26th November 2014

Your ref: 2012/5825P

Our ref: E4028

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Dear Rachel

Independent assessment of justification for refusal of planning application 2012/5825P at 8 Pilgrims Lane, NW3 1SL.

I am aware of firms involved in the submissions but am not aware of any connection with any of the persons or firms or any consideration that could call into question the validity of this independent assessment.

I have studied the documents associated with this case and have considered the justification for refusal of the application as follows:

Reason for refusal No.1:

The applicant has failed to demonstrate that the proposed basement excavations would not have significant adverse impacts on the structural stability of the application site and adjacent properties.

A Basement Impact Assessment (BIA) compiled by Arup was submitted. This was subjected to independent review by Card Geotechnics Limited (CGL) as assessors appointed by the LPA. The CGL Independent Review (Ref. CG/08264 dated 4th March 2013) concluded that, with regards to the impacts on land stability:

"Information provided does not adequately address the potential risk of damage to party wall properties and additional information and analysis is required."

Despite the subsequent submission of addition information CGL are understood to have concluded in March 2014 that the following information was needed in order to provide sufficient certainty to meet the requirements of DP27:

1. *A detailed drainage design for the sub-basement drainage, including:*

    a) *Drainage location, dimensions and shape, and termination details*

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b) Details of outflow location, peak flows, and attenuation required
c) Parametric assessment to determine the effects of varying permeability, groundwater flows and stratum thicknesses on groundwater flows.
d) Design to demonstrate sufficient attenuation to restrict peak/storm flows downslope and should demonstrate that its implementation will not excessively reduce groundwater levels from its current (typical) levels.

2. A detailed design and construction methodology including:

a) Proposed construction sequence and timing of the works
b) Details of temporary propping, including levels and layout, type of props to be used.
c) Construction methodology, including excavation (access routes, plant to be used, removal of spoil etc.)
d) Proposed construction method for deep underpinning
e) Detailed methodology and design of under-drainage for basement.
f) A monitoring plan including 'trigger limits' and actions to be taken at each trigger limit, locations and type of monitoring (assume 3D position monitoring), monitoring frequency.
g) The results of an investigation into the foundations of the 2 columns beneath No. 10 and detailed proposals for their support derived on the basis of these investigations.

3. The main contractor to provide:

a) Details of procedures for auditing and controlling site works during construction
b) Details of temporary works checking regime (independent checking required?)
c) Detailed contingency plans to reinstate and control ground movements should they occur
d) Evidence of recent and successful experience in the construction of basements of this scale in London (track record)
e) Details of accreditation or membership of accredited bodies (such as ASUC).
f) Details of warranty/insurance cover
g) Details of all subcontractors involved in the basement excavation, including track records, construction method statements, insurances.

4. The structural engineer to provide:

a) Detailed structural design calculations and methodology – or acceptance (independent review and approval) of contractor proposed design and methodology.
b) Programme of site inspections to confirm that construction is being undertaken in accordance with the approved design.

I concur with these conclusions.

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Reason for refusal No. 6:

The absence of a legal agreement to secure the submission and implementation of a Construction Impact Plan, could have significant adverse impacts on the structural stability of the application site and adjacent properties.

While it may have been considered legitimate for the Officers to have made a recommendation for approval subject to submission of further information where there was not fundamental doubt concerning the buildability of the scheme, it is clear from the size of the above list alone that significant risks were considered to be associated with the scheme and it seems that councillors felt that, on balance, there was simply too much residual uncertainty for the scheme to comply with CPG4 and DP27. This same thinking applies to the Reason for Refusal No.1.

Overall comments:

I am concerned overall that, despite the various investigations and modelling that has been undertaken, there are geological and hydrogeological uncertainties that could variously require significant adjustments to scheme, additional mitigation measures or at worst render the scheme in part unbuildable.

CPG4 requires that the assessments of Land Stability must be made by a Chartered Civil Engineer with demonstrable evidence that the assessments have been made by them in conjunction with an Engineering Geologist with the “CGeol” (Chartered Geologist) qualification from the Geological Society of London.

The Arup BIA of 8th August 2012, which was prepared with input from a CGeol, specifically excluded consideration of the effect of the basement construction on the host building and adjacent properties in terms of ground movements and structural damage assessment.

This all important assessment was provided in a subsequent Ground Movement Assessment by RKD dated 1st November 2012 that was not included in the Arup BIA. While the RKD report was authored by a Chartered Civil Engineer, there is therefore no demonstrable evidence that this assessment was made in conjunction with a CGeol.

It is considered relevant that that Arup do not appear to have been required to review this assessment and to have updated their BIA accordingly.

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There appears to be uncertainty in regard to exactly how the various areas of new basement retaining walls are to be constructed. While Arup have noted the fact that the excavations will extend below the water table, there is no certainty that these excavations can be formed using traditional underpinning methods and every likelihood that, if there is significant water ingress to the excavations, unacceptable structural movements to the host building, party walls and adjacent foundations will occur.

The RKD ground movement and damage category assessment is based simply on "theoretical estimates of ground movements" derived using an idealised model. For the model to be valid certain assumptions are made, including an important assumption "that the site is dry and with controlled ground water before underpinning and excavation work is attempted".

It is not clear how any ingress is to be controlled before excavation is attempted. There seems to be a proposal to pump away water once it has entered and yet it is the process of entry itself that can be expected to lead to instability.

If groundwater ingress proves to be an issue, it is not clear what alternative mitigation could be introduced if techniques such as chemical injection or ground freezing were to prove unacceptable. There is hence a potentially fundamental buildability issue here that was not addressed in the submission and it is the degree of hydrology and geological uncertainty surrounding if and how the proposal may be safely constructed that forms sufficient ground for refusal.

Additional information submitted since refusal:

Email from David Maycox to Michael Doyle of 31st July 2014:
This confirms that excavations around the base of the columns at No.10 were undertaken to reveal the extent of the existing foundations. The latter may be regarded as somewhat inadequate, heightening their sensitivity to movement.

Construction Method Statement by City Basements dated 8th August 2014:
For a scheme of this complexity the statement must be regarded as not containing sufficient detail. The statement includes an inadequate description of the intended works and an inadequate description the intended sequence of works.

Similarly, there is insufficient detail in the statement concerning monitoring of adjacent structures and what measures would be taken should movement be detected.

Letter from Listers Geotechnical to Greig-Ling dated 6th August 2014.
These results suggest some inconsistency in the groundwater levels with some levels rising and others falling.

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Appeal Statement by Doyle dated 10th August 2014

I have the following comments on the Appeal Statement in relation to the reason for Refusal No.1 , referenced by paragraph.

1.8 The potential effects cannot be fully assessed and appropriate mitigation cannot be identified with sufficient certainty on the basis of the present information.

1.16 Given the present uncertainties about the geology and groundwater conditions there is considered to be fundamental doubt about the design of the scheme and its impact.

1.28 The BIA specifically excluded consideration of damage to adjacent properties. The subsequent GMA has not involved assessment with demonstrable input from a CGeol as set out in policy. The independent assessor has considered that the submission does not meet the requirements of DP27 and has listed 20 issues requiring further information. The flying freehold is an unusual and exceptional feature of this property.

2.2 The potential effects cannot be fully assessed and appropriate mitigation cannot be identified with sufficient certainty on the basis of the present information.

2.9 The basement will extend beyond the footprint of the original building. The basement will extend a maximum of 5.6m (see para 2.64 of the appeal statement) below adjacent ground level.

2.18 The BIA did not determine the impact of the proposals upon adjacent properties.

2.19 Appendix B of the Camden Geological, Hydrogeological and Hydrological Study does not provide detail of the specific process for the preparation and submission of the BIA.

2.20 The BIA is incomplete in that it specifically excludes consideration of damage to adjacent properties. The BIA is not founded upon the work supported by the structural engineer's advisors on ground movement RKD as this was provided three months later.

2.21 The BIA did not assess the impacts upon adjacent properties.

2.22 The potential effects have not been fully assessed and appropriate mitigation identified. There is not sufficient evidence to support the conclusions that satisfactory mitigation has been offered.

2.27 The complexity of this proposal, both in terms of the construction and the ground conditions, requires far greater detail than would normally be required. Insufficient detail has been provided to provide reasonable certainty that the proposals will not cause harm. The council require sufficient analysis to be carried out to demonstrate a reasonable degree of certainty that the proposals will not cause harm.

2.28 The residual uncertainties can only be left to the detailed design stage where the council are provided with sufficient confidence that the proposal will not cause harm.

2.29 The LPA members determined that insufficient information was submitted because they did not obtain sufficient confidence from the information provided.

2.30 The independent assessor did not conclude that no further information was required. The independent assessor concluded that there were twenty addition items required.

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2.34 This presumption is incorrect.

2.36 The findings of the independent assessor have not been over-ruled.

2.43 The conclusion of the committee was reached followed a balanced consideration of the risks and their opinion that the residual uncertainties amounted to fundamental doubt.

2.50 Given the assertion that the excavation may extend below the water table appropriate mitigation is needed to prevent water from entering the excavations rather than to pump it out once it has entered. Given the inherent variability of the Claygate beds, greater confidence is needed that water-bearing soils will not be encountered in the underpinning positions if conventional underpinning is to be safely adopted.

2.56 There is no diagrammatic geological cross section provided.

2.57 The geological model is not clear. The BIA (section 6.3) incorrectly places the site “near the junction between the Bagshot Formation and the top of the Claygate Member”, while acknowledging that the investigations indicate the site to be some 5m from the base of the member. The borehole records suggest that the boundary between Claygate Members and London Clay appears to be located to the east of the site not to the west of the site as stated. Conversely, if the boundary is in fact to the west of the site, then the soils that have been described as Claygate beds may in fact represent some 5m of transported downwash rather than Claygate.

2.72 The independent assessor has considered that the submission does not meet the requirements of DP27 and has listed 20 issues requiring further information.

2.73 I cannot find any such statement by the independent assessment.

2.76 The LPA members are responsible for making a balanced judgement of the risks, taking account of the Assessor and Officer. It seems that in the face of a list of 20 issues to be resolved, there was considered to be too much uncertainty about the safety of the proposal.

2.87 The modelling is purely theoretical and cannot resolve the risks associated with groundwater ingress.

2.90 The predictions do not account for groundwater ingress.

2.93 The amount of and rate of water expected from the Claygate Member and the Made Ground during excavation is uncertain. It is not clear how any ingress is to be controlled. There seems to be a proposal to pump away water once it has entered and yet it is the process of entry itself that can be expected to lead to instability.

2.94 These are comments about the permanent situation, whereas it is the risks associated with the temporary situation that are of paramount importance.

2.109 The Arup BIA specifically excludes the assessment of structural risks.

2.111 I believe that both applications are located on the Claygate Member and that the 26 Wedderburn proposal included chemical injections to stabilise the potential water-bearing strata in order to prevent water ingress prior to excavation.

2.125 This is very valid concern

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2.126 The Construction Method Statement was produced after the determination. Moreover it refers only to grout injections associated with a breach of the piled cofferdam and does not refer to any injections in advance of the underpinning works.

2.128 If chemical injection is to be adopted as mitigation at this site, the proposal must be investigated further. For example there may be issues if the injections are to be undertaken beneath a neighbour's property.

2.129 The proposals extend beyond the profile of the original building.

2.151 If ground water ingress proves to be a issue, it is not clear what alternative mitigation could be introduced if chemical injection were to prove unacceptable. There is hence a potentially fundamental buildability issue.

2.152 The Assessors appear to have confirmed that the issues could, not should, be addressed by way of conditions and a legal agreement. The worst scenario in that case could be that proposal was found to be subsequently in part unbuildable.

Conclusions:

The submission failed to demonstrate that the proposed basement excavations would not have significant adverse impacts on the structural stability of the application site and adjacent properties.

The twenty issues identified on pages 1 and 2 of this letter need to be addressed in order to satisfy policy DP27 and CPG4.

Yours sincerely

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