



Project.

RMA Sandhurst - Football pitch

By.

MOH

Checked.

ND

Revision.

A - 16.04.2024

Consider Area to be drained = 8127 m<sup>2</sup>

Discharge through entire pitch sub-base

100 year + 40% climate change

**Flow**

Time (min)	M5-D 20mm x Z1	Z2 factor	M100-D (mm)	Inflow M <sup>3</sup>	Outflow M <sup>3</sup>	Storage M <sup>3</sup>
5	7.6	1.862	14.2	161.0	3.9	157.15
10	10.8	1.926	20.8	236.7	7.7	228.95
15	12.6	1.958	24.7	280.7	11.6	269.12
30	16.0	1.998	32.0	363.7	23.2	340.57
60	20.0	2.030	40.6	461.9	46.3	415.63
120	24.0	2.014	48.3	550.0	92.6	457.34
240	29.2	1.978	57.8	657.2	185.2	471.91
360	32.0	1.954	62.5	711.4	277.9	433.57
600	36.6	1.914	70.1	797.0	463.1	333.94
1440	45.6	1.842	84.0	955.7	1111.4	0

Ratio r = 0.4 (For locality)

Climate change allowance = 40%

**Outflow** Infiltration through pitch sub-base

Infiltration rate: 0.0001206 m/min

Soakaway details: 64 m wide 100 m length 0.38 m deep  
Assume void ratio 0.4 ∴ 972.80 m<sup>3</sup>

Available storage under pitch (based on 1:200 fall): 802.00 m<sup>3</sup>

Available storage within drainage system: 70.00 m<sup>3</sup>

Available storage area = 872.00 m<sup>3</sup>

Surface area: 6400 m<sup>2</sup>

Eff volume: 872.00 m<sup>3</sup> > 471.91 m<sup>3</sup> OK

Additional storage volume required: -400.09 m<sup>3</sup>

Half drain down time 36684.8 secs 10.1902 hours  
(soakaway only):

Total Storage required = approx. 472m<sup>3</sup>. Storage currently provided = 512m<sup>3</sup>. No additional storage required.

This volume will accommodate flows from all modelled 1 in 100 year + 40% 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.