Iris Osbourne

From: Charlotte Burrows on behalf of Planning.Responses
Sent: 12 June 2013 15:33
To: Planning Scanning; Amanda Scholes
Subject: FW: Planning Consultation on: BR/41/13/
Attachments: Engineers - Supplementary Guidance Notes For Surface Water Drainage Proposals.pdf

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From: Paul Cann
Sent: 12 June 2013 13:24
To: Planning.Responses
Subject: RE: Planning Consultation on: BR/41/13/

Engineers comments in respect to surface water drainage:

A SuDS system (Sustainable Urban Drainage System) must be investigated for surface water disposal, ie. soakage structures.

Please apply standard conditions ENGD2A & ENGD5A.

Infiltration rates for soakage structures are to be based on percolation tests undertaken in the winter period and at the location and depth of the proposed structures. The percolation tests and design must carried out in accordance with BRE 365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm between the invert of the entry pipe to the soakaway, and the base of the structure. It must also have provision to ensure that there is capacity in the system to contain below ground level the 1 in 100 year event plus 30% on stored volumes, as an allowance for climate change. Adequate freeboard must be provided between the base of the soakaway structure and the highest recorded annual groundwater level identified in that location.

Any SuDS or soakaway design must include adequate groundwater monitoring data to determine the highest winter groundwater table in support of the design. Supplementary guidance notes are also enclosed for information.

Paul Cann
Senior Engineer (Drainage & Coastal)

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From: planning.responses@arun.gov.uk [mailto:planning.responses@arun.gov.uk]
Sent: 04 June 2013 13:01
To: Brian Holland
Subject: Planning Consultation on: BR/41/13/

To: **Engineers (Fluvial Flooding)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL
Town & Country Planning Act 1990 (as amended)
Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended)
Planning Permission

APPLICATION NO:	**BR/41/13/**
Registered:	24th April 2013
Site Address:	Land to the rear of Holmlea Town Cross Avenue Bognor Regis PO21 2DN
Grid Reference:	493120 99925
Description of Works:	Demolition of existing buildings and redevelopment of the site with 6 No. two bedroom dwellings

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The Council have received the above planning application. I shall be pleased to receive any observations you may wish to make.
Click here to view the application details

Should you have any comments to make, these should be sent by replying to this email
by 06-JUN-13.

You can also monitor the progress of this application through the Council web site:
www.arun.gov.uk/planning
Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

The application will be determined having regard to the development plan policies (if any are relevant) and other material considerations. The development plan can be accessed via the website as can the leaflet which deals with material planning considerations.
Should the application go to appeal the Planning Inspectorate will publish any comments made to the Council on their website:
www.planningportal.gov.uk/planning/appeals/ but they will protect personal details.

The officer dealing with this application is Mrs S Leeson who can be contacted on telephone number 01903 737769.

Regards
Planning Officer

consultee_email

ARUN
DISTRICT COUNCIL

Supplementary Requirements for Surface Water Drainage Proposals

Any proposed surface water drainage scheme must consider the use of sustainable drainage principles.

SUDs Selection

The design should follow the hierarchy of preference for different types of surface water drainage systems as set out in Approved Document H of the Building Regulations and the Sustainable Urban Drainage System (SUDS) Manual produced by CIRIA. This means that the developer must first consider the discharge of surface water into an infiltration device (eg. soakaway, basin, swale, permeable paving etc). If this is not achievable then attenuated flows into a watercourse at an agreed run off rate should be considered. If no suitable watercourse is available, then attenuated flows into a surface water sewer at an agreed rate is the third option. Surface water must not in any development, be discharged into the foul sewer system.

Proposals must include a "Surface Water Management Statement", or a "SUDS Design Statement". This should detail the design principles used and how the surface water will be conveyed and disposed of. This can be supported by a schematic or indicative layout. In addition, it must show the boundaries of each catchment area and specify into which component of the drainage system these areas connect.

Maintenance and Management

Details of the maintenance and management of the SUDS system is to be set out in writing in a site specific maintenance manual. This manual shall include details of the financial management and arrangements for the replacement of components at the end of the manufacturers recommended design life. This document is then to be submitted as part of the planning process.

Infiltration Drainage Design

Infiltration rates for soakage structures are to be based on percolation tests undertaken in the winter period and at the location and depth of the proposed structures. The percolation tests and design must carried out in accordance with BRE 365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm between the invert of the entry pipe to the soakaway, and the base of the structure. It must also have provision to ensure that there is capacity in the system to contain below ground level the 1 in 100 year event plus 30% on stored volumes, as an allowance for climate change.. Adequate freeboard must be provided between the base of the soakaway structure and the highest recorded annual groundwater level identified in that location.

Any SUDS or soakaway design must include adequate groundwater monitoring data to determine the highest winter groundwater table in support of the design. Residential developments in excess of five properties will require ground water monitoring to be carried out between October and March inclusive. The extent of monitoring required for smaller developments will be subject to agreement with the Council's Engineers.

Controlled Discharge

Discharge to a watercourse or surface water sewer must be restricted to an agreed rate by means of a controlled outflow. The greenfield runoff can be derived from IH124 or similar, and will be used to estimate the correct flow for the development area. Any storage designs must be submitted with groundwater monitoring data where applicable. Storage areas are preferred to be in an 'open' form ie. ponds, etc, over the use of underground tanks.

Flow Routes and Exceedance Routes

Flow routes through the development must be demonstrated as a first stage in the design process, demonstrating how water will travel at or near the surface for three types of flow:

1. Low flow routes
Once surface water runoff has been collected, cleaned and controlled in source control features it will either be stored where it fell as rain in permeable pavement, or flow onward to local storage structures. The day-to-day flows from these features should travel in low flow channels through the development in a controlled way contributing to landscape quality.

2. Overflows
In the event of local blockages or surcharge a simple overflow arrangement should allow water to bypass the obstruction and return to the management train sequence until conditions return to normal.

3. Exceedance routes
When SUDS are overwhelmed by exceptional rainfall, then exceedance routes are required to protect people and property, by providing unobstructed overland flow routes from the development and should be considered for all drainage schemes. The SUDS design must demonstrate that flow routes have been considered at each design stage to take into account the effect of proposed development on the natural flow pattern for the site. Exceedance routes should also be protected from future changes in land use.

Culverting a Watercourse

Culverting (piping) of a watercourse is not advised unless there is no other alternative, as culverting can lead to an unacceptable loss of habitat, reduced flood storage volume, reduced flow capacity, and increased difficulty in future maintenance. Culverting can only take place with consent from the Lead Local Flood Authority (West Sussex County Council) or its agent (Arun District

Council). If access is required across a watercourse, then a single continuous spanning bridge is preferred, in order to maintain the capacity of the watercourse. Any structure should be as short as reasonably possible in terms of its length along the watercourse, in order to maintain good access for future maintenance.

References:

CIRIA
C697 The SUDs Manual
Woods Ballard B; Kellagher R et al
ISBN: 978-0-86017-697-8, 2007

Centre for Ecology and Hydrology
Flood Estimation for Small Catchments - IH Report 124
D C W Marshall & A C Bayliss
ISBN: 0948540621, 1994

Building Research Establishment,
Soakaway Design – Digest 365 (BRE 365)
ISBN: 1 86081 604 5, 1991

The Building Regulations 2000
Drainage and waste disposal
Approved document H
ISBN: 1-859462-08-1

CIRIA
R156 Infiltration Drainage – Manual of Good Practice
Roger Bettess
ISBN: 0 86017 457 3