[redacted]

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 20 October 2020 12:33
[redacted]
Subject: RE: *EXTERNAL: Land east of Drove Lane, Yapton Y/78/20/RES - drainage comments

Hi Simon

Just to confirm that all infiltration rates are to be discounted in the hydraulic calculations, irrespective of the rate achieved in the non-winter testing. Ie. including x10-6 rates and better. This was the compromise for the lack of winter testing.

We note that the storage of the 1 in 30 event below ground. You will obviously need to prove that the 1 in 100 year event + 40% climate change is fully retained on site without flooding of property/infrastructure and ensuring public safety when considering overland flow routes.

Regards

Paul Cann
Principal Engineer (Drainage)

Paul Cann | Principal Engineer (Drainage), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
Internal: 37819 | External: +44 (0) 1903 737819 | Fax: +44 (0) 1903 716019 | E-mail: Paul.Cann@arun.gov.uk
Arun is Working in Partnership with Chichester District Council
Visit Arun's web site at http://www.arun.gov.uk/ and www.chichester.gov.uk
Save the environment - think before you print.

From: Simon Marks [redacted]
Sent: 20 October 2020 12:21
To: Simon Davis <Simon.Davis@arun.gov.uk>; Laura Gibbons <Laura.Gibbons@arun.gov.uk>; [redacted] Paul Cann <Paul.Cann@arun.gov.uk>

[redacted]

Subject: RE: *EXTERNAL: Land east of Drove Lane, Yapton Y/78/20/RES - drainage comments

Morning all

Thank you for the virtual meeting this morning. As discussed I would like to clarify the points discussed and any required actions (in red). If anyone has anything they would like to add please let me know so we can get the drawings turned around and issued by the end of this week as discussed.

- Winter ground water level monitoring has been carried out, the drawings show the interpolated levels at the drainage feature locations. It was confirmed this is sufficient for RM application purposes.
- Infiltration features are located at or above the ground water levels obtained from the water testing. There are conveyance features that may encroach below this level. It was requested that the conveyance features be sealed to prevent ground water ingress.
- Features have been modelled with interpolated infiltration rates but also with zero infiltration for the locations where the soakage rate was found to be lower than x10-6. We have checked and calculated the effect zero infiltration would have on the system and modelled the downstream features to cater for any additional volumes required. The calcs will not be considered by the LLFA where the soakage rate was lower than x10-6.
- We have designed a hybrid system with infiltration features and permeable paving with the facility for high level overflows in extreme events.
- The outfall is restricted to QBAR. SM to check this has been calculated on the basis of the proposed impermeable area.
- Permeable paving has been provided in all drives and parking areas.
- Cells and tanks have been the last resort but are necessary in some locations. Laura confirmed the ration of open features / crates is acceptable.
- Any culverts required for existing water features should be 450mm minimum.
- It is proposed to connect to the existing ditch at existing invert level.
- SM to review the additional survey that has been carried out to identify if any works are required to the existing ditch.
- All proposed features / structures are a minimum of 3.0m from the existing watercourse. SM to clarify on the drawings.
- The network caters for all storms to be kept underground where possible up to and including the 1:30 year storm with overland flow routes / high level overflows provided to downstream features where required.
- Exceedance routes are shown (and have been designed) to protect properties and get any overland flood flows to the features around the perimeter of the site. SM to confirm depth of such flows in the roads.
- Land drainage consent will be required and applied for.
- Raising ground levels is unavoidable to achieve the overland flow routes and protect properties, but we have looked to minimise as much as possible. The properties on the boundaries are not elevated above normal working practice. The raising of ground levels occurs in board.
- A drainage strategy document in the form of a technical note, explaining how the network functions will be issued on Friday.
- Evidence is not now required to demonstrate discharge to the watercourse is required. This was raised before the drawings had been reviewed.
- SM to ensure drainage details are sit specific and referenced to the features on plan. Including hydrobrake and positive drainage details.
- SM to review and explain how the boundaries and watercourses are protected.
- Drawings can be issued directly to the LLFA and reviewed outside of the planning application so that the process can be expedited.

I think that covers anything, please let me know if I have missed anything or anything more is required. Please let me know also if I have missed anyone off the distribution list. Please give me any comments in time to get the drawings turned around and issued by the end of this week.

Many thanks
Simon

Simon Marks
Associate Director

