	Project			Job Ref.	
Inertia Inertia Structures Ltd	56A King Henry's Road, London, NW3 3RP			19079	
	Section			Sheet no./rev.	
	Attenuation Tank			1	
	Calc. by	Date	Chk'd by	Date	App'd by	Date
	M	19/11/2019				

ATTENUATION DESIGN

In accordance with CIRIA publication C753 - The SUDS Manual

Tedds calculation version 1.0.04

Allowable discharge method

Site characteristics

Location;   London

Hydrological region;   6;   Soil type (W.R.A.P map);   2

Standard percentage runoff;   SPR = **0.30**;   Average annual rainfall;   SAAR = **600** mm

5yr rainfall of 60min duration;   M5_60min = **20.0** mm;   Rainfall ratio;   r = **0.44**

Global warming rainfall factor; $p_{climate}$ = **40**%

Catchment details

Subcatchment	Name	Area (ha)	PIMP (%);	Impermeable. area (ha)
1;	Extended Basment;	0.00;	100.0;	0.00;
Total		0.00;	100.0;	0.00;

Greenfield runoff rates

Catchment area;   AREA = **50.00** hectare;   Greenfield runoff rate (50 ha); $\overline{Q}_{rural}$ = **76.1** l / s

Greenfield runoff rate; $\overline{Q}$ = **0.0** l / s;   G'field runoff rate (unit area); $\overline{Q}_A$ = **1.5** l / s / hectare

Estimated site discharges

FSR growth rate (2 year); FSR_{2yr} = **0.96**;   Discharge (2 year); Q_{2yr} = **0.0** l/s

FSR growth rate (30 year); FSR_{30yr} = **2.30**;   Discharge (30 year); Q_{30yr} = **0.0** l/s

FSR growth rate (100 year); FSR_{100yr} = **3.19**;   Discharge (100 year); Q_{100yr} = **0.0** l/s

Table equations

Total surface water; $V_w = A_{imp} \times M$;   Permitted dischrage; $Q_{allow} = Q_{2yr} \times D$

Storage volume required; $V_{req} = V_w - Q_{allow}$

Attenuation storage

Duration (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	30 year rainfall (mm)	Total surf water (m³)	Permit dischrge (2 years) (m³)	Storage vol. reqd (m³)
5;	0.39;	10.8;	1.50;	16.2;	0.24;	0.00;	0.24
10;	0.54;	15.0;	1.53;	22.9;	0.34;	0.00;	0.34
15;	0.65;	18.1;	1.54;	27.8;	0.42;	0.00;	0.42
30;	0.82;	22.9;	1.54;	35.2;	0.53;	0.00;	0.52
60;	1.00;	28.0;	1.52;	42.6;	0.64;	0.01;	0.63
120;	1.19;	33.4;	1.50;	50.0;	0.75;	0.02;	0.73
240;	1.39;	39.0;	1.47;	57.4;	0.86;	0.03;	0.83
360;	1.53;	42.8;	1.45;	62.3;	0.93;	0.05;	0.89
600;	1.70;	47.6;	1.43;	68.1;	1.02;	0.08;	0.94
1440;	2.07;	58.1;	1.40;	81.0;	1.22;	0.19;	1.03

Attenuation storage required

Max attenuation storage reqd; V_{req_max} = **1.3** m³

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WARNING - Maximum storage required coincides with the maximum duration and may be greater with a longer duration

Interception storage

Interception rainfall depth; d_{int} = **10** mm; Interception storage reqd; V_{int_req} = **0.12** m^3

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