

Plough Lane
Technical Note, 7th September 2026
Soakaway exceedance during 1in100 (+40%)

- Contributing area = 100m² (maximum)
- Infiltration rate = 7.54x 10⁻⁶ m/s,
- Design storm 1in100 (+40%)
- Method of calculation, BRE 365,
- Soakaway size 1 x 6 x 0.4m deep geocellular unit, 90% void ration,
- $a_{s50} = 6.4$

Inflow

$$I = A \times R, \text{ where}$$

$$r = 0.35, Z_1 = 0.80, Z_2 = 1.96$$

$$M100-30(+40\%) = 43.9\text{mm}$$

$$I = A \times R$$

$$= 100 \times .0439$$

$$= \mathbf{4.39m^3}$$

Outflow

$$O = a_{s50} \times f \times D$$

$$a_{s50} = 6.4$$

$$f = 7.54 \times 10^{-6} \text{ m/s}$$

$$D = 30\text{mins}$$

$$O = 6.4 \times 7.54 \times 10^{-6} \text{ m/s} \times 30$$

$$= \mathbf{1.45 \times 10^{-3} m^3}$$

Storage required

$$I - O = S$$

$$1.52 - 1.45 \times 10^{-3} = 4.38\text{m}^3$$

Storage available assuming 90% porosity;

$$(0.4 \times 6.0 \times 1.0) \times 0.9 = 2.16\text{m}^3$$

Exceedance volume

$$4.38 - 2.16 = \mathbf{2.22m^3}$$

In the event of extreme rainfall, an additional 2.22m³ of rainwater will temporarily surcharge each soakaway. Over the footprint of each soakaway, this will equate to 370mm depth of water.

Exceedance volumes will be managed within the footprint of each soakaway, within the 400mm depth gravel backfill. Exceedance flow plan 2118-620 illustrates how the 370mm flood depth will be managed during the 1 in 100 (+40%) event, without increasing flood risk to adjacent people or property across the site boundary.

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