

Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF

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From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 26 October 2021 10:58
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: James Cross <James.Cross@arun.gov.uk>
Subject: RE: Planning Consultation on: AL/107/21/PL

Engineers Comments Regarding Surface Water Drainage

A flood risk assessment and drainage strategy has been submitted with this application. The drainage strategy identifies that it is proposed to attenuate surface water prior to discharge to watercourse. Based upon the groundwater monitoring results we agree that infiltration is not suitable here.

We believe that the drainage for this area of the BEW development needs to be master planned. We are aware that there is a landlocked site bordering this site, master planning the drainage would prevent unnecessary connections to the foul sewer.

We note the proposed location of the basin is very close to flood zone 2/3, all surface water storage must be located outside of future flood zones. We would request that the applicant provides further detail on the future flood zone extent, and the proposed elevation of the pond. Some more detailed drawings have been provided in an appendix, however the quality of these on the system is very poor. Please can separate surface water drainage layout and detail drawings be provided.

A full review of calculations has not been completed due to our inability to read the drainage layout drawing, however we do note the following which need to be adjusted within calculations:

- FSR rainfall and a cv of 0.75 has been used. At least FEH 2013 rainfall must be used, ideally cv should also be set to 1.
- A surcharged outfall has not been modelled. This must be modelled with surcharged water level set to predicted future flood level.
- The system must be designed for the 1 in 100 year plus 40% climate change event.
- Urban creep must be applied to impermeable areas.
- Numerous pipes are too slack. Minimum self-cleansing velocity of 1m/s must be achieved. For example 450mm diameter pipes set at 1:545 are not suitable.

It appears that discharge rate has been based upon developable area, rather than the area positively drained. Please re-assess discharge rate based upon the proposed positively drained area (taking account of neighbouring development if appropriately master planned). We expect discharge to be limited to QBar for all events up to and including the 1 in 100 year plus 40% climate change event, we expect QBar to be far closer to 5l/s. This will have a significant impact upon the storage area required.

It is difficult to assess what conflict there may be between drainage and landscaping proposals, as the size of drainage features will likely need to increase. However, we would state that existing and proposed trees (root protection zones) must not conflict with suds features/pipework.

We would query whether widespread land raising is proposed here, and would recommend the case officer carefully reviews this. If ground raising is proposed there is a risk that this will surcharge groundwater levels and result in groundwater flooding on adjacent land.

We would like to raise a **holding objection** to this application. Surface water drainage must be considered at the earliest opportunity and form part of the layout development process. Leaving drainage design until after a layout has been agreed will likely unduly prejudice drainage design. Furthermore, inadequately considering drainage at this stage could potentially result in a lack of sufficient capacity being provided for surface water drainage and therefore the development could lead to an increased risk of flooding elsewhere.

To overcome the holding objection the applicant should submit a revised surface water drainage scheme based upon discharge rates equivalent to proposed positively drained areas. Calculations should be adjusted as per our comments above. Furthermore, further detail on the location of drainage features and future flood zones must be provided.

If you are however minded to approve this application, please ensure that the FRA and drainage strategy is NOT listed as approved and please apply the following conditions.

PCENG D2

"Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels and winter Percolation testing to BRE 365, or similar approved, will be required to support the design of any Infiltration drainage. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity."

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

And the accompanying informative:

INFORMD

"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 must be carried out in accordance with BRE365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm event plus 40% on stored volumes (allowance for climate change) 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 storm event plus 40% on stored volumes. 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. The applicant is advised to discuss the extent of groundwater monitoring with the Council's Engineers.

Supplementary guidance notes regarding surface water drainage are located here [Drainage Planning Consultations | Arun District Council](#) on Arun District Councils website. A surface water drainage checklist is available on Arun District Councils website, this should be submitted with a Discharge of Conditions Application."

PCENGD4

"Development shall not commence until full details of the maintenance and management of the surface water drainage system is set out in a site-specific maintenance manual and submitted to, and approved in writing, by the Local Planning Authority. The manual is to include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life. Upon completed construction of the surface water drainage system, the owner or management company shall strictly adhere to and implement the recommendations contained within the manual."

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W DM1, W DM2 and W DM3 of the Arun Local Plan. It is considered necessary for this to be a pre-commencement condition to ensure that the future maintenance and funding arrangements for the surface water disposal scheme are agreed before construction commences.

ENG1

"Immediately following implementation of the approved surface water drainage system and prior to occupation of any part of the development, the developer/applicant shall provide the local planning authority with as-built drawings of the implemented scheme together with a completion report prepared by an independent engineer that confirms that the scheme was built in accordance with the approved drawing/s and is fit for purpose. The scheme shall thereafter be maintained in perpetuity."

Reason : To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan.

Kind regards,

Laura Gibbons

Drainage Engineer

Engineering Services

Please note that I work Tuesdays 08:00-16:00 for Arun only.



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Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF

From: Planning.Responses <Planning.Responses@arun.gov.uk>

Sent: 19 August 2021 08:32

To: Land Drainage <Land.Drainage@arun.gov.uk>

Subject: Planning Consultation on: AL/107/21/PL

To: **Engineers (Drainage)**

NOTIFICATION FROM ARUN DISTRICT COUNCIL

Town & Country Planning Act 1990 (as amended)

Town and Country Planning (Development Management Procedure) (England) Order 2015

Planning Permission

Application No: AL/107/21/PL

Registered: 16th August 2021

Site Address: Woodgate Centre Oak Tree Lane Woodgate PO20 3GU

Grid Reference: 494134 104173

Description of Works: Demolition of the Woodgate Centre buildings (including 3 No. residential dwellings) & the construction of 180 No. residential dwellings with the creation of new vehicular access with footways and cycleways, ancillary road infrastructure, emergency access arrangements, associated parking, public open space, including children's play space, landscape planting, surface water attenuation & drainage & other associated infrastructure. This site is in CIL Zone H SP2, BEW Strategic Site and is not CIL Liable.

The Council have received the above application.

[Click here to view the application details](#)

Should you have any comments to make, these should be sent by replying to this email by 23rd September 2021. You can also monitor the progress of this application through the Council web site:

<https://www.arun.gov.uk/planning-application-search>

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

<https://www.arun.gov.uk/development-plan> as can information on what comments we can consider

<https://www.arun.gov.uk/planning-application-comments>

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.

Should the application go to appeal the Planning Inspectorate will publish any comments made to the Council on their website: <https://app.planninginspectorate.gov.uk/> but they will protect personal details.

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

Yours sincerely

James Cross

Planning Officer- Arun District Council

Telephone: 01903 737784

Email: james_cross@arun.gov.uk

PLCONSULT (ODS) 2020