




From: Laura Gibbons
Sent: 05 November 2018 13:31
To: 'Vlad Myrsikov'
Cc: Sarah Hufford; Anita Gardner; Paul Cann
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Vlad,

Following Paul's email on the 29th it looks like infiltration via ring soakaways will not be possible due to the groundwater levels in the summer.

We will need to see Southern Water's formal approval to means and method of connection and rates of discharge before we approve the drainage proposals. Have you discussed with southern water lining requirements for the pond etc.?

Having had a look at the details you have sent through I have the following comments:

1. Please detail on the layout plan the pond invert levels and bank levels.
2. Please ensure all water goes through the pond before reaching the flow control device. I would advise two inlets to the pond and one outlet which has the flow control device. At the minute the water is being able to bypass the pond at flows which are less than the restricted rates, therefore whenever it was raining water would be going into the sewer. We would like to see the sewer connection used as more of an overflow.
3. Please provide calculations of this revised arrangement.
4. Please detail proposed levels of the car park area. As you have provided no quantifiable proof that your proposal for the car park would work can levels be set so that there is a gentle fall to the pond rather than surrounding land.
5. Please provide construction detail drawings of the non-engineered permeable pavement.

Regards,

Laura Gibbons, MEng, GMICE

Engineer (Drainage & Coastal)

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: Vlad Myrsikov [REDACTED]
Sent: 29 October 2018 12:40
To: Paul Cann
Cc: Sarah Hufford; Anita Gardner; Laura Gibbons
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Paul,

As discussed, please find enclosed geotechnical investigation, soakaway and permeability test results. Standing groundwater was at 1.7m and stratum is very variable with many lenses of clay, silt and some gravel.

We welcome your direction to finalise the project as we've reached technical potential outlined within British Standards with the scheme we submitted for approval (see attached drawing L2340-C-52-750 and refer to previously submitted Technical Note L2340-TN-001).

Kind Regards,

Vlad Myrsikov
Pringuer-James Consulting Engineers

Pringuer-James
Consulting Engineers

[REDACTED]
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Pringuer-James Consulting Engineers
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From: Vlad Myrsikov
Sent: 29 October 2018 12:01
To: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Cc: Sarah Hufford [REDACTED] Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Laura,

Groundwater on our site is at 1.7m and soakaway test was completed at Groundwater depth or nominally above it. At 2.0m we will be below groundwater table. I am not familiar with a drainage concept of soakaway below groundwater and what you are proposing appears to be similar to a water well, but in reverse. I would welcome your input, and thus please send through British design standards for such a facility and we would be happy to consider this.

Kind Regards,

From: Laura Gibbons <laura.gibbons@arun.gov.uk>

Sent: 29 October 2018 11:51

To: Vlad Myrsikov [REDACTED]

Cc: Sarah Hufford [REDACTED] Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>

Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Vlad,

I am not convinced that all possibilities have been fully investigated. In East Preston there is typically a gravel layer at approx. 2m down which offers good infiltration.

Have you considered formalising the permeable paving and having ring soakaways which take the roof water going down into the gravel layers. Linking the permeable paving and ring soakways would mean that all storage could be provided above the winter groundwater levels but you could still utilise the good strata for infiltration. Please demonstrate whether this type of solution works or not.

As stated previously we would not be happy with an informal paving arrangement that you are proposing as no supporting calculations, rates, etc. have been supplied that demonstrate that this would work.

Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

[Laura Gibbons](#) | Engineer (Drainage & Coastal), Engineering Services, [Arun District Council](#) | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: Vlad Myrsikov [REDACTED]

Sent: 19 October 2018 16:28

To: Laura Gibbons

Cc: Sarah Hufford; Paul Cann; Anita Gardner

Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Laura,

As per our telephone discussion, please find below information and my comments.

Please see attached:

- Drawing L2340-C-52-750_Rev03 with updated site boundary to reflect “no development” disputed land.
- Soakaway Test results
- Permeability Test results

Permeability tests and soakaway tests have been done in car park, 5.0m away from building. This 5.0m line is indicated by small magenta line on the drawings with 5.0m dimension shown.

Infiltration for the development

Based on attached results infiltration is not viable for this development. This is consistent with geotechnical investigation we completed earlier which showed variable ground on site with mix of sandy Clay and Clayey Sand and other variable ground conditions. Good ground was found below water table.

Permeable Pavements

As discussed, we completed permeability tests for an engineered permeable pavement system. These failed. If we introduce an engineered system it will be Type B system and will effectively add more storm water into the system. As alternative we propose non-engineered pavements for this site. These non-engineered pavements are functional at neighbouring properties and do appear to work by infiltrate some water in first 200mm of natural ground, and then drain through more permeable pockets.

Pond

We briefly discussed the pond – this cannot infiltrate as most of it is within 5.0m of structure and ground is not suitable for infiltration.

Southern Water

We have lodged a Pre-Development query with Southern Water. We will forward you their results as soon as possible. If there is insufficient capacity within the system, then Southern Water will look to undertake necessary works to improve capacity. As mentioned on the phone, previous site was connected to sewer and was draining at around 4.5l/s (please refer to PJCE report), and new site is restricted to 2.1l/s.

Please advise if above is sufficient to discharge planning conditions.

Kind Regards,

Vlad Myrsikov
Pringuer-James Consulting Engineers

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From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>

Sent: 14 September 2018 11:05

To: Vlad Myrsikov

Cc: Sarah Hufford [REDACTED] Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>

Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Vlad,

Thanks for the email. I have provided responses to your points in *red* below.

Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
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From: Vlad Myrsikov [REDACTED]
Sent: 10 September 2018 17:04
To: Laura Gibbons
Cc: Sarah Hufford; Paul Cann
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Laura,

I've left you a voicemail, and perhaps we can discuss the points below?

Southern Water

As mentioned in previous email, we already have permission from Southern Water to discharge storm water to foul sewer, and our discharge rate is less than 3xGreenfield rate. Not sure why Council is worried about 3-party approval of which we already obtained? *The permission from southern water is only regarding the means and method of connection, it does not provide approval regarding capacity within the system. Furthermore, historic flooding of the sewerage system you are proposing on connecting into has occurred. Southern Water will only accept discharge of surface water into sewers if all other methods of disposal have been sufficiently ruled out, which we provide comments on. You have not provided sufficient justification.*

Permeable Pavements

We have permeable pavements throughout our development and it's highlighted on the drawings and report we submitted. *Non-engineered permeable pavement with no construction details is not good enough. My suggestion is that you could increase the depth of subbase of the permeable paving, or locate tanks under the permeable paving so that roof water could go into this and infiltrate. The points of diffusion must be located 5m away from the buildings.*

Pollution Prevention

In terms of reduction in 1m clearance – this is required by CIRIA 753 as a means of pollution prevention. Roof water is considered polluted by the guidance is requires “treatment”, which is normally achieved using 1.0m of unsaturated soil.

Could you please provide more details on how you would prevent pollution to groundwater, as required and provided by statutory guidance CIRIA 753? Our building control is very strict and it's not clear how we can achieve

required pollution prevention from roofs, as required by statutory guidance? CIRIA 753 actually states that only sediment and silt must be removed from roof water, this can be achieved by silt traps which you should be providing. My suggestion of using the sub base of permeable paving would provide further treatment beyond that required. The development is not within a source protection zone.

Infiltrating Pond

We would be happy to make the pond infiltrating, however it is currently located within 2.5m of structure, and we would need to move it 5m away, making it impossible to infiltrate, and parking bays do not fit. Perhaps discussion can be had with Planners to remove requirement for 2 bays, and then we will have sufficient space for infiltrating pond, provided of course we understand how to prevent pollution and Building Control approves less than 1.0m of soil between infiltrating structure and groundwater level?

See comment above regarding use of the area under the permeable paving. This could remove the need for the pond. GW was recorded at 1.7m bgl, you have ample room to infiltrate.

In summary, we have followed the hierarchy outlined in Building Regulations and designed our systems to those outlined in CIRIA(753). Our final discharge rate is less than 3xGreenfield rate which is the same as would be expected from any new developments in more stricter enforcing boroughs, and we already have permission with Southern Water. As such, I see no further reason to delay approval of our drainage strategy.

Kind Regards,

From: Laura Gibbons <laura.gibbons@arun.gov.uk>
Sent: 10 September 2018 16:29
To: Vlad Myrsikov [REDACTED]
Cc: Sarah Hufford [REDACTED]
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Vlad,

Infiltration needs to be fully investigated. The hierarchy for sustainable drainage means that infiltration should be fully investigated first. I would also note that Southern water expect us to ensure this occurs.

We do not require 1m clearance between the base of infiltration structures and maximum recorded winter groundwater levels. The base of infiltration structures must be sited above maximum recorded groundwater level. There is space for permeable paving, and for the pond to be infiltrating rather than attenuating.

Regards,

Laura Gibbons, MEng, GMICE
Engineer (Drainage & Coastal)

[Laura Gibbons](#) | Engineer (Drainage & Coastal), Engineering Services, [Arun District Council](#) | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: Paul Cann
Sent: 10 September 2018 15:39
To: 'Vlad Myrsikov'

Cc: Sarah Hufford; Laura Gibbons
Subject: RE: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

Hi Vlad

My colleague Laura will be dealing with this site so I have copied her in so she can respond to you directly.

Regards

Paul Cann
Senior Engineer (Drainage & Coastal)

Paul Cann | Senior Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
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From: Vlad Myrsikov [REDACTED]
Sent: 04 September 2018 14:50
To: Paul Cann
Cc: Sarah Hufford
Subject: EP/98/18/DOC - Tudor Cottage, 125A Sea Road

EP/98/18/DOC - Tudor Cottage, 125A Sea Road
Hi Paul,

I tried to reach you by phone, but I believe you are on holidays this week. When you are back, I would like to discuss above site with you to understand your expectations, thus would be great if you could call me back.

In advance of our discussion, below are some discussion points regarding the SuDS strategy we put together: I noted in the rejection letter that you would like to see "winter infiltration rates". We can certainly request the client to undertake infiltration tests, however it's unclear to me how this will change the scheme?

We have already implemented:

- Permeable pavements throughout (non-engineered gravel).
- Off-line Detention Basin
- Flow control at 2.5l/s (which is less than 3xGreenfield Rate, see attached)
- It should point out that the site already accepts/infiltrates storm water from both Sea Road, South Strand within the site boundary, as such the site is actually infiltrating a significantly larger overall area.

We are limited with any other infiltration features due to:

- Requirement for 1.0m clearance between water table and bottom of SuDS (pollution control)
- Site layout which prevents other infiltration SuDS, such as swales.
- Large number of tree protection zones around the site.

On a further note, Southern Water have accepted storm water going into their sewer, at 2.5l/s rate, as there are no other means to dispose of surface water for roof water.

I would appreciate a quick call so I can better understand your expectations for the SuDS on this site, given that undertaking "infiltration tests" represents limited additional value for the development.

Kind Regards,

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