principal Contractor has been appointed, and would need to be approved by the Council prior to any works commencing on site.

6.3 A CMP Implementation Support Contribution of £3,136 would also be secured as a Section 106 planning obligation.

**7.0 Trees**

7.1 The proposals include the removal of a palm tree from the front garden. The arboricultural report submitted with the application describes this tree as being of low quality (category C). The report also outlines how the trees to be retained would be protected during excavation and construction works.

7.2 The Council's Tree Officer has assessed the report and confirmed that there is no objection to the removal of the palm tree subject to its replacement with a new tree in the front garden. Full landscaping details will be secured by condition, to include details of the replacement tree.

7.3 The Hampstead Neighbourhood Plan states that basement developments under gardens should leave a minimum distance of 15m from any veteran tree or from a boundary that is a historic tree line, unless it can be demonstrated that any harm to the trees would not be significant or could be mitigated (policy BA1). The mature copper beech tree in the front garden is not identified as a veteran tree or of being locally important, but nevertheless, it is in good structural and physiological condition and makes a significant contribution to the streetscape. As part of the Arboricultural assessment, a trial hole revealed that the rooting area for the tree extends as far as and beyond the British Standard theoretical root protection area. However, none of the roots found in the trial hole zone (the proposed location of the front lightwell) were structural. The Council's Tree Officer has confirmed that the tree protection measures are satisfactory and that the loss of a small proportion of roots would not harm the long term health or viability of the tree. A condition would be imposed requiring the tree protection measures outlined to be installed and retained throughout construction and excavation works.

**8.0 Conclusion**

8.1 Overall, the proposed development is considered sympathetic and subordinate to the host building and would preserve the character and appearance of the host building and conservation area. The amenity of neighbouring residents would be maintained, subject to the recommended conditions. The development is considered to comply with policies of the Local Plan and Hampstead Neighbourhood Plan subject to the applicant entering into a S106 legal agreement securing the following obligations:

- Construction Management Plan and implementation support contribution of £3,136.
- Basement Construction Plan.

8.2 As such, it is recommended that conditional planning permission is granted subject to S106

legal agreement.

***The decision to refer an application to Planning Committee lies with the Director of Regeneration and Planning. Following the Members Briefing panel on Monday 28th January 2018, nominated members will advise whether they consider this application should be reported to the Planning Committee. For further information, please go to www.camden.gov.uk and search for 'Members Briefing'.***

**Regeneration and Planning**
**Development Management**
London Borough of Camden
Town Hall
Judd Street
London
WC1H 9JE

Tel 020 7974 4444

planning@camden.gov.uk
www.camden.gov.uk/planning

JLL
30 Warwick Street
London
W1B 5NH

Application Ref: **2017/1047/P**

24 January 2019



Dear Sir/Madam

**FOR INFORMATION ONLY - THIS IS NOT A FORMAL DECISION**
Town and Country Planning Act 1990 (as amended)

**DECISION SUBJECT TO A SECTION 106 LEGAL AGREEMENT**

Address:
**76 Fitzjohn's Avenue**
**London**
**NW3 5LS**



Proposal: Creation of a single storey basement with lightwell to front and rear, installation of 1 x AC unit within front garden, installation of 3 x rooflights, removal of 1 x palm tree from front garden, alterations to side elevation fenestration, alterations to rear ground floor patio doors and erection of a new fence in the front garden.

Drawing Nos: FPY_001; FPY_201 rev. E; FPY_206 rev. E; FPY_202 rev. E; FPY_210 rev. D.
Documents: Arboricultural Impact Assessment, 160820-PD-11a; Design & Access Statement, January 2016; Proposed Energy Statement by Carnell Warren Associates Ltd.; Planning Statement dated February 2017; Environmental Noise Survey and Plant Noise Assessment Report ref: 23816/PNA1Rev1 dated 5 December 2018; Louvremax Acoustic Enclosure manufacturer's specifications; Responses to CampbellReith 20.12.2017, Site Investigation and Basement Impact Assessment Report 3232_J16214 - 76 Fitzjohns Ave Rep Iss 2 complete, dated July 2018; J16214 - PDISP - Overall Term - Tabular Results 171219 082108, dated December 2017; J16214 - PDISP - Short Term - Tabular Results 171219 082108, dated December 2017; MBP-7009-Construction Method Statement-V2.0, dated May 2018; Emails dated 20 August and 25 September 2018; CampbellReith Audit Query tracker - Applicant responses.

The Council has considered your application and decided to grant permission subject to the conditions and informatives (if applicable) listed below **AND** subject to the successful conclusion of a Section 106 Legal Agreement.

The matter has been referred to the Council's Legal Department and you will be contacted shortly. If you wish to discuss the matter please contact **Aidan Brookes** in the Legal Department on **020 7 974 1947**.

Once the Legal Agreement has been concluded, the formal decision letter will be sent to you.

Condition(s) and Reason(s):

1 The development hereby permitted must be begun not later than the end of three years from the date of this permission.

Reason: In order to comply with the provisions of Section 91 of the Town and Country Planning Act 1990 (as amended).

2 All new external work shall be carried out in materials that resemble, as closely as possible, in colour and texture those of the existing building, unless otherwise specified in the approved application.

Reason: To safeguard the appearance of the premises and the character of the immediate area in accordance with the requirements of policy D1 and D2 of the London Borough of Camden Local Plan 2017 and policies DH1 and DH2 of the Hampstead Neighbourhood Plan 2018.

3 The development hereby permitted shall be carried out in accordance with the following approved plans:

FPY_001; FPY_201 rev. E; FPY_206 rev. E; FPY_202 rev. E; FPY_210 rev. D.
Documents: Arboricultural Impact Assessment, 160820-PD-11a; Design & Access Statement, January 2016; Proposed Energy Statement by Carnell Warren Associates Ltd.; Planning Statement dated February 2017; Environmental Noise Survey and Plant Noise Assessment Report ref: 23816/PNA1Rev1 dated 5 December 2018; Louvremax Acoustic Enclosure manufacturer's specifications; Responses to CampbellReith 20.12.2017, Site Investigation and Basement Impact Assessment Report 3232_J16214 - 76 Fitzjohns Ave Rep Iss 2 complete, dated July 2018; J16214 - PDISP - Overall Term - Tabular Results 171219 082108, dated December 2017; J16214 - PDISP - Short Term - Tabular Results 171219 082108, dated December 2017; MBP-7009-Construction Method Statement-V2.0, dated May 2018; Emails dated 20 August and 25 September 2018; CampbellReith Audit Query tracker - Applicant responses.

Reason: For the avoidance of doubt and in the interest of proper planning.

4 Prior to commencement of any works on site, a written programme of ground investigation for the presence of soil and groundwater contamination shall be submitted to and approved by the local planning authority in writing.

Site investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures [if necessary] shall be submitted to and approved by the local planning authority in writing.

The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior to occupation.

Reason: To protect future occupiers of the development from the possible presence of ground contamination in accordance with policies G1, D1, A1, and DM1 of the London Borough of Camden Local Plan 2017 and policy DH1 of the Hampstead Neighbourhood Plan 2018.



5 Noise levels at a point 1 metre external to sensitive facades shall be at least 10dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 15dB(A) below the LA90, expressed in dB(A).

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies A1 and A4 of the London Borough of Camden Local Plan 2017 and policy DH1 of the Hampstead Neighbourhood Plan 2018.



6 No construction shall take place until a detailed design and method statement for all foundations and other development proposed below ground level which takes account of the nearby Network Rail asset, has been submitted to and approved by the local planning authority in consultation with the relevant rail infrastructure undertaker. The development shall thereafter be carried out in accordance with the approved design and method statements.

Reason: To ensure that the development does not impact on existing strategic transport infrastructure in accordance with the requirements of Policies A1 and T1 of the London Borough of Camden Local Plan 2017 and policies BA1 and BA3 of the Hampstead Neighbourhood Plan 2018.

7 All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage throughout the construction and excavation works, in accordance with the protection details outlined in Arboricultural Report reference 160820-PD-11a dated February 2017.

Reason: To ensure that the development will not have an adverse effect on existing trees and in order to maintain the character and amenity of the area in accordance

with the requirements of policies A2 and A3 of the London Borough of Camden Local Plan 2017 and policy NE2 of the Hampstead Neighbourhood Plan 2018.

8 Prior to commencement of the relevant works, full details of hard and soft landscaping, means of enclosure of all un-built, open areas, and details of replacement tree, shall have been submitted to and approved by the local planning authority in writing. Such details shall include details of any proposed earthworks including grading, mounding and other changes in ground levels. The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved.

Reason: To ensure that the development achieves a high quality of landscaping which contributes to the visual amenity and character of the area in accordance with the requirements of policies A2, A3, A5, D1 and D2 of the London Borough of Camden Local Plan 2017 policies NE2 and NE4 of the Hampstead Neighbourhood Plan 2018.

9 All hard and soft landscaping works shall be carried out in accordance with the approved landscape details by not later than the end of the planting season following completion of the development or any phase of the development, whichever is the sooner. Any trees or areas of planting which, within a period of 5 years from the completion of the development, die, are removed or become seriously damaged or diseased, shall be replaced as soon as is reasonably possible and, in any case, by not later than the end of the following planting season, with others of similar size and species, unless the local planning authority gives written consent to any variation.

Reason: To ensure that the landscaping is carried out within a reasonable period and to maintain a high quality of visual amenity in the scheme in accordance with the requirements of policies A2, A3, A5, D1 and D2 of the London Borough of Camden Local Plan 2017 and policies NE2 and NE4 of the Hampstead Neighbourhood Plan 2018

10 A sustainable urban drainage system (SuDs) based on a 1:100 year event with 30% provision for climate change shall be implemented as part of the development in accordance with the details set out in the Construction Method Statement for Subterranean Development ref: MBP-7009-May 2018 V2.0, and shall thereafter be retained and maintained.

Reason: To reduce the rate of surface water run-off from the buildings and limit the impact on the storm-water drainage system in accordance with Policies CC1, CC2, CC3 of the London Borough of Camden Local Plan 2017 and policy BA1 of the Hampstead Neighbourhood Plan 2018.

Informative(s):

1 Your proposals may be subject to control under the Building Regulations and/or the London Buildings Acts that cover aspects including fire and emergency escape, access and facilities for people with disabilities and sound insulation between dwellings. You are advised to consult the Council's Building Control Service, Camden Town Hall, Judd St, Kings Cross, London NW1 2QS (tel: 020-7974 6941).

2 Noise from demolition and construction works is subject to control under the Control of Pollution Act 1974. You must carry out any building works that can be heard at the boundary of the site only between 08.00 and 18.00 hours Monday to Friday and 08.00 to 13.00 on Saturday and not at all on Sundays and Public Holidays. You are advised to consult the Council's Noise and Licensing Enforcement Team, Camden Town Hall, Judd St, Kings Cross, London NW1 2QS (Tel. No. 020 7974 4444 or search for 'environmental health' on the Camden website or seek prior approval under Section 61 of the Act if you anticipate any difficulty in carrying out construction other than within the hours stated above.

3 Your attention is drawn to the fact that there is a separate legal agreement with the Council which relates to the development for which this permission is granted. Information/drawings relating to the discharge of matters covered by the Heads of Terms of the legal agreement should be marked for the attention of the Planning Obligations Officer, Sites Team, Camden Town Hall, Argyle Street, WC1H 8EQ.

4 Your proposals may be subject to control under the Party Wall etc Act 1996 which covers party wall matters, boundary walls and excavations near neighbouring buildings. You are advised to consult a suitably qualified and experienced Building Engineer.



In dealing with the application, the Council has sought to work with the applicant in a positive and proactive way in accordance with paragraphs 186 and 187 of the National Planning Policy Framework.

Yours faithfully

Supporting Communities Directorate

Executive Director Supporting Communities

# 76 FITZJOHNS AVENUE LONDON NW3 5LS

## Review of subterranean aspects of planning application 2017/1047/P to Camden Council with respect to Camden development policy DP27.

**Report reference G1702-RP-01-E1**

| Edition | Date | Detail |
|---|---|---|
| E1 | 22/04/2017 | 1st issue |
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Eldreds

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# 1 Summary of report findings

1. Planning application 2017/1047/P to Camden Council proposes a single storey basement extension of 76 Fitzjohns Avenue London NW3 5LS. I am instructed to review the application on behalf of a group of neighbouring residents and to report my opinion concerning its compliance with the engineering requirements of Camden development policy DP27 for basements and lightwells.

2. I have reviewed relevant application documents together with other reports and documented records in the public domain and subjected them to experienced interpretation.

3. Policy DP27 has three engineering requirements, which I have taken as the issues to be addressed. Those issues together with my opinions concerning them are as follows.

4. Issue 1: Does the application demonstrate that the scheme proposed will maintain the structural stability of neighbouring property? My opinion is that it does not. The application provides no assessment of the risk of damage to neighbouring property. Further, the investigations made on behalf of the applicant provide no means of making reliable estimates of the risk. A construction method statement that the risk is negligible is false and completely without justification.

5. Issue 2: Does the application demonstrate that the scheme proposed will avoid adversely affecting drainage and runoff or causing other damage to the water environment? My opinion is that it does not. The basement impact assessment report and the construction method statement assert that the development would not change the impermeable surface area within the site, but the front lightwell would cause a small increase of impermeable surface which will give rise to additional run off.

6. Issue 3: Does the application demonstrate that the scheme proposed will avoid cumulative impacts upon structural stability or the water environment in the local area? My opinion is that it does not. The basement impact assessment does not demonstrate that the groundwater regime in the immediate region has been researched and adequately interpreted. Consequently, a high ground water level in one part of the site has been dismissed as unrepresentative, whereas its existence is compatible with the published findings at other sites in the locality. This review has cited evidence, also in the public domain, of groundwater regimes in the area being adversely affected by basement development.

# 2 Introduction

## 2.1 Subject of report

7. Planning application 2017/1047/P proposes a single storey basement extension of 76 Fitzjohns Avenue London NW3 5LS, which extends below the whole area of the house and projects to form lightwells at front and rear. The property is semidetached and linked also to the adjacent property on the other side. The subject of the report is an examination of the compliance of the application with Camden planning policy DP27 for basements and lightwells as it relates to engineering matters.

## 2.2 Issues to be addressed

8. Issue 1: Does the application demonstrate that the scheme proposed will maintain the structural stability of neighbouring property?

9. Issue 2: Does the application demonstrate that the scheme proposed will avoid adversely affecting drainage and runoff or causing other damage to the water environment?

10. Issue 3: Does the application demonstrate that the scheme proposed will avoid cumulative impacts upon structural stability or the water environment in the local area?

## 2.3 Instructions

11. I am instructed by Candice Nataf-Pesonen of No 74 Fitzjohns Avenue on behalf of herself, Antti Pesonen, and Ronny and Vanessa Feiereisen of 72 Fitzjohns Avenue.

## 2.4 Author qualification

12. I am Michael Eldred MSc. CEng. FIStructE MICE, Director of Eldred Geotechnics Ltd and a Consultant with more than 40 years' experience of practicing independently in the disciplines of Geotechnical, Geoenvironmental, Civil and Structural engineering. The assessment which follows is exclusively of matters falling within my professional disciplines. Dr Michael de Freitas has reported separately on geological and hydrogeological aspects of the proposals Some of the information acquired during research for this report serves to corroborate Dr de Freitas' findings, which in turn highlight matters that are material to engineering assessment.

## 2.5 Documents consulted

13. I have consulted relevant parts of the following documents posted upon the Camden Planning website in support of the application.

    a) Drawings by BB Partnership Architects of the existing and proposed arrangements.

b) Site Investigation and Basement Impact Assessment Report by Geotechnical and Environmental Associates (GEA) reference 116214 dated February 2017.

c) Construction Method Statement for Subterranean Development by Michael Barclay Associates reference MBP-7009-February 2017.

14. I have also consulted the following.

d) Review of technical support provided in Application 2017/1047/P for the excavation of a basement at 76 Fitzjohns Avenue NW3 5LS by Dr Michael de Freitas of First Steps Ltd.

e) Report G1504-RP-01-E1 A geotechnical and structural assessment of basement planning applications 2015/0851/P and 2015/1207/P and their potential impact on 4 Akenside Road NW3 5BS by Eldred Geotechnics Ltd dated April 2015.

f) Report BIA/6162R1.1 by Chelmer Consultancy Services dated November 2016; Basement Impact Assessment supporting application 2017/1229/P for 5 Templewood Avenue NW3 7UY.

15. Items 8 (e) and (f) are available on the Camden planning portal; Item 8(d) is expected to be posted on the application website.

# 3 Investigation

16. In addition to consulting the documents listed I have searched planning records of neighbouring properties, used Environment Agency Lidar data to compose both digital terrain map (DTM) and digital surface map (DSM) information and have referred to my own records of the area. I have not visited the subject property and have assumed the descriptions of the existing situation given by the application are factual.

# 4 Facts upon which opinion is based

## 4.1 Subject and neighbouring property

17. 76 Fitzjohns Avenue is currently a semidetached two storey house with a small loft room. Its front faces southwest towards Fitzjohns Avenue. The front garden comprises a central lawn surrounded by a hard paved driveway, narrower paths across the front of the building and a bed containing a large tree. To the rear is a smaller garden.

18. Seen from the front, the adjoining property, No. 78 is to the left, and Nos 72 and 74 are a broadly similar pair of semidetached houses to the right. No.76 shares a party wall with No.78 and has a single storey hallway extending from part of its right flank wall to the boundary with No 74, which has a matching extension creating a party wall.

19. Planning consent 2013/0413/P gave permission for the rearward extension of No.76 and alterations to the upper part of the house. That work has not been carried out at the present time.

20. No. 72 received permission for a basement extension below the whole of the ground floor with front and rear lightwells in 2007 but later application for renewal of the permission was withdrawn. There is no record of a Building Regulations application for subterranean works.

21. No. 74 has received several planning consents for alterations to the upper part of the house and an application for a basement extension below the whole of the ground floor with front and rear lightwells was granted in 2007. In 2009 consent was given for the removal of an oak tree in the front garden. Building Regulations records for the property contain no application for the basement works.

22. No. 78 has received planning consent for minor extension works above ground but none for basement works.

23. Basement consents for Nos 72 and 74 were obtained by the London Basement Company for the then owners, possibly as a means of canvassing for work. Withdrawal of application for renewal at No.72 and absence of relevant Building Regulations applications at No.74 shows they were not constructed.

24. No.76 is situated at National Grid reference 526591E, 185294N and at an elevation of approximately 93m above Ordnance Datum. Ground surface in the region slopes generally to the south at a gradient of about 1:12.5 or 4.6 degrees.

### 4.2 Ground conditions

25. By reference to the borehole records given by the GEA report and the interpretation of those by Dr de Freitas, ground to a depth of 3m below ground level is most likely to be material derived from older sedimentary deposits and transported downslope in a random manner during the freeze/thaw cycles of the ice age.

26. That material rests upon the Claygate member of the London Clay Formation, which is itself a quite irregular mixture of clay and sand varying unpredictably from clay through a cohesive mixture of clay and sand to thin, sometimes discontinuous beds of sand which can occur either as isolated or closely grouped features.

27. Again, as pointed out by de Freitas, groundwater can cause problems in such situations. This is to be expected from the fact that the boundary of the overlying sand of the Bagshot beds is a spring line and is about 85m to the north of and at a higher level than the property. A very short distance to the south of the subject property, conduit wells existed on the north side of what is now the junction of Akenside and Lyndhurst Roads and another well existed in land east of what is now the return of

Lyndhurst Road linking it to Wedderburn Road. These were all supplied by shallow groundwater flow and springs.

28. Research for previous work (cited report G1504-RP-01-E1) emphasises the effect of the shallow groundwater sources.

29. The owner of No.4 Akenside Road informed me that groundwater was a constant problem during underpinning excavations for a rear extension of the property. In some cases the water rose to approximately 0.5m below ground level in No. 4 next to the boundary with No.3. Records for 6 Wedderburn Road state that groundwater rose to 0.5m below ground level there, when a borehole was complete and before a standpipe was installed.

30. At 26 Wedderburn Road, the water level in one standpipe recovered slowly after being baled out, whilst another had such a rapid inflow that its water level could not be lowered. A similar situation occurred at Maresfield Gardens, a short distance to the west of Fitzjohns Avenue. Rising head permeability tests at these two sites gave permeability values of $10^{-6}$ to $10^{-7}$ m/second for the slower recoveries; the rapid inflow described for other cases prevented permeability measurement.

31. Surface water and shallow groundwater drainage characteristics changed after 29 and 30 Lyndhurst Road deepened their basements and significantly increased the amount of impervious external surfacing. Water then drained from No.30 through a boundary retaining wall into No.4 Akenside Road. The owners of No.4 had to take down a garden store which was set against the boundary and badly affected by the water, and rebuild it with tanked wall and floor. Also, the rear lawn of No.4 became so saturated as to cause grass to die off leaving bare earth and soft boggy conditions during the winter months. A statue in the garden, which had been in place for many years quite near the 30 Lyndhurst Road boundary tilted severely in the softened ground and eventually had to be removed to prevent it from being damaged.

32. A resident at 31 Lyndhurst Road reported that the garden of that property too had become waterlogged following the redevelopment of 29 and 30 Lyndhurst Road.

33. Templewood Avenue is also underlain by the Claygate Member and the cited report by Chelmer Consultancy Services contains a desk study which demonstrates the variability of groundwater levels in the deposit.

### 4.3 GEA Basement Impact Assessment (BIA) report

34. Dr de Freitas' report deals in large measure with the GEA report and I have limited my observations of fact to avoid unnecessary repetition.

35. Section 3 of the BIA relates to preliminary screening of the site and region for geotechnical risks for the proposed development that require further investigation.

Screening assessments for groundwater risk and stability take no account of the spring line 85m to the north of the site, the nearby historical wells.

36. The surface water and flooding screening assessment states that the development would not increase the impermeable area within the site. The Architects' plan of the existing site area shows, very faintly, the area of paving between the front wall of the house and the front lawn. Comparing this with the proposed basement plan shows that the front lightwell construction projects slightly more than 1m further away from the front of the house. This increases the impermeable site area that must be drained and needs to be accounted for in the design.

37. Following completion of the initial field work, a further and deeper borehole was excavated at the end of November, and subsequent to that, groundwater depths were measured in each of the three boreholes that then existed. The date of measurement is not recorded but it must have been at some time between December and February. Groundwater depths recorded varied from 4.51m in the deepest hole to 1.05m in Borehole 2, which had been excavated close to the front of the house in a flower bed.

38. GEA suggested that the high water level there had been caused by the watering of the flower bed; a most unlikely event in the months of December to February. The fact of a locally high groundwater level is compatible with measurements in other sites within the region and cannot be dismissed as insignificant.

39. In considering the construction process, GEA suggest that groundwater should not be encountered during excavation but repeatedly recommend that monitoring of groundwater levels in the boreholes should continue in case their assessment proves to be wrong. The investigation and assessment provided is thus inconclusive in this important respect.

40. The value of ground strength tests made during the ground investigation field work is rightly called into doubt by de Freitas and no laboratory tests that would permit an alternative assessment were made. In consequence the investigation has yielded no possibility of making a site specific assessment of either ground strength or other ground properties required for a meaningful assessment of ground movement during excavation and its impact upon neighbouring property.

41. The BIA provides no assessment of the effect of the basement construction on ground movement and risk of damage to neighbouring property. GEA note that the scope of their investigation was directed in part by their client but there is no indication of whether it was this or recognition that the necessary ground properties could not be determined that prevented its inclusion. Whatever the case section 10 of the BIA which considers outstanding risks and issues points quite correctly to the need for a ground movement and damage risk assessment to satisfy planning requirements.

## 4.4 Engineering basement proposals

42. The construction method statement (CMS) by Michael Barclay Partnership (MBP) shows proposals to construct a basement having the lateral extent already described and a depth which, scaled from the undimensioned application drawings, will require an excavation 4.1m deep below ground level. It is intended that the perimeter retaining walls will be constructed of reinforced concrete by constructing them in short lengths and that the basement will be waterproofed to a grade 3 standard in accordance with BS8102.

43. Section 3 of the CMS refers to local geology and hydrogeology, and commences with citation of 3 boreholes within 750m of the site, which are said to be representative, with a high degree of certainty, of the site conditions.

44. Patently that is wrong; only one of the three, excavated in Rosslyn Hill encountered the Claygate Member.

45. The account continues by asserting that neither the three boreholes cited nor the GEA ground investigation encountered groundwater of significance for the proposed basement but that the engineering design would allow for a head of water as required by the current design codes. Calculations forming part of the CMS allow for a groundwater level 2m above the retaining wall base, which is shown to be 3.5m below ground level, rather than the 4.1m indicated by the design drawings. According to the Architects' drawings a 3.5m construction depth would reduce the basement ceiling height to less than 2m.

46. The CMS does not recognise that if groundwater causes pressure on a basement retaining wall, it will also cause upward pressure on the basement floor. Even in case of a 2m head of water, the upward pressure on the floor would be some 30 tonnes, a considerable structural load for the floor and possibly more than the dead weight of the house above.

47. Section 7 of the CMS considers risks to and impact upon surrounding buildings. It states first that although deeper, the basement depth will not be significantly different from that of the existing foundations. Foundations of No.76 are about 0.75m below ground level. Nos 72 to 78 are contemporaneous and their foundations are most likely to be of similar depth. The basement foundation would thus be about 3.35m deeper than those of the neighbouring properties. That is significant.

48. Next the CMS asserts that the basement will not extend below the prevailing groundwater level. The BIA shows that it would.

49. The account continues by stating that the basement will be founded on dense gravels, which it would not; that heave due to the excavation would be negligible,

which it would not; that the basement walls can be constructed without causing damage to the neighbouring structures, which has not been demonstrated, and that excavation for the basement wall sections below existing walls can be satisfactorily excavated by machine, which they could not.

50. Section 8 of the CMS relating to construction method suggests that the basement can be constructed without need of extensive temporary support, which is contrary to the recommendations of the BIA and to general experience. Part 2 of the CMS provides sketch illustrations which show an intended sequence of working but do not provide temporary support where it would be needed for stability.

51. Section 11, entitled basement impact assessment and ground movement assessment, asserts that a ground movement analysis within the BIA has shown that damage to neighbouring property due to the proposed excavation would not exceed category 1 on the Burland scale. It also states that GEA have commented that the effect of the proposal upon a railway tunnel running close to the site will be negligible. In making these statements the MBA refer to sections 11 and 12 of the BIA.

52. The ground movement analysis does not exist, there is no mention by GEA of the impact of the development upon the railway tunnel and sections 11 and 12 of the BIA report do not exist.

# 5 Opinion

## 5.1 Issue 1

53. Does the application demonstrate that the scheme proposed will maintain the structural stability of neighbouring property? No. The application provides no assessment of the risk of damage to neighbouring property. Further, the investigations made on behalf of the applicant provide no means of making reliable estimates of the risk. A construction method statement that the risk is negligible is false and completely without justification.

## 5.2 Issue 2

54. Does the application demonstrate that the scheme proposed will avoid adversely affecting drainage and runoff or causing other damage to the water environment? No. The basement impact assessment report and the construction method statement assert that the development would not change the impermeable surface area within the site, but the front lightwell would cause a small increase of impermeable surface which will give rise to additional run off.

## 5.3 Issue 3

55. Does the application demonstrate that the scheme proposed will avoid cumulative impacts upon structural stability or the water environment in the local area? No. The

basement impact assessment does not demonstrate that the groundwater regime in the immediate region has been researched and adequately interpreted.
Consequently, a high ground water level in one part of the site has been dismissed as unrepresentative, whereas its existence is compatible with the published findings at other sites in the locality. This review has cited evidence, also in the public domain, of groundwater regimes in the area being adversely affected by basement development.

MICHAEL ELDRED MSc.CEng.FIStructE.MICE
ELDRED GEOTECHNICS LTD
22nd April 2017

FIRST STEPS LTD
To Success

**Review of technical support provided in Application 2017/1047/P for the excavation of a basement at 76 Fitzjohn's Avenue NW3 5LS**

**Introduction**

1. This review has been commissioned by residents, [redacted] Its purpose is to review the Basement Impact Assessment written by Geotechnical & Environmental Associates in support of the present application for a basement extension, as described in the Construction Method Statement of the Michael Barclay Partnership. The basement will cover the footprint of the house and a little more for light wells.

2. I am a Chartered Geologist (C.Geol) and registered on the UK Register of Ground Engineering Professionals (RoGEP) at Advisor grade. I am also a Chartered member of the Institution of Water and Environmental Managers (C.WEM) and have over 40 years' experience in geology applied to ground engineering, with basements in London being a feature of the past 10 years. My cv is attached.

**Summary**

3. The Basement Impact Assessment (BIA) contradicts the facts presented to support it and what is known of the general nature of the ground so close to the spring line around Hampstead Heath.

4. The BIA also report fails to reflect the risk shallow groundwater at this site can present to a contractor excavating a basement using the "hit-and-miss" method, as advocated in the Construction Management plan for providing not only a control of ground stability but also of ground water, whilst at the same time underpinning the party wall.

5. The excavation method proposed is relied upon to provide the ground with stability and thus the foundations to buildings the ground supports, but the ability of the ground to do this can be undermined by flowing ground water, and this hazard has not been highlighted.

6. Groundwater flow can cause local erosion of sandier and silty horizons exposed by excavation and such erosion will result in settlement.

7. Thus, shallow ground water, and its response to rainfall, should controlled and for that to happen a better understanding of ground water is required before this proposal can be considered to have done what it could to prevent foreseeable damage to neighbouring properties. In practice, that means more data on water levels with time is needed than exists at present, in particular their response to rainfall.

8. In addition, the interception of such water that a basement such as that proposed for No.76 will impound water beneath No.78 to which it is attached upstream, so presenting difficulties to that neighbour in the event of them wanting a basement at a later date. Some change in design to avoid this would seem necessary to satisfy Camden's requirements.

**Basic geology**

9. Fig.1 (the log for BH1) illustrates the basis for concern. The site is downslope from the high ground of Hampstead Heath to the north. Most of what is classified as Made Ground in the log is transported mixtures of the sediments, originally deposited in the Claygate and Bagshot deposits, that have slid and flowed downhill when it a wetter and weaker condition at the end of the ice age. Being near the surface any building work in them disturbs their original fabric and leaves behind building debris such as bricks, cement and clinker; this is what loggers describe as Made Ground but in fact it is essentially natural ground disturbed by man.

10. Beneath it is sand with gravel and beneath that is sandy clay all of which sounds as if it may be un-transported, unlike the Made Ground above. However the clay contains gravel and it should not if it was originally sedimented as clay; the two grain sizes, clay and gravel, require quite different velocities of flow to settle as sediment.

11. Thus the top 3m of this profile could all be transported material, carried down slope as mudflows and slides during the wet periods of the glacial past. Fig 1 illustrates that the measurements of in-situ strength (SPT) reflect a clear change in conditions at around 3m which supports that interpretation.

12. The implications of this are that the top 3m of this profile are likely to contain lenses and impersistent thin sheets of silty and sandy material sandwiched between more clayey material. It is these that could provide the local mini-aquifers that carry near-surface groundwater and it is these that could begin to erode if carrying ground water when exposed during a hit–and-miss excavation.

13. It should be remembered that almost all the nearby soak-aways will be discharging into the Made Ground and the sand beneath it, and that all the utilities will be in trenches that cut through these surface layers so connecting them in ways nature had not. Any leaky pipework (old gas pipes, drains and the like) would readily discharge into the ground through this network of trenches, so providing the ground with a means of rapidly responding to rainfall in ways that by-pass evaporation and extraction of water by the roots of vegetation.

14. In addition to these sources of water there is the much steadier reservoir of ground water held in the Bagshot sediments just uphill of the site. These sediments supported the springs that ringed Hampstead Heath, one of which fed the Shepherds' Well just uphill of the site. That spring is no longer at

ground level but the supply of water that fed it remains below ground level and will be flowing downhill towards the site.

15. Given these aspects of the site it is instructive to review how groundwater has been assessed in support of the application.

**The BIA**

16. Section 9 of the GEA report presents the Basement Impact Assessment; i.e. the assessment of impact concluded from their studies. A Table is presented in which the following is reported

16.1 ***Potential Impact*** *The proposed basement extends beneath the water table surface*

16.2 ***Site Investigation Conclusions*** *Groundwater was not encountered during drilling and the groundwater monitoring standpipes installed on the site have been found to be dry to their full depths of 9.00m. As a result, the proposed 3.50m deep basement will not extend below the water table.*

17. The following paragraphs described what was found.

**Ground water**

18. Three boreholes were sunk, BH1 and 2 in the front garden and BH3 in the back garden. The holes are positioned approximately along the topographic contour and would thus not be suitable for detecting flow downhill. BH2 is approximately 8m east of BH1 and BH3 is approximately 15m east of BH2.

19. BH1 was drilled over two days, beginning on the 30/11/2016 and ending on 01/12/2016. It encountered ground water free to flow at 7m below ground level, when its casing was at 6m. Until then the hole had been "dry" by which the driller means that it lacked evidence of ground water free to flow.

20. The casing was advanced to 7m and the hole was once again "dry". The log is now ambiguous about what happened next because the position of the base of the hole and its casing at the end of 30/11/2016 is not recorded.

21. When the hole was at 10.5m and the casing was at 9m, water level in the hole only dropped to 8m; the hole had not become "dry". So although the inflow at 7m had been sealed off it (assuming 3.5m of further casing had sealed off the weak flow at 7m) it was obviously not the only ingress of water; water was still entering the hole and stood at 8m.

22. Drilling on the 30/11/2016 finished when the hole was 15m deep with the casing following 1.5m to 2m above the base of the hole until the casing reached 11m. By that time the water level had risen from 8m to 7m and remained at that level over-night, being that level on the morning of 01/12/2016.

23. The water level in the borehole remained at 7m for the rest of the time the hole was deepened to 18m where it ended, with the casing following 1.5m to 2m above the base of the hole until the casing reached 15m whereupon it could not be driven further, even though the log states the casing ended at 11m.

24. A standpipe was installed with its base at 9m and water in that standpipe stood at 4.5m below ground level. Unfortunately, details of the installation are not recorded but it was probably surrounded by gravel to the base of the Made Ground and sealed through the upper 1.2m. Such an installation connects groundwater that nature may have stratified so it is not possible to know from which horizon the water found within the standpipe came. Also the date when the water level was recorded is not reported. In this respect the record is lacking in significant facts.

25. A second borehole (BH2) was drilled approximately 8m away to a depth of 5m. It penetrated similar ground to that at BH1 and again, ground water was not encountered at these depths (i.e. the hole was "dry") but a standpipe was installed (again details are not recorded) and water was found standing at 1.2m below ground level; the date of this measurement is unrecorded.

26. BH3 was located at the end of the back garden; it too went to a depth of 5m and penetrated similar ground to that found in BH1 and BH2. A standpipe was installed but when inspected it contained no water; again, the date of that fact is not recorded.

27. The conclusions drawn to all this in the BIA is that ground water is below the depth of the intended excavation and that the high water level found in BH2 could be the result of watering the garden. The evidence does not support this conclusion and as such fails to provide the assurance upon which the design relies.

28. The reasons for the inadequacy of these data are as follows.

28.1 The site is not far downslope from Shepherds Well and the former spring line at that elevation. Shallow ground water is to be expected.

28.2 The monitoring system used (standpipes) is unspecified but has probably connected ground water systems that originally flowed in different horizons at different speeds and with different response times to rainfall. So the groundwater standing at 7m could well be coming mainly from higher in the succession and flowing down the hole to a level where outflow from the saturated length of hole balances inflow from hole above; possibly from the sand below the Made Ground.

28.3 No mention is made of the rainfall that had occurred at the time those few water levels that were measured were made. As such the relevance of the water levels to design and construction is unknown, and it should be known..

28.3 Ground water is probably the explanation for the lack in strength increase with depth seen in BH1. The SPT values define an almost vertical line with depth whereas they should not. One explanation for this is that the base of the BH is being disturbed by the ingress of ground water under pressure which loosens the fabric of the ground giving it an apparently uniform strength with depth.

29. Thus, to imply that ground water will be nothing more than an incidental feature of the ground, as is done in this application, is unjustified and could be dangerously wrong.

30. Section 9 of the GEA report presents the Basement Impact Assessment; i.e. the assessment of impact concluded from their studies. As described above, a Table is presented in which the following is reported

30.1 ***Potential Impact*** *The proposed basement extends beneath the water table surface*

30.2 **Site Investigation Conclusions** Groundwater was not encountered during drilling and the groundwater monitoring standpipes installed on the site have been found to be dry to their full depths of 9.00m. As a result, the proposed 3.50m deep basement will not extend below the water table.

31. These statements are incorrect and dangerous. Further, they are not corrected by recommending, as is done in Section 8.1.1 of the BIA, that the measurement of water levels should continue! What's the purpose of that if the design is wrong? This aspect of the design needs to be properly addressed before the work can be approved.

**Risks**

32. Fig.1 shows the position of the existing foundations for No.78 and the proposed depth of excavation for No.76. If anything goes wrong during excavation the stability of the party wall will be jeopardise. Recalling that little is known about the water levels in this ground and nothing is known about their response to rainfall, highlights the two hazards that could catch a contractor unprepared, and they are as follows.

32.1 A short lived pulse of shallow groundwater that erodes the silt and fine sands from the sands and clays below the Made Ground. The particle sizes of samples taken from these levels are shown; 10% of the material at the base of the Made Ground is silt and clay, and horizons containing 35% silt and clay exist lower down. Once these "*bands of silty sandy clay*" begin to erode there is almost nothing an unprepared contractor can do to prevent a loss of solids from the ground and the settlement that will follow. This is not something controlled by pumping from within the excavation; such pumping cannot prevent erosion, indeed it will hasten it.

32.2 Rising ground water in the brown silty sandy clay that starts at 3m could turn the base of the excavation into a morass. It is this level that is expected to

provide the support and reaction for the underpinning proposed. This is something that could be controlled possibly by pumping but it would need preparation in advance; it could not be done as and when required if water becomes a problem.

32.3 If such problems are encountered on the south side of No.76 then No.74 could be affected. Ground water flows and as such its response to drawdown, i.e. drainage to the sump an excavation at No.78 will create, can extend beyond the geographical limits defined by the Party Wall Act. Instrumentation would be needed in the ground between No.76 and No.74, and that will have to be better designed and monitored than that installed so far. Further, a period of observation covering a wet season should be provided to enable the natural response of groundwater to be established so that the basic design can be seen as suitable for existing ground conditions. This should be a pre-requisite to design and construction.

32.4 Thought must also be given to the effects a basement will have on the ground beneath No.78. Ground water should be beneath No.78 and the evidence so far suggests that it is. A barrier of the sort proposed by the basement beneath No.76 is going to make conditions beneath No.78 wetter than they are at present. Should No.78 want a basement at a later date conditions will be worse than they are at present. Some thought should be given in the present application to how ground water can be diverted around the intended basement.

33. A passing comment is made on p25 ***Section 10 Outstanding Risks and Issues*** that groundwater levels should continue to be measured "*to confirm that significant groundwater inflows will not be encountered"* but fails to explain what would be "significant" and "why it is significant" (is it a matter of volume of water, or pressure of water, or erosion by water, or some combination, or the wetting of ground upstream under No.78 and so on) and what to do if such flow occurs. It is just a passing comment and should not be accepted in a document that is supposed to be defining and constraining risk.

34. For these reasons it is evident that ground water on this site needs to be much better understood than it is at present.

**Conclusions**

35. The very substantial ground investigation (in terms of thickness of paper) that is submitted in support of this application contains a BIA that fails to properly address groundwater and as such misses a very substantial hazard, viz. that from ground water.

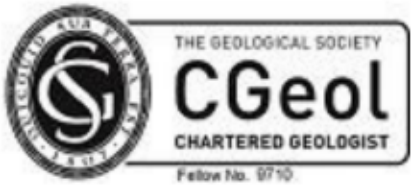
36. Not only does it miss this hazard but it encourages a contractor to believe the hazard does not exist.

37. Ground water has not been properly investigated at this site and needs to be. Given the criticality of ground water to ground stability the investigations

required should not be relegated to S106 conditionality where they remain unpoliced.

38. As it stands, the application fails to provide Camden with the assurances Camden requires as a basis for providing planning approval until ground water is properly investigated.

[redacted].




27th April 2017

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Director First Steps Ltd, and
Emeritus Reader in Engineering Geology
Imperial College London.
Ground Engineering Adviser,
UK Register of Ground Engineering Professionals (RoGEP) (68302453)

**SHORT BIOGRAPHY (2016)**
**Dr Michael Henry de FREITAS C.Geol., C.WEM**
**UK Registered Ground Engineering Adviser (RoGEP)**

**Present position:** Emeritus Reader in Engineering Geology, Imperial College London and Director of First Steps Ltd.,
Director & Co-owner of First Steps Ltd

**Higher Education:** BSc (Hons) 1st Class. Geology. London 1964
PhD. Engineering Geology. London 1982
Diploma of Imperial College. 1982

**Chartership:** Chartered Geologist. 9710. 1990
Chartered Water & Environmental Manager 2009

**Registration:** UK Registered Ground Engineering Adviser (RoGEP); 68302453. 2014

**Awards:** Sir Henry Miers Prize of the Mineralogical Society; 1964.
Safety in Construction medal of the Institution of Civil Engineers; 1997.
Chevalier L'Ordre des Palmes Academiques; 2001
Rudolph Glossop Medal of the Geological Society; 2008
William Smith Medal of the Geological Society, 2016

**Publications:** The authorship of two text books, contributor to four books, editor of seven books, author of over 50 refereed papers in geotechnical journals, and of 24 un-refereed publications in conferences.

**Membership of Professional Bodies, Learned Societies, etc.:**
Geological Society of London (F) 1960 – onwards
International Soc. Rock Mechanics 1967 – onwards
Institution of Water & Environmental Management (M) 1969 – onwards
Royal Geographical Society (F) 1974 – onwards
International Assoc. Engineering Geologists (M) 1979 – onwards
International Assoc. Hydrogeologists 1983 – onwards
British Geotechnical Society (M) 1985 – onwards
Geologists' Association (M) 1989 - onwards

**Learned Society (Geological Society) & Professional service**

| | |
|---|---|
| 2012 – onwards | Lead Author; Geol Soc Working Party Report (Glacial & Periglacial EG) |
| 2012 | Panel Member for the 2012 audit for C.Geol |
| 2011 – onwards | Panel Member for the Register of Ground Engineering Professionals |
| 2010 | Panel Member for the 2010 audit for C.Geol |
| 2009 – onwards | Chairman London Basin Forum Working Gp. of the Geol. Soc. London |
| 2008 | Glossop Lecturer |

| | |
|---|---|
| 2005 – 2007 | Chairman of the Fellowship and Validation Committee |
| 2004 – 2005 | Member of the Fellowship and Validation Committee. |
| 1998 – onwards | Provider of Continuing Professional Development courses |
| 1993 – onwards | Scrutineer for status of Chartered Geologist |
| 1990 – 1994 | Member of the Geological Society Awards Committee. |
| 1990 – 1992 | Chairman Engineering Group, Geological Society |
| 1988 – 1990 | Vice Chairman. Engineering Group of the Geological Society, |
| 1981 – 1984 | Editor Quart. Jour. Engineering Geology for the Geological Society. |
| 1978 – 1979 | Vice-President of the Geological Society. |
| 1971 – 1984 | Editor Geological Society Handbooks. |
| 1976 – 1979 | Member of Council of Geological Society and Chairman for the Promotion Co-ordinating Committee |

**International Society (Int. Assoc. Engineering Geologists) service**

| | |
|---|---|
| 1996 – 2003 | Chairman for International Assoc. Engineering Geologists Commission on Teaching and Training. |
| 1994 – 1996 | Secretary for International Assoc. Engineering Geologists |

**Research Council and national bodies**

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|---|---|
| 1996 – 1997 | Chairman of the CIRIA working party report for British Stratigraphical Nomenclature |
| 1991 – 1994 | Member of ICE (Ground Board Committee) on Inadequate Site Investigation |
| 1991 – 1993 | Member BSI Committee: Ground Investigation, for the revision of BS 5930 |
| 1986 – 1988 | Panel Member Natural Environment Research Council Research Grants Committee for Geology. |

**International invitations**

| | |
|---|---|
| 1984 – onwards | External Examiner for the Technical University of Delft & Hong Kong, and many universities in the UK. |
| 1974 - onwards | Visiting lecturer to Technical University of Athens; University of Complutense. Madrid; University of Stockholm (KTB); Guest touring lecturer, Beijing and Wuhan. University of Wuhan & University of Seoul. |
| 1997 | Commission 4 Rapporteur for Int. Assoc. Eng. Geol. (Athens) |
| 1994 | Rapporteur. 7$^{th}$ Int. Congr. Int. Assoc. Eng. Geol. (Lisbon) |

**Personal consulting**

| | |
|---|---|
| 1974 – onwards | Widely on practical matters of engineering geology to contractors, designers and regulators both in the private and the public sector, in the UK and overseas. Work involving the practical solutions of problems arising from groundwater, stability and materials at surface and below ground. Previous contracts include: Brighton Outfall tunnel; Dublin City Corporation (Dublin Port Tunnel); Railway Procurement Agency (Ireland) (Metro North Tunnel & surface works); ARUP Geotechnics (Havant Thicket reservoir); South African Council of Geoscience (Nuclear power sites), United Utilities Penrith UID scheme (for consortium Kier Murphy Interserve), London Borough of Camden, |

Donaldson Associates (various tunnels and pipelines), Parish of St Helier, Jersey (dispute resolution).

***Of particular relevance to Basements;***

Advice to and involvement with ARUP, the Heath and Hampstead Soc and London Borough of Camden with the drafting and implementation of CPG4
Advisor on hydrology to Heath and Hampstead Soc
Consultant for 25 basements to date within the London Borough of Camden, and others within the Royal Boroughs of Kensington & Chelsea, and Richmond upon Thames, with particular reference to the practical assessment of ground water management and ground response both on site and below surrounding properties.
Expert witness for the basement at 9 Downshire Hill, 2 Green Close & 9 Pilgrim's Lane
Liaising with MP's Karen Buck and Tulip Siddiq & Senior Manager for Planning GLA on matters relating to planning and best practice for basements in London.

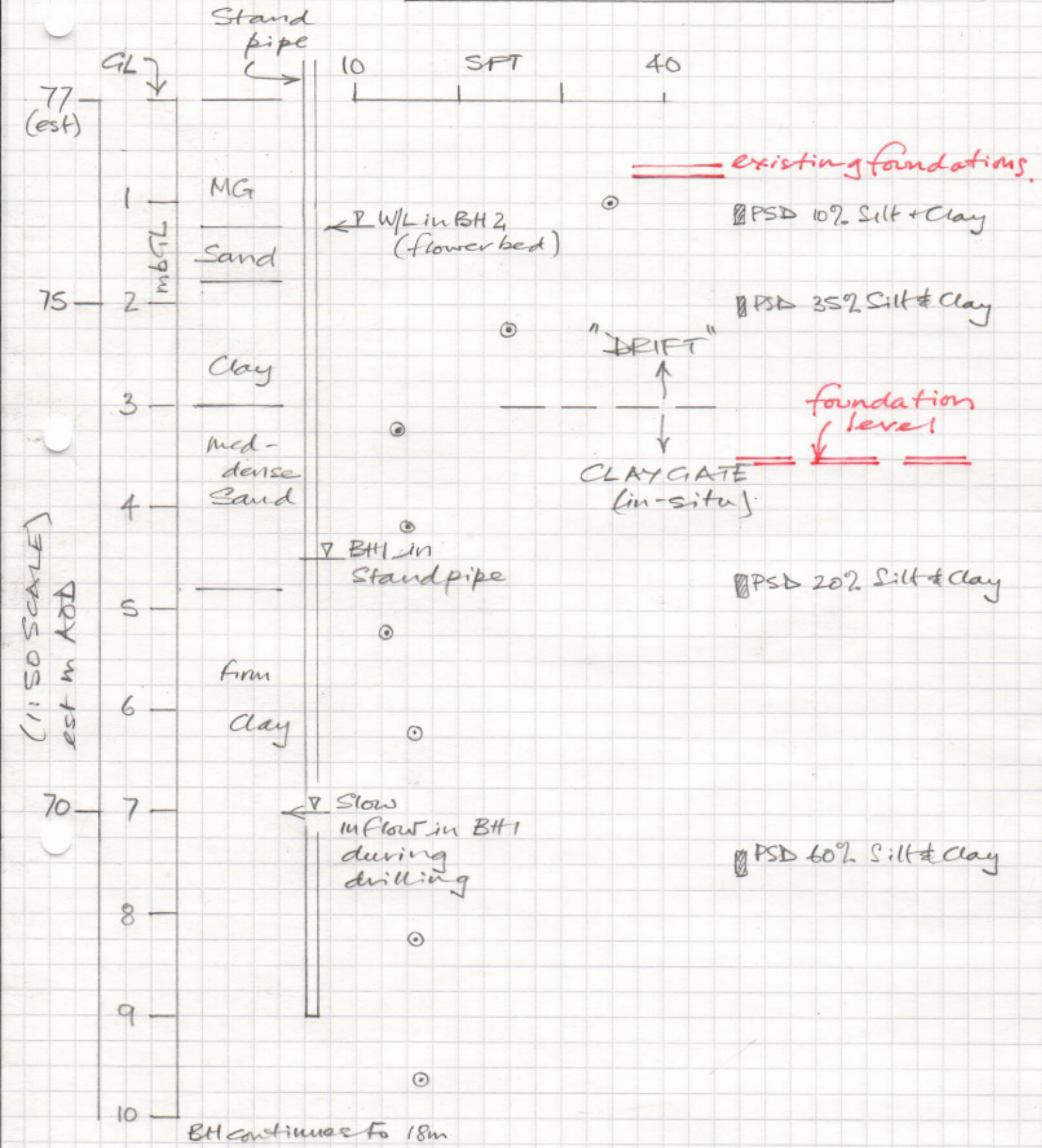
**Research experience**

Over 40 years' experience in the geological controls on geotechnical properties gained from studying the stability and behaviour of rock and soil slopes, the shear strength of clean and infilled rock surfaces, comminution in shear zones, rock and mineral reaction to water, weak rocks and the nature of boundary layers. Also, the influence of basement tectonics and their reactivation on the sedimentation and geotechnical characters of cover rock sequences and their implication for ground investigation and ground models.

**Present employment**

My time has been divided between teaching on the MSc in Engineering Geology in the Dept. Civil Engineering at Imperial College London, working at First Steps, the company I founded with a colleague in 2000, consulting as outlined above and continuing research with colleagues at Imperial and elsewhere. All major consultants and many contractors have sent staff to our courses at First Steps; in-house courses are also provided, the largest being to the Royal Engineers at Chatham. Web-based learning systems have also been developed to train those involved with creating Ground Models, the latest being Lapworth's Logs. All courses are endorsed by the Geological Society of London.

# 76 FITZJOHN'S AVE NW3 5LS — BH1

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