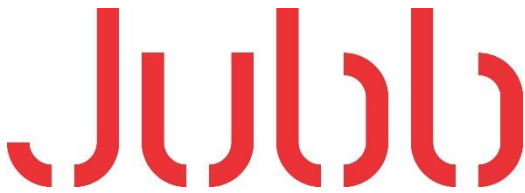


Project Number
17246



Title: Topic Note#03 – Ground Condition

Date: 26/03/2018

1.0 Introduction

- 1.1 The site at Land South of Northampton Road, Bromham which is located is located approximately 1.3 km (as the crow flies) west of the centre of the village of Bromham, comprises two fields which have been open fields for the entire period for which mapping is available. The larger of the two fields has been used for the growing of crops while the smaller is grassland. The site boundaries typically consist of mature deciduous trees and hedgerows.
- 1.2 The site topography is generally gently undulating, the survey shows that there is a steep and steady fall in gradient across the site, from the north-west to the south-east corner of the site, with a total difference in levels of approximately 19m.
- 1.3 There is also a steeper drop in levels to a low point in the north western corner. The A428 sits approximately 4-5m below site level to the west, with an earth bank leading from the site boundary down to the A road.

2.0 Baseline Conditions

- 2.1 The underlying geology of the site comprises five geological units as follows: The Kellaways Sand Member; The Kellaways Clay Member; The Cornbrash Formation; The Blisworth Clay Formation; and the The Blisworth Limestone Formation. These units comprise of various layers of sandstone, siltstone, limestone and mudstone.
- 2.2 The site is within an area of limited potential for groundwater flooding to occur, with a small part of the north western corner of the site shown to be within an area for the potential for groundwater flooding of property situated below ground level.
- 2.3 The nearest primary watercourse is the River Great Ouse located 1km to the east of the site; the site is not indicated to be at risk from surface water flooding.
- 2.4 Data obtained from the British Geological Survey (BGS) shows that the site is at low or very low risk from subsidence based on the underlying strata.
- 2.5 Review of available records shows that while there are nearby entries for coal/mineral mining and landfill/waste management sites, there are no entries for the site at Land South of Northampton Road.
- 2.6 The site in a lower probability radon area therefore no radon protective measures are necessary in the construction of new dwellings.
- 2.7 Having been in agricultural use, the principle sources of contamination on-site will be from Agricultural fertilisers and chemicals and from potential made ground and these might include the following sources of contamination: heavy metals (from made ground); Organic/PAH/Hydrocarbons (from agricultural machinery); Sulphates and pH; Asbestos (potential in made ground); and ground gases. However, given the history of the site, the likelihood and risks associated with this are low.

3.0 Key Opportunities and Constraints

- 3.1 Depending on the strength of the underlying soils, shallow foundations are likely to be suitable across much of the site, founding on these deposits or where absent directly onto the weathered bedrock.
- 3.2 Ground bearing floor slabs could potentially be viable depending on the nature of the site soils and the depth to bedrock.
- 3.3 In terms of constraints ground conditions over much of the site are expected to comprise topsoil over natural strata, with the possibility of limited or sporadic areas of made ground, associated with agricultural activities.
- 3.4 There is potential for shallow groundwater on site, particularly where sandstone and limestone strata are present.
- 3.5 There is also the potential for boulder sized dropstones to be encountered below ground which may impact on the use of piling foundation solution if this is required.
- 3.6 Infiltration drainage may be feasible in some areas of the site where non-cohesive soils are located, depending upon groundwater levels and specific infiltration rates as determined by ground investigation work.

4.0 Necessary Mitigation and Enhancements

- 4.1 Additional work, in the form of an intrusive ground investigation will be required to determine the ground conditions to a greater resolution and will need to incorporate contamination testing to determine the full extent and concentration of contamination.
- 4.2 The results of this testing will determine the appropriate foundation solution and any mitigation or remediation required in terms of contamination.

5.0 Summary

- 5.1 Given the proposed residential and possible educational use, the likely ground conditions and potential for contamination are considered unlikely to require any specialised foundation or remediation solutions and the site would be suitable for such development