

19249-LLFA_R_120824

12 August 2024

K. Waters
Lead Local Flood Authority
Post Point CHN 215
Hertfordshire County Council
Pegs Lane
Hertford
SG13 8DN

Dear Katherine

RE: 3/23/1390/FUL - Land Off London Road and Owles Lane, Buntingford, Hertfordshire

In response to your letter dated 17 May 2024. Please see our response to your points below

The revised Flood Risk Assessment fails to submit the calculations for the existing greenfield runoff rates as previously requested and we are therefore unable to determine if the proposed rate exceeds the current greenfield run off rates.

- Greenfield run off calculations have been provided in the updated FRA within Appendix K, the natural greenfield run off rate is 8.59 l/s, the proposed strategy provides betterment on this rate with an outfall discharge rate of 6.6ls

In addition, the FRA states infiltration is not viable for the site as the infiltration testing carried out failed. However, the proposed surface water drainage scheme is still proposing infiltration. The calculations provided model the detention basin as online and have allowed infiltration at the base.

- The calculations have been corrected and all infiltration has been removed from the storage basin

The model needs to incorporate the permeable paving areas and connections into the model to demonstrate these areas are not at flood risk and the storage provided is suitable

- The permeable paving areas are not designed to provide storage, they are to provide water treatment only

In addition, the calculations are underestimating the volume of rainfall entering the drainage system as only a runoff co-efficient (the percentage of the impermeable area that will drain into the drainage system) of 0.75 for a summer profile is being used. The value should be 1 and the winter profile should also be submitted as this is often the worst case scenario

- The CV has been amended to 1 for both summer and winter events.



From the information submitted the model has also capped the maximum rainfall to 50mm/hr and therefore artificially removing the rainfall that exceeds this rate. This needs to be amended.

- The maximum rainfall value has been amended to 100mm/hr. following simulation the maximum rainfall within a pipe is recorded at 50.1 l/s

Calculations also need to be submitted for the 1 in 30 (3.33%) critical storms plus climate change as well the appropriate greenfield run-off rate calculations to ensure this rate is not exceed from the existing and 10% urban creep needs to be included on the storage volumes as is industry practice.

- The updated calculations within the FRA have been updated to incorporate both points above, adding the 10% for urban creep has created an area of minor surface flooding (c.6m.cu.) in the 100 year + 40% climate change storm event, this flooding will retain in the highway with no risk to properties

It is also unclear why the surface water model has incorporated 3m diameter manholes as these will artificially increase the storage within the network however it is not suitable to have a 3m diameter manhole in a highway, this is especially critical as these locations are where the system is at flood risk.

- The manhole chambers that incorporate the flow control devices are sized at 3m due to the size of the flow control device (Hydrobrake)

The scheme relies on oversized pipes rather than a suitable source control SuDS scheme and therefore these pipes should be reduced in size and suitable measures need to be incorporated such as bioretention, swales, filter strips and enhanced tree pits.

- The proposed residential development of 68 units will be classed as low risk and achieves 'acceptability' in the CIRIA Simple index approach.

Yours Sincerely
for and on behalf of WOODS HARDWICK Ltd.

Matt Ford
Director

SIMPLE INDEX APPROACH

Site Reference 19249
Site Name London Road, Buntingford
Complies with CIRIA C753 SuDS Manual (2015)

This Simple Index Approach has been prepared by Woods Hardwick Ltd on behalf of Wheatley Homes in support of a Full Planning Application for a residential development comprising 68 dwellings and associated infrastructure on a site known as 'London Road, Buntingford'

Allocated pollution hazard indices for the proposed land use (Table 26.2 - CIRIA C753 SuDS Manual)

Land use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential roofing	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks and low traffic roads	Low	0.5	0.4	0.4

Allocated SuDS mitigation indices for discharges to surface waters (Table 26.3 - CIRIA C753 SuDS Manual)

Type of SuDS component	Mitigation Indices		
	TSS	Metals	Hydrocarbons
Permeable Pavement	0.7	0.7	0.5
Pond	0.7	0.6	0.7

Simple Index Approach Results

To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index (for each contaminant type)

Total SuDS mitigation index ≥ pollution hazard index
 (for each contaminant type) (for each contaminant type)

Total SuDS mitigation index = mitigation index₁ + 0.5 (mitigation index₂)

	Residential roofing		Combined Pollution Mitigation Indices	Acceptability	Individual property driveways, residential car parks and low traffic roads		Combined Pollution Mitigation Indices	Acceptability
TSS	0.2	<	1.05	Sufficient	0.5	<	1.05	Sufficient
Metals	0.2	<	1	Sufficient	0.4	<	1	Sufficient
Hydrocarbons	0.05	<	0.85	Sufficient	0.4	<	0.85	Sufficient

The Simple Index Approach has been satisfied as the Total SuDS mitigation index exceeds pollution hazard index for each contaminant type.