

Guidance on groundwater control is given in CIRIA report 113 'Control of Groundwater for Temporary Works'. Any temporary works should be designed by a suitably qualified engineer or competent person, particularly where personnel access is necessary, in accordance with the requirements of the Construction (Design & Management) Regulations.

## **7.5 Ground Floor Slab**

7.5.1 As the ground conditions have been characterised by cohesive superficial soils in proximity of existing semi mature to mature trees it is recommended that the ground floor slab for the planned extensions are fully suspended.

## **7.6 Geotechnical Laboratory Tests**

7.6.1 Index Property Tests

7.6.1.1 As part of the site investigation, index property tests have been carried out by Professional Soils Laboratories upon three samples of the natural superficial sandy, gravelly clays and the results are included within the appendix. The testing has classified the cohesive soils as being of low and intermediate plasticity and low volume change potential according to the current NHBC guidelines (NHBC Standards Chapter 4.2 Building Near Trees). The NHBC Standards recommend a minimum foundation depth of 0.75m where low volume change potential soils are present. At the time of the investigation the to the north and south of the area of the planned extension are semi mature to mature trees of various species and located at the boundaries of the school premises. The presence of these trees should be taken into account when designing the foundations for the any future structures and deepened accordingly.

## **7.7 Buried Concrete Classification**

7.7.1 As part of the site investigation, a range of tests have been carried out by Chemtest Laboratories upon selected soil and groundwater samples in accordance with those listed in BRE Special Digest 1 and the results are included within the appendix, listed together with the contamination analyses. For preliminary design purposes, in view of the prevailing ground conditions, it is recommended that design proceeds using AC-1 for buried concrete structures.

## **7.8 Soil Permeability & Soakaway Drainage**

7.8.1 The ground investigation has not included an assessment to determine if the ground conditions can support soakaway drainage. The ground conditions have comprised a shallow mantling of made

ground underlain by sandy, gravelly clays. A shallow groundwater body is present within the superficial soils. Clay soils are usually characterised by only very low rates of permeability or are considered practically impermeable. On the basis of the site investigation carried out, the ground conditions are not suitable to support soakaway drainage and it is recommended that an alternative solution to deal with surface water drainage is adopted.

## 8. Comments and Recommendations: Contamination

### 8.1 Updated Conceptual Site Model

#### *Potential On-Site Current Contaminant Sources – Updated*

8.1.1 The exploratory holes of this site investigation have revealed the presence of made ground to depths of between 0.40m and 0.70m below ground level. The made ground contained gravel sized fragments including brick, hardcore, sandstone, mudstone and quartz pebbles. No visual or olfactory evidence of contamination (e.g., odours or standing) was recorded during the logging of the window sample liners. When combined with the findings of the Preliminary Conceptual Site Model, it is therefore considered that the risk of current on-site sources of contamination affecting the Human Health of future site users continues to be 'low'.

8.1.2 On the basis of the information available to date there are a number of contaminant linkages between sources and receptors. These are discussed below.

#### Potential Receptors

- Human Health - Humans including construction workers and future occupiers of the planned educational facilities.
- Controlled Waters – the groundwater body beneath the site.
- Other Receptors - Building substructures

#### Potential Pathways

- Human Health - Skin / eye contact, ingestion and inhalation during site development and by contact / inhalation from future occupiers.
- Controlled Waters - Percolating water may act to mobilise contaminants and transport them downwards under gravity towards the water table.