

Broughton Road, Banbury

October 2021

Project Name:	Broughton Road, Banbury
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BWB Consulting Ltd (BWB) was instructed by Lone Star Land Ltd (the Client) to produce a Phase 1 and 2 Geo-Environmental Assessment for land north of Broughton Road, Banbury. The proposed development is anticipated to comprise a residential development with associated infrastructure.

At the time of writing, the assessments are in the process of being undertaken. A high level review of the desk study information is provided below which summarises the key geo-environmental aspects of the site in respect of the proposed development.

The Site

The site comprises an area of undeveloped agricultural land with bordering boundary hedges. The site decreases in elevation from approximately 160m above ordinance datum (AOD) in the north to 130m AOD in the south.

The history of the site, based on historical Ordnance Survey mapping dated from 1882 to 2021, indicates that the site has formed part of Bretch Farm since 1882. The site has been used for agriculture with some small farm outbuildings in the east of the site. A small pond is mapped in the south of the site adjacent to Broughton Road, Banbury until 1982.

The surrounding land has an agricultural history, with old clay pits located to the east and south of the site. Since approximately 1968, there have been residential developments to the north and the east of the site.

The site is underlain by topsoil directly overlying bedrock of the Chipping Norton Limestone Formation (Principal Aquifer), the Horseyhay Sand Formation (Secondary A Aquifer) and the Northampton Sand Formation (Secondary A Aquifer) in the north of the site. The Whitby Mudstone Formation (Unproductive Strata) underlies the south of the site. There are no superficial deposits mapped on site. Potential Made Ground is likely to be limited to the areas around the farm buildings.

There are no surface water features within 500m of the site.

The site is located within a radon affected area, with a large proportion of the proposed development area in the north of the site indicated to be in an area where between 5% and 10% of properties are affected by elevated radon levels. Higher levels are recorded in the south of the site (10-30%), however, this is an area where there are no proposed buildings. Radon protection measures will be required in all proposed dwellings.

Environmental Review

A significant contamination source has not been identified at the site. There is potential for localised Made Ground at the site around the farm buildings which could represent a localised potential source of contamination and/ or ground gasses. The potentially infilled small pond near the proposed drainage basin is unlikely to represent a risk to human health or controlled waters due to its location, and the low sensitivity of the underlying aquifer.

The Phase 2 ground investigation which is currently being progressed will aim to quantify the potential presence of Made Ground and assess whether it represents a potential

contamination source which could impact on controlled waters or human health. The gas monitoring will also seek to assess whether ground gas from off-site sources are migrating towards site, although at this stage it is considered unlikely.

Geotechnical Review

Based on the desk study information reviewed, a shallow strip foundation bearing onto the bedrock is likely to be suitable for this development.

There is a small area to the south of the proposed development area which is indicated to have a moderate risk of slope instability. It is located away from proposed buildings, however, the potential for slope instability should be considered as part of the proposed investigation works.

Recommendations

The ground investigation element of the Phase 1 and 2 Geo-Environmental Assessment will be undertaken to confirm ground conditions, quantify potential pollutant linkages, assess the ground gas regime and allow for in-situ and chemical testing to inform foundation options.