

Technical design note

Project name	Land off Misery Lane		
Design note title	Response to LLFA Comments (SWM/2022/0600		
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1. Introduction

This document has been produced for Foreman Homes in response to comments made by HCC (Hampshire County Council) as the LLFA (Lead Local Flood Authority) with regards to Condition 9 of Application No. DC/22/94075 (O/17/81166) for the proposed development of circa. 92 dwellings, associated open space, landscaping, amenity areas and infrastructure.

It is recognised by the LLFA's comments that further information is required in order for them to undertake a full assessment before they can recommend clearance of any conditions. The comments issued by the LLFA have been listed within this document and separated by Designer Responses to each key point. Any additional information or amendments required have been included as part of an Appendix to this document.

2. LLFA Comments and Designer Response

2.1 LLFA Comment

Further details are required on the proposed treatment of surface water runoff. An assessment is required in accordance with the simple index approach as described in CIRIA 753 the SuDS Manual. The previously submitted assessment in the FRA is out of date since the drainage design has changed.

Designers Response

In accordance with the Simple Index approach as described in CIRIA 753 pollution hazard indices can be attributed to general areas of the proposed development. This has been presented in the following table.

	TSS	Metals	Hydrocarbons
Residential Roofs	0.20	0.20	0.05
Residential Parking	0.50	0.40	0.40
Low Traffic Roads	0.50	0.40	0.40
	0.50	0.40	0.40

The updated drainage strategy proposes the use of at source treatment with secondary treatment by a downstream defender a tertiary treatment by an attenuation basin prior to discharge.

The following table illustrates the mitigation indices offered by each feature and the total mitigation when provided in series as described in CIRIA 753.

	TSS	Metals	Hydrocarbons
Permeable Paving	0.70	0.60	0.50
Downstream Defender	0.50	0.40	0.50
Basin	0.50	0.50	0.60
Total*	1.20	1.05	1.05

* Total mitigation is based on the following equation: Component 1 + (Component 2 x 0.5) + (Component n x 0.5) from CIRIA 753.

As such the Simple Index Approach described CIRIA 753 the SuDS Manual demonstrates suitable mitigation is provided.

2.2 LLFA Comment

Further details are required on the proposed maintenance plan including a schedule of maintenance tasks, to include descriptions and frequencies, and the responsible parties for maintain each part of the drainage system (including any adoption agreements) and any watercourses is required. This should also consider access requirements and any easements necessary.

Designers Response

A separate maintenance plan has been compiled and is included in Appendix A of this document.

2.3 LLFA Comment

The final SuDS basin prior to the outfall was not shown on the drainage layout submitted for the outline application and is shown located in an area subject to high risk of surface water flooding. This may have been overlooked as there appears to be an error in the FRA document submitted for outline planning: the site was illustrated in the wrong location on the surface water flood map. All ground level SuDS attenuation features should be located outside of areas of flood risk from any source, or compensation areas provided to ensure flood risk is not relocated elsewhere. Until the location of the basin and any compensation areas are confirmed, it is not possible to review the calculations in detail due to the level of change required.

Designers Response

The proposed drainage strategy has been updated, with the southern basin substituted for below ground cellular attenuation. To this effect, existing ground levels within the surface water flood zone will be retained and reinstated in areas of construction ensuring no effect to surface water flow routing or storage.

The proposed drainage drawings have been updated and appended.

2.4 LLFA Comment

The invert levels labelled on the "perforated underdrain to pond" pipes appear to be lower than the bed level on the receiving watercourse. Water is likely to flow from the watercourse and fill the perforated pipes with water. Filter drains would normally require very little maintenance but in this example due to the design levels, there is high likelihood that the filter drains will quickly silt up from the flows in the stream.

Designers Response

Given the changes as described in response 2.3, the underdrainage system has now been removed. Upthrust forces have been calculated and mitigated through the appropriate placement of topsoil.

The proposed drainage drawings have been updated and appended.

2.5 LLFA Comment

Explanation of the proposed discharge rate from the site is required. The calculation of the design discharge rate was queried by the LLFA at outline planning stage and although the proposed discharge rate is lower the rate proposed in the drainage strategy submitted at outline it is still unclear how the discharge rate has been calculated and whether it is representative of the existing greenfield discharge. The area used to calculate the greenfield runoff from the site must match the total drained area for the discharge network included in the hydraulic calculations to ensure that the total discharge from the site does not exceed greenfield rate as required by condition 9.

Designers Response

Discharge rates have been set based on the QBar value provided within the approved FRA. These values have been confirmed using the online hrWallingford online greenfield calculator.

Calculations are Appended.

2.6 LLFA Comment

It is not clear whether an allowance for urban creep has been included in the calculations.

Designers Response

10% urban creep has been allowed for all private areas (Parking and residential units). Calculations are shown on the impermeable areas drawings.

Impermeable area drawings have been appended.

2.7 LLFA Comment

A Plan illustrating the drained areas used in building the hydraulic model are required to verify and review the model.

Designers Response

Impermeable area drawings appended.

2.8 LLFA Comment

An exceedance flood flow rout plan is required.

Designers Response

Overland and Exceedance drawings appended.

Appendix A Drainage Strategy Drawings

Appendix B Drainage Calculations

Appendix C Maintenance Schedule