



**MICHAEL EVANS
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Civil and Structural Engineers
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TEL: 01332 871 840

DATE: 10.12.2024

PROJECT NO.:

24-190

SHEET NO.:

1 of 1

PROJECT: Hillmoren - Alter Stones Lane
CALCULATION: Rainfall Intensity

BY:

ND

CHECKED:

REVISION:

-

Following the Wallingford Procedure

M5-60 = 20 mm
Ratio r = 0.4
Duration (D)= 360 minutes
Z1 = 1

$$\begin{aligned} \text{M5- 360} &= \text{M5-60} \times \text{Z1} \\ &= 20 \text{ mm} \end{aligned}$$

Return Period = 100
Z2= 2.03

$$\begin{aligned} \text{M100 360} &= \text{M5- 360} \times \text{Z2} \\ &= 20 \times 2.03 \\ &= 40.6 \text{ mm} \end{aligned}$$

$$\begin{aligned} \text{Rainfall intensity (mm/hr)} &= \frac{\text{MT-D}}{\text{D/60}} \\ &= \frac{40.6}{6.00} \\ &= 6.77 \text{ mm/hr} \end{aligned}$$

Including an allowance for climate change:

20% = 7.44 mm/hr
40% = 8.80 mm/hr

NOTES:



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PROJECT:	Hillmoren - Alter Stones Lane	BY:		CHECKED:		REVISION:	
CALCULATION:	Surface Water Runoff Volumes		ND		-		-

Following the Rationale Method as described by the Wallingford Procedure

Runoff Volume = $A \times i \times C_r$

C_r = runoff coefficient

i = rainfall intensity (mm) = **40.6** for 100 year + 40% climate change 6 hour event

A = area (hectares)

Unrestricted runoff volumes from store area which are directed to the surrounding ground, and not connected into the wider drainage area. Calculations per downpipe (half of total roof area).

Proposed Volume

Proposed Site Characteristics

Brownfield Area = **0.0024**

Greenfield Area = **0**

Proposed Volume = **1 + 0 = 1 m³**

NOTES: