APPLICATION NUMBER 2015/6734/P

10 Clorane Gardens, London NW3 7PR

Excavation of basement and erection of rear ground floor extension

We have the following comments on/objections to the above application:

1. Expert reports

1.1 **Ground conditions - report**

(A) Please see the attached report from Michael H de Freitas CGeol, PhD, DIC, Reader Emeritus in Engineering Geology, Dept. Civil & Environmental Engineering, Imperial College London, UK Registered Ground Engineering Adviser. He has reviewed the application for a basement and reports on the extent to which it satisfies the requirements of DP27. He raises in his conclusion (pages 5-6) detailed issues which should be addressed before planning permission is sought because they arise from the Basement Impact Assessment ("BIA") and as such should be dealt with to comply with the requirements of DP27.

(B) We would ask that the issues raised by Dr de Freitas with respect to the applicant's understanding of the ground be addressed before the granting of planning permission is considered.

(C) Dr de Freitas refers in his report to matters that will need to be addressed in the construction management plan ("CMP"). His report was written just before the CMP was submitted. However, the CMP does not appear to address any of the issues in Dr de Freitas' report, so all the points raised remain valid.

1.2 **Structural engineer's report**

(A) The applicant's submitted documentation does not deal with the issue of our own basement at 12 Clorane Gardens or indeed how the predicted ground movements around the basement at number 10 will affect our basement, at basement level. This means we have had to appoint a second advisor at a later date in the consultation period, Michael Eldred MSc CEng FIStructE MICE of Eldred Geotechnics Ltd. As you know, the engineers' drawings referred to in the BIA have only just been posted for comment, at Mr Eldred's request. Accordingly, Mr Eldred will require a suitable period in which to review them and will post his report once he has had the opportunity to do so. Mr Eldred has spoken to you about this.

(B) We would ask that this application not be considered until Mr Eldred has had the opportunity to conduct a full review and submitted his report to Camden Council.

1.3 In conclusion on this point, we are not objecting to the principle of a basement but based on the inadequacy of the information thus far received, we do object to the proposal on the grounds that it would clearly contravene Policies DP26 and DP27 of the Camden Development Management Plan which requires development of this type not to harm neighbouring property and residential amenity.

3. **Tree issues:**

3.1 According to the arboricultural survey, the eucalyptus tree in the applicant's garden "is in the way of the proposal and will be need to be removed". This is a large, mature and apparently healthy tree (the report does not suggest otherwise) and as such we would oppose its removal. This tree provides greenery and helps block the traffic noise from the nearby A41 and Finchley Road. This removal of this tree is against clause 2.6 of CPG4 which states that "there should be no impact on any trees or on any adjoining site". It is hard to see how the applicants can claim "the retention of the majority of dense vegetation to the perimeter of the site" when they are asking to remove the largest tree in their garden that provides privacy between our house and theirs.

3.2 The arboricultural report refers to the mature lime and sycamore trees "offsite", the lime tree being in our garden. In clause 5.2 these are labelled as T5 (lime) and T6 (sycamore). Clause 6.9 refers to T1 (eucalyptus), T2 (plum) and T3 (apple) as being those trees the applicant wishes to be removed. However, in clause 10 (headed "images") the lime tree is referred to as T2 and the sycamore as T3. This inconsistency in labelling means it is unclear which trees exactly it is proposed are to be removed. If it is the sycamore and lime trees, then we would oppose this in the strongest terms as they are mature trees that if removed would denude the green environment in this location. Before planning permission is considered, clarification needs to be sought from the applicant as to which trees it is in fact seeking permission to remove.

4. **Design**:

4.1 **Glass dome on extension**: Contrary to CPG 1, this construction is wholly out of keeping with existing building and the buildings in the locality. It does not "preserve or enhance" the character and appearance of the building or locality. Nor does it take into account the character and design of the property and its surroundings (CPG 1, clause 4.7). The glass dome will be clearly visible from our garden; a simple Velux type roof light, which is not visually obtrusive, would provide light and be less obtrusive. There is also concerns that a glass dome could result in undue light spillage that would affect not only neighbours but also the local night wildlife in the rear gardens.

4.2 **Balcony**: This will enable people using the balcony to overlook our garden and reduce our privacy. The application states that "There will be limited opportunity for overlooking due to a retained dormer above setting the current extents of view." With respect, there is a considerable difference between the degree of overlooking permitted by a simple dormer window and that of a balcony on which people can stand and look out. In addition, the balcony appears to protrude beyond the level of the dormer window. Furthermore, the proposed removal of the eucalyptus tree (see

clause 3.1 above) means that it is not the case that "The retention of the majority of dense vegetation to the perimeter of the site will further protect neighbouring privacy".

5. **Construction Management Plan**.

5.1 We are concerned about the impact on traffic parking and road safety. Clorane Gardens is a small residential road with a steep curve in the middle (just outside our house). Lorries delivering material and skips block up the road, preventing vehicular access, and on occasion having difficulties entering and exiting the road. Briardale Gardens, the adjoining road, is very narrow (only one car can pass at at time). Both roads already have high volumes of traffic from drivers using them as a short cut through to Hampstead (and beyond) and to avoid the Finchley Road. This situation will be aggravated by the extra traffic a basement excavation of this type will cause. In addition, there is the noise, vibration, pollution, dust and dirt caused by basement excavations.

5.2 We are also concerned that site traffic will block the driveways at numbers 8, 10 and 12 during the construction process. We share a driveway with the applicant (down which we have legal right of way - see below) and we need to retain access down the driveway throughout the construction process. We have asked the applicant by letter dated 2 February 2016 for details of how the construction is to be managed, given this right of way. We have not yet had a response.

5.3 Given the above, we would therefore strongly urge that the applicant be required to provide details of the above in her CMP. On our current reading of the CMP it does not do so. As mentioned above (clause 1.2) we have asked Michael Eldred to report on the structural engineering report. He will also cover issues raised by the CMP.

6. **Right of Way**

6.1 The planning application includes "the construction of a new single-storey rear extension which will extend out from the west corner of the building into part of the existing driveway".

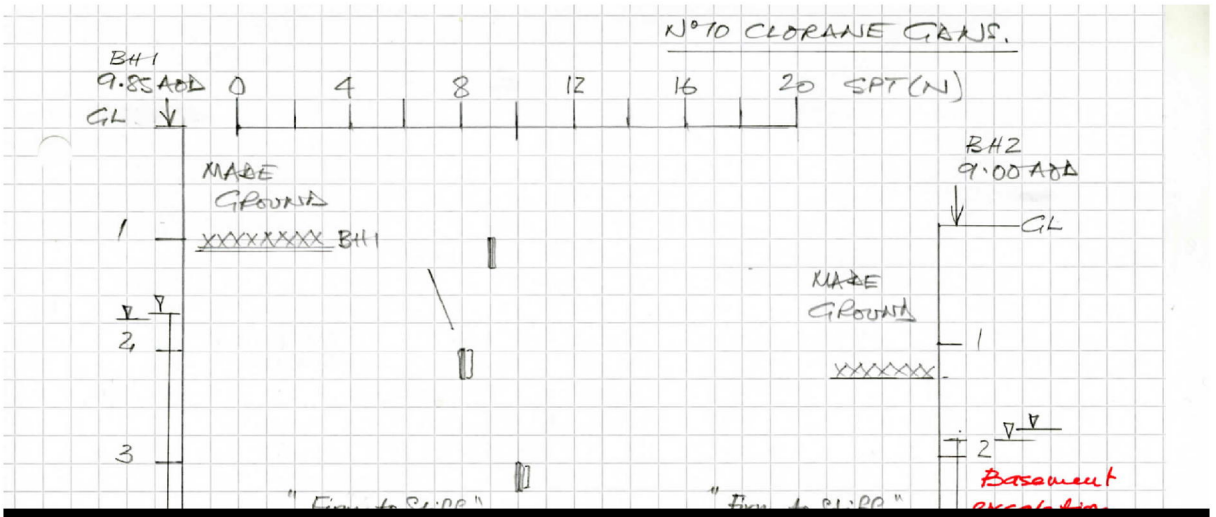
6.2 Under the terms of a deed dated 4 April 1977 (referred to in the Land Registry titles for both 10 and 12 Clorane Gardens) the owners of 12 Clorane Gardens have a right of way over the entirety of 10 Clorane Garden's section of the driveway and vice versa. Building into the driveway would narrow and infringe this right of way. A letter was sent to the applicant on 2 February 2016 pointing this out, to which we have received no response. We understand that Camden is not able to take this into account in reaching a decision but would point out that we have suggested that the applicant voluntarily amend her plan at this stage.

6.3 As we have a shared right of way, it is our belief that the applicant should have served notice on us and signed Certificate B on the application form. Unless this is undertaken, it is our view that the application cannot be regarded as legally valid.

Catherine Marsh

Nicholas Field

12 Clorane Gardens NW3 7PR


N°10 CLORANE GRNS.
BH1
9.85 AOD
GL
0
4
8
12
16
20
SPT (N)
MADE GROUND
1
XXXXXXXX BH1
2
3
BH2
9.00 AOD
GL
MADE GROUND
1
XXXXXXX
2
Basement

[redacted]

FIRST STEPS LTD
To Success

Ms Tessa Craig,
Planning Officer,
London Borough Camden,
Camden Reception,
5 Pancras Square.
London N1C 4AG.

9th February 2016

Tessa.Craig@camden.gov.uk

Dear Ms Craig,

Review of the Application to develop No.10 Clorane Gardens
Camden Application No. 2015/6734/P

1. I have been commissioned by Ms. K. Marsh and Mr. P. Ross, the owners and occupiers of Nos. 12 and 8 Clorane Gardens respectively, to review the application for a basement at No.10 and report on the extent to which it satisfies the requirements of DP27 and CPG4.

2. I am a Chartered Geologist with specialisation in engineering geology and groundwater and listed as an Adviser on the UK Register of Ground Engineering Professionals retained by the Institution of Civil Engineers.

Summary

3. The Basement Impact Assessment completed by Gabriel Geo Consulting Ltd., (GCC Report 16494/R2) provides a sound basis for design of the works; those involved with compiling the Assessment are qualified to do so on matters geological, geotechnical and hydrological, and have engaged the services of a well-respected engineer (The Alan Baxter Partnership) for engineering matters beyond their field of expertise.

4. There are however matters which deserve further consideration prior to approval as they can influence not only the temporary works required to achieve the excavation of a basement but also its affect upon the surrounding groundwater environment once constructed. As such they leave the application falling short of what it should achieve to satisfy DP27 and CPG4. These matters are as follows.

4.1 The mechanical properties of ground that may have been disturbed by previous working, including the creation of the basement at No.12, have not been adequately considered for the purposes of design and construction.

4.2 The absence of a Construction Management Plan makes it ever more pressing to resolve the shortcoming in 4.1.

4.3 The cumulative effects of basements including that proposed for No.12 on groundwater beneath Nos. 8 and 10 has not been considered.

5. Although these matters are unlikely to prevent the works from being completed, they are matters that can affect both the short term and the long-term response of the ground to the work proposed and as such should be dealt with before approval is given.

Background to your site

6. Clorane Gardens lies on the gentle western slopes of Childs Hill which is capped by the sands and gravels of the "Bagshot Beds" (now called the Bagshot Formation by the British Geological Survey) as seen up on Hampstead Heath; these are natural areas for infiltration of rain and provide the storage for groundwater that seeps away downslope throughout most of the year. Clorane Gardens is not on the "Bagshots" but on the finer grained material beneath them, what many know as the "Claygate Beds". A little further downhill, skirting along the Finchley Road, the London Clay itself appears from beneath the "Claygates". As the "Claygates" are very much more like the London Clay than they are the "Bagshots" the Geological Survey have designated them as the Claygate Member of the London Clay Formation.

7. All this gives a general impression of layer-cake geology; "Bagshots" on top, "Claygates" beneath and London Clay at the base, and on a large scale that is so, but at the scale of basements in Clorane Gardens small departures from this general picture become significant.

8. The differences arise from the evolution of the landscape towards the end of the Ice Age when these slopes were very much wetter than now and mantled with mudslides and mudflows supplied by sediment wasting from the Bagshot and Claygate horizons. These created a shallow apron of clays, silts, sands and gravels mixed in various ways that blankets the topography and is very commonly described, sometimes quite erroneously, as "Made Ground", i.e. artificially disturbed by man. To this mix can also be found wind-blown material carried on the cold dry winds of what was then Tundra.

9. This apron has to be penetrated by basements yet it can often behave as a shallow aquifer that has direct links with the "Bagshots" up-hill. Not only that but being so shallow it is the material into which the trenches for most of the utilities are excavated, which themselves act as an aquifer network for normal shallow groundwater flow they may intersect and for any leakage from sewers and water mains that occurs within them. It is also the horizon into which most soakaways discharge.

10. Very little is known about the hydrological response of this zone to rainfall but the few case histories known to me (on Rosslyn Hill, South Hill Park, The Old Orchard and Tanza Rd) suggest that they can transmit a rapid response to rainfall, even in the summer, and that is not surprising if they are also fed by leaking utilities; a sample of groundwater from Rosslyn Hill was contaminated.

11. From this it is evident that ground water needs to be well understood in Clorane Gardens before work that can change its long term levels and pattern of flow is undertaken.

12. Another feature of the site that has to be considered, and has been by the Basement Impact Assessment, is the possible legacy of Brick Working, i.e. the excavation of material for making bricks. This was haphazard by modern standards and excavations followed the suitable combinations of silt, sand and clay that nature had deposited in this surface apron of sediment transported downhill by gravity and mixed with windblown silt. It is not known where these excavations may have been or where the material discarded was placed. This makes the lateral correlation of near surface strata unreliable and hence the selection of representative mechanical properties for it very much a matter for judgement.

13. A further influence arising from the work of man comes from the basement beneath No.12. How this has affected the surrounding ground is probably unknown but is another reason why judgement has to be exercised when assessing ground response to excavation nearby.

Details

14. Fig. 1 is a synopsis of data obtained from the factual ground investigation; it plots a measure of strength (SPT N values) with depth and shows also the basic geology of the two boreholes from which these data come, their elevation above Ordnance datum (AOD), the elevations of the geological boundaries they intersect and that of water levels measured 3 and 4 weeks after the holes were completed.

15. No laboratory measurements were made of strength and that is not really a problem as the general trend of strength and the overall values of strength give a more reliable guide to likely conditions in such ground. However, these trends do raise questions which the technical advisors for No.10 should have answers.

16. The excavation for the basement will be in the Claygate beds which the site data now shows contains groundwater – as would be expected (see 9 above). The departure of the trend of measured strengths in BH2 from those measured in BH1 could be explained by the presence of groundwater pressures encountered by BH2 whilst penetrating the ground. The questions then are as follows.

16.1 Does this mean such groundwater driven disturbance could occur during the excavations for underpinning and if so how would groundwater be controlled so as not to encourage erosion of the surrounding ground?

16.2 If this is not driven by groundwater does it imply the ground over the short distance between BH1 and 2 changes in ways that are significant? BH2 is closer to the basement at No.12 than BH1 so perhaps some change in

conditions that affects the ground is being detected. The moisture content profile from BH2 is a subdued version of that in BH1 once below 1m (the profile in Fig 3 of the Complete Report needs to be dropped by about 1m to reflect relative ground levels) also suggesting the fabrics of the sediments encountered at BH2 may be a disturbed variant of that further away.

16.3 It is of course quite possible that the site response is a combination of both these.

17. Insufficient attention has been given to the effects the basement constructed beneath No.12 has had on the surrounding ground and to any long term adjustments of the ground the basement excavation at No.12 has promoted.

18. As GCC's report points out, the ability of this excavation to be completed with no adverse consequences to No.12 and No.8 depends critically on the workmanship at the time of construction and that will rely on the contractors being aware of the conditions they may encounter. The potential problems ahead have not been made clear.

19. One of the shortcomings of the submission is an absence of a Construction Management Plan; such a plan could take these matters into account. The 4 stages described in para 10.5.4 of the Complete Report need expanding. Unless these things are made apparent the ground will be considered as homogeneous. The borehole logs show this is not so and the problems during construction inhomogeneity can raise are not removed by taking conservative values for strength and stiffness.

20. The need for monitoring has been mentioned but the actions that follow unwarranted movements have not been defined other than the work should stop. Gravity, which will be the driver for things going wrong, will not stop whilst advisers consider what next to do. This should be sorted before seeking approval especially as there is uncertainty about the ground model.

21. The matters dealt with so far are all associated with the formation of the works, i.e. the underpinning and general excavations that follow. There is however the behaviour of the ground now that another basement is in place. The desk study has revealed the presence of a basements at Nos.7 and 5 across the road and there is that at No.12 and another is reported at No.14. It is also possible that some of the neighbours have cellars, shallow basements dug at the time the house was constructed. Some of these may even have been extended without anyone knowing. So a far fuller understanding of groundwater is required here than that provided.

22 The basic shallow hydrology of the site is of ground water flow off the southern extension of Childs Hill flowing approximately east north-east to west south-west towards the general area of Cricklewood, and this is reflected in the maps of flood occurrence (see Figure 6 of the Complete Report Extract from the Environment Agency's map of 'Risk of Flooding from Surface

Water'). It is also seen in the difference in piezometric levels measured in BH's 1 and 2 (see Fig 1 attached). That flow places Nos.7, 5 and 10 slightly up-stream from Nos.12 and 14; it is reported that No.7 inherited water problems with their basement.

23. A basement at No.10 has the potential for creating an underground dam that extends from the boundary of No.16 to that of No.8 on one side of the road with basements facing this dam on the other side of the road.

24. The question not addressed and one that CPG4 asks to be addressed, is what the cumulative effect of the basement at No.10 will be under these circumstances. Apparently the garden at No.12 is already sodden and the terrace there is protected with a sump pump at basement level, which when it fails permits water to rapidly rise. The garden of No.8 also experiences wetness. Further No.8 has a cellar that was deepened in 2000 to standing height so that a boiler could be housed; a small sump pump was installed and operates when water ingresses in wet weather.

25. The question is fairly simple to put; what will the effect be on surrounding ground water levels of a basement at No.10? The proposed works will probably include SUDS which will discharge rainfall and its runoff directly to the ground without the ameliorating influence of evapo-transpiration, and whilst that relieves the sewers it simply adds water to the ground as a rapid response (as per para 9 above).

26. Claims may well be made that the ground is of low permeability but groundwater has been measured in the piezometers and the two water levels recorded do not disagree with the general direction of flow suggested by topography. Further the neighbours have experienced the response of the ground to wet weather. The cause of the wetness in the gardens around and cellars should be investigated together with the speed with which groundwater there responds to rainfall, as it obviously does. It is clear that a number of sump pumps are operating in the vicinity and all these are discharging to the sewer so adding to the known problems of flooding "downstream".

Conclusions

27. There are 5 detailed issues which should be addressed before planning permission is sought because they arise from the Basement Impact Assessment and as such should be dealt with to comply with the requirements of DP27 and CPG4. They are;

27.1 Justification for;

(i) the design for the basement given the evidence that there may be around the existing basement of No.12 a zone of disturbed ground of different character from the ground in its virgin state, and probably a zone similarly disturbed adjacent to No.8, and

(ii) for the predictions for the lateral extent and vertical magnitude of the ground movements presented.

27.2 The provision of a Construction Management Plan for the ground works that takes into consideration the unknowns that the ground investigation has exposed about the character and variability of the ground.

27.3 The design for a ground water management plan that can be incorporated into the Construction Management Plan.

27.4 The incorporation of the monitoring protocol and its responses into the Construction Management Plan.

27.5 The need for the cumulative effects on groundwater of the basement at No.10 to be quantified and if necessary the design of the basement be adjusted to facilitate the continuation of groundwater flows it would have otherwise intercept.

28. To provide these data is a perfectly reasonable request to make and based on the requirements of DP 27 and CPG4. Without them permission for the application should be with held

Yours sincerely

[redacted]

THE GEOLOGICAL SOCIETY
CGeol
CHARTERED GEOLOGIST
Fellow No. 9710

MH de Freitas PhD, DIC, C.Geol, C.WEM
Director First Steps Ltd, and
Emeritus Reader in Engineering Geology
Imperial College London.
Ground Engineering Adviser,
UK Register of Ground Engineering Professionals (RoGEP) (68302453)