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2nd July 2020

Ref 2026 – 1c – 4b Hampstead Hill Gardens

Mrs J Williams
4a Hampstead Hill Gardens

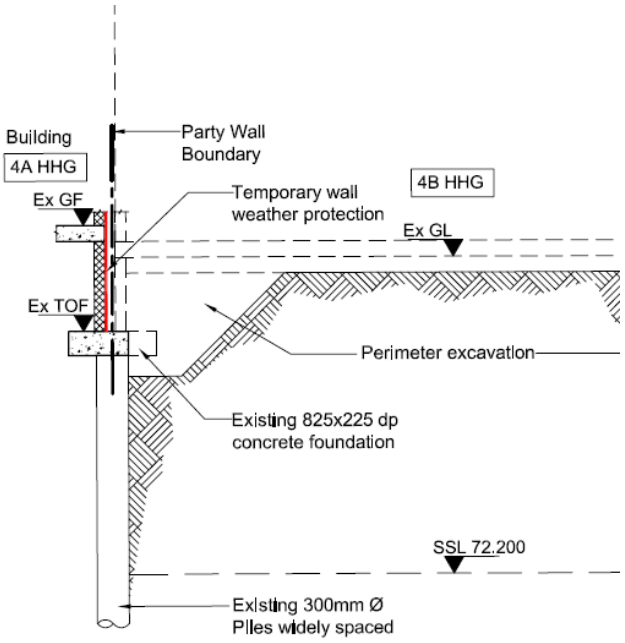
Dear Mrs Williams

Re: 4b Hampstead Hill Gardens

I have accessed the Camden Council Planning Portal to review the documents posted for the planning application to demolish and rebuild 4b Hampstead Hill Gardens, as instructed, to carry out a structural review of the proposal.

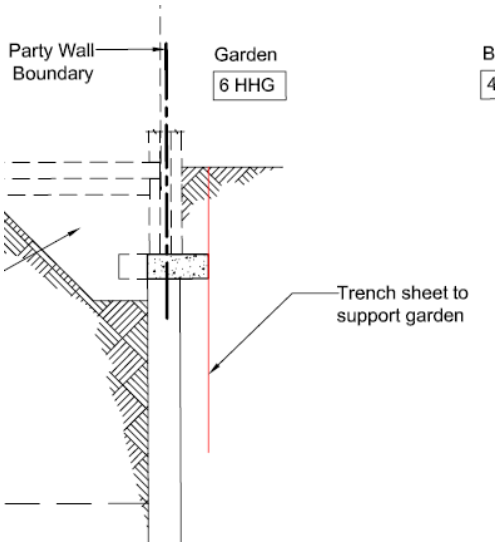
There are some discrepancies in the various versions of the BIA on the portal around the size of the basement and its proportions in relation to the plot, but this has been amended on other documents to conform with the Camden guidance. Within the 15th May 2020 BIA there are record drawings of the existing property which I attach along with the Temporary works sequencing drawings and summary soil analysis and movement assessment based upon the drawings reference. The Temporary works drawings show the larger basement, but updated drawings are available on the planning portal.

From the record drawings attached the existing property is founded on strip foundations 1ft 4” deep bearing on short bored 8 inch dia (200mm) piles located at strategic points. The drawing does not show if the strip footings are reinforced but mentions that the piles are doweled into the strip footing with 2 x ½” dowel bars 24 inches long with 2 horizontal ½” bars 48” long over each pile. The piles to extend 6’-0” below the formation of the strip footing so 9ft 6inches (2.9m) below ground level. The strip footing seems to have step across it to accommodate the layout and is referenced on the plan with dig levels varying from 3’ 6” to 4’ 6” with thickness of the footing varying from 1’ 4” to 1’. This is not reflected in the Temporary Works proposals as below.



The current Temporary Works proposals show that the existing masonry walls built off the strip footings on the Party Wall line are to be retained but cut back to the Party wall line. As these walls retain the ground additional temporary works will be required to allow this to happen. In addition, the drawing incorrectly references the size of the piles (300mm) and thickness of foundation (225mm) The drawing also indicates that the piles extend significantly below the proposed Basement SSL which is not the case based on the record drawings, which indicate a toe level at approximately 72.700, as described above.

The cavity wall leaf is to be removed for the full height as noted in the stage drawing and waterproofing is to be provided. This will result in the remaining part of the cavity wall having to resist the wind loads that it has not been subjected to previously and where as one could expect a cavity wall to withstand the wind load on a floor by floor basis this is not the case in this situation. The condition of the wall is not known and nor is the adequacy of any tie in of the wall into the floors which is required to resist any wind load, so the assumption made that no damage will be caused is suspect. This is a major flaw in the planning of the work which will put 4a at risk both during the demolition phase when one leaf is removed but also in the longer term during construction under wind and stability loading for an unknown period of time or season. In addition the construction of the wall below DPC is shown on the record drawings as both cavity and solid construction. To reduce a solid wall thickness by half over a significant length will inevitably create damage to the retained portion of the party wall.



On the boundary with 6 Hampstead Hill Gardens it is proposed to carry out a similar operation of reducing the wall thickness back to the party wall line and provide sheet piles within the garden of no 6 to retain the soil, which is a trespass. There is nothing to say how these sheet piles are to be installed or what damage will be done to the garden or adjacent properties in driving these sheet piles into place and ensuring that any deflection is limited. The proposal assumes access to no 6 is a given and so the works are not completely contained within the boundaries of 4b Hampstead Hill Gardens.

The basement construction using underpinning is a traditional way of forming a basement, however no thought has been given in the sequencing as to how to deal with the short bored piles that will be undermined during the underpinning and so putting at risk the party wall. These may or more likely may not be reinforced and so could well fall away at the base of the dowel bars creating unintended load transfers and subsequent movement of the foundation and the party wall built off it.

The sequence also talks about plan bracing and walings but does not give any indication as to what loads these should be designed for and what deflection limits are to be set for all of this work. The analysis repeatedly says that under good control underpinning construction can be limited in movement to less than 5mm. However, this is not a normal underpinning proposal and any relaxation of loads on the props or walings will result in increased movement and subsequent damage. The party wall to 4a will be significantly more susceptible to damage from small movements because of its changed load path and increased lateral loading from wind or indeed potential impact during excavation and subsequent construction of the new property.

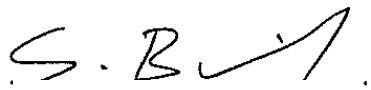
In Stage 5 of the sequence the drawing indicates a new concrete wall being formed above the existing strip footing up to the party wall line to support the new ground floor. In constructing this wall concrete pressures will be generated which will need to be taken by the reduced thickness party wall and the wall may well be inadequate to resist these forces and so fail causing major damage to 4a.

The construction of the new basement is of reinforced concrete with an internal waterproofing membrane. This type of concrete structure is subject to shrinkage over time, with the majority taking place during the initial curing. As shrinkage of the horizontal elements take place this will allow horizontal movement which will be additional to that experienced during the previous phases and has not been taken into account in the movement assessments which have ignored any construction risks during the various operations that all have to be very tightly controlled and monitored.

The linking of the new basement foundation to the remaining part of 4a Hampstead Hill Gardens will create a hard fixed spot and exacerbate damage due to differential movements as a result of thermal or ground movement due to variations of moisture content in the underlying clay. The property has suffered damage from ground movement in the past and this fundamental change in foundation support at one end of the building is likely to cause damage in the long term.

The combination of part demolition of the party wall, impact damage, ground movement during underpinning and subsequently during basement excavation combined with wind loading is likely to result in significant damage to the remainder of the party wall and potential collapse of the roof and floors supported by the party wall and so this scheme should not be allowed to progress.

Yours sincerely,



Steven R Brunswick CEng., FICE, FCIOB

Attachments

1. Temporary works sequencing drawings
2. Details of existing building