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Infiltration Test Report

1. Introduction

This report presents the results of an infiltration (soakage) test undertaken in accordance with the methodology described in *BRE Digest 365: Soakaway Design*. While this methodology is primarily intended to assess ground conditions for infiltration drainage systems, it also provides a structured means of observing how water behaves in the subsurface and whether groundwater is present within the depth of the proposed works. By measuring the infiltration rate and monitoring for any ingress of groundwater into the test pit, the test offers evidence of soil permeability and groundwater conditions. The objective of this investigation was to determine whether a high water table is present and to assess whether the ground exhibits suitable drainage characteristics to reduce the risk of localised flooding or waterlogging.

2. Site Investigation

A trial pit was excavated by Pro Build Construction on 16 October 2025 at the proposed site at Knockdown Farm, Knockdown, Tetbury, GL8 8QY. The location was chosen as the lowest point on the proposed site ~0.5m lower than the surrounding soil.



Fig 1: Site map



Fig 2: Hole location at the lowest point on site

3. Test Pit Details

Pit dimensions	40 cm × 80 cm
Depth	200 cm (2.0 m)
Excavation + test contractor	Pro Build Construction
Date excavated	16 October 2025

The pit sides were vertical as far as possible and the base was horizontal, as recommended by BRE 365. Care was taken to avoid compacting the soil at the base of the excavation.

The excavation revealed a natural subsoil comprising weathered limestone with a mix of angular stone fragments and sandy clay fines, typical of Cotswold limestone-derived soils.

No water was observed on initial excavation.



Fig 3: Hole location



Fig 4: Hole dimensions + Depth

4. Infiltration Test Procedure

The test was carried out by filling the pit with water and monitoring the fall in water level over time. The aim was to observe infiltration into the surrounding soil profile and assess whether any standing water persisted, which would indicate a high water table or poor drainage.



Fig 5: Hole After first fill

5. Results

The following table summarises the results of the infiltration tests:

Water level measurement:	0	2	3	4	5	75% → 25% Interval
Soakage Trial 1 time [min]	0	20	45	120	180	~52.4 min
depth to water [m]	0	0.88	1.4	1.8	2	
Soakage Trial 2 time [min]	0	20	50	85	125	~45.4 min
depth to water [m]	0	0.9	1.45	1.72	1.92	
Soakage Trial 3 time [min]	0	22	48	90		~43.9 min
depth to water [m]	0	0.88	1.43	1.78		

Observations:

- The water level fell steadily over the test period, with no signs of perched or rising groundwater.
- At no point during the test was there evidence of water ingress into the pit from the surrounding soil.

6. Interpretation

The observed infiltration behaviour indicates that the site does not exhibit a high groundwater table within 2.0 m of the surface. The steady infiltration rate demonstrates that the surrounding soil is permeable enough to allow surface water to drain away naturally, thereby reducing the risk of localised flooding.