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## 21 KIDDERPORE GARDENS NW3

### STAGE 1 - SCREENING FOR BIA- Reference Camden Planning Guidance Basements and Lightwells

12 April 2012

#### **Figure 1. Subterranean (ground water) flow screening chart.**

*Q1a Is the site located directly above an aquifer ?*

**NO.** See figure 8, site above 'unproductive strata'

*Q1b Will the proposed basement extend below the water table surface?*

**NO.** Formation of new basement is at -3.50m below ground level, site investigation has shown minor water seepage at -8.2m below ground level.

*Q2. Is the site within 100m of a watercourse, well or potential spring line?*

**NO.** With reference to figure 12 the site is not within 100m of any of these features.

*Q3. Is the site within the catchment of the pond chains on Hampstead Heath.*

**NO.** Refer to figure 14 the site is within the Golders Hill chain.

*Q4. Will the proposed basement development result in a change in the proportion of hard surfaced paved areas.*

**NO.** Basement is below footprint of existing building.

*Q5. As part of the site drainage will more surface water than at present be discharged into the ground.*

**NO.** There is no increase in impermeable area.

*Q6. Is the lowest point of the proposed excavation close to or lower than the mean level in any pond or spring line.*

**NO.** The nearest pond is the Leg Of Mutton in Golders Hill Park, 825m away in a direct line. The site ordnance level is above this pond.

#### **Figure 2. Slope Stability Screening Flow Chart.**

*Q1. Does the existing site include slopes natural or manmade greater than 7°*

**NO.**

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*Q2. Will the proposed re-profiling of the landscaping at site change slopes at the boundary to more than 7°*

**NO.** There are no re-profiling works.

*Q3. Does the development neighbour land have slopes greater than 7°.*

**NO**

*Q4. Is the site within a wider hillside with general slopes greater than 7°.*

**NO**

*Q5 Is the London Clay the shallowest strata on the site.*

**NO.** Site Investigation describes strata as Claygate Beds.

*Q6. Will any trees be felled or are any of the works within root zones of protected trees?*

**NO.**

*Q7. Is there a history of seasonal shrink swell subsidence in the area? And evidence that affects the site.*

**NO.** Site examination of buildings did not reveal evidence of subsidence due to shrink / swelling of soils.

*Q8. Is the site within 100m of a watercourse or a potential spring line.*

**NO.**

*Q9. Is the site within an area of previously worked ground.*

**NO.** The site is presently a dwelling within its own land.

*Q10. Is the site within an aquifer.*

**NO.** See figure 8, site above 'unproductive strata'

*Q11. Is the site within 50m of Hampstead Heath Ponds.*

**NO.**

*Q12 Is the site within 5m of a highway or pedestrian Way.*

**YES.** Kidderpore Gardens footpath is within 2.0m of the proposed front lightwell. As described in the Design Philosophy the structural elements at subterranean level will be designed to accommodate the loading from the Public Highway.

*Q.13 Will the proposed basement significantly increase the differential depth of foundations to the relative properties.*

**YES**

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Q. 14. *Is the site over any tunnels.*

**NO**

### Figure 3. Surface Flow and Flooding Screening Flowchart.

Q1. *Is the site within the catchment of the pond chains on Hampstead Heath.*

**NO.**

Q2. *As part of the proposed site drainage will surface water flows be materially changed from the existing route.*

**NO.** The existing surface water routes will not be changed by the development.

Q. 3. *Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas.*

**NO.** The development does not increase the impermeable paved areas.

Q4. *Will the basement result in changes to the profiles of the inflows of surface water being received by adjacent properties or downstream watercourses.*

**NO.** The development does not increase the impermeable paved areas.

Q5. *Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses.*

**NO.** The presence of the basement structure will not alter the quality of the surface water.

Q6. *Is the site in an area known to be at risk of flooding?*

**YES.** Camden Planning Guidance on page 29 lists Kidderpore Gardens as being flooded in 1975.

**STAGE 2 - SCOPING FOR BIA- Reference Camden Planning Guidance Basements and Lightwells**

**Figure 2.**

*Q12 Is the site within 5m of a highway or pedestrian Way.*

**YES.** Kidderpore Gardens footpath is within 2.0m of the proposed front lightwell. As described in the Design Philosophy the structural elements at subterranean level will be designed to accommodate the loading from the Public Highway.

**The structural element design and stability of the walls and base to the front light well will be made to accommodate a surcharge load of 10KN/m<sup>2</sup> or wheel load of 40KN which ever gives the most onerous loading.**

**Design of final structure and temporary elements within the method of construction will be made to minimise ground movement laterally, refer to method statement for construction.**

*Q.13 Will the proposed basement significantly increase the differential depth of foundations to the relative properties.*

**YES**

**The construction of the basement below no 21 will require underpinning of the party wall shared between no 21 and no 19, these foundations will be some 2 to 2.5m below the existing foundations.**

**The borehole investigation has shown the site to be overlain with 1.7m depth of made ground then the firm silty clay of the Claygate beds, the investigation lists the Claygate beds as medium shrinkage potential. It is probable that the existing foundations are formed into the Clay, i.e. at least 1.70m below ground level which is below the effective depth where seasonal variation can occur within the ground. It is unlikely therefore those seasonal variations within the soils will differentially affect the varying level of foundations.**

**Prior to works commencing the existing fabric of 21 and the adjoining buildings will be made to identify and record any existing cracks or movement. Monitoring points will be fixed at third points along the party wall, these levelled horizontally and vertically, these would be checked weekly to monitor movement of the party wall.**

**Differential movements between the underpinned foundations and those on the adjoining property will be minimised and controlled through careful structural design and controlled construction. The new and existing foundations will be founded upon similar material, i.e. the Claygate beds. Structural design will be made adopting lower than normally acceptable bearing pressures at formation level these to control**

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settlement movements, or pressures that imitate the existing bearing pressures below the existing foundations.

The previously issued method statement and construction sequence is added below for information.

### General Brief Method Statement For Construction of the Basement

The exact sequence of works will be agreed with Main Contractor and Structural Engineer, a Construction Method Statement for the works could be as follows.

- a) The walls to the perimeter of the new basement will be underpinned in reinforced concrete. The underpins will take the vertical loads from the walls and horizontal loads from the earth. During their construction the walls and bases will require laterally propping in the temporary condition; propping will be made against the central earth puddling.
- b) Underpinning legs will be excavated in short sections not exceeding 1200mm in width.
- c) The sequence of the underpinning will be in the 1, 3, 5, 2, 4 sequence and such that any given underpin will be completed, dry packed, and a minimum period of 48 hours lapsed before an adjacent excavation commenced to form another underpin.
- d) In the event that the existing foundations to the wall are found to be unstable, sacrificial steel jacks will be installed underneath the foundation to prop the bottom few courses of bricks. These steel jacks will be left in place and will be incorporated into the concrete stem.
- e) Whilst forming the wall and in the event that the vertical soil face is unstable, lateral propping will be provided as required to the excavation and to the sides of the working trench. The front and side faces of the excavation will be propped using a sacrificial inert board and acrow props as appropriate.
- f) The wall and base may be formed in two separate drives. The first drive being the formation of a 1.50m portion of wall, these formed a maximum of 1200mm wide in a 1, 3, 5, 2, 4, sequence. The subsequent second drive forming the remainder of the wall and the base will be formed in the same sequence but lapping the 1<sup>st</sup> drive by at least 50% of the drive over.
- g) Concrete will be chuted from the Mews into a 'holding bath' within the excavated basement and placed by wheelbarrow and /or bucket, or mixed on site. The exact arrangement will be finalised when works commence on site.
- h) Excavation for an underpin section will be excavated in a day, and the concrete to the base poured by the end of the same day.
- i) The concrete to the stem (or first drive) of the underpin will be poured the following day. This will be poured up to within 50 – 75mm of the underside of the existing wall foundations.
- j) On the following day, the gap between the concrete and the underside of the existing foundation will be dry packed with a mixture of sharp sand and cement (ratio 3 : 1).
- k) Once the dry pack has gained sufficient strength, any protrusions of the footings into the site will be carefully trimmed back using hand tools to avoid causing any damage to the foundation. The protrusions will be trimmed back to be flush in-line with the face of the wall above.
- l) A minimum of 24 hours will be allowed before adjacent sections will be excavated to form a new underpin.
- m) Once all pins are complete a temporary cross propping system will be introduced between the walls to allow bulk excavation will be carried out down to formation level.
- n) The below – slab drainage for foul & ground water, sumps and pumps will then be installed. The pumps will discharge the foul / ground water into the sewer system to the front of the properties. The drainage layout will be designed in due course.
- o) The basement slab will then be constructed, once cured this will provided the designed propping to the walls and the temporary cross propping can be removed.
- p) A cavity drainage layer will be laid to the slabs and walls.
- q) An arrangement of beams will be inserted at existing ground floor level to support the new ground floor over the constructed basement, either timber suspended or precast concrete beam and block.

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### Construction Sequence ( Assuming Occupancy of the property during the works)

1. *The light well to the front of the property will be constructed first to give access to the remainder of the works. The light well will be constructed by initially forming the upper part of the wall. Excavation will be made to form this part of the wall in the ground approximately 1.0 to 1.5 m deep. Once cured this wall will then be underpinned in the usual sequence to form the remainder of the wall and its base. Once formed the light well will be backfilled but leaving enough space to allow access subsequent works under the property.*
2. *Construction under the property will commence by forming a heading tunnel, approx 1.50m deep, below the lower ground floor, propping the existing concrete floor as the tunnel extends. Side tunnels will be formed to access the underpinning points. Priority will be given to pins or bases that will eventually support the structural steel supporting the existing lower ground floor slab. This steel work will be placed as the area below the floor is opened by the works.*
3. *Underpins will be carried out in the usual 1, 4, 2, 5, 3 underpinning sequence, the construction sequence for forming the pin is shown on the attached sketch drawing. Backfilling of the excavation will be made after each pin has been formed.*
4. *On completion of all underpinning and fixing of the structural steelwork supporting the lower ground floor, cross propping of the pin walls will be erected to allow release of the local pins that may be propped against the central dumpling so the basement slab can be constructed. The propping will be designed to suit the lateral loads behind the walls but generally takes the form of a series of horizontal slimshor props adequately laced and braced set approximately 1.5m from lower ground floor level.*
5. *Bulk excavation will be carried out down to basement slab formation level. Muck will continue to be removed from site via the conveyor belt.*
6. *The below – slab drainage for foul & ground water, sumps and pumps will then be installed. The pumps will discharge the foul / ground water into the sewer system to the front of the properties. The drainage layout will be designed in due course.*
7. *The basement slab (ground – bearing slab) will then be constructed.*
8. *After the new basement slabs have cured, the cross propping will be removed.*
9. *A drained – cavity layer will be laid to the slabs and walls.*

### **Figure 3. Surface Flow and Flooding Scoping Flowchart.**

Q6. *Is the site in an area known to be at risk of flooding?*

**YES.** Camden Planning Guidance on page 29 lists Kidderpore Gardens as being flooded in 1975.

**This occurred 37 years ago due to surcharge of existing drains during a storm and it is assumed that drainage improvements have been made to improve the situation. No 21 in the highest part of Kidderpore Gardens and as such any surcharge flooding to the road will travel away down the road and not have detrimental effect on the basement. The basement will be protected from water / moisture by an internal cavity drainage layer, ( DELTA SYTEM) , gravity drainage will not effectively be linked to the basement therefore the external drainage system will not be able to surcharge the new basement.**

**It should be noted that this is not a self contained apartment.**

**T. J. Vincent BSc C.Eng M.I.Struct E.**

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