

Graham Boston

From: Paul Cann [REDACTED]
Sent: 05 June 2020 09:45
To: Graham Boston
Cc: Sarah Burrow; James Cook; Chris Martin; Simon Lane
Subject: RE: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton (P19-439)

Hi Graham

Proposals now acceptable. Please note that you will need to submit everything to the planning officer in order to request the discharge of conditions.

In respect to item 10, you could be looking at around 30mm clearance between the underside of one pipe and the crown of the other, depending on pipe thicknesses. Obviously, if revisions are required on site due to things being too tight, then please contact us to agree any changes.

Regards

Paul Cann
Principal Drainage Engineer
Engineering Services



[REDACTED]
Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk

Sign up to our newsletter [here](#)



From: Graham Boston [REDACTED]
Sent: 29 May 2020 14:50
To: Paul Cann [REDACTED]
Cc: Sarah Burrow [REDACTED]; James Cook [REDACTED]; Chris Martin [REDACTED]; Simon Lane [REDACTED]
Subject: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton (P19-439)

Hi Paul,

Attached are updated information and also in RED below notes against your comments.

Hope this covers all information, if you could confirm and we can then make the application for release of the condition,

Many thanks for your assistance.

Best Regards

GRAHAM BOSTON
Technical Associate



Taylor Whalley Spyrá Ltd
consulting civil & structural engineers
3 Duffield Avenue, London, EC1Y 8PO

Please consider the environment before printing.
Office Location Plan

From: James Cook [REDACTED]
Sent: 29 May 2020 11:41
To: Graham Boston
Cc: Chris Martin; Simon Lane
Subject: RE: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton (P19-439)

Hi Graham,

Please see my comments to each of the items in red below. Attached is our updated drawings and calculations.

If you have any queries, please feel free to contact me.

Kind Regards

JAMES COOK



Simpson Associates Consulting Engineers LLP
8 Friday Street | Henley-on-Thames
Oxfordshire | RG9 1AH
www.simpsoneng.com

Offices in London, Henley-on-Thames, and Gloucester

The information contained within this e-mail is confidential and may be privileged. It is intended for the addressee(s) only. The contents of this e-mail must not be disclosed or copied without the sender's consent.

If you have received this e-mail in error please inform the sender, and destroy the message.

The statements and opinions expressed in this message are those of the sender and do not necessarily reflect those of Simpson Associates Consulting Engineers LLP.

Please review our [Privacy Policy](#) for details of how we store and use your information.

From: Paul Cann [REDACTED]
Sent: 18 May 2020 16:30
To: Graham Boston [REDACTED]
Cc: Sarah Burrow [REDACTED]; James Cook [REDACTED]; Chris Martin

Hi Graham

Comments below;

1. Whilst the infiltration testing was carried out deeper than the proposed formation level of the crate soakaway, it is recognised that ground conditions are similar within the depth range concerned and therefore it is reasonable in this instance to use the agreed infiltration rate/safety factor.
Noted
2. I note the half emptying as; 1 in 10 (22 hours), 1 in 30 (28 hours), 1 in 100 (37 hours), 1 in 100+40% (52 hours) – obviously we are only achieving half emptying within 24 hours on the 1 in 10 year event. There is some spare capacity in the crate soakaway and the permeable paving, etc. However, you need to consider overland flow routes/ponding should you experience exceedance with subsequent storms. Please advise, ensuring that there is no detriment to the proposed units and/or neighbouring properties/infrastructure. Also increase plan area of soakaway to reduce half emptying times?
We have been able to slightly increase the plan area of the soakaway to achieve the half drain time for the 1:30 year event which will comply with the requirements set out in the CIRIA SuDS Manual as below. Due to the method of discharge being infiltration to ground it will not be feasible to increase the size of the tank further to accommodate the half drain time for larger storm events.
"The infiltration component should discharge from full to half-full within a reasonable time so that the risk of it not being able to manage a subsequent rainfall event is minimised. Where components are designed to manage the 1:10 year or 1:30 year event, it is usual to specify that half emptying occurs within 24 hours. If components are designed to infiltrate events greater than the 1:30 year event, designing to half empty in 24 hours can result in very large storage requirements and, with agreement from the drainage approving body, it may be appropriate to allow longer half emptying times. This decision should be based on an assessment of the performance of the system and the risk and consequences of consecutive rainfall events occurring."
3. Abandoned surface water drainage – cap pipe at boundary – add note.
Note added
4. Rather than utilising perforated distribution pipes in the footpath to serve the channel drains, please specify a diffuser unit instead ie. polypipe or similar approved. Alter plans and construction details accordingly.
Diffuser units added.
5. Specify channel drain model/sump units/gradients/levels.
Channel specification added.
6. All connections not made to manholes to connection via 45 degree oblique junctions – add note.
Note added.
7. Silt trap manhole construction detail – whilst shown on section A-A of the soakaway. Provide a standalone fully detailed construction detail to cover all silt traps.
Catchpit detail to be added.
8. Manhole S8 to be a silt trap.
Manhole S8 updated to a catchpit manhole
9. Show finished surface levels/falls and finished floor levels.
Refer to 9264_EX_01 Levels Layout
10. Pipe crossing just downstream of manhole S5 – freeboard between the two pipes is very tight – scope for increasing freeboard?
<100mm between soffit and invert of crossing pipes.
11. Outlets from permeable paving to be via diffuser units, therefore remove perforated pipework.
Diffuser units added.
12. Permeable paving – specify base and finished surface levels on plan.
Formation levels added.
13. Granular surround to perforated crate soakaway distribution pipe – specify grading.
Granular surround specified.
14. Is a further gully required within the paving slab footway? ie. near section D-D? Assuming the path falls in that direction.
Ground levels fall towards proposed gully.

I await your revised proposals.

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

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: Graham Boston [REDACTED]
Sent: 01 May 2020 12:03
To: Paul Cann [REDACTED]
Cc: Sarah Burrow [REDACTED]; James Cook' [REDACTED] Chris Martin
[REDACTED]; Simon Lane [REDACTED]
Subject: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton

Hi Paul,

Hope you are well

Attached are the updated drainage drawings and calculations below and summary of the areas and infiltration rate used.

9261_PH_02_T3 Drainage Layout - Soakaway Design
9261_PH_03_T2 Drainage Details Sheet 1
9261_PH_05_T2 Drainage Details Sheet 3 - Soakaway Details
9261_EX_02_T3 Surface Finishes Layout
9261_EX_03_T3 Boundary Line Sections

Soakaway Design Calculations 1 in 1 yr
Soakaway Design Calculations 1 in 10 yr
Soakaway Design Calculations 1 in 30 yr
Soakaway Design Calculations 1 in 100 yr
Soakaway Design Calculations 1 in 100 yr + 40% CC

Infiltration rate used is 3.18×10^{-6} m/s

Total site area based on boundary line = 3192m^2

Total Impermeable Area = $2,988\text{m}^2$ (Roof = $1,115\text{m}^2$ + External Hardstanding = $1,873\text{m}^2$)

Within the External Hard standing area of $1,873\text{m}^2$ we have the Surface area discharging via permeable sub-base = 387m^2

External landscape areas of 204m^2

The tank size is 9m x 41m x 0.75m = 276m³

If you could let us any comments once you reviewed

Many Thanks

GRAHAM BOSTON
Technical Associate



Taylor Whalley Spyrin Ltd
consulting civil & structural engineers
3 Duffield Avenue, London, EC1Y 8PO

Please consider the environment before printing.

Office Location Plan

From: Paul Cann [REDACTED]
Sent: 01 April 2020 14:02
To: Graham Boston
Cc: Sarah Burrow; 'James Cook'; Chris Martin; Simon Lane
Subject: RE: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton

Hi Graham

It's a shame they didn't undertake the 3 fillings of the hole as required by BRE365. This is something we normally insist upon.

On a positive note, the test was undertaken in March 2020 when the groundwater peaked after a very wet period. Normally, we expect the testing to be done in Jan/Feb but this year was exceptional. I note that the infiltration rate of 4.77×10^{-6} which has then been adjusted to 3.18×10^{-6} to allow for two further tests in the pit. Whilst this still leaves some uncertainty, in this instance only, we would be prepared to accept the interpolated rate on the proviso that a further safety factor is applied to that rate (factor to be agreed).

We would therefore be looking at a soakaway solution rather than utilising any connectivity to the public surface water sewer, provided half emptying in 24 hours can be achieved. I note the oil interceptor, however, permeable paving should be utilised where possible. Please note that silt traps will need to be incorporated upstream of the crate soakaway.

The detailed design will be assessed, once all the relevant information is available. Hope this all makes sense.

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

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: Graham Boston <[REDACTED]>
Sent: 30 March 2020 14:36
To: Paul Cann <[REDACTED]>
Cc: Sarah Burrow <[REDACTED]>; 'James Cook' <[REDACTED]>; Chris Martin <[REDACTED]>
Simon Lane <[REDACTED]>
Subject: 9261 - Lineside Industrial Estate, Eldon Way, Littlehampton

Hi Paul,

Many thanks for returning my call today,

As discussed I attach the infiltration testing results undertaken which also include the water monitoring results between December and March and also the results from last year during March and April

The results as discussed for the infiltration testing were undertaken over a day as the test first run the water was slow to soakaway and the last 200mm interpreted with RML recommending Soil Infiltration Rate $f = 3.18 \times 10^{-6}$ m/s to be used

The pit was excavated to 2.6m below ground level and the recorded water table on site is about 4.15m below ground level

Attached are the two tender designs I mentioned undertaken for tender stage one for infiltration and one for restricted discharge to the main SW Sewer, all based on 1:100 year event with 40 % climate change. With final detailed design once the drainage has been agreed for storage tank size etc

As discussed infiltration on site and in the area is not great.

Could you review and let us know your comments

Many Thanks for you time

And keep well

Best Regards

GRAHAM BOSTON
Technical Associate



Taylor Whalley Spyrá Ltd
consulting civil & structural engineers
3 Dufferin Avenue, London, EC1Y 8PQ

[REDACTED]
Please consider the environment before printing.

📍 [Office Location Plan](#)

<http://www.arun.gov.uk>

DX 57406 Littlehampton

You can view Arun District Council's Privacy Policy from <https://www.arun.gov.uk/privacy-policy>

Important Notice This e-mail is intended exclusively for the addressee and may contain information that is confidential and/or privileged. If you are not the intended recipient (or authorised to receive it for the addressee), please notify the sender and delete the e-mail immediately; using, copying, or disclosing it to anyone else, is strictly prohibited and may be unlawful. Any views, opinions or options presented are solely those of the author and do not necessarily represent those of Arun District Council. The information in this e-mail may be subject to public disclosure under the Freedom of Information Act 2000, therefore we cannot guarantee that we will not provide the whole or part of this e-mail to a third party. The Council reserves the right to monitor e-mails in accordance with relevant legislation. Whilst outgoing e-mails are checked for