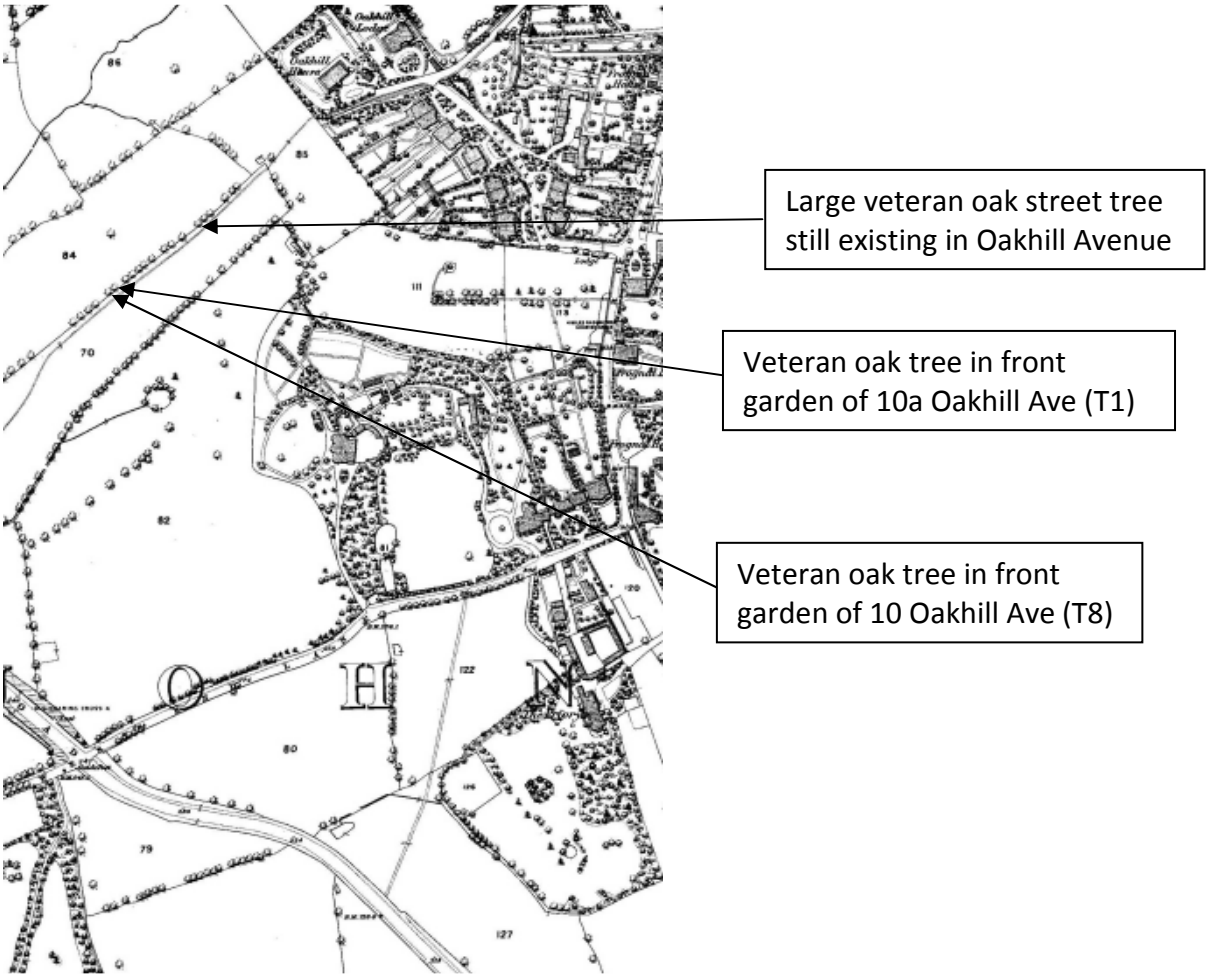
2014/1016/P 10a Oakhill Avenue: Application for one large new house.

I am commenting on this application in respect of its impact on trees and biodiversity/sustainability.

The Tree report makes no statement on the ages of any of the trees on this site. The Design and Access Statement estimates the veteran oak trees in the front gardens of 10a and 10 Oakhill Avenue to be 90 to 100 years old. They are considerably older than this. They and other veteran hedgerow trees in the area are very accurately and individually marked on the 1866 Ordnance Survey map. I have personal experience of using this same 1866 OS map to survey nearly 400 veteran trees on part of Hampstead Heath; the map at its original size can be demonstrated to be accurate to within a yard, indicating the skill of map surveying and drawing at this time, though this did not extend to trees on the 1895 OS map. These particular oak trees were large mature trees in 1866, and their level of veteranisation indicates they are at least 300 years old now.



As well as their historic value, these trees (T1 and T8) are of immense importance for local biodiversity. They support species of invertebrates unique to veteran trees and so are vital for the remaining networks and corridors of veteran oak hedgerow trees in Hampstead.

The veteran hedgerow oaks up Oakhill Avenue and into Oakhill Park are also part of a known bat flight path into the wood surrounding Oakhill House and Spedan Close. These 2 trees should be assessed for bat maternity roosts, and if present, any significant building work in the vicinity performed outside bat breeding times.

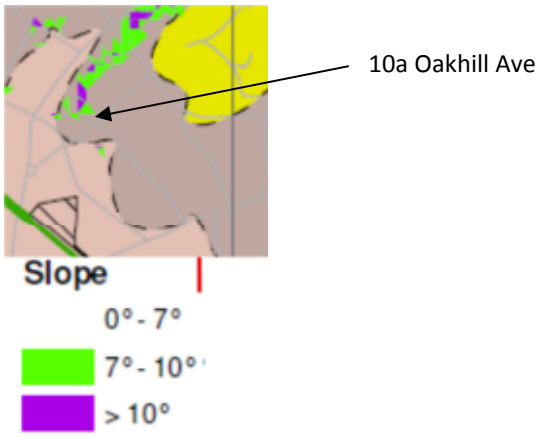
The present building was built too close to T1, the result being too much constraint upon its canopy and frequent Notices of Intent to have its canopy reduced. It would be good if the present house could be set further back to protect the tree in the future. While the tree's RPZ is only slightly affected by the proposed building, I am concerned that the author of the tree report is unaware of

this tree's value, and has not been very clear on the need for its protection. I would urge that when a development goes ahead, the developer be encouraged to use a tree expert with experience of veteran trees, and that this person be approved by Camden Tree Officers as someone they know to be good. An excellent example of developers/architects working well in Hampstead is the case of 37a Redington Road – just around the corner. The architects worked well with Camden and made the veteran oak in the front garden the main feature of the development and were sensitive to its needs. We can now continue to appreciate its history and beauty for the lifetime of the house.

Trees and building stability
Building stability is of concern to me as when a building moves and cracks appear, for whatever reason, insurance companies and the subsidence industry will look to blame local trees. Notices of actionable nuisance are then sent out to their owners, including the local authority regarding street trees, requiring these trees to be felled. I have concerns about this development and the adequacy of the Land Stability Report:

Slope stability
From: BASEMENT IMPACT ASSESSMENT SCREENING REPORT: 'LAND STABILITY'
Page 4: 'Beyond the western site boundary the ground slopes down more steeply, towards a valley of the headwaters of the River Westbourne, down which Heath Drive runs. Although the slope angle there could not be properly assessed, the Camden Slope Angle Map [Figure 16 of the Arup report] shows angles, in that vicinity, of between 7° and 10° and, locally, >10°. These slope angles are, however, outside of the site and some 20m from the existing building footprint.'

From Arup's 'Camden Geological, Hydrogeological & Hydrological Study: Figure 16 Slope angle map', it is clear that 10a Oakhill Avenue (virtually opposite Greenaway Gardens) is not far from a 7° slope, if not actually on it.



If however one turns to Figure 17 of the same Arup report: 'Landslide potential modelling of North London, British Geological Survey Internal Report, IR/03/122R; Source – British Geological Society, 1:50,000 Series England and Wales Sheet 256 – North London', it can be seen that 10a Oakhill Avenue sits right over the area of significant landslide potential. Slope angle is not the only consideration when evaluating risk of landslip, the underlying geology - including presence of ground water to lubricate slip (confirmed here) and the presence of slip surfaces left over from glacial activity during previous ice ages, relatively common within the Claygate Beds and very common within the overlying Head (unmentioned in this report) - are other important factors. These are all present or potentially present here.

With a swimming pool under this proposed building, with acknowledged ground water passing around and under it, it is highly likely after some years that the whole development becomes a concrete boat that will start sliding down the hill. Swimming pools formed in concrete all eventually crack and leak, which will hasten the concrete boat effect.

From: RA Ellison (2004) 'Geology of London: Special Memoir for 1:50 000 Geological sheets 256 (North London)' British Geological Survey, Keyworth, Nottingham.

Page 98: ... Landslides on London Clay slopes are well known, and have been the subject of much research.... Hutchinson (1967) concluded that an angle of 8° was the ultimate angle of stability. The Claygate Member... is more susceptible to slope instability than the bulk of the London Clay. It has high plasticity and high moisture content on account of water-bearing sand layers. ...

Many London Clay slopes greater than 3° are covered with a veneer of Head, which may not be shown on geological maps. Culshaw and Crummy (1991) suggested that these too should be considered as potentially unstable. The head is composed of redeposited London Clay, including the Claygate Member; it is derived by downslope solifluction and soil creep and may contain relict shear surfaces. The shear strength is likely to be at, or close to, its residual value. Reactivation of the shear surfaces may occur if the slopes are undercut, loaded, saturated or the water table rises.

Culshaw MG & Crummy JA (1991) SW Essex – M25 Corridor: engineering geology. *British Geological Survey Technical Report,* WN 90/2.

Hutchinson JN (1967) The free degradation of London Clay cliffs. *Proceedings of Geotechnical Conference, Oslo.* Vol. 1, 113-118.

This is a very important factor for neighbours and the owner of 10a Oakhill Avenue, and for me an important factor for trees. It also illustrates that the BIA completely ignores the safety and protection of neighbours' buildings, and is insufficient. Please support your Duty of Care to the neighbours of this development, as well as the trees and refuse this application.

Tree Drowning
On the Claygate Beds it is possible for water to be encountered in sand partings under pressure when digging for Basements. This occurred at 22 Christchurch Hill where it took 18 months for a solution to be found to the lake that formed under the house despite continuous 24 hour pumping, and neighbouring houses required shoring up then significant underpinning and repair. Camden has a requirement for basements to be only one level down for very good reasons. It is not impossible for this to happen here, as sand partings with water under pressure could be present here and missed as they are between the boreholes. I would urge that this application not be granted until T1 and T8 are assessed for the possibility of protection from drowning in this eventuality, then a condition imposed to ensure this actually happens.

Sustainability

Energy
The Energy Strategy Report of application 2014/1016/P is essentially the same as that of 2014/1037/P. As with the other report, no mention is made of the swimming pool, and I repeat my criticism of 2014/1037/P for this application. I am concerned about the use of PV panels in 'leafy' Hampstead.

As a precaution, please place a condition on any approval for this building stating that no tree should have its canopy reduced in order to improve the efficiency of these panels.

The development Energy Strategy says it has adopted the following design ethos:
BE LEAN – By using less energy and taking into account the further energy efficiency measure in comparison to the baseline building. This cannot be said to be true when considering the following:

The baseline average energy use and CO_2 emissions for the development are presented in the table below:

Building Services	Baseline CO_2 Emissions (kg $CO_2/m^2/yr$)
Heating	18.99
Auxiliary	0.05
Lighting	0.87
Hot Water	0.57
Total regulated emissions	**21.12**

Building Services	Baseline CO_2 Emissions (kg $CO_2/m^2/yr$)	Baseline CO_2 Emissions (Tonnes CO_2/ yr)
Total regulated emissions (heating, hot water, lighting, fans & pumps)	**21.12**	**34.140**

Page 13 demonstrates that only the living parts of the house have been considered for energy use. The heated swimming pool has been excluded from the calculations. It is proposed that the energy use of the swimming pool will more than wipe out the CO2 savings of using photovoltaic panels.

Page 57 – no external rainwater collection system provision is being sought. This is untenable.

The values given in their Code for Sustainable Homes: Score Sheet for Ecology are patently fiction. This is clearly a desk-top cut-and-paste exercise. Firstly they are calculated for the house *excluding* the garages and the heated swimming pool.They fail to address the effect *on* the surrounding trees or the effect *of* the trees, and on the energy needs of 4 parking spaces with their cars, and the heated swimming pool. While surface water run off has been considered, ground water affected by the development has not, neither has water use by a swimming pool, and polution from chemical use (such as chlorine or salt) to 'clean' the pool water.

For the house – but excluding the garges and swimming pool:

Ecology							
ECO 1 Ecological Value of Site	1	1	7	9	77.78	12	9.33
ECO 2 Ecological Enhancement	1	1					
ECO 3 Protection of Ecological Features	1	1					
ECO 4 Change of Ecological Value of Site	2	4					
ECO 5 Building Footprint	2	2					
	Level Achieved: 4		**Total Points Scored: 73.45**				

There are many assumptions:

It has been assumed that a code compliant external drying line of 6m+ will be provided in the garden area. It is hard to imagine this would be used by the eventual tenant/s and B-rated tumble driers have been assumed too. ENE4 has been given half the full score; it is hard to see where this score could rise above zero.

The assumptions continue ++++. It is strange that ground source heat pumps are considered unfeasible, presumably from lack of experience; cost cannot be a factor for this highly profitable development. Please refuse this application for its impact on the environment.

Transport

I am pleased to see that in the Design and Access Statement it is acknowledged that

> ‘Local public transport can be comfortably accessed and used from Oakhill Avenue. Tubes, bus routes and overland trains are easily accessible within a couple of minute walk from the site. The close location of the site in relation to local amenities such as shops, public houses and restaurants will also encourage people to walk or cycle to these facilities rather than using their cars.

From a sustainability point of view this site is one unit and should have no more than one on-site parking space. Building more parking spaces in order to accommodate the excessive car ownership and use of others should not be permissible. Please refuse on this account.

This development with 2 basements and the depth of a swimming pool goes 3 levels down which is against Camden’s policy of basements to go only 1 level down. Please refuse.

Dr Vicki Harding
Voluntary Tree Officer, Heath and Hampstead Society