

55 Fitzroy Park
N6 6JA

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 12985-19
Revision: F1

November 2018

Campbell Reith Hill LLP
Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T: +44 (0)20 7340 1700
E: london@campbellreith.com
W: www.campbellreith.com

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Author	Revathy Nair, Msc, DIC, GMICE
Project Partner	E M Brown, BSc MSc CGeol FGS
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1.0 NON-TECHNICAL SUMMARY

- 1.1. CampbellReith was instructed by London Borough of Camden, (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for 55 Fitzroy Park (planning reference 2018/3672/P). Due to the exceptional nature of the development, the audit for the proposed basements is considered to fall within Category C as defined by the Terms of Reference.
- 1.2. The planning application pertains to the re-development of the property to comprise three three-storey and two two-storey detached residential developments along with access paths and associated landscaping; through removal of an existing house, a tennis court and mature trees within the proposed site area.
- 1.3. For the purpose of the audit, the lowest floor of all the proposed buildings shall be considered as a basement.
- 1.4. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.
- 1.5. CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and reviewed it against an agreed audit check list.
- 1.6. The BIA (Geotechnical assessment and the Hydrological and Hydrogeological Impact assessment) has been prepared by a well-known firm of engineering consultants using individuals who possess suitable qualifications.
- 1.7. The BIA has confirmed that the buildings would be supported on CFA piles founded in London Clay, with the basements partially embedded within the superficial deposits for the buildings on the western site area.
- 1.8. The BIA has confirmed the presence of a man-made private pond on the northern area of the site and the Highgate Chain of ponds 80m southwest of the site. The Kenwood Ladies' and Bird sanctuary ponds are also located southwest of the site.
- 1.9. It has been established that the site lies within a Critical Drainage Area and that the surface water flood hazard (flood risk to people) in the event of a 1 in 1000 rainfall event is 'Significant' in the area of the man-made pond.
- 1.10. It is stated that the proposed development will decrease the overall amount of hard-surfaced areas.

- 1.11. It is stated that a surface water drainage system will be designed such that it will direct any excess surface water towards the man-made pond and an existing discharge pipe constructed underneath the Millfield lane, and that the current inflow into the pond and the outflow from the discharge pipe is maintained.
- 1.12. It is also stated that the outflow from the pond will be controlled by an existing pond weir arrangement and that it will be directed to an existing discharge pipe constructed under Millfield Lane.
- 1.13. It is stated that the site is located in the vicinity of the Hampstead Heath SINC, 15m from the closest point on the far side of Millfield Lane.
- 1.14. It is understood that some mature high water demand trees, especially those occupying the area for the proposed building in Plot no.4, shall be removed as a part of the development.
- 1.15. It is acknowledged within the BIA that "*there are important inter-relationships that exist between the water environment and the living environment*", however the same has not been incorporated into the design of the surface water drainage system.
- 1.16. It is stated that the neighbouring houses and roads are sufficiently far away from the proposed development works, for any ground movement influences induced by excavation, and hence a ground movement assessment is not required.
- 1.17. It is stated that the Superficial Deposits overlying London Clay in parts of the site will be hydraulically impermeable. However, data to support this statement has not been provided.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 11th October 2018 to carry out a Category C Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 55 Fitzroy Park, N6 6JA.

2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within

- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- Camden Planning Guidance Basements. March 2018.
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.
- Local Plan Policy A5 Basements.

2.4. The BIA should demonstrate that schemes:

- a) maintain the structural stability of the building and neighbouring properties;
- b) avoid adversely affecting drainage and run off or causing other damage to the water environment;
- c) avoid cumulative impacts upon structural stability or the water environment in the local area;

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.5. LBC's Audit Instruction described the planning proposal as *"Demolition of all existing buildings on site and their replacement with five detached homes (Class C3) (three x part 2 part 3 storey houses at front facing Fitzroy Park and two x part 1 part 2 storey houses at rear adjoining Millfield Lane) plus associated driveways, access paths, carparking, landscaping and pond enhancements."*

2.6. CampbellReith accessed LBC's Planning Portal on 29th October 2018 and gained access to the following relevant documents for audit purposes:

- Hydrological & Hydrogeological Impact Assessment prepared by LBH Wembley, (Reference: LBH4480 Ver.2.0, dated July 2018);
- Construction Management Plan prepared by Montway;
- Geotechnical Assessment prepared by LBH Wembley (Reference: LBH4480 Ver.2.0, dated July 2018);
- Design and Access Statement prepared by Piercy and Company (dated August 2018);
- Site Investigation Report by Concept Site Investigations, dated September 2018;
- Structural and Civil Engineering Design statement (Reference: 16-254-181025-01RP, by Coyle Kennedy Consulting Engineers;
- Arboricultural Impact Assessment & Tree Protection Plan prepared by BoskyTrees (dated 11 July 2018);
- Planning Application drawings consisting of;
 - Site Location Plan (Dwg no: 010 prepared by Piercy & Company, dated August 2018)
 - Existing site plan (Dwg no: 005 prepared by Piercy & Company, dated September 2018)
 - Proposed plans and sections (Dwg no: A1000, A2000, A2010, A2011, A2201, A2200, A2300-2301 prepared by Fathom Architects, dated April 2018)
 - Proposed Plans and sections (Dwg no: 100 – 150 prepared by Piercy & Company, dated August 2018)
- Planning comments and response.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	However, the qualifications of the individuals concerned with the production of the Structural and Civil Engineering Design Statement is not known.
Is data required by Cl.233 of the GSD presented?	No	Groundwater monitoring data is required to accurately characterise the groundwater table level in the area. The design of the SUDS requires further justification. Outline design of all temporary and permanent sheet pile walls (or other retaining walls) which directly affect the neighbouring properties, public roads and the man-made pond is required.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	No	The construction of an embankment next to the pond to facilitate the incorporation of access paths requires further description. Refer to section 4 of this audit report. The impact of the numerous changes proposed to the surface water drainage system on the existing pipe network needs further assessment.
Are suitable plan/maps included?	No	Relevant Arup GSD map extracts have not been included.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	No	Insufficient information supplied to allow changes to surface water treatment to be assessed.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Refer Geotechnical Assessment prepared by LBH Wembley, dated July 2018. The stability of the embankment slopes under proposed surcharge loadings should also be assessed.

Item	Yes/No/NA	Comment
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Refer to Hydrological & Hydrogeological Impact Assessment, dated July 2018. However more information is required to verify the statements. Refer section 4 of this audit report.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Refer to pages 26-37 of Hydrological & Hydrogeological Impact Assessment, dated July 2018
Is a conceptual model presented?	Yes	It is assumed that there is no groundwater, however this is contradicted by the provision of a groundwater contour plan and discussion of groundwater flow. A more conservative approach would be to assume the presence of perched groundwater.
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Refer to pages 20-21 of the Geotechnical Assessment, dated July 2018.
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Refer to Hydrological & Hydrogeological Impact Assessment, dated July 2018 and Geotechnical Assessment prepared, dated July 2018.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Refer to Hydrological & Hydrogeological Impact Assessment, dated July 2018 and Geotechnical Assessment prepared by LBH Wembley, dated July 2018.
Is factual ground investigation data provided?	Yes	Refer to Site Investigation Report by Concept Site Investigations, dated September 2018.
Is monitoring data presented?	No	Refer to section 4 of this audit report.
Is the ground investigation informed by a desk study?	Yes	Refer to Hydrological & Hydrogeological Impact Assessment, dated July 2018.

Item	Yes/No/NA	Comment
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	Refer to page no. 22 of Geotechnical Assessment, dated July 2018.
Does the geotechnical interpretation include information on retaining wall design?	Yes	Refer to Geotechnical Assessment, dated July 2018.
Are reports on other investigations required by screening and scoping presented?	Yes	Arboricultural Impact Assessment, Heritage Assessment, Construction Management Plan etc are presented.
Are the baseline conditions described, based on the GSD?	Yes	However groundwater level monitoring data is absent.
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	
Are estimates of ground movement and structural impact presented?	No	The outline design of the retaining walls (including temporary structures) is required with confirmation that ground movements will not adversely impact surrounding roads and the pond. A slope stability assessment is required for the embankment slopes, which include surcharges due to construction traffic, where relevant.
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	No	The outline design of all retaining walls (including temporary structures) is required. Mitigation measures to prevent any adverse movements are required, if applicable.

Item	Yes/No/NA	Comment
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	However, appropriate mitigation to be confirmed once further assessment completed as described in section 4 of this audit.
Has the need for monitoring during construction been considered?	No	
Have the residual (after mitigation) impacts been clearly identified?	No	Contradictory statements have been presented regarding the groundwater level in the site. Monitoring data is required to assess the potential impact. Further assessment is required to verify the impact of the development on surface water flows off-site, to ensure the network has sufficient capacity.
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	No	The structural stability of the buildings and the retaining walls have to be demonstrated.
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	No	
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	No	Surrounding properties sufficiently remote that no cumulative impacts to stability are anticipated, however, the cumulative impact of the various changes to surface water flow requires further detail.
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	No	However, it is accepted that the surrounding structures are away from the zone of influence of the proposed excavation and foundations.
Are non-technical summaries provided?	Yes	Refer to Page 16 of the Geotechnical Assessment prepared by, dated July 2018.

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) comprises two documents, namely Geotechnical Assessment and Hydrological & Hydrogeological Impact Assessment has been carried out by LBH Wembley Engineering and the individuals concerned in its production have suitable qualifications.
- 4.2. A Structural and Civil Engineering Design Statement has been prepared by Coyle Kennedy Consulting Engineers, but the qualifications of the individuals concerned with its production is not known.
- 4.3. The proposed redevelopment will take place in a site which lies within the Highgate Conservation Area, on the west side of Fitzroy Park and backs onto Hampstead Heath. The site is roughly trapezoidal in shape with a gross area of 0.35ha and slopes from +84m OD adjacent to Fitzroy Park in the east, down to about +77.50m OD adjacent to Millfield Lane in the west. A man-made pond is present in the northern area of the site.
- 4.4. It is proposed to redevelop the property through removal of existing structures to form two two-storey houses in the west (plots 4 and 5) and three three-storey houses in the east (plots 1, 2 and 3) along with associated soft and hard landscaping. The proposed works will lead to the demolishing of an existing two storey residential building towards the eastern side of the property, and the removal of a hard-surfaced tennis court in the western corner and mature trees in the south-west corner.
- 4.5. It is understood that plots 1, 2 and 3, next to Fitzroy Park road, will require up to 1.50m of excavation from the existing level to facilitate the lower ground floor. Plot 4, planned next the pond in the western end of the site, will require excavation up to 1.40m and Plot 5 will require an excavation up to 2.50m to facilitate construction of the ground floor.
- 4.6. The building planned on Plot 5 will be constructed at a distance of 4.40m away from the man-made pond.
- 4.7. The BIA has identified that the site is underlain by Made Ground to variable depths of 1m to 1.50m below which lies the London Clay Formation. Along the western portion of the site, the BIA has identified the presence of Superficial Deposits overlying the London Clay beneath the Made Ground increasing in thickness from 1m to 2m in an east-west direction. The Hydrological and Hydrogeological Impact Assessment report also presents evidence for the possible presence of an infilled channel running across the man-made pond in a northeast to southwest direction.
- 4.8. The Geotechnical Assessment states that due to the variable ground conditions present throughout the site, a bored or CFA pile foundation 300mm in diameter and up to 25m long,

founded in the London Clay would be the preferred foundation solution. The proposed development also considers the use of suspended floor slabs to avoid possible ground movement.

- 4.9. The existing layout plan (Drawing no: 005, dated 27th September 2018) and the landscape masterplan (Drawing no: 010, dated 16th July 2018) were studied, and it was understood that access paths with associated earthworks are also planned as a part of the re-development. The access paths would require the introduction of a retaining wall and shallow embankments with their side slopes ranging from 1:2.5 to 1:1.6 along the southern and eastern perimeter of the man-made pond.
- 4.10. It is mentioned in the CMP document that a 'Mechanical Stabilizing Earth Retaining Wall System' is planned for the southern edge of the pond for supporting the permanent access pathway. A design for this system has not been provided and hence could not be reviewed as a part of this audit. It is understood that the path may be used by construction vehicles, thus the stability of slope and any retaining wall should be demonstrated under temporary and permanent loading conditions.
- 4.11. Installation of temporary sheet pile retaining walls have been planned as a part of the development to prevent groundwater ingress into the excavations. It is accepted that the retaining walls to permit construction of the houses are remote from any sensitive structures and infrastructure. However, it is described in the BIA that drainage channels will be excavated between Plots 1-3 and Fitzroy Park. The nature of any retaining structures here should be described and their impact assessed.
- 4.12. It was noted that the drawings provided are mostly schematic in nature. No engineers' drawings are presented. Outline calculations and sketches demonstrating the proposal for retaining walls, basement slabs and foundations are required.
- 4.13. The soil investigation reveals that the London Clay present in the site area has a medium to high volume change potential. Although due consideration of the same has been given in the design of the foundations and the floor slabs, it is suggested that the information be considered for the design of the drainage systems.
- 4.14. The BIA states variously that the Superficial Deposits have only limited permeability but also that a consistent groundwater table exists and that the permeability is sufficient for infiltration drainage to be relied on. Further clarification should be provided regarding this.
- 4.15. Although groundwater monitoring data is not presented within the BIA, a contour plan of the indicative groundwater table across the site has been presented within the Geotechnical Assessment report. The figure indicates that the groundwater level varies from +80m OD to

+76m OD east to west of the site. It is therefore to be understood that the excavations for Plot 4 will extend to nearly a metre below the groundwater. Other drawings show the basement to Plot 5 to be below the water level in the pond. This contradicts the screening checklist for 'subterranean (groundwater) flow', and the need for dewatering should be clarified. Ground water monitoring data should be provided.

- 4.16. The BIA states that impermeable area will be reduced, due partly to the removal of tennis court. This is considered beneficial by increasing flows to ponds downstream. It should be confirmed that the tennis court drains to the sewer network. It is also stated that green roofs and rainwater harvesting are to be incorporated in to the design. This may have the impact of reducing infiltration in to the ground. The cumulative impacts of the change to surface water management require clarification to allow further assessment to be made within the BIA of the impact on the local hydrogeology.
- 4.17. It was understood that as per the Camden SFRA, the risk of flooding from surface water around the area of the man-made pond was high and that the entire site lies with a 'Critical Drainage area Group3_001'. A hazard mapping created by the EA indicates that the site lies in an area which comes under a 'Significant' flood hazard in the event of a 1 in 1000 rainfall event. It is noted that the storage calculations have been carried out by considering the 'Standard percentage of run-off coefficient for the soil category' and the area of the catchment, without factoring the water feature already present within the site area.
- 4.18. It is understood that a weir arrangement directs any excess outflow flow from the man-made pond on site to a discharge pipe constructed underneath Millfield Lane, the outflow of which will be discharged to the heath below. The surface water drainage system will also be directing all outflows to the same pipe. The cumulative impacts of the proposed changes to the groundwater flows and surface water treatment require clarification to confirm the feasibility of this proposal.

5.0 CONCLUSIONS

- 5.1. The BIA have been carried out by well-known firms of engineering consultants using individuals who possess suitable qualifications.
- 5.2. The BIA has confirmed that the proposed basement will be founded on London Clay and that the basement of buildings on Plot no. 4 and no.5 will be embedded in the Superficial Deposits.
- 5.3. The BIA states bored or CFA piled foundation as the viable foundation solution with suspended floor slab. It is accepted this will address any issues of heave and shrinkage.
- 5.4. Groundwater monitoring data is required to confirm whether or not the proposal will have impact on the local hydrology and hydrogeology.
- 5.5. The stability of slope and retaining wall next to the man-made pond should be confirmed, particularly under proposed surcharge loadings.
- 5.6. Whilst it is accepted that any temporary retaining walls for the construction of the houses are remote from sensitive structures or infrastructure, the impact of excavation for the drainage trench adjacent to Fitzroy Park should be assessed and retaining/mitigation measure described including outline design of the retaining walls, both temporary and permanent, where potential impact exists.
- 5.7. The cumulative impact of the proposed changes to the surface water management on the existing hydrogeology and surface water flow on-site and off-site is not clearly understood. The overall difference in the outflow with respect to the site, before and after construction has to be presented.
- 5.8. Clarification is required with respect to the permeability of the Superficial Deposits and the presence of groundwater tables. It should be confirmed whether perched groundwater will be encountered during basement foundation excavation.
- 5.9. Queries and requests for additional information are summarised in Appendix 2. Until the additional information requested is provided and audited, the BIA does not comply with the requirements of CPG Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Barber, Sue Barber, Steve Kennedy, Caroline Kenedy, John Lambie, Bruce Thompson, Kathy	Fitzroy Park London N6 6HX	12/10/18	Impact of development on Fitzroy Park and the rural area etc.	Clarifications requested in Audit.
Fitzroy Park Residents Association	49 Fitzroy Park Highgate London N6 6HT	18/10/18	Regarding lack of necessary information.	Clarifications requested in Audit.

From: Thuaire, Charles
Sent: 12 October 2018 11:34
To: Planning
Subject: FW: 55 FITZROY PARK - APPLICATION 2018/3672/P

PI register as objection on m3 and upload onto trim

Charles Thuaire
Senior Planner

Telephone: 020 7974 5867



From: Sue Barber [REDACTED]
Sent: 12 October 2018 11:15
To: Thuaire, Charles <Charles.Thuaire@camden.gov.uk>; Bushell, Alex <Alex.Bushell@camden.gov.uk>
Subject: 55 FITZROY PARK - APPLICATION 2018/3672/P

Dear Sirs

I am writing to object to this planning application. My objections are the same as those of my husband who wrote to you two days ago.

We live in Sunbury which is opposite and a few yards to the side of the proposed development.

Before listing my objections, I would note, as my husband did, that when I looked the Camden planning site for this application, it said that comments were required by 10 October. However, when I looked a few days ago, this had changed to 30 September. Would you confirm that this objection has been properly recorded as valid.

i would also note that there remain significant omissions in the application and final comments cannot be made until they have been filed.

My objections:

1 Parking

In contravention of Camden's own policies, I understand that one parking space is anticipated for each house.

The applicant, Mr Springer, has numerous cars which he currently parks on the roadway of Fitzroy Park outside his current house. If this application gets approved it would be anticipated

that he would park them on Fitzroy Park, causing a blockage in the road and preventing access for emergency vehicles.

2 Over development

The construction of 5 houses on the site is over development, especially as the pond has been included in the applicants densities.

3 Development by Hampstead Heath

The land on which the proposed development is to be constructed is, I understand, Private Open Space. Camden's policies restrict developments on such land and, in particular, next to Hampstead Heath.

3 Impact on Fitzroy Park and the rural area

The proposed 3 houses facing on to Fitzroy Park will have a severely detrimental impact on Fitzroy Park which at present is effectively a rural lane in the middle of London. These 3 houses are of very similar design, are two metres higher than the existing house and will be severely detrimental to the rural nature of the area. From the perspective of my house, our view towards Hampstead Heath will be severely obstructed.

4 CMP

The applicants have claimed a host of proposed measures to minimise the impact of the development but a careful reading of the draft CMP suggests that the number of vehicle movements will be far greater than outlined and that the large vehicles will have to reverse into Fitzroy Park, creating severe danger to the public.

5 Camden's policies

As outlined in the report from Tony Bowhill, already submitted to Camden, there are numerous other breaches of Camden's planning policies as well as numerous omissions in the application.

6 Water issues

Fitzroy Park lies on a hill that encounters considerable water movement. Some 50% of the proposed development is at basement level and the proposed construction could create significant water related issues, including damming up the water flows.

7 Consultation

The applicants have stated that there has been local consultation. The fact of the matter is that the only consultation has been the applicant, Mr Springer, telling us what he is going to do – rather than consulting with local residents. My comments to him have been ignored.

No doubt, once the full application details are submitted, I will have further comments and I reserve the right to comment further as and when such documents are properly filed.

Please confirm receipt of this objection.

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Our Ref: 1675/118/DR/ca

Fitzroy Park Residents Association
c/o Karen Beare
49 Fitzroy Park
Highgate
London
N6 6HT

75 Cowcross Street
London EC1M 6EL

t 020 7250 1555

e aba@alanbaxter.co.uk
w www.alanbaxter.co.uk

18 October 2018

Dear Karen

55 Fitzroy Park, Highgate, N6

Following our discussion we have reviewed again the information included in support of the planning application for 55 Fitzroy Park and confirm that, in many areas, important information has not been provided. Elsewhere, where some information has been provided it is often unclear or lacks the necessary detail. In particular there are important gaps in the information relating to the BIA as follows: -

- 1) Clause 8.7.2 of the Planning Statement states that the Geotechnical Assessment and the Hydrological and Hydrogeological assessment 'equate' to a BIA. In fact whilst the Geotechnical Assessment includes standardised screening and scoping assessments for potential hydrogeological, hydrological and stability impacts, the impacts identified have generally only have been addressed by broad statements and summary information, with little detail.
- 2) None of the original factual site investigation information such as borehole and window sample logs or test results has been provided. It appears that some groundwater monitoring has been undertaken but the results have not been provided. There is an important 'buried valley' feature which crosses the site but little information is available on the nature of the head and fill materials or groundwater flows within this feature. It is difficult to see therefore that the hydrogeological and hydrological issues have been properly considered.
- 3) Again broad statements have been made about existing surface water flows feeding into the pond but no evidence has been provided to confirm this. Statements are made regarding contamination, but no water sample test results have been provided. 'Indicative' surface water path directions are shown on schematic drawings, along with elements of a FRA and SUDS strategy, but there are no details of how the SUDS will work to achieve the stated aim to control the discharge of water to the heath in exactly the same manner as present.
- 4) There is a proposal for installing a pipe below Millfield Lane to improve flows and reduce the risk of pollution to the Bird Sanctuary Pond Nature Reserve. However no details of levels or existing and proposed flows are provided. We understand that this is unlikely to be acceptable to City of London as it will disrupt the existing water regime on the Heath, but no alternative solution has been proposed.

2/...

ABA STRUCTURAL & CIVIL ENGINEERING URBAN DESIGN MASTERPLANNING TRANSPORT & MOVEMENT CONSERVATION SUSTAINABILITY

Alan Baxter CBE BSc MICE FStructE
Michael Coombs MSc DIC FStructE
Directors
James Gardiner BSc MICE MStructE
William Filmer-Sanke MA DPhil FSA MCIFA
Adam Sewell MEng MStructE

Alan Fleet BSc MICE MStructE
Andrew Morton BSc MICE
Richard Pollard MA MA
Clare Coats BSc Dip LA CMLI
Nicholas Davies BSc ACA

Associates
John Mason MA MStructE
Ian Taylor BSc MICE MStructE
Trenton Williams BSc(Eng) MPhil
David Lankester MEng MStructE
Thomas Roberts BSc MSc MStructE
David Rathbone BSc MICE MStructE
Adrian Tucker BEng MStructE

Raihan Abu BEng MSc DIC MICE MStructE
Olivier Fernandez MA MStructE
Ing. Luca Frasci
Fredrik Nyberg MEng MStructE
Rory Dack MEng
Alice Eggeling BSc MA MRTPI IHBC
Robert Hradsky BA MA
Thomas Brewer MEng MStructE

Daniel Zwietsloot MEng
André Siwek MEng MSc
Alexander O'Hare MEng
Consultants
Robert Thorne MA FSA
Paul Ragsdale BEng MStructE
Kit Wedd BA IHBC

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- 5) No existing or proposed surface or foul water plans have been submitted and the projected foul flows from five properties will be significantly greater than from the one house to be demolished. We understand that an existing foul water sewer that runs at shallow depth under the proposed plots 4 and 5 will need to be diverted but no details of the proposals are provided. There are references to connections to an existing combined sewer but no details or drawings have been provided. Suggestions that there might be a connection to the Kenwood sewer within the nature reserve are unlikely to be acceptable to the City of London. Without more information, including drawings, it is impossible to assess the viability of the drainage proposals.
- 6) Extensive excavations to around 50% of the site will be needed for the five basements which appear to be of the order of 1.5m to 2.5m deep, but no engineers' drawings for the proposals have been provided. Further earthworks are proposed to create access roads to plots 4 and 5 and the rear of plots 1 to 3 and the freeboard to the pond is to be raised. Only schematic sketches and statements have been submitted with the CMP. No details are available.
- 7) No slope stability drawings, details or calculations have been provided despite proposals for extensive temporary sheet piling, soil stabilisation of the retained ground and a Mechanical Stabilising Earth Retaining Wall System (MSE) on the south side of the pond. It also appears that reliance may be placed on the existing retaining wall along part of the frontage with Fitzroy Park, but no details of the existing wall, proposed strengthening or any temporary works proposals have been provided.
- 8) No damage assessments have been carried out although there is a risk of ground movements during excavations for the basements to plot 1 to 3, which could impact on the existing road.
- 9) The various statements on the volumes of material/spoil to be removed from site are contradictory and unclear, as are the proposed arrangements for HGV manoeuvres. These need to be clarified and assessed cumulatively with vehicle movements from other construction sites locally.
- 10) The cumulative hydrogeological and hydrological impacts in relation to neighbouring basements, particularly at 51 and 53 Fitzroy Park should also be considered.
- 11) Overall, given the nature and extent of the proposals, it is unusual not to include any information on the engineering proposals in the BIA or the submission more generally. We would expect to see engineers' drawings for the proposed piling and basement construction, a Basement Construction Plan, drainage plans and details and some form of damage assessment. Without more information and in particular more details we do not consider that it is possible to properly assess the impact of the proposals.

I trust that the above is all clear but if you have any queries or would like to discuss any points in more details please give me a call.

Yours sincerely



David Rathbone
for Alan Baxter Ltd

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Groundwater monitoring data	Groundwater monitoring data has to be provided.	Open	
2	Design of retaining wall	Require outline design of temporary and permanent retaining walls to assess their suitability.	Open	
3	Cumulative Impact assessment	Assessment or calculations showing the overall difference in the inflow and outflow with respect to the site, before and after construction has to be presented.	Open	
4	Utility survey	A detailed utility survey for the area is required, along with details regarding the existing drainage pipe running underneath the Millfield Lane.	Open	
5	Slope stability analysis/ design of the MSE retaining wall	The slope stability analysis or the design of the MSE wall is required to confirm the stability of the embankments constructed south of the man-made pond.	Open	

Appendix 3: Supplementary Supporting Documents

None included due to document security

London

Friars Bridge Court
41- 45 Blackfriars Road
London, SE1 8NZ

T: +44 (0)20 7340 1700
E: london@campbellreith.com

Birmingham

Chantry House
High Street, Coleshill
Birmingham B46 3BP

T: +44 (0)1675 467 484
E: birmingham@campbellreith.com

Surrey

Raven House
29 Linkfield Lane, Redhill
Surrey RH1 1SS

T: +44 (0)1737 784 500
E: surrey@campbellreith.com

Manchester

No. 1 Marsden Street
Manchester
M2 1HW

T: +44 (0)161 819 3060
E: manchester@campbellreith.com

Bristol

Wessex House
Pixash Lane, Keynsham
Bristol BS31 1TP

T: +44 (0)117 916 1066
E: bristol@campbellreith.com

UAE

Office 705, Warsan Building
Hessa Street (East)
PO Box 28064, Dubai, UAE

T: +971 4 453 4735
E: uae@campbellreith.com

Campbell Reith Hill LLP. Registered in England & Wales. Limited Liability Partnership No OC300082
A list of Members is available at our Registered Office at: Friars Bridge Court, 41- 45 Blackfriars Road, London SE1 8NZ
VAT No 974 8892 43