

EXECUTIVE SUMMARY

19058 Land to the Rear of 25 – 35 Orchard Way, Harwell, OX11 0LH – Geotechnical and Phase II Contamination Report

Feltham Construction Ltd propose to develop this site by constructing 16 No. detached properties over two plots with associated private gardens, car parking and detached garage bike storage.

The geology map reports the Upper Greensand Formation over the entire site. Old maps show that the area had a predominantly agricultural usage until the late 1960's when the surrounding area became residential and Orchard Way was first constructed.

Intrusive investigation has established a veneer of Topsoil, a very localised mantle (c.0.5m) of Made Ground, and a continuous stratum of variably weathered, firm becoming stiff silty Clay (with bands of medium dense clayey gravel) to depths of about 1-2m below existing ground level. From c.1-2m depth, weak to moderately strong sandstone was proven to 2.5m depth.

The variably Weathered Upper Greensand can provide an adequate bearing stratum for reinforced strip footings with design bearing pressures of 150kN/m² at approximately 1m depth increasing to 250kN/m² at c.2m depth. A 'flexible' foundation raft or short bored piles are other alternative foundation solutions. Where new structures are close to existing or proposed trees, consideration should be given to the inclusion of compressible material such as clayboard to accommodate ground heave at critical locations. Ground floor slabs may be designed as ground bearing assuming a 'weak' formation on clayey soils or 'normal' on granular soils. Design CBR values of at least 3-4% should be adopted for clayey Weathered Greensand at 0.5m depth, increasing to 5+% for gravelly Weathered Greensand.

The classification tests suggest that the founding strata will be of medium to high plasticity and shrinkage potential. All foundations should be designed and constructed in line with NHBC guidelines for buildings near trees.

Elevated carbon dioxide (2.2-6.3%) was proven in both boreholes in the natural ground. In this case where there is raised carbon dioxide it is recommended to increase protection to Characteristic Situation 2. This is generally covered by including a carbon dioxide gas proof membrane as a replacement for a standard DPM and having a sub floor void beneath suspended floor slabs.

Design Sulphate Class of DS-I and ACEC Class of AC-I d are appropriate for buried concrete.

Based on the desk study and ground investigations completed to date, the risk posed to the development and the future users from a contaminated land viewpoint would appear to be low and no further investigations are recommended.