

File note

Project	Date	By	Reference
Bacton Low Rise	9 Feb 2017	RH	2880 . FNT 2
Title			
LBC Drainage comments response			

Bacton S73 ref: 2016/5358/P - LBC Drainage comments response

The following response has been prepared following comments on below ground drainage and SUDs proposals, received from Ana Lopez, Sustainability Officer for LBC.

The response was discussed via a telephone conference call on Friday 3rd February

Attenuation capacity within porous paving to potentially aid overall attenuation

It is not intended to connect the porous paving to the drainage system as it is a standalone construction. and therefore water run-off from porous areas is not included in the calculations.

The surface water will drain through the pavement and be stored within the open textured sub base material where it will percolate in to the sub soil below.

The capacity of the storage within the sub base will store water resulting from a 1 in 100 year storm over a 6 hour period with a 30% increase to allow for climate change. The sub base thickness calculation is attached.

Confirmation of whether pipe capacities are included within the attenuation volume

The amount of storage that is required is allowed for within the attenuation tanks and the storage volume within the pipe network and the manholes has been excluded as pipe diameters and manhole sizes will be small and not contribute to the overall capacity significantly.

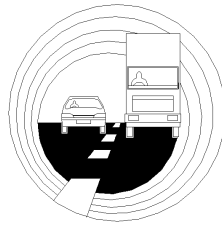
Any storage within the system, other than the actual tanks is therefore in addition to that required and any reduction due to level of the retained water within the system and the manholes will not affect the overall designed storage.

Assessment of overland flow routes

A drawing showing the overland flow routes should the surface water system surcharge due to the capacity of the system being exceeded by flash floods, is appended to this filenote.

The overall flow will be towards the lowest point on the site in the south east corner where Wellesley Road bends. Surface water at this point will flood on to Gospel Oak Open Space and will therefore not cause flooding to any properties either within the development or adjacent to the site.

It should be noted that the inner courtyards which are to be constructed using permeable paving do not have a clear overland run and it is intended that a pipe is to be laid under the building with gullies at each end to allow water to enter and discharge from the courtyards in to the pipe at the lower level. This is indicated on the drawing.



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BACTON II

Permeable Paving Storage Calculations

Rainfall intensity calculations in accordance with the Wallingford Procedure

Storm Duration	D=360 min
Return Period	Period = 100 year
Ratio 60 min to 2 day rainfall of 5yr return period	r = 0.4
5-year return period rainfall of 60 minute duration	M5 -60min = 20mm
Increase of rainfall intensity due to climate change	p _{climate} = 30%
Factor Z1	Z1 = 1.67
Rainfall for 360min storm with 5 year return period	M5-360min = Z1 x M5-60min = 33.4mm
Factor Z2	Z2 = 2.03
Rainfall for 360 min with 100 year return period	M100-360min = Z2 x M5-360 = 67.8mm
Design Rainfall intensity	I _{max} = (M100 -360min/D) x p _{climate} = 14.7 mm/hr

Volume of storage required = I_{max} x D x 60/1000 = 14.7 x 6 x 60/1000 = 0.088 cu m

Thickness of sub base = 300mm

Voids ratio of sub base = 30%

Volume of storage in sub base = 300 x 0.3/1000 = 0.090 cu m

6th February 2017



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Overland Flow Routes Shown

NOT FOR CONSTRUCTION

Revision	Date of Issue	By
Issue History		
Work Stage - ACE / (RIBA)		
RIBA Stage 2		
Issue Status		
Planning		
Project Title		
Bacton Low Rise II		

Client
London Borough of Camden

Architect
Karakusevic Carson Architects

Drawing Title
Proposed Surface Water Flow Routes