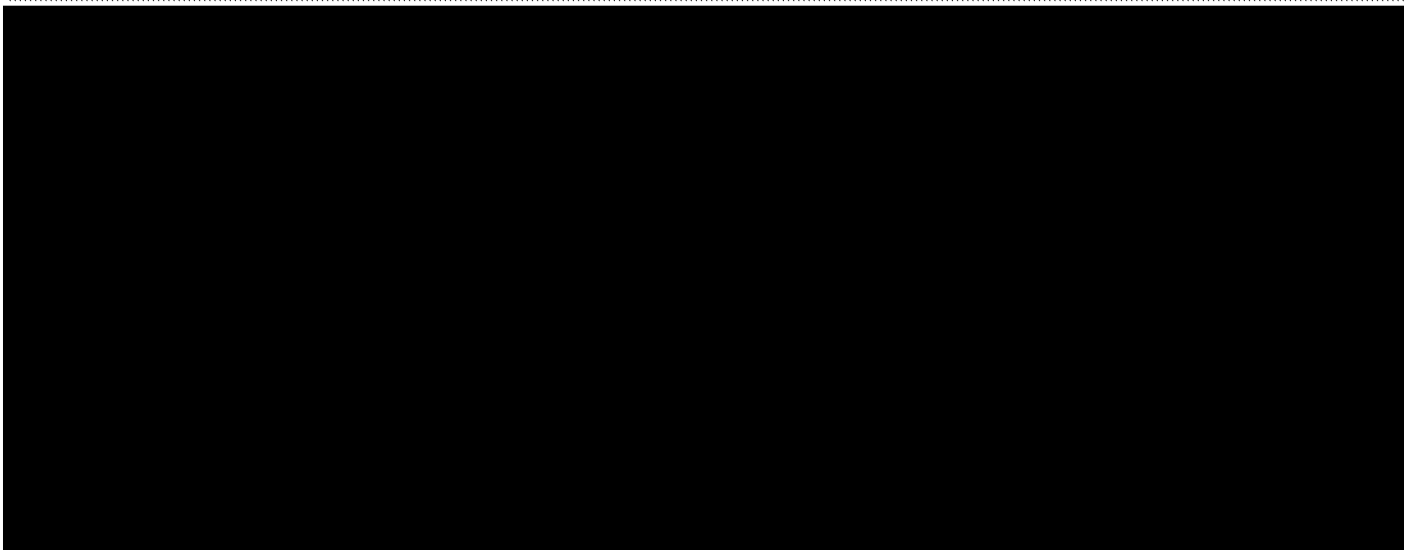
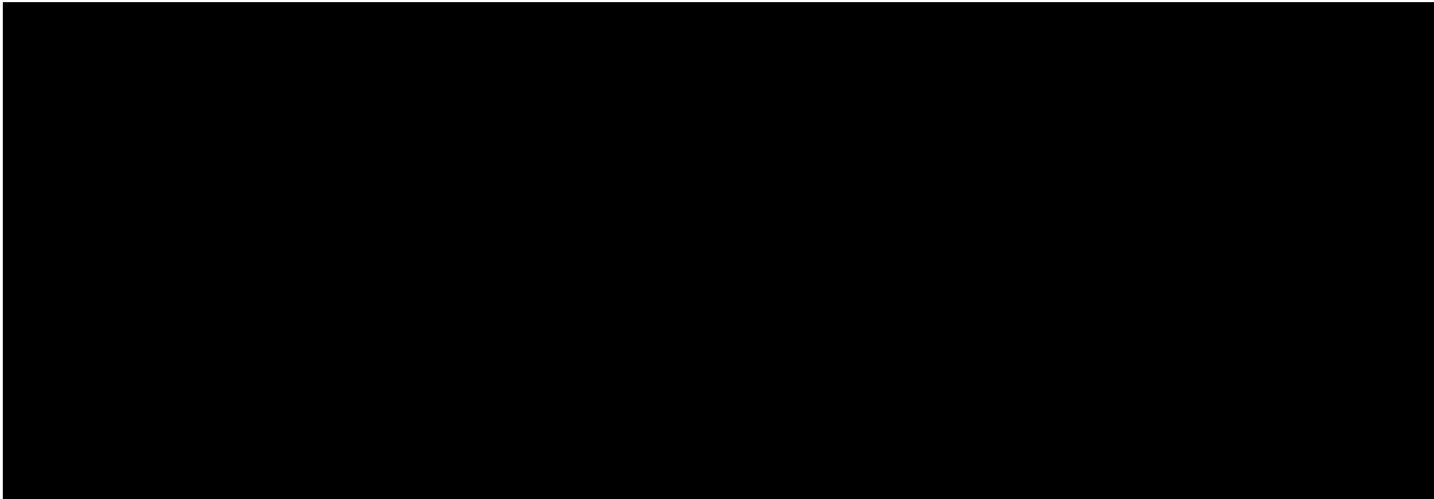
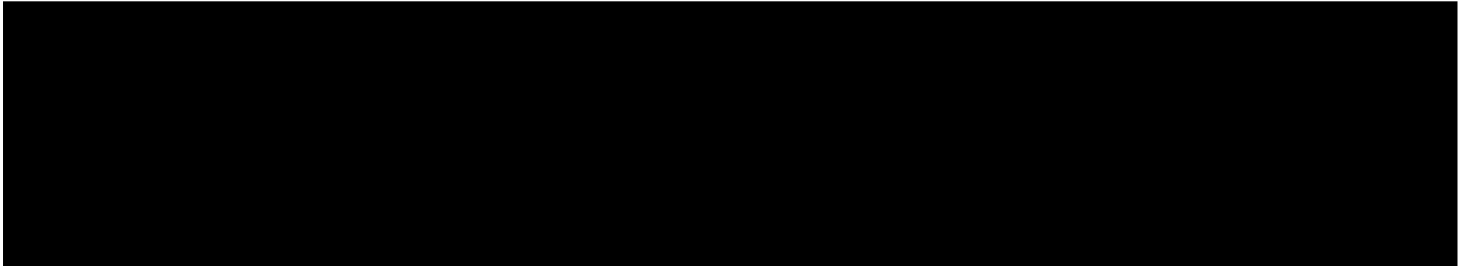




Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF
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From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 20 October 2020 15:16
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Raymond Cole <Raymond.Cole@arun.gov.uk>


Dear Ray,

Thank you for consulting us we have the following comments on Flood Risk and Surface Water Drainage

Flood risk

The application is within flood zone 3. It is understood that the Environment Agency have been consulted, safe access and egress should be provided and finished floor levels should be above peak flood levels.

The site is at risk from surface water flooding. This risk is confined to the drainage channels that are currently present on site for the 3.3% and 1%AEP events. Wider surface water flooding is forecast for the 0.1% AEP event, which can be used as an approximation of the 1%AEP plus climate change event. Surface water flow paths should be maintained.

Surface water drainage

The proposals include infilling/ diversion of ordinary watercourse. Land drainage consent will be required for such activities. A buffer of 3m must be provided between top of bank of watercourses and proposed structures that will limit access.

Uncontrolled discharge to tidal bodies is acceptable. However, the impact of tidal locking on outfalls must be considered. Therefore, if proposals are to discharge to the tidal body it is highly likely that storage will be required to ensure that the surface water does not flood the site during high tide. We note that the strategy submitted proposes a bio swale to convey the discharge of roof water and permeable paving to store water from paving areas prior to discharge to main river or ordinary watercourse. If discharge is proposed to watercourses that are the landward side of defences then it will be necessary for discharge to be limited to QBar or 2l/s whichever is greater. Full calculations, layout plans, and construction details will be required to support design.

Calculations for surface water drainage should use FEH data, or if FSR is used Cv must be set to 1.

It is noted that infiltration has been ruled out based on BGS data. Winter infiltration testing must be completed on site to establish if infiltration is viable. Detailed design should be supported by winter groundwater monitoring. Winter groundwater monitoring is required even when infiltration is not proposed to ensure that the effects of flotation are adequately accounted for in design.

If you are minded to approve this application please apply the following conditions to ensure the development is adequately drained throughout its lifetime.

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:

INFORM D

“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 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 40% 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. 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

<https://www.arun.gov.uk/surfacewater> 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."

PCENG D3

"The development shall not proceed until details have been submitted to and approved in writing by the Local Planning Authority for any proposals: to discharge flows to watercourses; or for the culverting, diversion, infilling or obstruction of any watercourse on or adjacent to the site. Any discharge to a watercourse must be at a rate no greater than the pre-development run-off values. No construction is permitted, which will restrict current and future land owners from undertaking their riparian maintenance responsibilities in respect to any watercourse or culvert on or adjacent to the site. "

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. And to ensure that the duties and responsibilities, as required under the Land Drainage Act 1991, and amended by the Flood and Water Management Act 2010, can be fulfilled without additional impediment following the development completion. It is considered necessary for this to be a pre-commencement condition to protect existing watercourses prior to the construction commencing.

And the accompanying informative:

INFORM D2

"Under Section 23 of the Land Drainage Act 1991 Land Drainage Consent must be sought from the Lead Local Flood Authority (West Sussex County Council), or its agent (Arun District Council land.drainage@arun.gov.uk), prior to starting any works (temporary or permanent) that affect the flow of water in an ordinary watercourse. Such works may include culverting, channel diversion, discharge of flows, connections, headwalls and the installation of trash screens.

The development layout must take account of any existing watercourses (open or culverted) to ensure that future access for maintenance is not restricted. No development is permitted within 3m of the bank of an ordinary watercourse, or 3m of a culverted ordinary watercourse."

PCENG D4

"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.

ENG D1

"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.



T: 01903 221374

E: laura.gibbons@arun.gov.uk or [REDACTED]

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