Oriel

Response to Technical Queries on the Basement Impact Assessment and Desktop Ground Movement Assessment

March 2021

Oriel
Creating the centre for advancing eye health

Moorfields Eye Hospital NHS Foundation Trust

NHS

Moorfields Eye Charity

UCL INSTITUTE OF OPHTHALMOLOGY

Oriel – Response to technical queries on the Basement Impact Assessment and Desktop Ground Movement Assessment, 15th March 2021

1. Introduction

Moorfields Eye Hospital NHS Foundation Trust, on behalf of Oriel[1] (the 'Applicant'), submitted a planning application on 16th October 2020 (Application Ref. 2020/4825/P) to the London Borough of Camden (LBC) for a new facility that would allow the existing Moorfields Eye Hospital at City Road (Moorfields at City Road) and University College London (UCL) Institute of Ophthalmology (IoO) services at Bath Street to relocate into a single building at the existing St. Pancras Hospital site (hereafter referred to as the 'Proposed Development').

The Proposed Development will be located at part of the existing St. Pancras Hospital site (hereafter referred to as the 'Site'). The Proposed Development comprises a single building, between seven and ten storeys in height (including Ground Level and Lower Ground Level, together with plant at Roof Level), as well as provision of public realm at ground level, blue badge parking, and a vehicular drop off point on St Pancras Way.

A Basement Impact Assessment was prepared for the Proposed Development (Document Ref. ORL-INF-XX-XX-RP-PL-330_Basement Impact Assessment) and submitted with the planning application.

Campbell Reith, on behalf of the London Borough of Camden (LBC), reviewed the Basement Impact Assessment against the Camden Planning Guidance (CPG): Basements (Ref. 1 and Ref. 2) and raised a number of comments on the report, which were issued to the Applicant on 14 December 2020.

AECOM, as the authors of the Basement Impact Assessment, updated the Basement Impact Assessment report (Revision. 1.0) and provided responses to the comments, which were issued to LBC on 9 February 2021. Campbell Reith subsequently reviewed the responses and the updated Basement Impact Assessment, and concluded that whilst responses to some comments were acceptable not all comments had been satisfactorily addressed.

This document sets out how AECOM have sought to address the remaining comments and/or provides further justification where appropriate. This includes the completion of a Desktop Ground Movement Assessment (GMA) which was submitted to LBC on 9 March 2021.

[1] Oriel is a joint venture between Moorfields Eye Hospital NHS Foundation Trust, University College London Institute of Ophthalmology and Moorfields Eye Charity.

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All comments received from Campbell Reith on the Basement Impact Assessment are detailed in Table 1 below, including comments received on 17 February 2021 and initial comments received on the Desktop GMA on 10 March 2021.

The initial responses provided on 9 February are also included within Table 1 in black regular text, with updated responses provided in red italicised text.

This document should be read in conjunction with the Desktop GMA (issued to LBC on 9 March 2021) and the updated Basement Impact Assessment (Revision. 2.0), submitted alongside this document.

Table 1 Applicant's Responses to Campbell Reith Comments

<table>
<tr><th>Consultee</th><th>Date comment received</th><th>Comment</th><th>Response</th></tr>
<tr><td rowspan="2">Campbell Reith (on behalf of LBC)</td><td rowspan="2">14/12/2020</td><td>1. The authors and their qualifications are not stated/shown in the submitted reports (Desk Study, BIA, FRA) and are requested in accordance with Section 4.7 of Camden Planning Guidance Basements (CPG).</td><td>The Basement Impact Assessment report (Document Ref: ORL-INF-XX-XX-RP-PL-330-Basement Impact Assessment) submitted with the planning application has been updated to include the qualifications and job titles for all authors (added to page 2). In addition, the Desktop GMA report, submitted to LBC on 9/03/2021 also includes the qualifications and job titles of the authors.

These are included below for ease of reference.

<table>
<tr><td>Basement Impact Assessment
Mike Brace, MEng CEng MICE
Structural Engineer

Martin Webb, BEng CEng MIStructE
Associate Director

Michael Wright, BSc MSc CEng MIStructE
Regional Director</td><td>Geotechnical and Geoenvironmental Desk Study Report

Marla Gillow, BA MEng
Graduate Geotechnical Engineer

Giles Gordon-Saker, CGeol FGS UK Registered Ground Engineering Professional
Associate Director

Katie Bruce
BSc (Hons) DIS MIEnvSc
Principal Environmental Consultant</td></tr>
<tr><td>Flood Risk Assessment and Drainage Strategy

Roddy Prayag, MEng
Principal Engineer, Infrastructure

Rob Forsyth, CEng CEnv MICE CWEM MCIWEM
Associate Director</td><td>Desktop Ground Movement Assessment
Irina Shmeleva, BA (Cantab) MEng, GMICE
Graduate Geotechnical Engineer

Njemile Faustin, BSc MSc DIC PhD MICE CEng
Senior Geotechnical Engineer

Giles Gordon-Saker, CGeol FGS UK Registered Ground Engineering Professional
Associate Director</td></tr>
</table>
</td></tr>
<tr><td>2. Screening and scoping sections are included in the BIA, however, the answers to groundwater screening questions no 1a, 1b and 2, and land stability screening questions no 5, 8 and 10 shall be revised given; a historical BGS borehole indicated gravel to c.6m bgl may be present on-site, which may contain groundwater/be considered an aquifer; according to GSD maps the Lost River Fleet is shown in proximity to the site. The scoping sections shall be revised accordingly.</td><td>Whilst historical mapping of the route of the Lost River Fleet indicates it may have once passed through the site area (though due to the accuracy and scale of the mapping it is difficult to confirm), the river is now however deemed to be fully culverted and integrated with the sewer network. There are various trunk sewers in the general vicinity of the Site, one of which likely containing the Fleet flow, however this does not pass directly beneath the Site.

The relevant screening responses in the Basement Impact Assessment report (Document Ref: ORL-INF-XX-XX-RP-PL-330-Basement Impact Assessment) submitted with the planning application have been updated.

Note groundwater assessment question 1b has not been updated as it was not deemed to require revision following update to question 1a.</td></tr>
</table>

Consultee	Date comment received	Comment	Response
		3. Section 4.3.4 of the submitted Desk Study indicates that there is no potential for groundwater flooding. This statement shall be reviewed in the light of the historical BGS borehole data discussed above and following the site specific ground investigation findings, as discussed below.	Appendix B provides the Groundwater Flood Risk Map included within the Geotechnical and Geoenvironmental Desk Study Report (Document Ref: ORL-INF-XX-XX-RP-PL-260- Phase 1 Geotechnical and Geoenvironmental Desk Study Report) submitted with the planning application which was an update of the report appended to a request for an Environmental Impact Assessment (EIA) Screening Opinion for the Proposed Development issued to the LBC on 19th December 2019. This mapping confirms that the Site is not at risk of flooding from groundwater, or indeed at risk of flooding of properties below ground level. The AECOM review of BGS archive logs and the ground model prepared for the Site by AECOM shows the presence of a thick layer of Made Ground (which is variable but likely does contain some gravel) over London Clay, but no presence of actual secondary aquifer gravel layers overlying the London Clay. The Made Ground might be expected to contain localised perched water but would not be considered an aquifer.
		4. Site specific ground investigation (GI), ground water monitoring, reporting and interpretation have not been undertaken and are requested in accordance with Sections 4.17 to 4.21 of the CPG. The geotechnical interpretation shall include information for retaining wall design. The presence/absence of any adjacent basements shall be confirmed.	Access to the Site to undertake Site Specific Ground Investigation (Phase 2 GI) during the on-going COVID-19 pandemic has been restricted as it is a working hospital. A proposed start date for the Phase 2 GI is currently being discussed with the specialist contractor with the intention of it being undertaken as soon as possible. It is therefore recommended that completion of the Phase 2 GI is subject to a condition *Further to recent correspondence [dated 17/02/2021], the following explains the efforts which are being made by AECOM in relation to gaining access to the site in order to proceed with the ground investigation at the St Pancras Hospital site required, in connection with application reference number 2020/4825/P.* *Each NHS Trust and individual hospital facility has its own procedures in place in relation to ongoing site operations during the current pandemic. Camden and Islington NHS Foundation Trust have been working with NHS England and taking steps to manage the outbreak of Covid-19 and are maintaining services as much as possible.* *Whilst they have made changes to their services to manage the outbreak of Covid-19, such as changes to some services at the St Pancras Hospital site due to the need to maintain social distancing. In some circumstances (but not all) alternative measures such as video consultations are being used together with assessment and home treatment through telephone support. However, the delivery of high quality effective health care during this time remains of paramount importance.* *The Phase 2 GI is to be conducted within the grounds of the existing St. Pancras Hospital site. Notwithstanding the changes to some services, the site does remain operational and continues to provide treatment for vulnerable mental health patients. The site is extremely congested in terms of existing buildings and the presence of below ground services, which has made the selection of a suitable scope of ground investigation challenging. It is not possible to avoid borehole locations in close proximity to treatment facilities and active hospital areas.* *AECOM have been engaged in detailed discussions with the existing hospital facilities team to agree on the scope of works for the Phase 2 GI. This team have had to subsequently consult with clinicians in the various healthcare departments within the hospital to review the scope of works and provide advice on measures to minimise disruption to hospital activities and patients. The patients visiting or undergoing treatment on the site are sensitive to noise which is inevitably produced during ground investigation works. This has required*

Consultee	Date comment received	Comment	Response
			additional controls to be identified and put in place above and beyond what would normally be required for a ground investigation. *In addition to the above constraints to the Phase 2 GI and access issues specific to this site, the Covid-19 pandemic and associated lockdown did initially stop all ground investigation works though these are now able to proceed with social distancing measures being maintained. Ground investigation contractors still have a backlog of work which has exacerbated the situation. AECOM are continuing to work with contractors to expedite commencement of the ground investigation and are in discussion with the hospital facilities team to secure access to the site for the anticipated duration of the works whilst minimising disturbance to patients, visitors and staff. However, this is taking far longer than expected.* *Given the position outlined above and the timescales involved in developing a suitable ground investigation scope and appropriate controls to minimise impacts on the vulnerable patients on-site, and securing the access, AECOM propose that the best way forward would be to secure the Phase 2 GI through a planning obligation prior to commencement of works on site. A Desktop GMA has subsequently been prepared to support the Basement Impact Assessment and has included calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings, submitted to LBC on the 9/03/2021.* *As such, it is hoped that the above provides sufficient information on our position to enable the Phase 2 GI, and any subsequent assessment, to be conditioned or secured through the S106 agreement so not to delay determination of the application.*
		5. CPG Section 4.29 requires that where the BIA identifies a risk of damage to properties, this must be quantified. A Ground Movement Assessment (GMA), a building damage assessment, the structural impact to infrastructure in the proximity (highways, utilities, underground infrastructure, if any) and any mitigation measures to reduce the impact, have not been provided and are requested in accordance with CPG Sections 4.27 to 4.33.	A Ground Movement Assessment (GMA) requires site-specific geotechnical information obtained through the Phase 2 GI. Therefore, this assessment is subject to the same delays due to COVID-19, see response above. Furthermore, any updates made during the stage 4 design process would need to be factored into the GMA. It is therefore recommended that this assessment should be subject to a condition and would be undertaken by the Contractor's Design Team. This GMA shall also inform the impact of the basement construction on the adjacent buildings. *In response to subsequent comments raised on 17/02/2021, a Desktop GMA has been prepared to support the Basement Impact Assessment and includes calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings. This was submitted to LBC on 09/03/2021.* *The Desktop GMA is considered to represent a preliminary assessment and the results are likely to be conservative based on simplified and conservative assumptions which are drawn from a combination of published records, information held by the Applicant (where available) and other sources such as information from statutory records (such as information from the local authority and the Environment Agency) and historical mapping supplied within a Landmark Envirocheck Report (included within Appendix B of the Phase 1 Geotechnical and Geoenvironmental Desk Study Report prepared by AECOM, (submitted with the planning application in October 2020 (Document Ref. ORL-INF-XX-XX-RP-PL-260)). The GMA will be updated upon completion of the Phase 2 GI, which could be secured through an appropriately worded planning condition or through the S106 agreement.*

Consultee	Date comment received	Comment	Response
			Further details are provided below in relation to initial comments on the Desktop GMA received on 10/03/2021.
		6. The comment included in Table 6-1 of the BIA that "...the impact of the basement construction will not exceed Category 2 on the Burland Scale" is not in accordance with Section 4.33 of CPG which sets Category 1 as the maximum acceptable damage for London Borough of Camden properties. A revision is requested, together with justification for the category of damage predicted.	Table 6-1 within the Basement Impact Assessment report has been updated to state that the GMA will be carried out by the contractor and that the design must be progressed so as to limit damage to adjacent buildings to Category 1 on the Burland Scale.
		7. The proposed 45° temporary open excavation proposed in the BIA (Section 6.2.1) towards the east may potentially not be stable thus having a potential impact the surrounding structures and infrastructure. This should be reviewed following the results and assessment of the site specific ground investigation and justification be provided.	Section 6.2.1 and Table 6-1 within the Basement Impact Assessment report have been updated to state that these details will be verified following completion of the Phase 2 GI.
		8. Sketches of temporary works are presented in the BIA. Outline structural calculations have not been provided and are requested to support the structural proposals. It is noted that, according to the Terms of Reference & Audit Process of LBC [Section 6.1(d)] it should be demonstrated that the conclusions have been arrived at based on all necessary and reasonable evidence and considerations, in a reliable, transparent manner, with sufficient attention paid to risk assessment and use of cautious or moderately conservative engineering values/estimates.	A concept construction methodology of the basement has been provided within the Basement Impact Assessment report to demonstrate that consideration has been given to buildability of the design and with the aim to reduce impacts on the surrounding site. However, the final construction methodology, including the temporary works, will be undertaken by the Contractor's Design Team during the RIBA Stage 4 design with temporary works calculations completed by their temporary works sub-contractor. It is therefore recommended this is subject to a suitably worded planning condition. *As set out relation to point 5 above, in response to subsequent comments raised on 17/02/2021, a Desktop GMA has been prepared to support the Basement Impact Assessment. The Desktop GMA includes consideration of heave resulting from overburden pressure being removed during basement excavation and for lateral movements associated with temporary retaining walls. These movements have been taken into consideration when carrying out the building damage assessments included in the Desktop GMA, in addition to loading resulting from construction of the Proposed Development.*
		9. The need for monitoring of adjacent buildings during construction is mentioned in Section 7.1.5 of the BIA. However, an outline monitoring schedule with trigger levels informed by the GMA and outline contingency measures have not been included and are requested.	Inspections of the existing buildings on the Site has not been possible due to the impact of the on-going COVID-19 pandemic. The required levels of monitoring and triggers levels will be dependent on the GMA and so this will be completed by the Contractor's Design Team during the stage 4 design, however the monitoring requirements will be included within the employer's requirements to the Contractor and the Basement Impact Assessment has been updated to state that the damage must be limited to Category 1 on the Burland Scale. *As set out relation to point 5 above, in response to subsequent comments raised on 17/02/2021, a Desktop GMA has been prepared to support the Basement Impact Assessment. The Desktop GMA is considered to represent a preliminary and conservative assessment and therefore movement predictions identified are anticipated to be higher than what would realistically occur. An indicative monitoring strategy has been provided for information within the Basement Impact Assessment report (Revision 2.0) based on the results*

Consultee	Date comment received	Comment	Response
			of the Desktop GMA; however, this will require updating following the results of the Phase 2 GI, Stage 4 design and final construction methodology developed by the Contractor. AECOM consider that it would be more appropriate for a final monitoring programme to be developed, if required, on completion of a revised GMA following the Phase 2 GI. This could be secured through an appropriately worded planning condition or S106 obligation, related to the Phase 2 GI.
		10. Drawing no 20305 (rev.P3, 13/10/20), Proposed Section DD, indicates a deep B2 basement at 10.9m AoD. This B2 basement has not been included or discussed in the BIA report. A clarification is requested whether a B2 basement level is proposed too, or whether it is a typo on the drawing.	This is a typo in the drawing. The drawing will be updated and reissued as part of an update to the drawing package by Penoyre & Prasad.
		11. A Flood Risk Assessment and a Drainage Strategy (FRA) report have been presented with SuDS including permeable pavements and attenuation storage tanks proposed for the subject development. The FRA shall consider the risk of flooding from groundwater following the site specific ground investigation. Also, the FRA shall assess any potential impact from the Lost River Fleet being indicated in proximity to the site.	Whilst historical mapping of the route of the Lost River Fleet indicates it may have once passed through the site area (though due to the accuracy and scale of the mapping it is difficult to confirm), the river is now however deemed to be fully culverted and integrated with the sewer network. There are various trunk sewers in the general vicinity of the Site, one of which likely containing the Fleet flow, however this does not pass directly beneath the Site. In addition, Appendix B of the Flood Risk Assessment and Drainage Strategy report (Document Ref: ORL-INF-XX-XX-RP-PL-240- Flood Risk Assessment and Drainage Strategy) submitted with the planning application provides the Groundwater Flood Risk Map which confirms the Site is not at risk of surface flooding from groundwater, or indeed at risk of flooding of properties below ground level, as far as the published risk mapping indicates. The AECOM review of BGS archive logs and ground model prepared by AECOM for the site showed thick Made Ground (which is variable but likely does contain some gravel) over London Clay, but no presence of actual secondary aquifer gravel layers overlying the London Clay. The Made Ground might be expected to contain localised perched water but would not be considered an aquifer.
		12. Any proposals for rainwater/wastewater disposal into the main system shall be discussed with/approved by Thames Water, although this is not required for the BIA.	Acknowledged. *A pre-development capacity check with Thames Water has been undertaken and confirmation of sufficient available capacity has been received (see correspondence in Appendix A).*
		13. A tree survey and an arboricultural impact assessment has been presented. An assessment of the proposed removal/addition of trees into the scheme with regard to potential shrink/swell damage to existing foundations, surrounding buildings or infrastructure is not presented and is requested.	An additional line in Table 6-1 within the Basement Impact Assessment report has been included to cover impact of shrink/swell from trees.
		14. The potential impact of the proposed development on the existing groundwater regime remains to be assessed following the site specific GI and monitoring data as discussed above. Any mitigation measures to reduce the impact, if required, shall be included in the BIA.	~~This item is linked to undertaking Phase 2 GI and GMA, and is recommended to be included in a suitably worded condition.~~ *As set out in the Basement Impact Assessment and the Phase 1 Geotechnical and Geoenvironmental Desk Study Report, the geology beneath the Site, and within which the basement will be constructed comprises Made Ground and London Clay Formation.*

Consultee	Date comment received	Comment	Response
			Neither of these strata are recognised as primary or secondary aquifers. The London Clay is an impermeable strata with negligible groundwater flow (classified as Unproductive Strata) and the Made Ground is a highly variable material which may contain localised pockets of perched groundwater but is not a significant groundwater bearing layer. It is also noted that the Site is not considered to be at risk from groundwater flooding (see points 3 and 11 above). On this basis, it is considered that the proposed development is not expected to significantly impact the local groundwater regime and therefore no mitigation measures are required. *Upon completion of the Phase 2 GI, if the results show there is the potential to impact on the local groundwater regime, further assessment would be undertaken and, if required, mitigation measures would be developed to minimise any potential impact. This could be secured through an appropriately worded planning condition or S106 obligation, related to the Phase 2 GI.*
		15. A non-technical summary shall be provided as requested by Section 4.6 of CPG.	The Basement Impact Assessment report has been updated to include a non-technical summary at the start of the document.
		16. As the public consultation will close in advance of the formal audit, any comments relevant to the BIA shall be addressed by applicant's consultant.	Acknowledged.
	17/02/2021	**Site specific investigations** Given the various open areas of amenity planting on site, there is little evidence to justify the suggestion that it has not been possible to conduct on site investigations since this was first raised in our pre-app meeting in August 2020. They note that they have handled many BIA audits over the past year across the Borough, including on NHS sites, where this has not been raised as an issue. In fact, CR note that AECOM have confirmed that site investigations have now been instructed within their response and so this should finally provide the base data needed to make an informed assessment. This remains standard practice across the Borough, and is required for the Council to progress towards a determination, as set out in the CPG. Unless further evidence to demonstrate why this remain unfeasible, then the SI is required at this stage.	*Further to recent correspondence [dated 17/02/2021], the following explains the efforts which are being made by AECOM in relation to gaining access to the site in order to proceed with the Phase 2 GI at the St Pancras Hospital site required in connection with application reference number 2020/4825/P.* *Each NHS Trust and individual hospital facility has its own procedures in place in relation to ongoing site operations during the current pandemic. Camden and Islington NHS Foundation Trust have been working with NHS England and taking steps to manage the outbreak of Covid-19 and are maintaining services as much as possible.* *Whilst they have made changes to their services to manage the outbreak of Covid-19, such as changes to some services at the St Pancras Hospital site due to the need to maintain social distancing. In some circumstances (but not all) alternative measures such as video consultations are being used together with assessment and home treatment through telephone support. However, the delivery of high quality effective health care during this time remains of paramount importance.* *The Phase 2 GI is to be conducted within the grounds of the existing St. Pancras Hospital site. Notwithstanding the changes to some services, the site does remain operational and continues to provide treatment for vulnerable mental health patients. The site is extremely congested in terms of existing buildings and the presence of below ground services, which has made the selection of a suitable scope of ground investigation challenging. It is not possible to avoid borehole locations in close proximity to treatment facilities and active hospital areas.* *AECOM have been engaged in detailed discussions with the hospital facilities team to agree on the scope of works for the Phase 2 GI. This team have had to subsequently consult with clinicians in the various healthcare departments within the hospital to review the scope of works and provide advice on measures to minimise disruption to hospital activities and patients. The patients visiting or undergoing treatment on the site are sensitive to noise which is inevitably produced during ground investigation works. This has required*

Consultee	Date comment received	Comment	Response
			additional controls to be identified and put in place above and beyond what would normally be required for a ground investigation. *In addition to the above constraints to the Phase 2 GI and access issues specific to this site, the Covid-19 pandemic and associated lockdown did initially stop all ground investigation works though these are now able to proceed with social distancing measures being maintained. Ground investigation contractors still have a backlog of work which has exacerbated the situation. AECOM are continuing to work with contractors to expedite commencement of the Phase 2 GI and are in discussion with the hospital facilities team to secure access to the site for the anticipated duration of the works whilst minimising disturbance to patients, visitors and staff. However, this is taking far longer than expected.* *Given the position outlined above and the timescales involved in developing a suitable Phase 2 GI scope and appropriate controls to minimise impacts on the vulnerable patients on-site, and securing the access, AECOM propose that the best way forward would be to secure the Phase 2 GI through a planning obligation prior to commencement of works on site. A Desktop GMA has subsequently been prepared to support the Basement Impact Assessment and has included calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings, submitted to LBC on the 9/03/2021.* *As such, it is hoped that the above provides sufficient information on our position to enable the Phase 2 GI, and any subsequent assessment, to be conditioned or secured through the S106 agreement so not to delay determination of the application.*
		Ground movement assessment Even if further, robust evidence showing why access remains impracticable is submitted and accepted, then as a minimum we would still expect an indicative ground movement and building damage assessment (GMA & BDA, based on CIRIA C760 and Burland Scale) to be undertaken based on existing desktop study information. The preliminary ground model assumptions should be clearly presented and be subject to confirmation by site specific GI as further discussed below. Outline structural calculations and an initial assessment of the anticipated hydrogeological impact is also expected to be carried before approval of the planning application. Under such a scenario, after submission of the above additional information and assuming no further queries will be raised from the thorough audit of the same, a site specific ground investigation and assessment, and updated GMA, BDA and hydrogeological impact assessment will be undertaken during a BCP stage post-planning, to confirm preliminary assumptions. This would be dependant on the demonstration that site specific investigations are not feasible as such an approach would not comply with our adopted guidance.	*A Desktop GMA has been prepared to support the Basement Impact Assessment and includes calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings. This was submitted to LBC on 09/03/2021.* *The Desktop GMA is considered to represent a preliminary and conservative assessment based on simplified and conservative assumptions which are drawn from a combination of published records, information held by the Applicant (where available) and other sources such as information from statutory records (such as information from the local authority and the Environment Agency) and historical mapping supplied within a Landmark Envirocheck Report (included within Appendix B of the Phase 1 Geotechnical and Geoenvironmental Desk Study Report (submitted with the planning application in October 2020).* *The GMA will be updated upon completion of the Phase 2 GI, which could be secured through an appropriately worded planning condition or through the S106 agreement.* *Further details are provided below in relation to the comments received from Campbell Reith on 10/03/2021.*

Consultee	Date comment received	Comment	Response
	10/03/2021	Initial comments from Campbell Reith: *'the GMA would appear to remain contrary to the Council adopted policy requirements in that it shows likely slight to moderate damage to properties within the wider hospital site (Burland category 2-3, policy cap at category 1')*	*A detailed GMA requires site-specific geotechnical information obtained through the Phase 2 GI. Therefore, this detailed assessment is subject to the same delays due to COVID-19, see response above in relation to the comments raised in December 2021 (point 4.) Furthermore, any updates made during the Stage 4 design process would need to be factored into the GMA.* *However, in response to the comments raised on 17/02/2021, a Desktop GMA has been prepared to support the Basement Impact Assessment and includes preliminary calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings. This was submitted to LBC on 09/03/2021.* *The Desktop GMA is considered to represent a preliminary assessment and the results are likely to be conservative based on simplified and conservative assumptions which are drawn from a combination of published records, information held by the Applicant (where available) and other sources such as information from statutory records (such as information from the local authority, Environment Agency) and historical mapping supplied within a Landmark Envirocheck Report (included within Appendix B of the Phase 1 Geotechnical and Geoenvironmental Desk Study Report prepared by AECOM (submitted with the planning application in October 2020 (Document Ref. ORL-INF-XX-XX-RP-PL-260)). These include published geological and hydrogeological mapping and historical borehole records (see Appendix C of the Phase 1 Geotechnical and Geoenvironmental Desk Study Report).* *As set out in Section 4 of the Desktop GMA, the building damage assessment was undertaken based on the Burland et al. (2001) method for the exterior walls of adjacent structures accounting for the demolition of the existing building, excavation of the new basement. The majority of the walls were found to be in Damage Category 1 ("very slight" damage) or less.* *Walls associated with the building to the north of the Site (65 and 66, associated with the building known as 'The Ugly Brown Building') and those associated with the residential block to the east (61 and 62, associated with 101 Camley Street) were calculated to be in the "slight" Damage Category 2. These assessments are considered likely to be an over-estimation of the damage category due to the simplified and conservative assumptions included in the assessment at this stage. It is considered likely that damage category would be lower with a more detailed analysis following completion of the Phase 2 GI.* *The North Wing building to the immediate north east of the excavation, housing the Mary Rankin dialysis unit (walls 53 to 60) has been calculated to be in the "moderate" Damage Category 3 for the worst case. The assessment has been carried out on the basis of assumed low support stiffness temporary retaining walls. An increase to the support stiffness of the temporary retaining walls could be considered to reduce the damage impact on this building. The damage category is also considered to be conservative due to the simplified and conservative assumptions included in the assessment at this stage. It is considered likely that damage category would be lower with a more detailed analysis following completion of the Phase 2 GI.* *However, it is noted that the building to the north of the Site known as the 'Ugly Brown Building' (walls 65 and 66) is located on a site which has received planning consent for redevelopment that would require demolition of the existing building. In addition, the buildings immediately east of the Site form part of the wider St Pancras Hospital site, including The North Wing (walls 53 to 60), and are anticipated to be redeveloped in the future by KCCLP. The design is at an early stage, however it is understood that KCCLP intend to submit a planning application for the remaining part of the St Pancras Hospital site in 2021.*

Consultee	Date comment received	Comment	Response
			The assessment results presented in the Desktop GMA includes an assumption of the use of sheet pile walls for temporary support. This is considered a conservative assumption in terms of lateral movements. Actual lateral wall movements will be controlled by the introduction of performance specification limits on the design of the temporary works that would limit lateral movements to a point at which damage categories for adjacent structures would be Damage Category 1 or less on the Burland scale.
		Initial comments from Campbell Reith: GMA appears to be incomplete, as it has not included: • Impact assessment for the surrounding infrastructure (highways, utilities)	*A Desktop GMA has been prepared to support the Basement Impact Assessment and has included calculations of predicted ground movements and an assessment of the structural impact on the surrounding buildings.* *The Desktop GMA should be read in conjunction with the Basement Impact Assessment Report, which includes information that critical infrastructure is not likely to affected by the development.* *It is not clear that assessment for surrounding infrastructure (not just critical infrastructure) is a specific requirement of the Camden Planning Guidance set out in Sections 4.27 to 4.33 (as referenced in relation to point 5 above in the 14/12/2020 comment), however if required AECOM can extract ground movements for adjacent infrastructure corridors from the ground movement model and provide additional commentary on this point. Again as noted in the response above, performance specification limits will be used to minimise impacts on adjacent infrastructure would be Damage Category 1 or less on the Burland scale.*
		Initial comments from Campbell Reith: GMA appears to be incomplete, as it has not included: • Outline structural calculations	*The Desktop GMA includes consideration of heave resulting from overburden pressure being removed during basement excavation and for lateral movements associated with temporary retaining walls. These movements have been taken into consideration when carrying out the building damage assessments in addition to loading resulting from construction of the proposed development.*
		Initial comments from Campbell Reith: GMA appears to be incomplete, as it has not included: • an initial assessment of the anticipated hydrogeological impact	*The Desktop GMA should be read in conjunction with the updated Basement Impact Assessment Report.* *As set out in the updated Basement Impact Assessment and the Phase 1 Geotechnical and Geoenvironmental Desk Study Report, the geology beneath the site, and within which the basement will be constructed comprises Made Ground and London Clay Formation. Neither of these strata are recognised as primary or secondary aquifers. The London Clay is an impermeable strata with negligible groundwater flow (classified as Unproductive Strata) and the Made Ground is a highly variable material which may contain localised pockets of perched groundwater but is not a significant groundwater bearing layer. It is also noted that the Site is not considered to be at risk from groundwater flooding. On this basis, it is considered that the proposed development is not expected to significantly impact the local groundwater regime and therefore no mitigation measures are required.* *Upon completion of the Phase 2 GI, if the results show there is a potential to impact on the local groundwater regime, further assessment would be undertaken and, if required, mitigation measures would be developed to minimise any potential impact. This could be secured through an appropriately worded planning condition or S106 obligation, related to the Phase 2 GI.*

References

Ref. 1. London Borough of Camden, (2018); Camden Planning Guidance: Basements. https://www.camden.gov.uk/basement-developments

Ref. 2. London Borough of Camden; Basement Impact Assessment: Defining the scope of Engineering input. https://www.camden.gov.uk/basement-developments

Appendix A Pre-development Capacity Check - Response Received from Thames Water

[redacted]

AECOM
Midpoint
Alencon Link
Basingstoke
RG21 7PP

Wastewater pre-planning
Our ref DS6081542

26 February 2021

Pre-planning enquiry: Confirmation of sufficient capacity

Site: Oriel Building MEH, St Pancras Way, London, NW1 0PE

Dear [redacted],

Thank you for providing information on your development.

Proposed site: Education Centre (210 people), Lab (100 people), Restaurant (800 people), Office (42 people), Hospital (1200 people), Hospital therapy and recovery (50 beds), Impermeable area : 8280m2
Proposed foul water discharge by gravity into combined water sewer downstream of manhole TQ29836601 via existing connection.
Proposed surface water discharge at 20.8 l/s for all storm events up to and including 1:100yr+40%CC into combined water sewer downstream of manhole TQ29836601 via an existing connection.

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent combined water sewer network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

Surface Water

When developing a site, policy 5.13 of the London Plan and Policy 3.4 of the Supplementary Planning Guidance (Sustainable Design And Construction) states that every attempt should be made to use flow attenuation and SuDS/Storage to reduce the surface water discharge from the site as much as possible.

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. Before we can consider your surface water needs, you'll need written approval from the lead local flood authority that you have followed the sequential approach to the disposal of surface water and considered all practical means.

The disposal hierarchy being:

1. store rainwater for later use.
2. use infiltration techniques where possible.
3. attenuate rainwater in ponds or open water features for gradual release.
4. attenuate rainwater by storing in tanks or sealed water features for gradual release.
5. discharge rainwater direct to a watercourse.
6. discharge rainwater to a surface water sewer/drain.
7. discharge rainwater to the combined sewer.
8. discharge rainwater to the foul sewer

Where connection to the public sewerage network is still required to manage surface water flows, we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

If the above surface water hierarchy has been followed and if the flows are restricted to a total of 20.8 l/s, then Thames Water would not have any objections to the proposal.

Please see the attached 'Planning your wastewater' leaflet for additional information.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s.

If you have any further questions, please contact me on 0800 009 3921.

Kind Regards,

[redacted]
Developer Services – Technical Coordinator, Sewer Adoptions Team
Tel: 0800 009 3921
[redacted]
Get advice on making your sewer connection correctly at connectright.org.uk
Clearwater Court, Vastern Road, Reading, RG1 8DB
Find us online at developers.thameswater.co.uk