1492/20/DP

18/02/2015

The Old Dairy

Summary of Site Investigation findings

**Introduction**

The investigation comprised of 3 boreholes (BH 1-3), 12 trial pits and 4 window samples (BH A-D) and was completed by the specialist contractor Site Analytical Services (SAS) during December 2104 and January 2015. Standpipes were installed in all 3 of the boreholes so that ground water levels could be monitored over a month.

A detailed factual geotechnical report, together with the findings and an interpretative report on their ground contamination investigation has been produced by SAS as the contamination Consultants for the project.

**Geotechnical**

The boreholes confirmed the expected geology beneath the site, comprising of a variable layer of Made Ground to a depth of between 0.4 and 2.3m, overlying 0.5m of sandy gravely clay overlying London Clay which was proven to a depth of 25m.

Ground water was not encountered in Boreholes 2 and 3, and SAS report the material in these boreholes remained essentially dry throughout the investigation. In Borehole 1, to the west of the site, water was encountered at a depth of 2.5m. Recent readings from the standpipes say that the ground water level had risen to a depth of 1.8m in BH1 and groundwater had stabilised at a depth of 5.5m and 6.4m in Borehole 2 and 3 respectively.

SAS have suggested that the large difference in ground water level found across the site is due to the presence of more permeable made ground at the location of borehole 1 compared to those present at the locations of boreholes 2 and 3. They also say that the water table across the site represents a perched water table in the made ground above the effectively impermeable London Clay.

For the basement it may be necessary to control the ground water during the construction period with the use of conventional pumps from open sumps. We have discussed this matter with the Pringuer James Consultancy who designed a single storey of basement for 10 Wakefield Street, an adjacent property to the location of Borehole 1. They have told us that they did not encounter any ground water ingress into their basement excavation during construction.

Trial pits exposed the foundations to both the main building and the boundary wall to St Georges Gardens. The existing foundations generally comprised of concrete strip footings of varying depth bearing onto the made ground and sandy clay. The results from these will be used to determine how we may underpin the northern and garden walls.

The borehole findings and results from both the laboratory tests on soil samples taken from the boreholes, as well as the in situ tests carried out as part of the borehole works are being used to help with the design of the proposed new strip foundations and the underpinning to the existing walls.

The detailed findings from the site investigation will be used in any detailed analysis for ground movements that become necessary as the design proceeds and the party wall negotiations are developed.

**Contamination**

SAS say in their report that contaminants found during the investigation works which are of concern for the site are:

* Elevated Lead levels across the site
* Asbestos was found in the BHB location
* Ground gas was also encountered on site

Each of these will need to be considered in the detailed design of the scheme by S333 Architects, advised by SAS in order to mitigate the risk of those working on site and the eventual end users.

They have also said that the levels of water soluble sulphur on site could lead to sulphate or acid attack to any buried concrete and have stated that Class DS-3 concrete should be used in final design. This is usual for buried concrete in London.

SAS have advised on the Waste Acceptance criteria for the Made Ground, Sandy gravely Clay and London Clay encountered during the investigation works.

SAS have said that the soil on site can be classified as non-hazardous, with the exception of BH3 at 1.00m which is classified as hazardous due to lead content and BHB at 0.50m which is hazardous due to Asbestos content.

The Contractor will be required to carry out further testing as part of their works to confirm these criteria prior to disposing of the excavated material.