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8 LINDFIELD GARDENS LONDON NW3 6PU

NEW PLANNING APPLICATION REFERENCE: 2014/3625/P

(PREVIOUS PLANNING APPLICATION REFERENCE: 2013/4006/P)

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1.0 INTRODUCTION

This report was prepared on the instructions of the freehold owner of 8 Lindfield Gardens NW3 6PU where a planning application (reference 2013/4006/P) has been made in relation to the raised ground floor flat 1.

As instructed, at this time this report is limited to a review only of the basement part of this application and information issued to LB of Camden in July 2013 for the proposed works.

This report has been prepared by Mr. Stephen Stark, a chartered civil/structural engineer of Stark & Associates.

2.0 THE PROPERTY

8 Lindfield Road is a large detached late Victorian house of 3 storeys which has been divided into 6 flats. The entrance to flats 1-5 is via the main front door whilst access to flat A is via its own entrance to the side of the property adjacent to the garage. Flat A is immediately in front of the applicant's proposed works. The building itself is in a raised position above the public footpath. Access to the property is via steep stairs. The site itself is sloping. To the rear of the house is a very large garden with many significant trees and vegetation. The garage and large rear garden are owned by the lessee of flat 1 (i.e. the applicant).

3.0 PROPOSED WORKS AND PLANNING APPLICATION

The proposed works for which the planning application has been submitted are for the excavation of a new basement and ground floor extension living space. The proposed new and revised planning application will include for a basement that will extend across the full width of the detached building and down one side of the property linking up with the existing garage at the front of the property. The ground floor extension will be limited to the rear elevation of the property.

Other works include alterations to the internal arrangement of the flat. At this time no structural calculations, details nor investigations in connection with this work have been carried out nor submitted. Such detail once available may affect the design of the basement and foundations and could also have a bearing on the structural stability of the building. Planning permission should therefore not be considered until everything including the internal structural alterations have been addressed.

Lindfield Gardens is a quiet residential road just east of Finchley Road, London NW3. Lindfield Gardens is a mix of single dwelling houses, converted flats and purpose built flats. This is a residential street with parking on both sides of the road.

4.0 INFORMATION SUBMITTED WITH PLANNING APPLICATION

The following documents were taken off London Borough of Camden's planning web site (17/7/13) and form the basis of the planning application:-

4.1 Set of Canaway Fleming Architects' existing drawings Nos. D001 - (R1, SE, NE, 00, B1, NW and SW), DOO2/S1. Proposed drawings and D002 –SE, NE, NW, SW, B1, 00, R1, AA and D003 - S1. These drawings are all revision 00.
4.2 Elliott Wood Engineers' Basement Impact Assessment (BIA) report.
4.3 SAS Ltd – site investigation and basement impact assessment (dated April 2014).
4.2 Wassells Arboricultural report.

5.0 TERMS OF REFERENCE

The key information requirements pertaining to this development are:

5.1 Arup report for Camden Council dated November 2010
5.2 Camden Planning Guidance – Basements and Lightwells (CPG 4)
5.3 Camden Planning Guidance – Amenity (CPG 6)
5.4 Camden Development Policy DP27

6.0 COMMENTS

I have the following preliminary comments on the applicant's planning submission and response to our previous comments in relation to the applicant's previous submission. In particular I comment on the basement impact assessment (BIA) and design proposals:-

6.1 From the property grid reference and geological maps, the soil appears to be London Clay. However mapping is not accurate and variations in the actual soil conditions can exist. It is also worth noting that geological maps can only give an indication of the soil in an area – there is a margin of error that should be allowed for of approximately 2m. This is particularly relevant since the site geology borders the Claygate beds. At this time a limited site investigation has been carried out and it is possible that Claygate beds may be found on the site. This would affect the design and construction proposal. A worst case condition should always be taken and the design proposal should take this into account. This scenario should include for such issues as water flows, loss of fines and slope stability issues. At this time this has not been done.

In the applicant's engineer's response in the latest submission, the applicant's soil specialist acknowledges that Claygate member is present in the northernmost area of the site. It may not have been encountered with three very small diameter boreholes but because it is acknowledged that it may exist on the site and so it should be taken into account as the worst case condition.

6.2 A trial hole has been dug for the existing foundations to the existing garden wall with No 10 Lindfield Gardens. Sketch details of the trial holes would assist. No investigations nor assessment nor levels of the neighbouring properties have been conducted in particular to the other flats

within the building and the neighbouring property at No 10 Lindfield Gardens. This is important in order to assess what the damage is likely to be to the neighbouring properties.

In the applicant's engineer's response in the latest submission, the applicant places the blame on having no access. It is unclear what attempts for access was made. An investigation into the ground condition to the area behind flat A could be carried out from the applicant's own flat with the permission of the freeholder and subject to a method statement being agreed. Such investigation is very important so that an accurate assessment on the likely damage to the building and Flat A can be made. This is a key requirement of London Borough of Camden's Development Policy DP27 before planning permission is considered for grant.

As regards the foundations to the garden wall garage, these can and should be investigated.

Clear trial pit sketches should be provided.

6.3 No investigations have been carried out to determine the construction/layout/extent of the rear wall and foundations to the existing lower ground floor flat (flat A) at the front of the property. By virtue of the existing ground levels, this flat cuts into the ground and the rear wall of the flat will be very close to the proposed basement. As such this flat and in particular its rear wall might be significantly affected by the proposed works. This could affect the structural stability of this flat and the building as a whole. The applicant has not dealt with this.

Please see comments above which have been given by way of our reply to the applicant's engineer's response in the latest submission.

6.4 Architect's drawings D001/B1 and D002/B1 shows a space where there is currently another flat (flat A) below the applicant's flat but fail to give any details about this area. No investigations testing nor details of the area below has been provided. This lack of information could increase the risk of damage to this flat and also neighbouring properties above the applicant's development which have also not been investigated.

Architect's drawings D001/B1 and D002/B1 also indicate an area of soil/made ground in between the existing lower ground floor flat (Flat A) and the proposed new rear basement extension. The soil in this area is likely to be fill and loose. It will be highly susceptible to movement/collapse. This is likely to put at risk the structural stability to not only of flat A but also the flats above. Coupled with this potential soil movement there will be potential for changes in ground water flow (not presently known). This could cause damp to the existing flat A and in a worst case flooding into flat A. Additional ground stresses could also be placed on this flat which could lead to damage. The developer's engineer has failed to deal with these very important issues putting at greater risk these neighbouring properties.

We disagree with applicant's engineers response in the latest submission. Any disturbance/excavation works to the ground could result in movement of the soil and/or made ground behind which the applicant has not investigated. This in turn could cause settlement of the ground which will change water flow and stresses on the wall forming Flat A behind. There could also be disturbance to the waterproofing and alteration to the ground water flow as well as settlement of the soil/made ground below the ground floor slab which in turn could cause damage. There are no details of this because the applicant has not investigated. We also do not know what load is applied to the ground floor slab above and what transmission of load there is onto the slab and ground below. This puts the building and neighbours at increased risk.

The applicant's engineers refer to a water level at 7.2m but in their specialist soil consultants' (SAS Ltd) latest report dated April 2014 the water level has been recorded at 3.88m. However their monitoring has not been continuous and took place only once in March 2013 and then in April 2014. 3.88m is just below the proposed works. The condition of the bore hole has not been verified and also its datum has not been established. Monitoring should be at say 2 monthly intervals and particularly at times of high rain to get a better picture of the situation. This has not been done.

The applicant also ignores water flow at the top of the clay, through the fissures and the effects should Bagshot medium be discovered on the site as the applicant's specialist admits may be present. An assessment of possible water flow across the site is also important.

Investigations are required to establish the soil conditions in this area along with details of the existing internal foundations and ground slab. These factors will affect the structural stability of the building and the existing tenants of the building above this flat. The applicant has also failed to consider the internal structural alterations that are being proposed. This is essential in order to determine whether the scheme is viable.

With respect* to the a*pplicant's engineer's response in the latest submission, it should be recognised that the investigations are accepted as being limited proportional to the scheme. However, where desktop studies reveal different possible soil conditions being on site these should not be simply overlooked as has been done here. A worst case condition should be taken and a design carried out. At this time this has not been done.

The applicant does not consider that the internal structural alterations are relevant. We disagree. Where load path is altered this must be taken into account at the design stage as this may affect ground movement and the potential for damage to the neighbouring properties and the building as a whole. The application design has not taken this into account. It is clearly not acceptable in the least to leave this to be dealt with under the party wall process.

In order to minimise the risk of structural damage, damp and flooding, the issues we have highlighted must be dealt with and included in the construction method statement. The applicant has still not done this yet.

This information is an essential part of the planning process and Basement Impact Assessment (BIA) in order for the planning authority to assess the acceptability of the scheme (DP 27.5). It is also essential in order for the method of construction of the scheme to be determined and importantly to assess any likely damage to neighbouring properties. Without this assessment being carried out, no meaningful reporting or analysis can be done. The applicant has still failed to deal with this adequately.

Turning to the applicant's engineer's response in the latest submission, a worst case condition should be taken and design carried out. At this time this has not been done. Full details of how this will affect the neighbouring properties and the building itself must be taken into account for both a temporary and permanent basis. This must be done prior to planning consent is been considered for grant. This is a key requirement of DP27 to avoid damage to neighbouring properties including in this case the building itself.

6.5 Only a limited analysis of the actual soil conditions has been carried out. The applicant has assumed London Clay but this is a generic term. The soil conditions in Hampstead/Belsize Park and the surrounding areas are highly variable. Indeed the clay itself varies in consistency significantly depending on the level of silt and sand present. The soil condition will affect the design characteristics of the material and increase the risk of ground movement and/or ground water movement and flooding, movement and subsequent damage to neighbouring properties. Any basement development in particular a large one such as this can be detrimental to the environment and the adjacent buildings. The applicant has ignored the uniqueness of the soil conditions in Hampstead.

With regard to the applicant's engineers' response in the latest submission, we note that additional information has been provided but remain concerned that the worst case condition has not been taken into account. In addition contouring of ground movement and possible cracking/damage has not been shown.

6.6 No contamination testing of the soil, hardcore or ground water has been carried out as required by DP 27.4. This is important as one of the results of the construction of a basement is an increased risk of ground water movement and flooding. In addition, assessment must be made not only of the construction but also of the method of disposal of the soil and possible harm to the environment. The applicant's report recommends that this is carried out but the applicant has not done this.

Turning to the a*pplicant's engineer's response in the latest submission, we acknowledge the desk top study presented. However, within the applicant's latest submission the ground level was recorded at only 3.88m just below the proposed construction works. We have already*

highlighted deficiencies and a lack of ground water monitoring which if properly carried out may show the water levels to be higher and thus having a bearing on the works. The applicant has also failed to recognise the effect of water flow at the top of the clay, the effects of water flow through fissures and the Claygate beds. This is an important aspect for not only the design and construction but also health and safety and should not be overlooked.

6.7 A bore hole was drilled in March 2013 and a ground water level was recorded. The report recommends that "due to possible unforeseen ground conditions" monitoring of water levels up to at least the start of the development is undertaken. The applicant has now issued 3 ground monitoring results. This is not adequate and monitoring at 2 monthly intervals should be carried out. Ground water flow has also not been assessed.

Turning to the applicant's engineers response in the latest submission, it is also recommended that the ground water is tested. This should be a very minimal cost and provide some reassurance of the water encountered and thereby address any health and safety concerns.

Due to the presence of below ground water courses in Hampstead and the very leafy green environment we would expect water to be in evidence. It is a requirement of DP 27 to establish changes during the seasons and also the likely effect of the construction in terms of risk of damage and movement of neighbouring properties. This assessment should be carried out in the short term and in the long term. The applicant has not done this.

Please see my previous comments on the lack of ground water monitoring and also the applicant's recording of the water level at 3.88m not 7m as stated by the applicant's engineer in his latest report.

6.8 The applicant's engineer advises that the soil is London Clay and as such they state that it will be impermeable. This is subject to the characteristics of the soil/clay on the site (see item 5.1 and 5.4 above) which as yet has not been assessed. Notwithstanding this, hydrologic movement of water can occur at the top of the clay surface which will act as a drainage path for the water. It is also common in the area for water to pass through fissures within the clay soil. At this time this has been ignored.

The applicant' soil specialist also states that part of the site may be within the Bagshot formation but the applicant has ignored this. Furthermore he accepts that the site is on the edge of a minor aquifer but again this has been ignored. This will affect the applicant's design, the risk and degree of damage and the method and type of construction. It is important that this is not ignored.

Furthermore the construction of a basement will alter the ground water flow which may increase the risk of flooding to the existing lower ground floor flat (flat A) (see item 6.4 above) and also the adjacent properties and their existing basements/coal cellars.

In the applicant's engineer's response in the latest submission, the applicant's engineer fails to take into account his own findings in relations to basement developments already carried out at No. 10 Lindfield Gardens which itself will limits the route of ground water and heightens the risk of flooding. The applicant has ignored this. Again this is a key requirement of DP27 not to cause damage to neighbouring properties even where an adjoining owner has carried out similar works. This in itself may preclude a neighbour carrying out similar works at a future time and is an obstacle for a planning authority to give approval.

The proposed basement runs down the side of the property with No 10 Lindfield Gardens. This will restrict the flow of ground water here. This problem is exacerbated still further as a result of a basement construction that the applicant acknowledges has already been carried out at No 10 Lindfield Gardens but fails to take into account. If this basement application is allowed what will the effect of water flow be? The risk of flooding of this property and the neighbouring property will in principle be increased. Please refer to the Arup report dated November 2010, figure 23. Furthermore by reducing the vegetation in the garden, the ground water level will increase. The effects of possible heave has not been considered adequately. A full assessment of this (both for this property and the neighbouring property) is required to be made and presented but to date this has not been submitted by the applicant.

No modelling of the effects that a basement development will have on water flow adjacent to the works has been carried out. This problem is made worse because of the basement carried out at No 10 Lindfield Gardens. Site ground water monitoring and flow measurements over a realistic timescale must be carried out. The applicant has ignored this.

Please see my comments on ground water monitoring and levels and the effects of works to neighbouring properties above.

6.9 Hampstead and the surrounding areas are subject to underground streams, watercourses and tributaries. This can make the ground very unstable and change the characteristics of the soil thereby greatly reducing its load carrying capacity and its resistance to lateral movement and also augmenting the damage to adjacent ground and buildings.

In the a*pplicant's engineer's response in the latest submission, the applicant has ignored this.*

Figure 11 of BIA an extract of Barton - Lost Rivers of London indicates a watercourse very close to the applicant's property. I appreciate that the water course is shown just to the North of the site but this is diagrammatic and spring lines could very possibly be on or very close to the applicant's property. At this time the applicant's engineer has not taken this into account but it could have a significant effect on the works. No specific investigation nor assessment nor allowance for this has been made and DP 27.3, DP 27.7 requires it.

6.10 The applicant's acknowledges that the site is on a significant slope. It is unclear whether this is due to natural terracing or backfill. This could alter not only the design and construction but also increase the risk of both the long

and short term damage to the neighbouring properties. This requires further investigation prior to planning permission being sought.

The applicant's engineer has not dealt with this issue.

6.11 The applicant's drawings do not show the neighbouring properties both within the building and adjacent to the building) adequately. This is especially important given the significant structural alterations and basement works being proposed. Without this information the applicant cannot make any assessment of the likely damage to the neighbouring properties. This may be one of the reasons that the applicant has failed to carry out an assessment of the likely damage to neighbouring properties. Given the nature and extent of the works this is essential.

We note the applicant's engineer's response in the latest submission but this needs to be developed to ensure that no damage occurs to the neighbouring properties as a result of the applicant' proposed work. This is a key requirement of DP27

6.12 The applicant's drawings show that the new basement will be for bedrooms without any natural light. It is questionable whether this is acceptable to planners. There is also the risk of flooding and the issue of inadequate means of escape.

Should roof lights/light wells be installed there is also the issue of light pollution on the existing upper flats which would also need to be considered.

With regard to the applicant's engineer's response in the latest submission, we agree that this is a matter for London Borough of Camden's planning department. We have simply highlighted the issue.

6.13 The proposed extension will mean a loss of garden and create an additional 88m2 of roof. It is still unclear how the increased rainwater runoff will be dealt with and whether this is acceptable to the Camden Council. I note that the Camden Council planning officer has suggested a green roof which the applicant has rejected.

We leave this matter for Camden Council Planning to deal with.

6.14 The applicant has not submitted a Construction Management Plan (CMP) – CPG 6. DP 27.4 may require one to be carried out. The CMP should include clear details as to how the works are to be carried out, timescale, details of deliveries/lorries to be used/skips etc., any proposed parking restrictions, working times, noise levels (which will be significant) etc.

We note the applicant's engineer's response in the latest submission, but we consider that this should be provided at planning stage as this affects the amenity of the neighbouring properties including those within the building. We would also consider that a strict timescale on the works should be set out in any S106 agreement again to minimise the risk of damage as the longer excavations are left open the greater the risk of damage and also to limit any disruption on the neighbours as a result of the works. Penalties may need to be agreed and imposed to

ensure compliance.

We would point out that if the owners of the neighbouring properties are at home during the day, then they will be greatly affected by the works if planning consent is given. The time scale and programming of any work may therefore of even greater importance. Camden Council is duty bound to consider not only the rights of a homeowner to carry out works to their property but the loss of amenity and disruption to the owners of the neighbouring properties.

6.15 The applicant has only submitted limited details of the construction. The construction sequence and timescale have not been provided. Timescale is particularly important in terms of the development of basements for establishing the short term and long term movement and risks involved. Presently the ground is stable and at rest. The proposed work will alter that.

Please see above with regard to the applicant's engineers response in the latest submission.

As any basement is excavated the surrounding ground will start to move and settle. This could involve movement of soil from below and adjacent to the neighbouring properties in particular the existing lower ground floor flat, flat A and below the existing party wall garden walls. This could cause damage. An accurate assessment of the proposed method of work, timescale and the potential damage has not been carried out.

Please see my comments above in regard to the applicant's engineer's response in the latest submission. We remain concerned that additional site investigations are required. We also consider that a worst case condition should be used and movement/damage contouring maps should be drawn to indicate the level of damage that can be expected. The applicant should use an adequate factor of safety and adopt worst case conditions.

6.16 The applicant has not indicated the volume of soil which needs to be removed from site. This will need to be transported away by road. Even on its own this is very significant. However, the applicant needs also to fully take into account the quantity of concrete and other material deliveries which will be required and also the considerable quantity of other waste requiring transportation to and from the site by road. The applicant's proposal will have an impact on the amenity of others and cause major disruption during the construction phase in the neighbouring area which is largely residential. This needs to be considered within the applicant's construction management plan.

Please see my comments above in regard to the applicant's engineer's response in the latest submission. The CMP should be an integral part of any basement planning application and not left as a planning condition. The effect of the works will relate not only to the immediate neighbours but also to the community as a whole. This should be taken into account.

6.17 As part of the works, existing concrete and also other materials will need to be broken out. This will be very disruptive and noisy and could increase the damage to the neighbouring properties. Less destructive methods should be considered including the use of diamond saw cutting to disconnect the slabs. This should be dealt with within the CMP.

Please see my comments above in regard to the applicant's engineer's response in the latest submission.

6.18 The applicant alludes to the need for temporary propping and supports but the applicant has not shown any details at all nor calculations or details. This is intrinsic to any method statement for the works. No details of how the propping will be monitored and adjusted to suit site conditions are provided. This is essential to ensure the stability of the neighbouring properties and to determine the degree of damage to neighbouring properties (in particular the lower ground floor flat (Flat A) and others within the building). Without this information being provided as well as calculations, no meaningful assessment can be made as to whether the scheme is viable and the level of risk and damage to the neighbouring properties.

We disagree with the applicant's engineer's response in the latest submission as temporary works, monitoring, trigger levels and how adjustment will be made all affect movement potential and the risk of damage to neighbouring properties and in this case the building as a whole. This is a fundamental requirement of DP27. Where this cannot be achieved planning consent should be refused.

6.19 The applicant advises that Lindfield Gardens was not affected by the flooding events in Camden in 1975 and 2002. However that does not mean that there will not be a problem in the future. The applicant needs to take into consideration the increased risk of flooding as a result of rerouting of groundwater. Site water monitoring and ground water flow monitoring is required.

The applicants engineer states that he cannot comment on ground water movement. This is because it has not been investigated. This is an important issue that applicant has chosen to ignore.

Note should also be taken of the natural slope in the ground. Water reportedly already flows from the rear gardens down onto Lindfield Gardens and then along Lindfield Gardens onto Arkwright Road. The applicant needs to take this into account as well as factoring in changes in the ground water flow which the basement development will create. At this time this has not been done.

As discussed above the applicant's drawings shows the new basement will be for bedrooms the risk of flooding and escape should be considered.

6.20 The applicant has not taken account of trees and vegetation on the neighbouring properties. These must be carefully shown and taken into account. DP 27.10 clearly upholds the importance of trees/vegetation not only on the site itself but on adjacent properties. Camden Council requirements (DP 27) are quite clear that where there are trees on or adjacent

to the site an arbourist's report is required. Protection of the vegetation during the works should be ensured to assure their long term protection. Details must be submitted.

The applicant's engineer has referred this matter to the applicant's architect/arboriculturalist. We await the applicant's advice on this. The protection of trees/vegetation whether on the applicant's land or neighbouring land is important and should not be ignored.

6.21 There is concern with the logging of the vegetation on the site. The architect's drawings do not appear to agree with the arbourist's details which are not to scale. This being the case damage to the trees may occur and this needs to be re-addressed. It is unclear what replanting to replace lost trees and vegetation will be done.

The applicant's engineer has referred this matter to the applicant's architect/arboriculturalist. We await the applicant's advice on this.

6.22 Furthermore the arbourist's reports states that "the re-construction of the first level retaining wall shall be constructed at no less than 9.5m from the centre of the stem of T1" but from the architect's drawing D 002 the retaining wall and steps will be within this area and also tree T4.

The applicant's engineer has referred this matter to the applicant's architect/arbouriculturalist. We await the applicant's advice on this.

6.23 As a result of the basement construction, root growth from trees/vegetation close by will be restricted and/or the roots redirected. Account should be taken of this with the increased risk of damage to neighbouring properties with shallower foundations.

The applicant's engineer has referred this matter to the applicant's architect/arbouriculturalist. We await the applicant's advice on this. However this could be a structural issue which could affect the structural stability and risk of damage to the building itself and also the neighbouring properties and garden walls. Planning consent should not be considered for grant until this has been dealt with.

6.24 There is a substantial number of trees and vegetation close to the proposed works and these may affect the applicant's proposed new foundations. The applicant talks about large roots being found but it is the fine roots which are the feeder roots which extract significant water from the ground and which have the potential to cause significant damage. A building inspector will ask for the bottom of foundations to be at least 600mm below the lowest roots. For this reason we consider that the proposed foundation may be within the zone of influence and therefore the foundation may not be realistic and a piled foundation may be required. Should this be the case the design proposals will fundamentally change.

We note the applicant's engineers comments but we are concerned that the scheme proposed using underpinning as a retaining wall may not be the most suitable form of construction.

6.25 I understand that in 1997 the building suffered subsidence and as a result of this remedial works were carried out in 2011/2012. The applicant should make reference to this and take this into account. At this time it appears that this has not been done.

The applicant's engineer ignores the effects on the proposed works on the neighbouring properties and also gardens walls.

6.26 The applicant's proposal is very close to the brick/render party fence walls and in particular the one with 10 Lindfield Gardens which is high. At present it is covered with vegetation and so a full examination could not be carried out. An inspection from both sides of the wall is essential. It is likely that the wall may not be in the best condition and as an absolute minimum safety measures/propping may be required. I am also concerned that buttressing to the wall and soil will be moved thereby putting at risk the structural stability of the wall. The existing foundations are minimal and as such this wall in particular may need to be underpinned. The applicant has not dealt with this at all and thus the risk due to the works has not been factored in. It is important that this is included as part of the applicant's BIA.

The applicant's comments in the applicant's engineers response in the latest submission are noted. However we remain concerned that this may not be the worst case condition and that contouring of movement and damage has not been provided.

Furthermore proposals are to remove soil from behind the party wall/remove buttressing but no inspection of the level of ground levels on the neighbouring properties has been carried out and no design checks carried out. No details of temporary works have been included. This could affect the structural stability of the wall and neighbouring property. This is an essential part of the BIA which the applicant has ignored.

The proposed underpinning will be to a significant depth of over 3.5m. The engineer has not provided a design .Where underpinning is proposed it will need to be designed as a retained structure and special attention must be given to lateral movement, surcharge loading and uplift (short term and long term). The engineer also fails to consider differential settlement. All of this may have serious implications for the neighbouring properties. This should be dealt with as part of the BIA. Underpinning used as a retaining wall is not an ideal method of support and we would not recommend its use.

The applicant's comments are noted in the applicant's engineer's response in the latest submission.. We will review this once all other matters have been dealt with.

6.27 An underpinning scheme has not been produced. A detailed study needs to be carried out in relation to excavation of the soil/removal from site etc.

No levels nor dimensions are shown on the architect's drawings for this property or the neighbouring properties. It is clear that the underpinning will be very deep at about 3.5m. We express our concern that this has not been considered adequately. We are concerned that no design has been carried

out and ground movement, lateral movement and uplift have not been considered adequately. The risks of differential movement will be significantly increased. We also express concern with tree and vegetation roots and the loss of trees/vegetation in the area which will increase the ground water levels.

6.28 In addition to the basement works the applicant proposes to carry out extensive alterations and other works throughout the property which may reconfigure and/or concentrate loading. At this time it is unclear how these will affect the structural stability of the building and/or the adjacent buildings. This should be carefully calculated and an assessment made. A holistic design is an essential part of the BIA. The applicant has not done this.

Please see my comments above in response to the applicant's engineer's response in the latest submission. This is required prior to planning consent being considered for grant.

6.29 No study of the proposed construction has been undertaken. Such a study must take into account the results of a full soil investigation, ground water assessment, modelling etc. This is required for Camden Building Control to evaluate damage to neighbouring properties (DP 27.5). This is particularly important in the context of these properties which form an intrinsic element of the conservation area.

Regarding the applicant's engineer's response in the latest submission, I remain concerned that this does not take into account the worst case condition.

6.30 The applicant's engineer has carried out preliminary calculations on what the damage to the neighbouring properties will be. We have already highlighted a number of deficiencies with the applicant's submission which mean that he cannot assess the likely damage accurately. Only when the applicant has considered all the issues, carried out the further investigations and testing and carried out a full design taking worst case conditions can an assessment of likely damage be made. We are not convinced by his assessment of cracking damage in accordance with the Burford scale. A full investigation and worst case condition should be used. The results should be presented as contouring.

Turning to the applicant's engineer's response in the latest submission, I remain concerned that this does not take into account the worst condition.

7.0 Conclusion

From the above re-application it is clear that applicant's design team have still underestimated the possible problems and that further works are required which should include the following:-

7.1 Site investigations and analysis to include for the effects of the development on the existing building in particular the ground floor flat

(Flat A), the party garden walls and the retained ground . Additional site investigations, testing, analysis, reporting and a full design are required.

We acknowledge that further work has been done in the applicant's engineer's response in the latest submission, but remain concerned that the worst case condition has not been taken into account which if it were would increase the risk of damage to the property and the adjoining flat.

7.2 Show in more detail the construction and layout the properties behind and above the proposed development (flat A and flats 2-5). Also investigate the soil between Flat A behind and the proposed development and full implication of the works.

We remain concerned that the applicant's engineer's response in the latest submission does not been dealt with this which increases the risk of damage to the property and the adjoining flats.

7.3 Show in more detail the neighbouring properties in particular No 10 Linfield and party wall. The ground levels/vegetation and construction need to be understood more fully so that assessment of likely damage can be made. Additional measures to avoid this damage may need to be taken.

The applicant's engineer's response in the latest submission is noted however ground levels have not been shown. We remain concerned that this has not been dealt with which increases the risk of damage to the property and the adjoining properties and building.

7.4 Trees/vegetation and ground levels to adjoining properties should clearly be shown and taken account of. An assessment of the loss of trees on ground water needs also to be made and the effect of heave. Details of replanting should also be shown.

We understand that the applicant's architect or arbouriculturalist will deal with this. However this may be a factor affecting the structural design and risk of damage to neighbouring properties and the building itself. We therefore remain concerned that this has not been dealt with which increases the risk of damage to the property and the adjoining flats.

7.5 Borehole water monitoring over an extended period is required.

Please see our comments above with respect to the applicant's engineer's response in the latest submission. Monitoring of the ground water level has not been adequately carried out and now the water level is shown to be 3.88m which is just below the proposed formation level. We remain concerned that this does not been dealt with which increases the risk of damage to the property and the adjoining flat.

7.6 testing of samples for contamination is required.

The desk top study is noted however we are of the opinion that this should be backed up with site testing.

7.7 Water flow and modelling around the proposed basement to be carried out taking into account ground water and spring lines etc.It should also take into account basements already built to neighbouring properties.

We refer to our comments above in responding to the applicant's engineer's response in the latest submission. We remain concerned that this has not been dealt with which increases the risk of damage to the property and the adjoining flat.

7.8 A full and detailed Construction Management Plan to include a programme of works, timescale, method of construction, materials to be excavated/removed, deliveries, noise levels etc. is required.

7.9 Details of temporary works is required including design and monitoring. Details of predicted movement and damage is required.

7.10 A full review of the underpinning and construction works. Underpinning depths are substantial. Differential settlement may be significant and needs to be considered. Details of the neighbouring properties including ground levels, cellars, footpaths gardens and foundations need to be considered.

7.11 A full design of the foundations and basement is required along with calculations of ground movement in the short and long term. This must also include the existing ground floor flat.

7.12 A full survey and details of the existing flats within the building including details of the structural layouts. This should also include the rear wall and foundations of flat A and ground behind Flat A.

7.13 On-site supervision, monitoring procedures and checks need to be established.

7.14 Substantial internal structural alterations are being proposed. No information, design or details have been provided. To assess likely damage and to obtain meaningful results it is essential that a holistic design and BIA is produced.

7.15 A proper assessment of the risk of the likely damage to the neighbouring properties is required along with a risk assessment. This is very important and an intrinsic part of the BIA. The applicant has not done this.

The applicant's engineers has not responded to points 7.8-7.15 above.

The above list is not intended to be a complete list of all works required but an indication of the works necessary prior to planning permission being considered.

The information provided by the applicant is inadequate and does not meet the minimum requirements of Camden Council. The applicant has failed to investigate and therefore understand the uniqueness of the soil, the groundwater and general ground conditions in the area and how variable they are. The proposed extension to the basement is significant both in plan and depth.

The applicant has failed to take into account the other properties within the building and also the adjacent properties. Failure to do this adequately could have a significant effect on these properties.

The applicant has not carried out any realistic evaluation of the risk of damage to the neighbouring properties (including the flats behind and above this one) and the consequences of the works.

DP 27.5 states that “Building Control will need to be satisfied that effective measures will be taken”. This information has not been provided and thus Camden Council cannot make such an assessment.

For these reasons alone Camden Council should refuse the application.

Stephen Stark
BSc MBA C. Eng MICE

Dated 23 June 2014