

Project SITE OF LODGE LANDS ARDINGLY			Project No.
Subject STORM DRAINAGE			
By M.H.R.	Checked	Date 09-01-23	Sheet No. 1

DATA

Area house $147m^2$ Area drive $35m^2$

Geology: Drift over Ardingly Sandstone

Infiltration test: Borehole 0.53m deep by 0.08m dia
Brown silty clay over sandstone.

$$k = 4.9 \times 10^{-6} \text{ m/s} \text{ or } 0.0176 \text{ m/h.}$$

PLANE SOAKAWAY

100y Storm + 4.5% Climate Change

Allow for greenfield run-off of 166 l/s/ha or 6mm/h.

Duration (h)	100y Rainfall (mm/h)	Enhanced rainfall (mm/h)	h_{max} (m) $n=0.40$	h_{max} (m) $n=0.95$	$h_{max} = \frac{D}{n} (Ri - q)$
1	39	51	0.59	0.261	$R = \frac{(147 + 35)}{35} = 5.2$
2	24	29		0.280	
6	12.9	12.7	0.68	0.305	Gravel sub-base too thick
12	7.8	5.3		0.125	

PROVIDE

$35m^2$ of 300mm deep Stormcell or similar product below drive.

Include silt trap prior to soakaway.

$$\text{Time to half empty } t_{1/2} = \frac{0.305 \times 0.95}{0.0176 \times 2} = 8.2 \text{ h.}$$