	Project <b>Dunkirk Lane, Chester</b>				Job Ref. <b>XXXX</b>	
	Section <b>Area Drainage Calculations.</b>				Sheet no./rev. <b>1 / -</b>	
	Calc. by <b>GDR</b>	Date <b>04.09.23</b>	Chck'd by <b>SHP</b>	Date <b>04.09.23</b>	Rev'd by	Date

## Surface Water Drainage.

### Introduction.

The following calculations have been undertaken to determine the drainage requirement for the above-mentioned site. The site consists of a level gravelled area to a maximum depth of 0.45m deep. This will affectively be utilised as attenuation storage for the rainfall with infiltration as the discharge.

### Design criteria

M5-60 (mm)	18.000
Ratio R	0.384
Area	843m <sup>2</sup> .
Infiltration Rate	0.001m/hr
Qbar for area UK SuDS Site	0.49 l/s
Design Period used	100 yr plus 40% additional Climate Change

### Attenuation Required

Based on source data from Microdrainage.

### Criteria

Quick Storage Estimate

Micro Drainage

Variables

FSR Rainfall: [dropdown]  
 Return Period (years): 100  
 Region: England and Wales  
 Map: M5-60 (mm) 18.000  
 Ratio R: 0.384  
 Cv (Summer): 0.750  
 Cv (Winter): 0.840  
 Impemeable Area (ha): 0.100  
 Maximum Allowable Discharge (l/s): 0.5  
 Infiltration Coefficient (m/hr): 0.00100  
 Safety Factor: 2.0  
 Climate Change (%): 40

Analyse OK Cancel Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000

### Results

Quick Storage Estimate


Micro Drainage

Results

Global Variables require approximate storage of between 59 m<sup>3</sup> and 81 m<sup>3</sup>.  
 With infiltration storage is reduced to between 54 m<sup>3</sup> and 80 m<sup>3</sup>.  
 These values are estimates only and should not be used for design purposes.

Analyse OK Cancel Help

Enter Infiltration Coefficient between 0.00000 and 100000.00000

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### Attenuation Calculations

Site Area 853m<sup>2</sup>  
 Gravel Depth 0.450m

Volume = = 853 X 0.450 = 383m<sup>3</sup>  
 Void Volume @ 30% = 383 @ 90% = 115m<sup>3</sup>

### Conclusion

Considering the volume attainable from the gravel surface and the sourced estimation for required volume it demonstrates full feasibility for the proposed Site.