

BARKWAY DRAINAGE TECHNICAL NOTE.

1.0 Introduction

The current scheme has outline planning approval based on the drainage design identified within the flood risk assessment undertaken by Ardent Consulting Engineers ref: 163461-02a dated June 2018.

The drainage strategy within the report indicated the use of infiltration basins to allow the disposal of surface water from the site. This was on the basis of infiltration testing undertaken by Green Earth Management Company (GEMCo) in February 2017. This testing concluded that shallow infiltration was unsuitable given the presence of shallow clay deposit but recommended depths of 2.4m would provide rates in the order of 10-6 m/sec.

2.0 Further investigations

As part of the on-going Ground Investigation Assessment and due diligence, an additional investigation was undertaken by RPS which included trial holes, boreholes and borehole soakaway testing (Ref: BMK23256_Barkway Ground Conditions Report, dated 13 May 2024)

The conclusion of the investigation was that shallow soakage rates up to 5m in depth would be very poor due to the extent of clay within the material. Beyond 5m the clay content reduced significantly and the infiltration potential increased, therefore infiltration by deep bore soakage was recommended. The other major conclusion was that the location of the chalk varied across the site and this variance was very acute in some locations. Therefore, locations of infiltration systems would need to be carefully considered against the trial hole data obtained.

A recent scheme located to the south of the proposed development site (Planning ref: 18_00919_DOC) has similarly utilised a deep bore soakage disposal method.

3.0 Alternative drainage strategy

Following the conclusion of the recent RPS ground investigation, it is clear that the outline drainage strategy would not generate a suitable surface water disposal system and an alternative solution would be required. Therefore, the current design has developed into the provision of infiltration through deep bore soakaways as the primary method of surface water disposal for the site.

The proposed drainage strategy has been developed to utilise a storage system of balancing ponds located strategically around the development and in similar locations to the outline design. The water from these balancing ponds is then directed towards borehole soakaways located in the chalk to disperse the water and infiltrate to the ground.

Environment Agency consent will be sought for this disposal method, via the water quality permitting scheme.

The calculations provided by Robert West identify that the infiltration systems can half drain in 24 hours for the 1 in 10 year return period event and the whole system can accommodate the 1 in 100 year event including climate change.

Refer to the Robert West drawings and documents for further details.

Shaun Pentlow

Redrow Homes South Midlands Ltd.

07.08.2024