

## Outline Structural Description – New Entrance Block And Pavillion

PROJECT TITLE: CORAM  
PROJECT NO. A056571  
DATE: 13.09.11

### 1.0 PAVILLION

The pavilion structure is currently proposed to consist of a single storey steel frame with a timber roof supported on steel primary beams. The structural zone currently allowed for the roof structure is 350mm excluding finishes, deflections and tolerances.

Lateral stability is to be provided by a combination of diagonal bracing and moment frames. Diagonal bracing is preferred however moment frames are used in locations where bracing is not suitable architecturally.

Internal partitions and cladding are to be non-loadbearing.

The ground floor is proposed to be a suspended reinforced concrete slab supported on bored piles. There are to be no pile caps and instead a relatively thick 450mm deep ground slab is proposed. This is to be designed to allow the piles to be repositioned on site by up to 500mm to minimise clashes with the roots of the mature trees on site. The entire ground slab is to be placed above existing ground level as illustrated below to minimise excavation on site and any impact on the existing tree roots. A 100mm thick void former layer is proposed below the ground floor slab to allow ground movement in the tree root zones to occur without stressing the ground slab.

The piles are proposed to be 300mm diameter bored piles between 10 and 20m long depending on loading and spaced at approximately 3m centres. The piles are to be designed for additional load as necessary to allow their positions to be adjusted by up to 500mm.

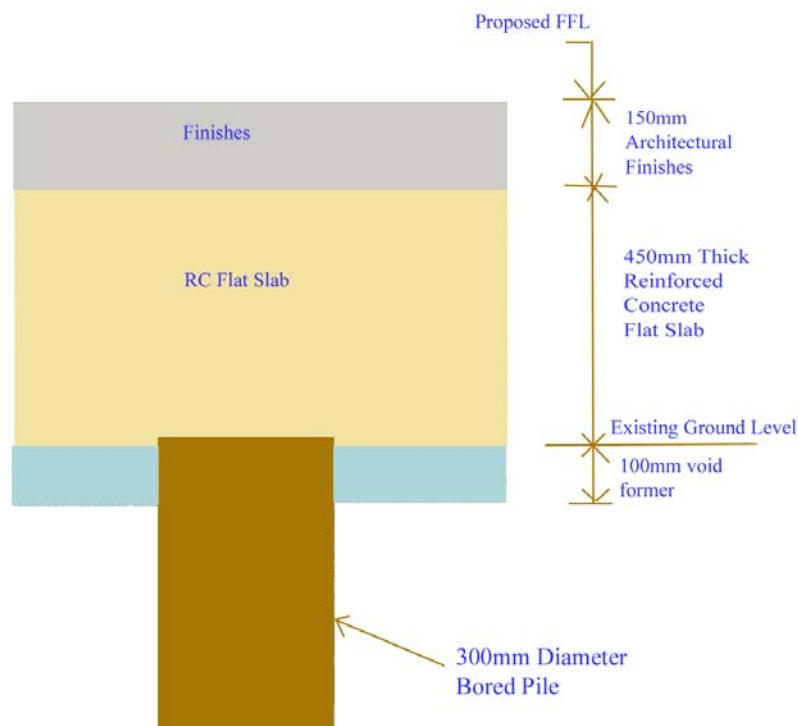


Figure 1: Section through the suspended ground slab at a pile position



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### **2.0 NEW ENTRANCE BLOCK**

The entrance block structure is currently proposed to consist of a two storey reinforced concrete frame with RC flat slabs at ground floor, first floor and roof.

Lateral stability is to be provided by a combination of RC shear walls and moment frames. RC shear walls are preferred however moment frames are used in locations where shear walls are not suitable architecturally.

Internal partitions and cladding are to be non-loadbearing.

The ground floor is proposed to be similar to that of the Pavillion shown in figure 1 however as the entrance block is a heavier structure the piles will need to be spaced more closely at approximately 2 to 2.5m centres.

The piles are proposed to be 300mm diameter bored piles between 15 and 20m long but depending on final loading 450mm piles may need to be considered. The piles are to be designed for additional load as necessary to allow their positions to be adjusted by up to 500mm to avoid existing tree roots.

During later stages of design a lighter steel framed solution will be investigated with a view to reducing the number of piles.

### **3.0 PROPOSED NEW FENCING ADJACENT TO THE WIDENED PUBLIC FOOTPATH**

The new fencing is to separate the Coram Campus from the widened public footpath and runs across the root zones of several mature trees. To limit the impact on the tree roots the fence should consist of posts at as large a spacing as possible with infill fence panels between. The base of the infill panels should be at approximately the level of the existing ground to avoid the need for a continuous trench excavation through the tree root zones.