From: Vicki Harding
Sent: 10 January 2025 22:19
To: Henry Yeung; Planning
Subject: 31 Willoughby Road 2024/5203/P
Attachments: 31 Willoughby Rd H^0HS objection 2024.5203.P.pdf

Dear Henry Yeung,

Please would you accept this further objection from the Heath & Hampstead Society which mainly concerns the risk of flooding to others, particularly the South End Flood Zone, for which this application does not provide mitigation, which is a requirement of the Hampstead Neighbourhood Plan.

Many thanks and all good wishes

Vicki Harding
--
Dr Vicki Harding

The Heath & Hampstead Society

The Society examines all Planning Applications and Notices of Intent for tree work relating to Hampstead and Hampstead Heath Fringes, and assesses them for their impact on the Conservation Areas, the local environment and building stability.

To London Borough of Camden, Planning Solutions Team

Planning Ref: 2024/5203/P
Address: 31 Willoughby Road London NW3
Case Officer: Henry Yeung
Date: 8th January 2025

We wish to object to this planning application for its risk to flooding. In addition to the inadequately addressed matters concerning protection of the listed buildings and retaining wall revealed by the neighbours in Willow Cottages and by their expert Phil Smith of GCG, this project would also add further to the risk of flooding; not only to immediate neighbours, but also to the South End Flood Zone and other properties 'downstream' of this part of the river Fleet catchment area. This is counter to the NPPF and the Emerging Hampstead Neighbourhood Plan.

The BIA for this planning application was produced by Card Geotechnics Limited (CGL 2024) who had the benefit of the previous BIAs by GEA and by Eldred with Prof Michael de Freitas as the geological advisor (Eldred) and the neighbours' expert Phil Smith of GCG (GCG), the audits from Campbell Reith. One difference though was that this application was submitted *after* the Hampstead Neighbourhood Plan was deemed 'Emerging' (EHNP).

The EHNP explains how Hampstead is set on one of the largest and highest hills in London, with the highest rainfall of the Greater London area. As a consequence, a significant number of Hampstead streets are downward sloping, where hard standing or building footprint enlargement produces additional surface run-off and drainage requirements. Hampstead geology is layered and complex, the high silt and sand component of the top three layers (Bagshot Sands, superficial quaternary deposits – the 'Head solifluction' and Claygate Beds, here up to 50% fines) render them susceptible to high water conductivity and silt erosion below ground. When groundwater is encountered during basement dig-out, diverting it more directly into the sewers increases the flood risk to vulnerable lower areas such as the South End, South Hampstead and West Hampstead flood zones during storms.

The EHNP DH3: Sustainable Development is pertinent here as this supports the holding back and slowing of both surface and groundwater to the sewers in all areas in order to protect the flood zones 'downstream':

> 3 c) Maintaining, restoring, and where possible, increasing permeable – in the sense of porous – surface areas. Applicants should slow water run-off, using a sustainable drainage system where appropriate, such as storm attenuation tanks.
> d) Aiming to exceed the Local Plan requirements to be water efficient by such measures as grey-water recycling, permeable paving, drought-resistant landscaping, and rainwater harvesting.
>
> 3.39 … Developments that remove soil, as for foundations for extensions, basements, etc., should mitigate for loss of water absorption by use of storm attenuation tanks and/or by removing hardstanding elsewhere on site.

This area in the catchment area of the western branch of the old river Fleet river will have contributed towards the flooding of South End Road in 1975, 2002, and twice in 2021. Not only does it send fast flowing surface water to South End via the sewers and surface run-off, but the large volume and rapid flow also scours and erodes out more silt from the Claygate Beds and from seams within the Band D clay through which the old tributaries of the river Fleet passed. This silt blocks the gullies, connecting pipes and the sewers so that the water cannot flow away rapidly via the sewers. The South End flood zone particularly suffers from silt blockage with flood water finding it hard to get over where the road and the sewer pass over the railway.

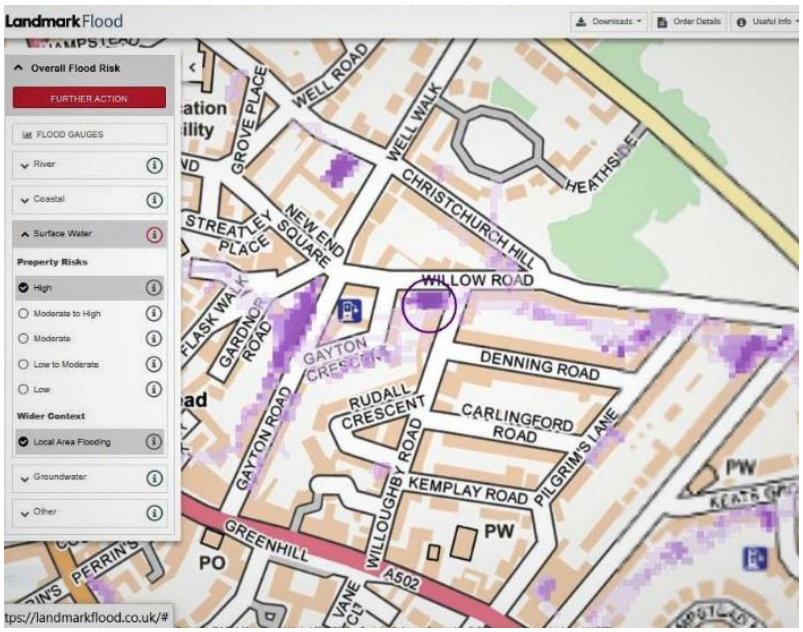
The NPPF (December 2024) explicitly states:

170. development should be made safe for its lifetime without increasing flood risk elsewhere.

and 178 b). the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

'Areas at risk of flooding' in the NPPF are described as included all flood zones, including Flood Zones 1 which has critical drainage problems and which has been notified to the local planning authority by the Environment Agency, as stated in the Technical Guidance to the NPPF: Flood Risk March 2012) where 'flood risk' is defined as 'risk from all sources of flooding - including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, etc' and in the Planning Practice Guidance from March 2014 as (para 4.1.6) 'the combination of the probability and potential consequences of flooding. Areas at risk of flooding are those at risk from any source, now or in the future.' These can be seen in the following maps:

Camden Draft Local Plan Map 10: Areas of Historical Flooding in Camden and Local Flood Risk Zones



Landmark Flood Report No 241664144-1 (2024)

Willow Cottages objection, addendum document

Purple=areas of High Risk surface water flooding

'Elsewhere' does not imply restricting any risk to merely the neighbouring buildings. This wording was already present in the NPPFs of December 2023 (paras 165 & 170b); September 2023 (paras 159 & 165), and others going back to 2012, therefore they would have applied to planning applications 2016/7146/P and 2020/0927/P as well. We have noted that through all the BIA up-dates, Campbell Reith themselves keep maintaining that 'It is accepted that the extent of impermeable areas is not changing and that, therefore, the risk of flooding at the site and surrounding areas is not altered'. We disagree with this statement (though Campbell Reith did acknowledge 'However, neighbours have submitted a plan showing a different surface water flood risk categorisation.')
Risk of flooding is usually and mainly via surface flooding, however there can be other factors in play. There are two geological aspects that should have a bearing on flooding for this application and give us concern:

1) Groundwater. While not on a slope, this site sits pretty much on the edge of a spring line between the relatively more permeable Claygate Beds and the less permeable Band D of the London Clay Formation. GEA, Eldred with Prof Michael de Freitas as the geological advisor (Eldred) and the neighbours' expert Phil Smith of GCG (GCG) mentioned: 125. Free groundwater was only encountered as a slow seepage at 2.8m and 13m in EG BH1, 3m in GEA BH1& 2 and 3.3m in GEABH4.

However Eldred's Figure 8 shows that during a period of over 6 months (from late August 2018 to mid-March 2019) from groundwater monitoring of four piezometers at 10 minute intervals, there was little significant rainfall, nothing approaching 20mm a day, yet the groundwater levels responded. In 2020 and 2021 following these tests there were 9 days of over 20mm of rainfall. On the 2nd & 3rd October 2020 there was a total of 65mm for the 2 days and 70.4mm in July 2021 where there was extensive flooding in the South End and South Hampstead Flood Zones amongst many other areas of London. This means that despite what should be expected to be very reasonable testing, the site has not been tested across a significant storm, even though these are becoming more frequent in recent years and are expected to increase further.

This site should be contributing to reducing the flood risk to lower areas downstream, not increasing this risk by removing more permeable soil and doing nothing about surface run-off.

Eldred stated that

> 142. Groundwater flows generally with gradients and directions similar to those of the land surface before draining eastward down the valley. In the site it rests at about 2.5m below ground level, in the Made Ground. This is very close to ground level in the rear access passage of the cottages and the authors' tentative opinion is that a drain trench below the passage draws down and controls groundwater level below the cottages and passage.

The GCG Letter Report_ISSUE_FINAL - RevA (2020) stated "The proposal will remove an element of sub-surface water storage/ attenuation, and therefore will adversely affect drainage and run-off." The following details were also provided:

> 'As is noted by the Arup Report, the soils of the Claygate member are relatively porous, and so provide capacity for short-term storage of infiltration.
>
> It is this capacity that leads to the site being classified as a 'Secondary A' aquifer by the EA, as noted in the Eldred Report. Thus, while the surface area of impervious material may not be significantly changed, excavating this material (the Claygate or Claygate-derived soil) to form the proposed basement effectively removes a volume of sub-surface material that is currently acting as a natural attenuation tank. Replacing this with a bypass drain will result in an increased rate of run-off from the site, surcharging the local surface water drains.'

This could not be clearer, yet this problem was not addressed further, not even when this was repeated in an additional report by GCG (2023). This still holds true in 2024.

2) The presence of superficial deposits with their disturbed nature and silty content

The CGL BIA states in its non-technical summary: 'Superficial deposits are indicated to be absent within the site boundary, and the closest superficial deposits are recorded some 1.5m to the northwest'. One presumes this is referring to the centre of the Dollis Hill Gravel deposit 1.5 *miles* northwest of the site (DH – orange discrete area NW of Hampstead on map below) since a distance of 1.5 metres for geological findings would be far too small.

However CGL BIA also states in the non-technical summary that

> 'the site is indicated to be underlain by the Claygate Member, at the boundary between the Claygate Member and the London Clay Formation. Superficial deposits are not denoted within the site area, however, Head propensity is shown on paper geological maps in the immediate vicinity of the site. Furthermore, historical geological maps show a watercourse, labelled 'Fleet Brook', to run directly to the southeast of the site in an ~east-west orientation and following the local valley contours.'

Prof Michael de Freitas in the Eldred BIA stated the 1:50,000 scale British Geological Survey, Sheet 256 North London (Bedrock & Superficial deposits. NERC 2006) shows the site to be located on the feather edge of the mapped outcrop for the Claygate Member of the London Clay Formation. The map describes ground as having a propensity for "Head"; a deposit formed by the downslope movement of ground usually as mudflows and landslips. The boreholes show that (para 139): Above the undisturbed clay are, from ground level, about 3m of made ground, 1.5m of periglacial head, which rests in turn upon at least 2m of disturbed London Clay.

GEA reported on their own experience from a drill hole located opposite the site at 44 Willoughby Rd: a "significant" thickness of Made Ground overlying orange-brown mottled grey clay with occasional brick fragments to 2.9m, covering "soft dark greyish brown silty clay with roots and wood fragments" to depths of 3.3m and 4.5m, above "firm becoming stiff clay (London Clay).

However GEA (2016) concluded that while an allowance should be made for possible dewatering of 'discrete inflows' from the made ground and head deposits, the site investigation indicated potential inflows are 'unlikely to be significant' and 'dealt with by using standard capacity sump' …. 'further inflows are expected to be slight due to the low permeability of the surrounding soils and correspondingly low rate of potential recharge'.

This was stated despite local experience of an 18-month large lake beneath 22 Christchurch Hill and its neighbour following basement dig-out that couldn't be cleared by a standard capacity sump, and the effect of storm surges of groundwater which in 1991 caused over $60m^3$ of silt to be washed into an open site beneath 'The Cottage' immediately neighbouring the Air Studios building from similar ground overlain by Head during the 'Pavarotti in the Park' storm.

Groundwater tests at 31 Willoughby Road have shown sewage to be present, so passage of silt through the cracks in drains and sewers associated with leakage is likely, as well as other methods of silt passing into sewers if it isn't removed from the water before entering the sewer system.

These 2 geological factors are common to a significant part of Hampstead in a way that is different from other areas of London, so not always recognised. However they are important for Hampstead with silt wash-out by the action of groundwater surging causing building subsidence, potholes and sink holes, mains water and sewer pipe and their foundation failures, and risks associated with basement dig-outs and both local and more widespread flooding. inSAR mapping of the area shows a steady drop of 4mm over the site, mentioned by Phil Smith as possibly evidence for landslide, but is also likely to have been silt erosion – as occurs in many other parts of Willoughby Road. This eroded silt needs to go somewhere. I suggest the local sewer pipes are good candidates.

In this application there is: evidence of groundwater presence; lack of evidence of the degree of groundwater flow rates during intense storms here; evidence of the degree of silt within the soil present on site and its well-known ability to block the connecting pipes, gully pots and sewers 'downstream'; and finally there is the topography that indicates where this groundwater, as well as the surface rainwater run-off flows to.

All these indicate that there is a not fully-appreciated level of risk that this site contributes to the flooding of both neighbouring listed buildings and to the South End Flood Zone. This last should be mitigated for, and we consider the site so tight that this is unlikely to be possible. The rear garden is limited for digging out for storm attenuation tanks or crates beneath the hard standing due to the tree roots, quite apart from the risk to the listed retaining wall of digging out of such an area. The front garden is tiny – incidentally so small it is hard to see how this can be where all materials and machinery can be stored. We fear for what the rear garden may be expected to take. We consider the Tree Officers should re-evaluate what the tree roots can withstand with only boarding for protection; that the CMP should indicate the quantity of all on-site materials & machinery storage/parking requirements.

In view of the degree of water attenuation required for this project it is doubtful if this could be achieved within such a tight site. Likewise the requirement to achieve Biodiversity Net Gain, mitigation for surface run-off, and grey-water recycling and rainwater harvesting is hard to envisage. The one tree in the front garden has been removed. It has been recommended that the existing shrubs along the listed retaining wall should not be replanted with either trees or shrubs owing to future root-growth expansion risking this wall. Future planting by unwitting future owners must be prevented.

We consider enough is enough for this already very very tight site, with 32 Willoughby Road inappropriately shoe-horned into a tight corner between 31 and listed buildings rather than providing a meaningful garden.

Please refuse.

Dr Vicki Harding,

Society Tree Officer, Planning Sub-Committee, Heath & Hampstead Society