

Project: Propect Estates New Mill Road	Sheet	2.00
	Job No.	39141
	Date	10.11.15
Subject: Surface Water Storage Estimate	Designed	LEM
	Checked	
	Revision	

Site Details :

Information From Wallingford Maps :

Location :	Holmfirth	M5-60	20.4 mm
Grid Ref :	SE 148 093	r	0.31
		SAAR	1100 mm
Total Site Area	1.900 ha	UCWI	116 (Fig. 9.7)
		Soil Type	4
Total Impermeable	1.045 ha	SOIL	0.45 (Section 7.4)
PIMP	55.0%		
PR	45.2	Equation 7.3	
Cv	0.82	Equation 7.21	
Default Cv	0.84	Designer to insert to override calculated Cv	
Design Return Period	100 Years	Max. Branch Length	150 metres
		Approx. Time of Flow	2.5 mins

Percentage Increase For Climate Change:

30%

Details of Restricted Discharge :

Maximum Permitted Rate of Flow from the System	22.1 Litres/sec.ha
Assumed Average Flow as a Proportion (Estimate)	42.0 Litres/sec
Average Rate of Flow	85 %
	35.7 Litres/sec

Calculation of Critical Duration and Storage Volume Required :

Trial Durations (mins)	30	60	90	120	180	240	300
M5-D (mm)	15.8	20.4	23.4	25.8	29.4	32.2	34.6
Cr (Equation 6.1)	0.223	0.227	0.227	0.225	0.220	0.215	0.212
Average Point Intensity (mm/hr)	63.2	41.3	31.6	26.0	19.4	15.7	13.4
Volume of Run-off for the period = Area x Cv x i x D (m3)	277.5	362.9	416.7	455.9	510.8	552.5	586.9
With climate change	360.8	471.8	541.7	592.6	664.1	718.3	762.9
Volume of Out-flow for the period = Ave. flow x (D+Tf)(m3)	69.6	133.8	198.1	262.3	390.8	519.3	647.8
Storage Volume for this Duration (m3)	291.2	337.9	343.6	330.3	273.3	199.0	115.1

Storage Volume Required for

100 Year Return Period = 343.6 m3

Pipe dia = **1500** mm
 Pipe length = **200** m
 Pipe capacity = **353.3** m²

Storage provided is greater than storage required