PICK EVERARD

Pick Everard
Halford House
Charles Street
Leicester
LE1 1HA

T 0345 045 0050
E leicester@pickeverard.co.uk

Mr Mark Patterson
Harborough District Council
The Symington Building
Adam & Eve Street
Market Harborough
Leicestershire
LE16 7AG

25 January 2022

Our Reference DMN/PCA/200799/17-2/L001

Dear Mr Patterson,

Gartree 2 – Response to LLFA Consultation in respect of application ref: 21/01600/OUT

Further to our meeting of 13th January 2022, I write to provide clarification in respect of the consultee response provided by LLFA in respect of the above planning application. For ease of reference my response follows the same structure as the LLFA letter. Quotes from the LLFA letter are in italics whilst my responses are in red.

It is noted that while discharge rates have been advised, no supporting calculations have been submitted. It is advised that it is not clear if the stated greenfield discharge rates are correct due to varying site areas stated within the submission.

The supporting calculations are provided below – please see attached at Appendix A our "Quick Storage Estimate" and QBar calculation. Please note that while we mentioned QBar being 89l/s in the meeting, and that this figure was quoted in our OPA reports, on review of the calculations this figure should be 47.7l/s. Please note that the design of attenuation volume is based on the 47.7l/s figure. The figure has been revised following a re-assessment of the contributing areas.

The contributing area from the site is 11.16Ha. This figure is used in the QBar and Quick Storage Estimate Calculation.

An existing catchment plan should be submitted to support this calculation.

It was agreed that an existing catchment plan is not required at this stage but could be the subject of a planning condition.

Notwithstanding the concerns of the validity of the greenfield rates advised, it has also not been stated at what rate the proposals will discharge. It is advised that as the proposals are to a greenfield site, the volume of discharge will increase, which will require mitigated through discharging at no greater than QBar for the peak event.

The discharge rate is 47.7l/s.

The rate will be at QBar, as indicated in the calculations at Appendix A.

As such, the diverted watercourse should be advised noting that the Council's culverting policy will not allow culverting of existing or diverted watercourse unless it can be demonstrated to be unavoidable. Furthermore, the scale of the SuDS indicated should be evidence through the provision of suitable calculations based on the correct QBar discharge rate noted above.

This is noted. As discussed, the design of the diverted watercourse has not yet been designed in detail so we are happy to accept a suitable planning condition on this.

The LLFA has concerns relating to the level of surface water treatment being provided within the central and eastern catchments. Consideration must be given to further SuDS features within these catchments. We would recommend a swale or filter drain be used for the final run outside the security fence towards the outfall. This will provide additional treatment and reduce the risk of blockage.

This is noted. Again we are happy to accept a condition relating to the detailed design of this part of the SuDS area.

- *Utilisation of the QBar discharge rate in-line with best practice guidance with supporting calculations.*
  As stated the QBar rate has been utilised. Calculations are provided at Appendix A.

- *An assessment of the required attenuation volume in order to maintain the proposed discharge rates for each catchment. This should be supported by an assessment the total impermeable area.*
  This is provided in the supporting calculations section of the letter (Appendix A). The required attenuation volume (range) is provided by the "Quick Storage Estimate", and the proposed surface water drainage design includes for an attenuation volume within this range.

- *Evidence that the scale of SuDS proposed is sufficient to attenuation peak surface water flows generated within each catchment.*
  Evidence is provided in the form of Quick Storage Estimate calculations at Appendix A, and the surface water design drawing 661277-0000-PEV-GTX0011-ZZ-DR-C-0500_Proposed Surface Water Drainage

- *Details relating to the diversion of existing watercourses.*
  As stated this detail has not yet been designed, but we are happy to accept a condition on this.

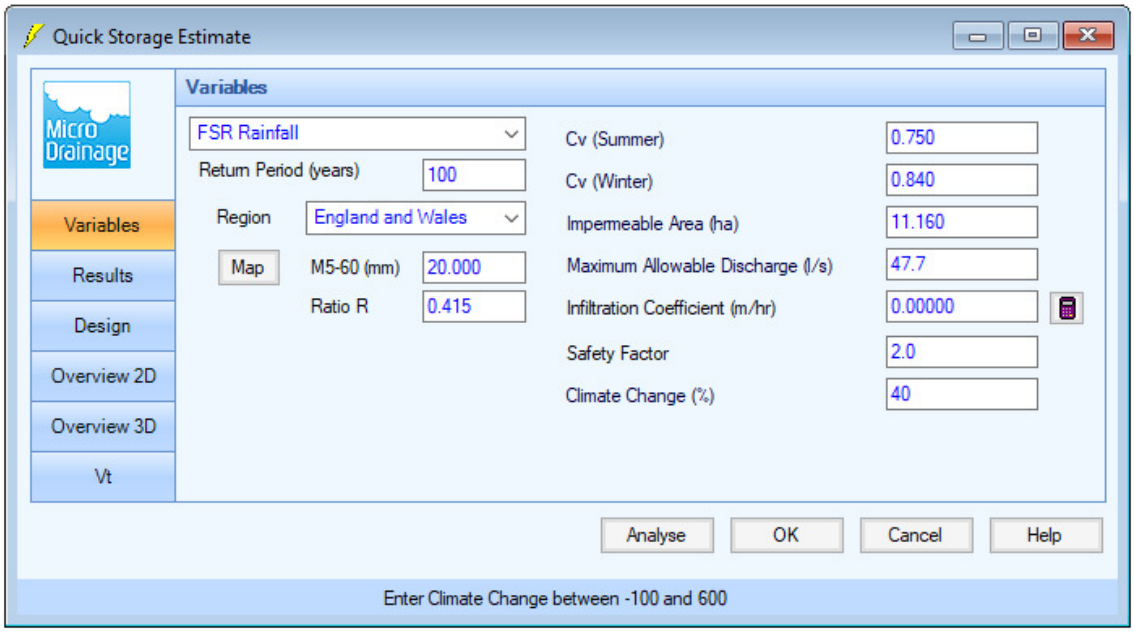
- *Consideration of further SuDS features as discussed above.*
  As stated, we are happy to accept a condition on the detailed design of the SuDS area.

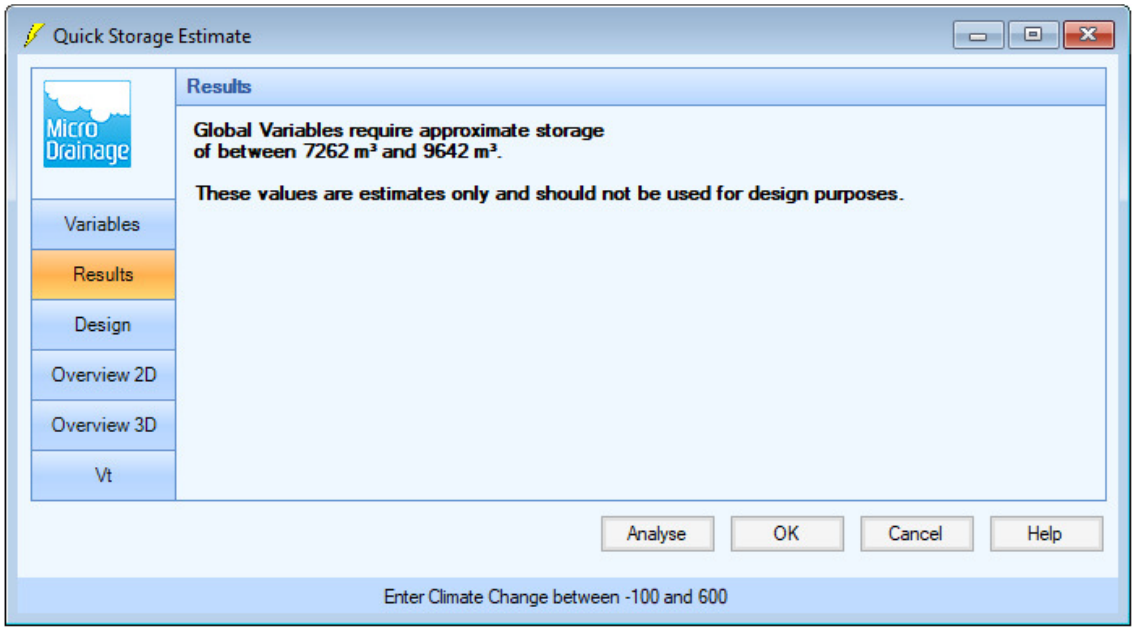
I trust the above is in order, however, should you have any questions or wish to discuss in more detail please don't hesitate to contact me.

Yours sincerely,

Paul Cannaby
Director
For Pick Everard

Appendix A


Quick Storage Estimate
Micro Drainage
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Variables
FSR Rainfall
Return Period (years) 100
Region England and Wales
Map
M5-60 (mm) 20.000
Ratio R 0.415
Cv (Summer) 0.750
Cv (Winter) 0.840
Impermeable Area (ha) 11.160
Maximum Allowable Discharge (l/s) 47.7
Infiltration Coefficient (m/hr) 0.00000
Safety Factor 2.0
Climate Change (%) 40
Analyse
OK
Cancel
Help
Enter Climate Change between -100 and 600


Quick Storage Estimate
Micro Drainage
Variables
Results
Design
Overview 2D
Overview 3D
Vt
Results
Global Variables require approximate storage
of between 7262 m³ and 9642 m³.
These values are estimates only and should not be used for design purposes.
Analyse
OK
Cancel
Help
Enter Climate Change between -100 and 600

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Vikesh Patel
Site name:	HMP Gartree
Site location:	Leicestershire

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	52.49548° N
Longitude:	0.96534° W
Reference:	3783786656
Date:	Nov 10 2021 14:05

Runoff estimation approach IH124

Site characteristics

Total site area (ha): 11.16

Methodology

Q_{BAR} estimation method: Calculate from SPR and SAAR

SPR estimation method: Calculate from SOIL type

Soil characteristics	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics	Default	Edited
SAAR (mm):	631	631
Hydrological region:	5	5
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	2.45	2.45
Growth curve factor 100 years:	3.56	3.56
Growth curve factor 200 years:	4.21	4.21

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates	Default	Edited
Q_{BAR} (l/s):	47.72	47.72
1 in 1 year (l/s):	41.52	41.52
1 in 30 years (l/s):	116.91	116.91
1 in 100 year (l/s):	169.88	169.88
1 in 200 years (l/s):	200.9	200.9