Swallow Hill Road, Mapplewell

Percolation Test Report

February 2025

Mr P Needham

AMA Project Number: 22972

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REPORT QUALITY MANAGEMENT

	First Issue	Revision 1	Revision 2	Revision 3
Remarks	Planning			
Date	23/02/25			
Prepared	AY			
Checked	JE			
Authorised	AY			

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1 TESTING METHODOLOGY

1.1 BRE 365 INFILTRATION TEST

1.1.1 All tests undertaken at the site were excavated following the below instruction as outlined in BRE 365 Digest.

- Excavate a soakage trail pit to the required depth (typically 1.0m - 2.0m deep) using minimum width (0.3m) and length (1.0m). Carefully trim sides and bottom.
- Carefully measure size of pit and note sizes below.
- Fill soakage hole briskly with water (from bowser) to at least three quarters full. Being careful not to wash away the sides. (Note: a 0.3m wide, 1m long, 1.5m deep trench needs at least 350 litres (80 gallons) of water)
- Place straight edge over top of soakage pit and measure (dip) to the top of the water.
- Record time versus dips in table below. Dip every 5 minutes for the first hour and every hour until pit is one quarter full. Repeat test 3 times in total on the same or consecutive days.

2 INTRODUCTION

2.1 INTRODUCTION

2.1.1 This infiltration test report has been prepared by Andrew Moseley Associates (AMA) in relation to the drainage design associated with land at Swallow Hill Road, Mapplewell. This report will focus on:

- Development and Site Description
- Weather Conditions
- Dimensions and Properties of the Pit
- Results
- Summary

2.1.2 The undertaken infiltration test has been carried out to understand the porosity of the ground and shall be used to establish whether infiltration methods could be viable or not for the site. The results of the testing are not intended to be used for detailed design of the whole site, location specific tests to BRE365 should be undertaken during detailed design should the viability of the preliminary tests look promising.

2.2 DEVELOPMENT DESCRIPTION AND LOCATION

2.2.1 Andrew Moseley Associates (AMA) was appointed by Mr P Needham to provide a Percolation Test Report in support of a residential development, located at Land at Swallow Hill Road, Mapplewell, Barnsley, S75 1LY.

2.2.2 The site is referenced in Table 2-1 and Figure 2-1 below.

Table 2-1 Site Context

Site Name	Swallow Hill Road
Location	Mapplewell, Barnsley
NGR (approx..)	SE 32474 09152
General Locality	The site is located on undeveloped Greenfield land and borders agricultural land to its north, undeveloped greenfield land to its west, residential development to its east, and Swallow Hill Road to its south. Pedestrian and vehicular access to the site is provided via Swallow Hill Road which is located along the southern boundary of the site.
Development Type	Residential

Figure 2-1 Site Location Plan

2.3 GEOLOGY AND GROUND CONDITIONS

2.3.1 British Geological Survey (BGS) Open Geoscience website indicates that the entire site is underlain by Pennine Middle Coal Measures Formation – Sandstone with no overlying superficial deposits.

2.3.2 The BGS website information indicates that there is no borehole record within close proximity to the site.

2.3.3 Information obtained from the Cranfield University's Soilscape website indicates that the majority of the site is located in an area classified as being Soilscape 17, which is defined as having slowly permeable seasonally wet acid loamy and clayey soils. The south of the site is located in an area classified as being Soilscape 20, which is defined as having loamy and clayey floodplain soils with naturally high groundwater.

2.4 HYDROGEOLOGY

2.4.1 According to the Department for Environment, Food and Rural Affairs (DEFRA) MAGIC map, the site is indicated as not being located in a Groundwater Source Protection Zone (SPZ), as defined by the Environment Agency (EA) for the protection of a potable groundwater supply.

2.4.2 The site is located as being in an area of medium groundwater vulnerability and located above a Secondary A bedrock aquifer.

2.5 WEATHER CONDITIONS

2.5.1 The infiltration test was undertaken on the 19th of February 2025, throughout the times of 9:00am to 12:00pm

2.5.2 Ground conditions were dry and there had been no rain over night. Throughout the whole test there was no precipitation and the air temperature ranged between 0-3 degrees Celsius.

2.6 DIMENSIONS AND PROPERTIES OF THE PIT

2.6.1 The percolation testing was carried out on the site on the 19th of February 2025 to establish if infiltration methods were going to be a suitable solution for draining the site.

2.6.2 1 trial hole was formed with the following dimensions:

- Trial Hole 1: 1.5m x 1.00m x 0.90m

2.6.3 The water level drop was monitored and recorded. The trial pit was located in the center of the site.

2.7 RESULTS

2.7.1 For the test completed on Test Pit 1, water was filled to a depth of 0.70m, and the water level dropped to 0.65m over a 60-minute period.

Table 2-2 Test Results

Test Pit 1	
Time (mins)	Dip (m)
0	0.70
5	0.68
10	0.68
15	0.67
20	0.66
25	0.66
30	0.65
40	0.65
50	0.65
60	0.65

2.8 SUMMARY

2.8.1 Based on the results shown above it can be confirmed that soakaways would not be viable at the site.

2.8.2 Photographs from the infiltration test can be found in **Appendix A** of this report.

Appendix A
Photographs from Infiltration Test

ANDREW MOSELEY ASSOCIATES

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