

Project	Longhurst Road
Document Title or Subject	LLFA Comments Responses
Document Reference	106240-PEF-XX-XX-CT-D-0001

Further Information Required

The proposed drainage drawing (106240-PEL-HDG-01-DR-D-1001) indicates sections of proposed sewer to be outside the red line boundary. Any new infrastructure outside the redline boundary and outside of the applicant's ownership will require agreement from the riparian landowner.

The location and dimensions of the proposed attenuation tank have been included on the drainage layout. However, the dimensions have been stated as 16m x 5m x 400m, whereas the drainage calculations state that the tank has an area of 97 .Sm 2 to a depth of 0.8m.

The following is required:

Ensure that the tank dimensions and volume correspond between the drainage layout and calculations

The storage volume & percentage porosity of the tank should be included on the drainage layout.

The diameters and invert levels of the oversized pipes should be included on the drainage layout.

Provide agreement in principle for the proposed new infrastructure outside the redline boundary.

<standard comment: The applicant must present a consistent package to discharge this condition (Including all layouts and calculations). The layout and calculations must be jointly updated to account for any edits required. When preparing a resubmission, the applicant must ensure that the drainage layout and hydraulic calculations correspond, and that they

Designers' response

The GA drawing 106240-PEL-HDG-01-DR-D-1001-P12 and Drainage model results indicate the size of the Attenuation as 16m x 5m x 0.4m. The design was changed following the unavailable 1m depth crates.

Storage Calculation from Microdrainage source control

Global Variables require approximate storage of between 70 m³ and 109 m³.

These values are estimates only and should not be used for design purposes.

Variables

FSR Rainfall		Cv (Summer)	0.750
Return Period (years)	100	Cv (Winter)	0.840
Region	England and Wales	Impermeable Area (ha)	0.195
Map	M5-60 (mm) 18.800	Maximum Allowable Discharge (l/s)	5.0
	Ratio R 0.335	Infiltration Coefficient (m/hr)	0.00000
		Safety Factor	2.0
		Climate Change (%)	40

can be cross referenced for checks. This includes layout annotations and schedule printouts. >

Storage Volumes from Microdrainage Model

Pipe Number	US/MH	US/MH Volume (m³)	Pipe Volume (m³)	Storage Structure Volume (m³)	Total Volume (m³)
1.000	1	6.224	9.074	0.000	15.298
1.001	2	6.519	9.018	0.000	15.537
1.002	4	6.996	3.279	0.000	10.275
2.000	5	3.333	7.828	0.000	11.161
1.003	6	5.044	0.174	32.027	37.245
Total		28.116	29.373	32.027	89.516

Construction details and a technical specification have been provided for the flow control device. A 'S104 Attenuation Tank Foundation Plan' has been provided, illustrating a Sm easement from properties and the highway.

The following is required:

The developer must provide attenuation tank construction details (site specific) for review.

Arrangements must include suitable future access arrangements.

The proposed section must demonstrate the foundations zone of influence to avoid any structural impact following development.

The interaction between the attenuation tank and foundations can be found in 106240-PEL-HDG-01-DR-D-1007-P02. The proposed layout of the attenuation tank can be found in drawing 106240-PEL-HDG-01-DR-D-1010-P03-ATTENUATION TANK PLAN along with the manufacturer’s specification PSM_SD_EG_003

Construction details of flow control and SuDS elements. The Geotechnical Interpretative Report (ref: 106240-PEL-GEN-XX-RP-D-0002), section 4.4 - Cutting Slope Stability. Recommends the inclusion of appropriate drainage into the cut slopes to increase stability over the development lifetime and prevent water ponding within the proposed gardens. The developer will need to demonstrate necessary drainage measures for the development's lifetime prior to approval.	Land drainage provided please see land drainage plan drawing 106240-PEL-HDG-01-DR-D-1006-P05. Filter drains are provided at the back of the retaining walls to mitigate groundwater seepage.
The proposed cross sections (106240- HML-01-DR-O-0003) indicates a reduction of existing ground levels by circa 1 m - N N 3.9m. Given groundwater has been encountered circa 1.5m - 2m below existing ground levels for WS01 and W503. The developer must demonstrate appropriate engineering measures proposed to be implemented to prevent or mitigate groundwater seepage.	Land drainage provided please see land drainage plan drawing 106240-PEL-HDG-01-DR-D-1006-P05. Filter drains are provided at the back of the retaining walls to mitigate groundwater seepage. There is minimal lowering of the ground levels in the vicinity of the Surface water Drainage to accommodate the drives as such the proposed levels for the Longsections have not been modelled.
The design of foundations and structures shall consider the potential for groundwater seepage. Foundation systems shall be designed to minimise the risk of seepage, considering factors such as groundwater levels, soil permeability, and hydrostatic pressure.	Land drainage provided please see land drainage plan drawing 106240-PEL-HDG-01-DR-D-1006-P05. Filter drains are provided at the back of the retaining walls to mitigate groundwater seepage