



SKETCHLEY LANE, BURBAGE GREENFIELD RATE CALCULATIONS

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1. INTRODUCTION

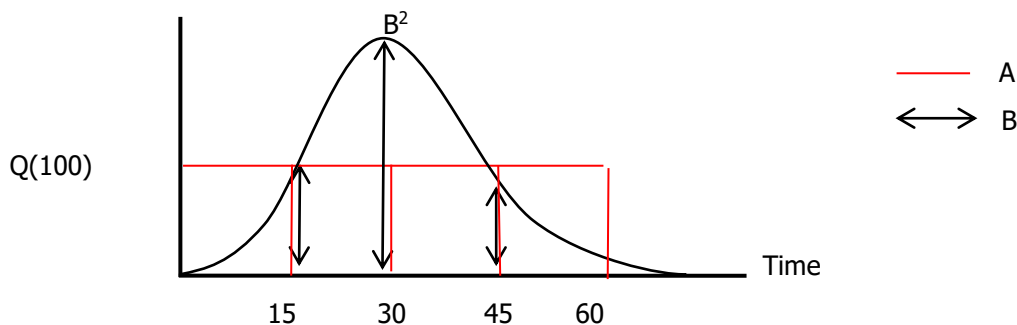
This document provides evidence of the greenfield runoff rate in response to Comment 1 from the LLFA reference **2024/0847/04/Fdis/R2**.

The data demonstrates that the additional volume discharged from S1 is lower than the natural greenfield runoff volume discharge toward Sketchley lane for the same storm duration.

2. COMPARISON OF RUNOFF RATES AND VOLUMES

- **A** - Greenfield runoff rate (estimated using ICP SUDS 2004 methodology)
- **B** – illustrative Rainfall profile for a 60 minute storm event

Graph showing relationship between A and B (Illustrative)



From modelled calculations, the proposed runoff volumes for S1 in the 100yr + 40%cc critical events are as follows:

$$V^2 = 1.49\text{m}^3 \quad (30 \text{ min winter})$$

3. GREENFIELD RUNOFF AREA AND FLOW CALCULATIONS

The calculations shown in *Appendix 1 and 2* show the original area of greenfield runoff that would naturally flow towards Sketchley Lane.

The cumulative area comes to **900m²**.

Using the reduced area that will actually contribute to runoff towards Sketchley Lane, the runoff calculator provides a **Q (100 years) rate of 1.0/s** (*As shown in appendix 2*). This rate is then used to calculate the area of water leaving the site using the following calculations:

30 minute winter

$$Q (100 \text{ years}) * 30 * 60 = A^2 = 1800\text{l} = 1.8\text{m}^3$$

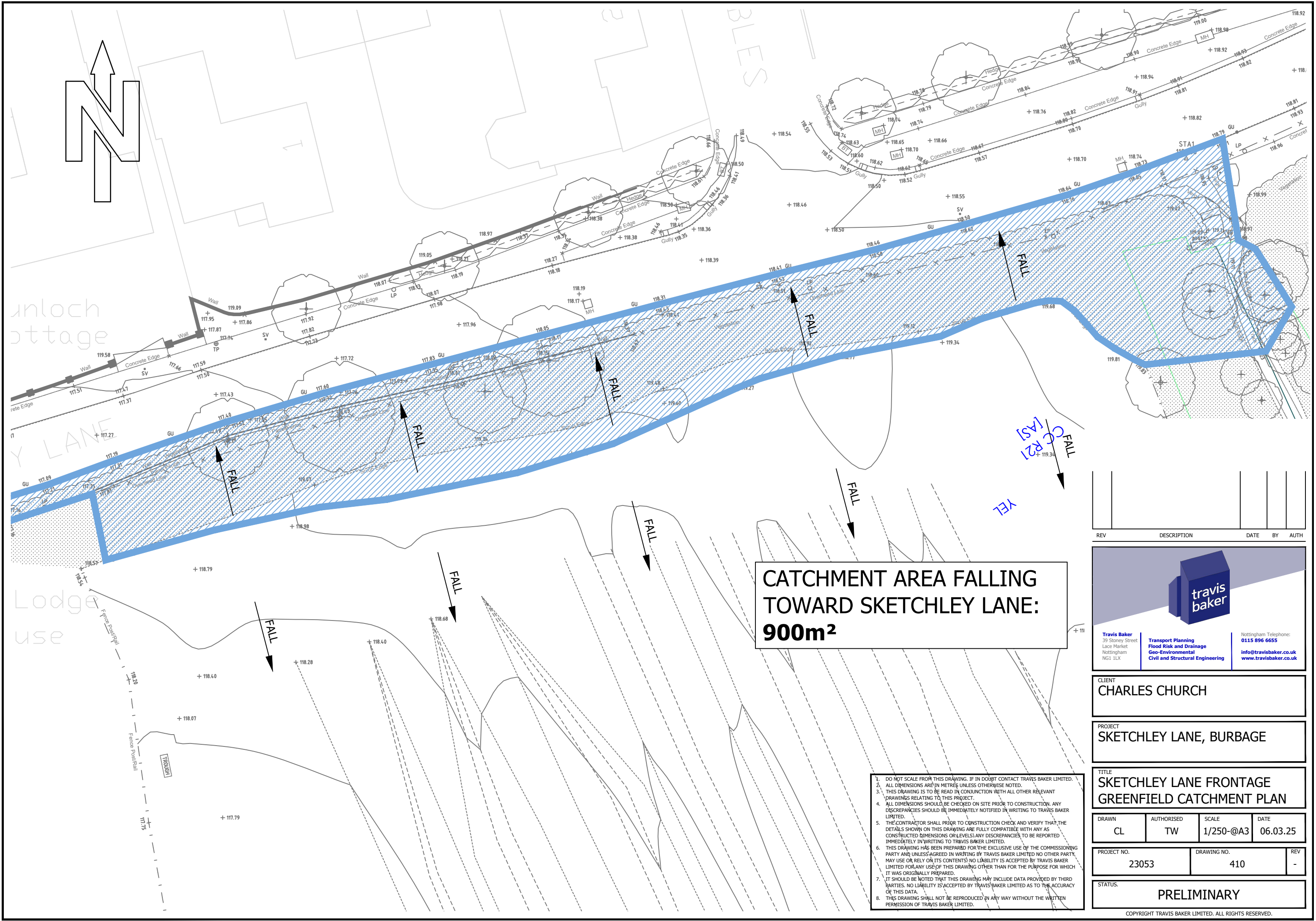
4. CONCLUSIONS

The evidence provided confirms that the pre-development volume (1.8m³) leaving the site towards Sketchley Lane is higher than the climate change adjusted post development volume (1.49m³) for the comparable critical storm event. This demonstrates that the predicted discharge from **S1** does not represent an increase in flood risk to the surrounding area and should be considered acceptable on this basis.



5. APPENDICES

23053 410 Greenfield Catchment Plan



CATCHMENT AREA FALLING
TOWARD SKETCHLEY LANE:
900m²

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REV	DESCRIPTION	DATE	BY	AUTH



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CLIENT
CHARLES CHURCH

PROJECT
SKETCHLEY LANE, BURBAGE

TITLE
**SKETCHLEY LANE FRONTAGE
GREENFIELD CATCHMENT PLAN**

DRAWN	AUTHORISED	SCALE	DATE
CL	TW	1/250-@A3	06.03.25

PROJECT NO.	DRAWING NO.	REV
23053	410	-

STATUS.
PRELIMINARY

SKETCHLEY GRANGE, BURBAGE

GREENFIELD RATE CALCULATIONS



Appendix 2.0 – Rural Runoff Calculations

Rural Runoff Calculator

Micro Drainage

ICP SUDS

ICP SUDS Input (FSR Method)

Return Period (Years)

Area (ha)

SAAR (mm)

Soil

Growth Curve

Partly Urbanised Catchment (QBAR)

Urban

Region

Results

QBAR rural (l/s)

QBAR urban (l/s)

Return Period Flood

Region	QBAR (l/s)	Q (100yrs) (l/s)	Q (1 yrs) (l/s)	Q (30 yrs) (l/s)	Q (100 yrs) (l/s)
Region 1	0.4	1.0	0.3	0.7	
Region 2	0.4	1.0	0.3	0.8	
Region 3	0.4	0.8	0.3	0.7	
Region 4	0.4	1.0	0.3	0.8	
Region 5	0.4	1.4	0.3	0.9	
Region 6/Region 7	0.4	1.3	0.3	0.9	
Region 8	0.4	1.0	0.3	0.8	
Region 9	0.4	0.9	0.3	0.7	

Greenfield Volume

OK Cancel Help

Enter Urban between 0.000 and 0.750