

Job: 610.10676

Calculation Sheet 1

Preliminary Overland Flow Rate Calculation

Component	Area (m2)	runoff coefficient
Bank Street	1570	1
Entry Forecourt, Roof and E.Accessway	1197.5	1
Total Catchment	2767.5	1.00

*Assume 25% of land beneath bridge is rained upon due to wind

Note: Western Accessway has not been assessed.

$$tc1 = 0.76 \times A^{0.38}$$

$$0.0027675 \text{ A in square km}$$

Time of Conc	tc (hrs)	tc (mins)
tc1	0.081	5

*Assume 5mins for IFD purposes

Rational Method

$$Q = fy.cy.I.A / 360$$

Q = Flow

c = Runoff Coefficient

i = intensity

A = Area

Pre-development Runoff				Bank Street Catchment						Site Contribution						Total Q(l/s)
ARI	Duration	I (BOM)		c	Fy	Cy	A	Q (m3/s)	Q (L/s)	c	Fy	Cy	A	Q (m3/s)	Q (L/s)	
	2	5	129	1	0.85	0.85	0.157	0.048	47.8	1	0.8	0.80	0.11975	0.034	34.3	82.1
	5	5	163	1.00	0.95	0.95	0.157	0.068	67.5	1.00	0.95	0.95	0.11975	0.052	51.5	119.0
	10	5	183	1.00	1.00	1.00	0.157	0.080	79.8	1.00	1.00	1.00	0.11975	0.061	60.9	140.7
	20	5	196	1.00	1.05	1.05	0.157	0.090	89.8	1.00	1.05	1.05	0.11975	0.068	68.5	158.2
	100	5	252	1.00	1.20	1.20	0.157	0.132	131.9	1.00	1.20	1.20	0.11975	0.101	100.6	232.5

Overland Flow Max = 100yr Total Q - 2yr Bank St Q - 20yr Site Q

Overland Flow = 116.2 L/s

Overland Flow = 0.116 m3/s

Overland Flow Min = 100yr Total Q - 10yr Bank St Q - 20yr Site Q

Overland Flow = 84.2 L/s

Overland Flow = 0.084 m3/s