

SOAKAWAY DESIGN

Date:	17/01/2018
Issue:	1
Project:	Residential Development at Greenfoot Lane, Barnsley
Client:	Richfield Developments
Brief:	Design soakaways to receive stormwater from various parts of the Residential Development at Greenfoot Lane, Barnsley.

Summary of Soakaways

Based on White-Agus Partnership Plan Ref 14-106 (June 2016), the following are required:

- Soakaways for residential developments with impermeable (roof) areas of 117 m² (Type 1, Type 1A and Type 2);
- Soakaways for residential developments with impermeable (roof) areas of 103 m² (Type 3)
- Soakaways for residential developments with impermeable (roof) areas 82.5 m² (Type 4); and,
- Soakaways for road gullies with impermeable areas of 134 m².

An infiltration rate (f) of 5.05×10^{-5} m/s has been provided by the Client.

The Table provides a summary of the required parameters of each soakaway.

Impermeable Area:	117 m ²	103 m ²	82.5 m ²	134 m ²
Type:	Type 1, Type 1A and Type 2	Type 3	Type 4	Road Gully
Length:	3.7 m	3.2 m	2.5 m	4.3 m
Width:	1.0 m			
Effective Depth¹:	1.5 m			
Free Volume:	30 per cent (based on an average value for granular fill)			
Time taken to Discharge from Full to Half-Empty (T_{F-HE})²:	39 minutes	38 minutes	36 minutes	41 minutes

¹ The difference between the depth and the inflow pipe depth.

² To confirm the parameters of the soakaway are appropriate, 'BRE Digest 365: Soakaway Design' notes that the soakaway should discharge from full to half full volume with 24 hours.