

Thorogood House
34 Tolworth Close
Surbiton
Surrey
KT6 7EW

Tel: 0208 339 7899
Fax: 0208 339 7898
E-mail: info@lanmor.co.uk
Internet: www.lanmor.co.uk

Mr T Roberts
Progress Planning
1st Floor
10-12 The Broadway
Wycombe End
Beaconsfield
HP9 1ND

Our Ref: 201345/ml/KL/01

29 March 2023

Dear Tom

KINGSTON BRIDGE HOUSE

Further to your recent email we have reviewed the comments from LLFA and the information they require and have questioned is set out in the drainage strategy report we prepared for the development, however for clarity we have set out response to each issue raised by them below.

The drainage strategy for the development is using 3 main elements to attenuate and restrict the runoff from the site. The new permeable paving around the existing building is one and the two green roofs being the others.

Within the drainage strategy the discharge was restricted for each element to a maximum rate before they would be subject to overflowing. At more frequent return periods the discharge rates are lower, so the maximum rate mentioned in the drainage strategy is the extreme value. The drainage calculations for the paving and the green roofs are provided in the strategy and this shows the maximum discharge from each for a range of return periods, and these are the figures used in the pro-forma.

For easy the discharge rates from the paving and roofs have been tabulated below.

Return Period	Permeable Paving	Higher Level Roof	Lower Level Roof	Total Discharge	Estimated Greenfield Runoff
1 in 1 year	0.4 l/s	0.1 l/s	0.1 l/s	0.6 l/s	0.4
1 in 30 year	0.6 l/s	0.3 l/s	0.3 l/s	1.2 l/s	1.0
1 in 100 year	0.7 l/s	0.3 l/s	0.3 l/s	1.3 l/s	1.3
1 in 100 +40%	0.8 l/s	0.4 l/s	0.4 l/s	1.6 l/s	-

As can be seen from the above table the discharge rates from the application site are just above the greenfield rates for the 1 in 1 and 30 year events and are the same as the greenfield runoff for the 1 in 100 year event.

These proposed discharges are as near too greenfield as possibly achievable to reduce any further would mean small orifices that could be prone to blockages, the orifice from the paving is only 30mm which is not desirable but necessary to meet the low discharge rates demanded but the LLFA.

The microdrainage calculations in the strategy set out the storage needed in the paving and on the roofs for each return period. The calculation in the appendix of the strategy show the maximum storage volume required for each return period and the depth of water in each facility (paving / roof) demonstrating there will be no flooding. For ease the storage requirements, depth of flooding and storage provided are tabulated below.

Permeable Paving			
Return Period	Storage Required	Depth of Water	Storage Provided
1 in 1 year	4.4 m3	0.065m	56.7 m3
1 in 30 year	14.7 m3	0.124m	56.7 m3
1 in 100 year	20.8 m3	0.157m	56.7 m3
1 in 100 +40%	31.6 m3	0.215m	56.7 m3

Low Level Roof			
Return Period	Storage Required	Depth of Water	Storage Provided
1 in 1 year	10.4 m3	0.020m	79.5 m3
1 in 30 year	19.8 m3	0.037m	79.5 m3
1 in 100 year	24.8 m3	0.047m	79.5 m3
1 in 100 +40%	35.0 m3	0.066m	79.5 m3

High Level Roof			
Return Period	Storage Required	Depth of Water	Storage Provided
1 in 1 year	9.9 m3	0.020m	79.5 m3
1 in 30 year	18.3 m3	0.037m	79.5 m3
1 in 100 year	23.1 m3	0.046m	79.5 m3
1 in 100 +40%	32.6 m3	0.065m	79.5 m3

The permeable paving has been designed with a 300mm thick sub-base for attenuation and the roof with a 150mm deep reservoir to store rainwater. The above tables demonstrates that the paving and roofs are cable of storing more runoff than the required for each return period.

The LLFA have made the comment that the proforma should be updated to reflect the revised storage and runoff rates, however there are no changes to either and the proforma doesn't need updating. They raised the question if tanks are being provided below the green roofs for storage, as state above and indicated on the microdrainage calculations a reservoir will be provided below the green roofs which has been designed at 150mm deep.

Finally, the LLFA require information on who will own the maintenance tasks, as set out in the drainage strategy the Management Company for the site will be responsible for the maintenance of the SuDS and drainage element within the development, so they will "own the maintenance tasks".

I trust the above is sufficient for the LLFA to review the strategy and remove their objection, however if you require further information please let me know.

Yours sincerely

Robert Steventon