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29 Barrie House, St Edmunds's Terrace, London NW8 7QH

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12727-47
Revision: D2

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Appendix

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 29 Barrie House, St Edmund's Terrace, London, NW8 7QH (planning reference 2018/0645/P). The basement is considered to fall within Category B as defined by the Terms of Reference.

1.2. 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.

1.3. 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.

1.4. The Basement Impact Assessment (BIA) and Structural Strategy Report (SSR) have been prepared by well-known firms of engineering consultants using individuals who possess suitable qualifications.

1.5. Relevant information screening and scoping as defined and required in the LBC Planning Guidance document 'Basement and Lightwells (CPG4)' has been provided.

1.6. It has been identified that the basement proposal neither involved a listed building nor was adjacent to listed buildings.

1.7. The proposed scheme involves the demolition of the existing two storey building, construction of part four, part five storey residential block forming the extension to 8-storey block of flats and construction of basement to both blocks.

1.8. The basement walls are proposed to be formed using piling methods, with concrete floors and liner walls. This is acceptable as an appropriate structural form for the proposed basement in respect of the identified ground conditions.

1.9. A proposed construction methodology are to be provided in the form of a Basement Construction Plan (BCP).

1.10. Outline structural calculations for the basement retaining wall structure are required.

1.11. An appropriate site investigation has been carried out, including investigation of ground water levels.

1.12. The ground conditions have been identified as a shallow depth of made ground overlying London Clay. Ground water was observed at relatively shallow depth below ground level.

1.13. The basement is to be found below the anticipated ground water level, however an appropriate construction method has been proposed to account for this.

1.14. The damage category calculated for the flats within Barrie house has been calculated as Burland category 1 via a formal ground movement assessment.

1.15. The damage category for the neighbouring properties has been calculated as a worst-case of Burland damage category 1 via a formal ground movement assessment.

1.16. The site is within of the Environment Agencies Inner Source Protection Zone 1 (SPZ), relating to the Barrow Hill reservoir however, it is accepted that the development will not impact on the ground water flows.

1.17. An appropriate SUDs Assessment has been provided including adequate drainage system strategy proposal.

1.18. It is accepted that nearby rail assets are outside of the zone of influence of the proposed site.

1.19. It is accepted that the surrounding slopes to the development site are stable.

1.20. It is accepted that the development will not impact on the wider hydrogeology of the area and is not in an area subject to flooding.

1.21. A schedule of queries for additional information are provided in appendix 2.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 06/02/2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 29 Barrie House, St Edmund's Terrace, London, NW8 7QH, planning ref: 2018/0645/P.

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 (CPG) 4: Basements and Lightwells.
- 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 *"It is proposed develop the site adjacent to the existing residential tower block at Barrie House 29 St Edmunds Terrace. The site is currently occupied by a car park and an unoccupied 2 storey masonry structure in the western corner. Included in the proposal is a basement structure below the footprint of the proposed block, which is the focus of this Basement Impact Assessment as part of the planning application pack. Redevelopment of existing two-storey porter's lodge and surface level car park*

to construct a part four, part five storey extension (lower ground, ground and 3 storey's) to Barrie House including excavation of a basement level, to provide 9 self-contained residential flats, cycle parking, refuse and recycling stores, hard and soft landscaping and relocated off-street car parking spaces."

The Audit Instruction also confirmed 29 Barrie House, St Edmund's Terrace involved, or was a neighbour to, listed buildings.

2.6. CampbellReith accessed LBC's Planning Portal on 14/02/2018 and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Part 1-9 Rev.1 – February 2018, parmarbrook
- Location Plan – October 2017, prepared by Marek Wojciechowski Architects
- Existing, Demolition and Proposed Application Drawings – November 2017, prepared by Marek Wojciechowski Architects
- Design and Access Statement Part 1-6 - November 2017, Marek Wojciechowski Architects
- Planning Statement - February 2018, Montagu Evans
- Landscape Proposal – December 2017, Exterior Architecture
- Construction Management Plan – December 2017, RPS
- Sustainability Assessment – Final Issue dated 04/01/2018, motion
- Daylight and Sunlight Report – 21 December 2017, malcolm hollis
- Draft Construction Management Plan (inc. Pro Forma) – December 2017, RPS
- Noise Level Survey – 18 December 2017, EMTEC
- Arboricultural Report – 2 January 2018 (1-38-4326), John Cromar's Arboricultural Campany Limited
- Planning Comments – where pertinent to scope of audit

2.7. Following the D1 issue of this audit the following further information was downloaded and considered;

- Basement Impact Assessment Part 1-9 Rev.2 – May 2018, parmarbrook

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
Is data required by Cl.233 of the GSD presented?	Yes	
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	
Are suitable plan/maps included?	Yes	Referral to the EA maps has been made and commentary is sufficient. Responded to screening question adequately.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	A justification statement is generally provided for 'no' answer.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	A justification statement is generally provided for 'no' answer.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	A justification statement is generally provided for 'no' answer.
Is a conceptual model presented?	Yes	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Impact Assessment with ground movement assessment has been identified and scoping is consistent with screening.

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	No	All Hydrogeology Screening answers were No and justification has been provided.
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Further ground water monitoring has been identified and scoping is consistent with screening outcome.
Is factual ground investigation data provided?	Yes	
Is monitoring data presented?	Yes	Ground water level has been monitored
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	A site walkover was undertaken by a CGL Engineer on 6th December 2017.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	
Does the geotechnical interpretation include information on retaining wall design?	Yes	Factors for retaining wall design have been provided but Structural calculations for retaining wall to be provided.
Are reports on other investigations required by screening and scoping presented?	Yes	Ground movement assessment has been provided and ground water monitoring has been identified
Are the baseline conditions described, based on the GSD?	Yes	
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?	Yes	Ground movement assessment
Is the Impact Assessment appropriate to the matters identified by	Yes	

Item	Yes/No/NA	Comment
screen and scoping?		
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	
Has the need for monitoring during construction been considered?	Yes	
Have the residual (after mitigation) impacts been clearly identified?	Yes	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	SUDs Assessment has been provided
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Worst case damage category of 1 has been calculated
Are non-technical summaries provided?	Yes	Non-technical summary has been provided in BIA part 5 Section 10

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) has been carried out by a well-known firm of engineering consultants, Card Geotechnics Limited (CGL) and the individuals concerned in its production have suitable qualifications in geology as required by CPG4.

4.2. Consulting Structural Engineers, parmarbrook, have produced supplementary information to support the structural design and construction of the basement proposal.

4.3. The BIA Audit Instruction confirmed that the site is not situated in a conservation area and that there are no listed building neighbouring the site.

4.4. The BIA submissions include land Stability, Hydrogeology and Hydrology screening and scoping, relevant site investigations and impact assessment as defined and required in the LBC Planning Guidance document 'Basement and Lightwells (CPG4).

4.5. The existing Site is located within the Primrose Hill area of London and consists of a 1950's 8-storey detached residential tower block named Barrie House with a single storey basement Plant Room beneath part of its footprint, a hardstanding car park and an unoccupied 2 storey masonry structure named Porter's Lodge.

4.6. The site generally slopes from north-eastern to south-western corner with approximately 6.6m difference and covers approximately area of 0.2ha. It is bounded by St. Edmund's Terrace to the South and Broxwood Way to the West. There is 'Kingsland' residential estate to the north and 'Regent Heights' which is a seven storey residential block of flats to the East.

4.7. The proposed scheme involves the demolition of the existing 2 storey caretaker's flat in the far western corner of the site, then construction of part four, part five storey residential block which will form part of the extension to Barrie House. Both the proposed block, and the approximately half of the existing tower block will include a new basement level, with the existing plant room at basement level extended beneath the existing block.

4.8. A site specific ground investigation was conducted in September 2012, comprising three trial pits (to investigate existing foundations), three window sample boreholes and one cable percussion borehole to a depth of 7.5mbgl. Two return ground water monitoring visits were undertaken in December 2017.

4.9. The form of construction of the basement to the proposed tower block consists of underpinning three of the existing shallow pad foundations, and the construction of with an L shaped retaining wall to the perimeter of the existing structure which is not below existing load bearing structure. The pad foundations around the existing portion of basement are indicated as being at a level below the required basement formation level, and are not indicated as requiring

underpinning. A new ground bearing RC basement slab is proposed to form the extended basement slab level.

4.10. London Clay was encountered beneath the made ground (in BH1 & WS2) at 0.5-1.13mbgl and directly below the foundation concrete (in WS1 to WS3), to the full depth of the borehole (maximum 7.5mbgl in BH1). The stratum generally comprised brown weathered mottled orange clay with occasional grey gleying and scattered selenite crystals. The London Clay is generally overlaid by Made Ground which was present above all foundation pads, comprising a topsoil layer followed by brown clay with occasional to some building rubble. In the area of the existing pad foundations(WS2) a 1m thick layer of soft to firm clay with occasional flint gravel and dark brown sand and silt lenses was observed from the level of the top of the pad foundation (1.1mbgl). Borehole BH1, in the car park area, encountered 0.5m thick layer of made ground comprising asphalt surfacing and at the depth of 0.35m becoming grey/brown clay with some ash and clinker.

4.11. Groundwater was noted within the Made Ground at levels between 42.7mOD (1.9mbgl) and 44.78mOD (0.82mbgl). The groundwater levels were generally consistent at each of the window sample locations, however the groundwater level at borehole WS2 was approximately 1m lower than the groundwater level at borehole WS1. It was noted that as pipes had no cover and that some of the water could be standing water that has entered during rainfall. However, the observed groundwater levels indicate that groundwater is likely to be encountered during the excavation of the proposed basement and as such ground water control measures will be required. Additionally, sump pumping was suggested to be used while the excavation processes.

4.12. The basement structure to the new building is proposed to be formed from a 450mm diameter secant piled wall to the perimeter, with 250mm thick RC liner wall. A 600mm thick RC raft slab is to support internal load bearing walls and columns, and a RC ground slab is proposed to bear onto and provide a permanent prop to the head of the piled wall in the permanent case. The proposed superstructure is proposed as an in-situ reinforced concrete frame.

4.13. The underpinning to the three pad foundations to the existing structure is indicated as being carried out in either nine or four horizontal sections, depending on the size of the pad, and two vertical stages. It is indicated that access to carry out the underpinning will be obtained from both external with the contiguous piling to the proposed structure being installed prior to allow for local excavations to take place, and from beneath the existing building via cutting through the existing basement wall and excavating beneath the existing suspended slab. While a detailed scheme of temporary works is not provided for the basement construction to the existing building, it is noted that lateral restraint is to be provided to the underpinning at all times during construction.

4.14. Due to the sensitive nature of carrying out underpinning to an existing multi storey building, and the potential sensitivity of a 1950's framed structure to ground movements, it is required that further details of the proposed construction methodology are to be provided in the form of a Basement Construction Plan (BCP). The BCP is to contain the following;

- Detailed construction method of all underpinning works associated with the existing multi storey building.
- Sequence of underpinning construction, including how access to form each underpin is to be gained, and details of any temporary works excavations beneath the existing building.
- Details of temporary works/propping to stabilise both the underpinning in the temporary case, and any temporary excavations.
- Bearing pressure calculations in the temporary case, with justification of the acceptability of bearing pressures for the duration required for the temporary case.

4.15. Construction of the basement to the new building is proposed to take place alongside that of the basement to the existing building, with contiguous piling carried out initially, the underpinning works carried out to the existing building, and then the excavation within the secant piled wall and construction of the proposed liner wall, raft slab, and internal load bearing elements. While a detailed temporary works scheme are not provided for the construction of the basement to the proposed building, it is indicated that lateral propping is to be provided to the contiguous piled wall in the temporary case until both the basement and ground slabs have been constructed, therefore permanently propping the piled wall. It is accepted that feasibility of the safe construction of the basement to the proposed building has been demonstrated.

4.16. An interpretive geotechnical report has been produced that provides geotechnical design parameters for shallow foundations, retaining walls, and piled foundations based on the site specific investigations. The geotechnical interpretation of the soil has been presented specifying bearing pressure calculation in the permanent case.

4.17. The new structure will be set at a formation depth at approximately 4.75m below existing ground floor level, and therefore in the London Clay. The stratum has been confirmed as having good load bearing characteristics appropriate for an RC raft slab, with a safe maximum bearing pressure of 200kN/m2. The excavation of the basement will result in a maximum unloading of approximately 102 kN/m2. As there is a risk of heave in the ground and hydrostatic uplift the basement slab will be designed accordingly during the detailed stage.

4.18. Given the ground conditions, shape and form of the building it is proposed to found the building on a raft slab, which will be tied into the piled perimeter walls. At this stage it is envisaged this will be in the order of 600mm thick, including 450mm piles and a 250mm liner wall. The depth of embedment of the contiguous piles has been modelled as being equal to the excavation depth of 5.15m, therefore the pile lengths have been assumed as 10.3m.

4.19. Outline structural calculations for the basement retaining walls have not been provided. These should be submitted to demonstrate the feasibility of the proposed basement structure.

4.20. EA mappings indicates the site is within Flood Zone 1, and therefore has a 'low' risk of surface water flooding. It is noted that the site did not experience flooding in the significant flooding events in 1975 and 2002.

4.21. The Environment Agency Maps shows the site is within of the Environment Agencies Inner Source Protection Zone 1 (SPZ), relating to the Barrow Hill reservoir. The London Clay strata is described as being approximately 50m thick beneath the site, which creates an impermeable barrier between the principle aquifer that is located within the chalk beneath the London clay, and the development which is located within the top few meters of the clay. While piling is proposed, it is accepted that the London Clay is of adequate thickness to allow for typical depths of piling without causing penetration through the entire thickness of The London Clay.

4.22. It is accepted the site has a very low flooding risk from surface water and sewers, reservoirs and fluvial/tidal watercourses.

4.23. A ground movement assessment has been produced with horizontal displacements calculated following the method as described in CIRIA 760 for secant piled wall construction, and vertical displacements calculated using PDISP which takes into account heave due to unloading of the soil beneath the basement. The basement walls has been considered as being of 'high stiffness', therefore benefitting from a high level prop in both the permanent and temporary cases. The ground movement assessment also considers the flats within Barrie House itself, with a section taken through the building and a maximum differential vertical displacement and angular distortion calculated. Horizontal movements have been ignored for the damage assessment of Barrie House due to the underpinning proposed which will take the formation level to the depth to a lower level.

4.24. The damage category assessment concludes a worst-case damage category to the surrounding buildings of 1, including a damage category of 1 for the flats within Barrie House. It is accepted that reasonable assumptions have been made in the method used, and that assuming good workmanship and appropriately designed temporary works this damage assessment can be considered to be of appropriate accuracy.

4.25. A discrepancy was noted between the ParmaBrook BIA and CGL's ground movement assessment, with the BIA stating that damage to neighbouring buildings would not exceed category 2 following mitigation measures. It is assumed that this is an error given the detailed GMA discussion is carried out in CGLs report.

4.26. A construction monitoring scheme is proposed to be carried out throughout the construction stage to demonstrate that movements are within those predicted by the CGL analysis. Monitoring will be carried out by the contractors or their representatives using targets and methods agreed with party wall surveyors prior to the beginning of construction. The site is within 5m of Broxwood Way, however the basement development on site will be over 15m from Broxwood Way and therefore will not affect the property. The movement monitoring strategy should be updated following the revising of the GMA.

4.27. The maximum slope on site is marginally over 1 in 5 or 11.3^{O} to the west / south west of the existing apartment block. The slope stability was assessed in the Soil Consultants report 2 and a factor of safety of 1.45 was found for the slope stability indicating the overall stability is acceptable. Also, no signs of deep-seated failure were observed on site.

4.28. It is accepted that nearby rail assets are outside of the zone of influence of the proposed site.

4.29. An outline works programme covering key phases of work and approximate durations has been presented.

4.30. A schedule of queries for further information is summarised in Appendix 2. It cannot currently be confirmed that the proposal adheres to the requirements of CPG4.

5.0 CONCLUSIONS

5.1. The Basement Impact Assessment (BIA) has been carried out by a well-known firm of engineering consultants, and the individuals concerned in its production have suitable qualifications in geology as required by CPG4.

5.2. The BIA submissions include Land Stability, Hydrogeology and Hydrology screening and scoping, relevant site investigations and impact assessments as defined and required in the LBC Planning Guidance document 'Basement and Lightwells (CPG4)'.

5.3. The BIA Audit Instruction confirmed that the site is not situated in a conservation area and that there are no listed building neighbouring the site.

5.4. The proposed scheme involves the demolition of the existing 2 storey caretaker's building, construction of part four, part five storey residential block forming the extension to 8-storey Barrie House and basement construction to both blocks.

5.5. The basement to the existing residential block is to be formed with an L-shaped RC retaining wall to the perimeter of the building with underpinned internal shallow pad foundations and RC ground bearing slab. The basement to the proposed new building is to be formed of the perimeter secant piled wall, with RC liner wall and RC raft slab. The proposed block basement excavation is to be 4.75mbgl in depth, and the new block basement up to 2.1mbgl.

5.6. A site specific ground investigation has been carried out, which consist of three trial pits, three window sample boreholes and one cable percussion borehole. A brief period of ground water monitoring was undertaken.

5.7. The ground conditions have been identified as a shallow depth of made ground overlying London Clay. Ground water was not consistent and was observed between 1.9 and 0.82mbgl. It is likely that the ground water table will be encountered during basement foundation excavation and ground water control measures will be required.

5.8. A bottom up construction sequence is proposed with temporary propping described as being provided to the secant piled walls at all times until the permanent RC box is constructed. This is acceptable as an appropriate method of construction.

5.9. An interpretive geotechnical report has been produced that provides geotechnical design parameters for shallow foundations, retaining walls, RC raft slab and piled foundations based on the site specific site investigations. The new structure will be set in the London Clay and as there is a risk of heave in the ground and hydrostatic uplift the basement slab will be designed accordingly during the detailed stage.

5.10. Due to the sensitive nature of carrying out underpinning to an existing multi storey building, it is required that further details of the proposed construction methodology are to be provided in the form of a Basement Construction Plan (BCP).

5.11. Outline structural calculations for the basement retaining wall structure are required.

5.12. A ground movement assessment has been produced generally following the method as described in CIRIA 760. A worst-case damage category for the neighbouring buildings been concluded as Burland category 1. The damage category to the flats within Barrie house have been calculated as having a damage category of 1.

5.13. A construction monitoring scheme is proposed to be carried out throughout the construction stage to demonstrate that movements are within those predicted in the GMA.

5.14. The site is within of the Environment Agencies Inner Source Protection Zone 1 (SPZ), relating to the Barrow Hill reservoir however, it is accepted that the London Clay is of adequate thickness to allow for typical depths of piling for the development without causing penetration through the entire thickness of The London Clay.

5.15. SUDs Assessment has been provided. Permeable paving and attenuation system has been proposed as part of the rain water management. It is recommended that the proposed additional flow to the combined drainage system to be checked with Thames Water.

5.16. It is accepted that nearby rail assets are outside of the zone of influence of the proposed site.

5.17. It is accepted that the surrounding slopes to the development site are stable.

5.18. It is accepted the site has a very low flooding risk from surface water and sewers, reservoirs and fluvial/tidal watercourses.

5.19. It is accepted that the development will not impact on the wider hydrogeology of the area and is not in an area subject to flooding.

5.20. A schedule of queries for additional information are provided in appendix 2.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Liyang Li and Will Chaffin	Flat 12, Barrie House, 29 St. Edmunds	04/03/2018	Concern was raised regarding deep excavation to Barrie House	The applicant has submitted a construction methodology adequate to the proposed excavation and basement construction.
Group of residents	Flat No. 5 - Gaurav Jain Flat No. 17 - Armine Ishkanian and Vitali Flat No. 20 - Anita Robbins-Berke and David Berke Flat No. 3 - Suvarna Shirsat Flat No. 11 - Luke Sonoda Flat No. 21 - Elizabeth Elster Flat No. 12 - Liyang Li and Will Chaffin Flat No. 14 - David Atkinson and Joanna Kaliszewska Flat No. 7 - Alain Gherson Flat No. 16 - Mr. &Mrs.Gupte Flat No. 4 -Tischa Stossler	Feb/March 2018	No Basement Impact Assessment for basement directly under the block of flats. Slope stability Stability of the building during excavation and construction of the basement caused by possible mains water pipeline leak located nearby.	An appropriate ground movement assessment has now been produced that assesses the damage category to Barrie House as 1. The applicant has demonstrated adequately slope stability assessment which shows no further concerns. The applicant has demonstrated stability assessment adequate to the proposed development.

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Preliminary design calculations for the secant piled retaining wall, RC retaining walls and underpinning to demonstrate feasibility of proposal.	Open	-
2	Stability	Predicted movement values to be resubmitted based on secant piled wall construction method as proposed. Currently calculations account for contiguous piled wall installation. Or evidence of mitigation measures proposed to indicate that the values adopted are realistic	Closed	12/07/18
3	Stability	In relation to the basement formation beneath the existing multi storey block; • Detailed construction method statement • Detailed temporary works design	To be provided in a Basement Construction Plan	N/A
4	Stability	Basement Impact Assessment to be provided for the flats within Barrie House	Closed	12/07/18

Appendix 3: Supplementary Supporting Documents

None

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