



Consider Area to be drained = 10080 m²

Discharge through entire pitch sub-base
and external soakaway

30 year + 35% climate change

<u>Flow</u>	Time (min)	M5-D 20mm x Z1	Z2 factor	M100-D (mm)	Inflow M ³	Outflow M ³	Storage M ³
	5	7.6	1.465	11.1	151.5	24.7	126.76
	10	10.8	1.497	16.2	220.1	49.4	170.63
	15	12.6	1.512	19.1	259.2	74.1	185.10
	30	16.0	1.530	24.5	333.1	148.3	184.83
	60	20.0	1.543	30.9	420.0	296.6	123.45
	120	24.0	1.535	36.8	501.4	593.2	0
	240	29.2	1.517	44.3	602.9	1186.3	0
	360	32.0	1.504	48.1	654.9	1779.5	0
	600	36.6	1.481	54.2	737.5	2965.9	0
	1440	45.6	1.439	65.6	892.7	7118.1	0

Ratio $r = 0.4$ (For locality)

Climate change allowance = 35%

Outflow Infiltration through pitch sub-base

Infiltration rate: 0.0004896 m/min

Soakaway details: 80 m wide 126 m length 0.38 m deep
Assume void ratio 0.4 ∴ 1532.16 m³

Available storage under pitch (based on 1:100 fall): 182.00 m³

Available storage within drainage system: 95.00 m³

Available storage area = 277.00 m³

Surface area: 10080 m²

Additional external soakaway

Infiltration rate: 0.0002652 m/min

Soakaway details: 10 m wide 3 m length 1 m deep
Assume void ratio 0.95 ∴ 29 m³

Surface Area: 30 m²

Eff volume: 307.00 m³ > 185.10 m³ OK

Additional storage volume required: -121.90 m³

Half drain down time 2250.4 secs 0.62511 hours
(soakaway only):

Total Storage required = approx. 185m³. Storage currently provided = 307m³. No additional storage required.

An external soakaway to the south of the pitch with dimensions 10m x 3m x 1m depth with 95% void ratio has been provided to accommodate flows from the 1 in 100 year + cc event, but is not required for the 1 in 30 year + cc event.

This volume will accommodate flows from all modelled 1 in 30 year + 35% climate change events.

In order to meet building regulation standards, a half drain-down time of 24 hours should be achieved. This requirement is met at the site.