COLE EASDON
CONSULTANTS

The Rational Formula

$Q_p=CiA/0.36$

Q_p	**314.8l/s**	Peak discharge from catchment
A	1.20ha	Catchment area
i	86.5mm/hr	Average rainfall intensity
C	1.1mm/hr	Dimensionless coefficient

Determination of C

Value of C_V

C_V	0.84	Volumetric runoff coefficient

Value of C_R

C_R	1.3	Routing coefficient

Determination of i

Determination of M5-60 min and r

M5-60min	18mm	5 year - 60 minute rainfall depth
r	0.35	Ratio of the 5 year - 60 minute rainfall depth to the 5 year - 2 day rainfall depth
D	15min	Rainfall duration
T	100year	Return period

Determination of M5-D

Z_1	0.62	
M5-D	11.2mm	rainfall depth of 5 year return period for required duration

Determination of MT-D

Z_2	1.93	
MT-D	21.62mm	rainfall depth of the required return period

Determination of point rainfall intensities

i	86.5mm/hr

Aplication of areal reduction factor

A	0.0120km²
ARF	1
i	**86.5mm/hr**