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# Outline Method Statement for Temporary Works

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| Project Title: | 1 Frognal Gardens. London NW3 6YU |
| Job Code: | ARC1170 |
| Description: | Structural Engineers report for Planning Condition No. 9 |
| Client: | 800 Group |
| Prepared by: | Richard Cordingley BEng (Hons) |
| Date: | Dec 2011 |
| Drawings Referenced: | KSR Architects – Architectural drawings<br>Elliot Wood - Structural drawings |

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## 1 Introduction

Arc Design & Engineering Ltd have been appointed 800 Group to provide a methodology for the safeguarding of the appearance and the structural stability during the construction phase of the building project at 1 Frognal Gardens. We are also tasked to oversee the temporary / enabling works and to design and detail the temporary structures as required. We will also liaise with the other specialist designers to ensure the overall structural integrity and design philosophy for the temporary works are understood and maintained at all times. Specialist designers will design the piled retaining wall and any temporary scaffold type structures used to support existing building elements where they are to be retained and are not stable in their own right.

The works are to refurbish the property and create a new lower ground floor or basement whilst taking the opportunity of remodelling the upper storeys whilst protecting the important and protected elements of the property. This is all as detailed in the Architectural submissions by KSR Architects. The permanent structure is fully detailed within the structural package submitted by Elliot Wood.

## 2 General structural philosophy of he construction process

The proposed basement will be formed with the aid a bored pile wall (contiguous) allowing the formation of the reinforced concrete structure of the basement. The rear of the basement will support the new rear garden and the remaining part of the basement structure towards the front of the site will support the main house above.

In order to meet a demandingly short construction programme and to aid in Party Wall matters a top down construction process of forming the basement has been proposed. This method of working has the following advantages:

- The contiguous piled walls are effectively propped prior to excavation and so lateral deflections at the pile head are minimised as far as is reasonably possible. This safeguards the stability of any adjacent structures etc.
- Work to both the basement and the super-structure can be concurrent once the top-down slab is complete. This gives massive time saving potential.

The structural stability of the building will be maintained at all times, retained element will be supported by a temporary scaffold retention system taken back down to temporary steel beams which span from side wall to side wall. Any remaining out of balance forces will be transferred to the contiguous piles or the internal piles via the same temporary beams or the top down reinforced concrete slab once constructed. The existing building elements that are retained will be supported upon the top down construction slab which is to be cast at a level, within the existing basement, just below existing ground floor level. The top down slab will be temporarily supported upon steel framing and columns which are in turn supported upon the internal

permanent piles. Positional restraint is to be maintained at all times by connection back to the contiguous piled walls prior to excavation of the new basement.

Support to the existing wall is facilitated by the introduction of a slot which is achieved by sequentially cutting out pockets in the wall and placing steel stools until the building is supported entirely on the stools. This system was pioneered by Abbey Pynford. The reinforced concrete is introduced into the slot to provide vertical support to the walls. The slab supporting the perimeter wall cantilevers from the internal support provided by steelwork bearing upon piles.

Once excavation is complete the proposed structure will then be built from the base back up to provide permanent support to the top down slab

## 3 Sequence of works

1. Access scaffold to erected to the perimeter.
2. Soft strip of the building and demolition where required.
3. Install steel beams at just above ground floor level which will support the scaffold retentions system.
4. Install the scaffold retention system.
5. Complete any remaining demolition now that all retained building elements are secured.
6. Access scaffold to the perimeter is removed to allow for perimeter contiguous piled wall to be installed.
7. Install contiguous piled wall and internal piles with temporary steelwork columns and framing etc as required to temporarily support the top down construction slab.
8. At the appropriate level within the existing basement cut pockets into the existing walls and place the steel stools as described above
9. Construct the top down slab with connection back to the contiguous piled wall. This connection will be in the form of the permanent works or by means of temporary props etc.
10. Excavate below the top down construction slab
11. Construct the permanent works above and below the slab
12. Remove the temporary structure once the relevant permanent works are in place.

Once the permanent reinforced concrete shear walls are complete in the basement positional restraint is no longer required from temporary props to the contiguous piled wall and so these can be removed. As the proposed permanent works to the superstructure are completed then the scaffold retention systems can be sequentially removed as appropriate.