

From: Amanda Scholes on behalf of Planning.Responses
Sent: 30 January 2020 08:44
To: Planning Scanning
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Amanda Scholes | Receptionist, Department, [Arun District Council](#) | Location: Ground Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF



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From: Daniel Vick <[REDACTED]>
Sent: 29 January 2020 17:36
To: Planning.Responses <[REDACTED]>
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Please upload and redact as appropriate.

From: Paul Cann <[REDACTED]>
Sent: 13 January 2020 12:00
To: Daniel Vick <[REDACTED]>
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Hi Dan

I can now confirm the following comments in respect to the surface water drainage;

1. As the plan still does not show any manhole positions except the two proposed silt traps, I can only assume no other manholes exist or are proposed. However, to provide means of access for maintenance/inspection and follow good practice of providing access on changes of pipe direction, further manholes are required. Rodding eyes can be provided at heads of run. Cover and invert levels will be required for these access points.
2. The manhole detail shown on the drawing should be labelled as 'Type E' to correspond with the relevant note on drg. 535/01 Rev C. The detail shows the manhole cover being buried under 100mm thick gravel which is not acceptable. Manhole covers need to be visible/easily accessible. Please alter.
3. Provide construction detail for the sump manholes. Minimum requirements are 450mm diameter chambers with min. 300mm deep sumps. Cover and invert levels will be required for these.
4. Pipe gradients to be shown for each pipe length once manhole positions have been indicated. I note item 3 on 535/01 rev C specifying an approx. gradient of 1 in 59 based upon an assumption. These gradients will

need to more accurately assessed and this can be done once excavations have been made to accommodate manholes, etc, and therefore levels can be obtained at that time.

5. Provide a copy of the Environment Agencies approval/comments for the connection to the watercourse which is designated 'main river'.
6. I note from the levels that the perforated pipes are around 1m below ground level. Due to the high water table in this area it is likely that groundwater will flow into these pipes at times, rather than surface water being able to infiltrate into the surrounding ground (be it minimal infiltration due to the ground conditions). This is not ideal as we try to avoid groundwater being drained into the watercourse directly (properties flood downstream), but in this instance (due the minimal flows involved), I am not going to make a big issue about it.

I will await the revised drawings, etc.

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 5LE

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From: Daniel Vick [REDACTED]
Sent: 19 December 2019 14:48
To: Paul Cann <[REDACTED]>
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

See attached and below for comment *when time allows*.

Dan

From: pete.davies <[REDACTED]>
Sent: 19 December 2019 14:21
To: Pete Davies <[REDACTED]>; Daniel Vick <[REDACTED]>; A TimHall <[REDACTED]>
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Hi Mr Vick,
I am so sorry. I thought Tony Trist had sent the attached to you.
Tony sent me the following:

Good afternoon Peter,

Please find attached the AS- Built drainage layout 535/01 iss C which I have amended to shown the additional details requested

by Arun DC. together with a new drawing 535/02 which indicates details of the outfall as built by you subby and bedding and construction details for all the 100mm diameter UPVC drain runs with their access chambers and a detail for the construction of the two 6.0m lengths of French drain.

I have attached Tony's amended drawing.

Can you forward to Mr Cann please.

Tim, my business partner, and I are resolved to complete any remedial works that Mr Cann and Mr Trist deem necessary in order to complete the discharge of conditions.

Pete Davies

From: Daniel Vick
Sent: 19 December 2019 14:08
To: [REDACTED]
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Mr Davies,

I am not quite sure where we are with this – the latest comments from our engineers below are in red.

I am keen to resolve the matter as soon as possible. Are you able to comment on the information below. As it stands I plan to refuse the DOC application early in the New Year.

Daniel Vick

Daniel Vick | Area Team Leader, Planning Services, Arun District Council | Location: Phoenix House, Maltravers Road, Littlehampton, BN17 5LF
[REDACTED]
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From: Paul Cann <[REDACTED]>
Sent: 08 November 2019 14:56
To: Daniel Vick <[REDACTED]>
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Hi Dan

See below in red. It is clear that remedial works are going to be required, so I would not be keen on discharging the planning condition until such time that the drawings have been agreed and the remedial works completed as there are no guarantees that they will be carried out. This is the trouble with not complying with a pre commencement condition. Hopefully, you are of the same opinion.

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
Internal: 37819 | External: +44 (0) 1903 737819 | Fax: +44 (0) 1903 716019 | E-mail: Paul.Cann@arun.gov.uk
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-----Original Message-----

From: Daniel Vick [REDACTED] >
Sent: 04 November 2019 18:06
To: Paul Cann <[REDACTED]>
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Response from applicant for comment with plan attached.

Dear Daniel,

I acknowledge receipt of your Email dated 01/11/2019, stating the various comments you had received from Paul Cann

Having read Paul Cann's comments with regard to information required to be shown on a drawing, by reference to the As- Built record drawing sent to ARUN DC. No. 525/01, anyone should have no trouble in identifying that the majority of the information he has requested to be shown thereon.

Peter Davies the Contractor advised when I was on site that he had been advised by the senior engineer from Arun DC. that because the ground conditions were unsuitable for percolation disposal of the roof storm water drainage to construct the final 6.0m runs of both 100mm dia. storm drains ,which could be joined before discharge using a 75mm drain pipe to The Rife, in the style of a French Drain surrounded in a 20/40mm size gravel wrapped in a filter fabric Terram Geotextile, with the short length of outfall pipe passing through a 900x 900 x 50mm precast paving slab sitting vertical at the end of the French Drain trench situated within the Rife bank behind the wattle fencing panels used as the bank protection.

My assumption was the Peter Davies was referring to Paul Cann but if Paul is adamant that he did not make that statement and as I have no reason to doubt Peter's words, on reflection he must have been referring to one of Paul's colleagues I can see no purpose in providing a flap valve over the end of the 75mm dia. pipe used as a throttled outfall to the Rife, as during periods of high rainfall when the flow level has risen, any flap would have already been forced and kept open by the pressure in the drains generated by at least 6.0m height of static head. The reference to 100mm minimum drains in the building regulations is primarily mean for sizing foul drainage pipes running at flows due to gravity and at 1 bar pressure whereas these storm water drains have 75mm size downpipes conducting roof water under a head of static pressure via 100mm dia. drains to the 75 mm dia. short pipe used as the outfall downstream of the two French Drains

Does Paul really need to see a detailed section through a shallow flexible access chambers type E, used in a domestic garden repeated when he can see the detail in the water authorities publication Sewers for Adoption and to see a cross-section through a French Drain as described on the drawing.

Please find attached a slightly amended version of the As-Built drawing 525/01. issue B.

Regards, Tony

-----Original Message-----

From: Daniel Vick
Sent: 01 November 2019 14:16
To: Paul Cann [REDACTED]

Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Thanks Paul - request forwarded to applicant.

Dan

-----Original Message-----

From: Paul Cann [REDACTED]
Sent: 01 November 2019 13:52
To: Daniel Vick [REDACTED]
Cc: Sarah Burrow [REDACTED]
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Hi Dan

Further comments;

1. Please include on the plan manhole locations, including as constructed cover and invert levels. (not provided)
2. Provide manhole construction details (type E specified on drawing) (The type E detail needs to be included in the drawing package. The applicant should also note that a type E manhole in 'sewers for adoption' 7th edition does not exist. In older document versions, it was a concrete ring manhole and probably not what has been built -- more likely polypropylene manholes. On this note, silt traps need to be incorporated in strategic manholes in intercept debris from roofs, etc and prevent blinding of the perforated pipes -- the manhole detail will dictate if any sumps have been provided.)
3. Specify pipe bedding for the non-perforated sections of pipe. (ok)
4. Indicate pipe invert level where connecting to the rife and rife bed level at that location. (connection level provided but no watercourse bed level)
5. Provide headwall construction details to support the written details, together with the EA's written consent. (Copy of consent not provided. A description of the headwall in an email needs to be backed up with a construction drawing detailing the arrangement within the bankside protection -- surely a drawing would have been prepared for the EA? See also item 6 below)=)
6. I note the 75mm diameter outfall to the rife. On a previous plan it says that the diameter was agreed with myself. This is not the case. Please can the applicant provide evidence that Building Control (approved inspector - BBS Building Control) has agreed that this arrangement is acceptable to them. It should be noted, that in order to comply with the Building Regulations a minimum 100mm diameter is required where serving more than one building. This matter will be considered further following Building Control's response. I have spoken to our own Building Control and also enclose a copy of an extract from Approved Document H where it is quite clear that a minimum 100mm diameter pipe is required where draining more than one property. This is a standard Building Regs requirement. Also, flow control/restriction is performed using more formal measures such as a control chamber with hydrobrakes or orifice plates, supported by calculations and hydraulic modelling). Essentially the pipe will need to be upsized accordingly.
7. Specify finished floor levels. (ok)
8. Has a flap valve been installed on the outlet to the rife? Provide details if so. If no flap has been installed then the applicant will need to prove that there is no detrimental effect on the development and associated drainage when water levels in the rife are at their maximum. (6m of static head? -- assumed to the top of the guttering?? How can this be achieved unless it is a sealed system and all manholes have bolt down/sealed covers? Please advise)

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

[REDACTED]

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-----Original Message-----

From: Daniel Vick [REDACTED]
Sent: 25 October 2019 12:28
To: Paul Cann [REDACTED]; Sarah Burrow [REDACTED]
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Paul,

See attached additional plan for comment.

Dan

-----Original Message-----

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 24 October 2019 09:04
To: Daniel Vick [REDACTED]; Sarah Burrow [REDACTED]
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Only seen the capture.png. However, the drawings are still lacking sufficient detail.

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

[REDACTED]

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-----Original Message-----

From: Daniel Vick [REDACTED] <[\[REDACTED\]@arun.gov.uk](mailto:[REDACTED]@arun.gov.uk)>
Sent: 24 October 2019 08:57
To: Paul Cann [REDACTED] <[\[REDACTED\]@arun.gov.uk](mailto:[REDACTED]@arun.gov.uk)>; Sarah Burrow [REDACTED]
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Paul and Sarah,

Mr Trist has asked me to clarify if you have seen the attached plans?

Dan

-----Original Message-----

From: Paul Cann <[REDACTED]>
Sent: 23 October 2019 11:34
To: Sarah Burrow <[REDACTED]>, Daniel Vick <[REDACTED]>
Subject: RE: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Hi Dan

Just to let you know (and Laura was probably unaware), I had a meeting on site with the contractor/developer just as construction was starting (2017) and the discussed principles of what we would be expecting to see in terms of surface water drainage on this site. At that time we made them aware they were in breach of planning as they had not discharged pre-commencement conditions.

However, ground conditions observed at the time, the previous land use (a house that discharged direct to the rife) and the proximity of the Barnham Rife, we agreed that shallow perforated pipework is an option we would consider in this case. This would make use of any infiltration potential before discharge to the Barnham Rife. Groundwater monitoring/infiltration tests was agreed to be waived, provided we can agree the detailed proposals based upon site discussions. Needless to say, no proposals were submitted until now.

I note the EA have approved an activity permit for the surface water outfall to the Barnham Rife (main river) which I advised the applicant to apply for.

In terms of a way forward, I suggest the applicant amends their plan to show fully detailed arrangements. This should include manhole cover levels, invert levels, all pipe diameters and gradients. Construction drawings are also required for manholes, pipe bedding, bedding/spec for perforated pipe section, gravel finished area around the building frontage, etc.

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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-----Original Message-----

From: Sarah Burrow <[REDACTED]>
Sent: 23 October 2019 09:43
To: Paul Cann <[REDACTED]>
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

-----Original Message-----

From: Daniel Vick <[REDACTED]>
Sent: 21 October 2019 16:32
To: Sarah Burrow <[REDACTED]>
Subject: FW: 4 Lake Lane -ground infiltration rate. BN/59/19/DOC

Sarah,

Please see below - last comments from Laura were:-

"Engineers Further Comments Regarding Condition 5 Our checklist has been submitted. Within the checklist it is indicated that no groundwater monitoring or infiltration testing has been completed and that justification has been provided for not using infiltration. Please can this justification be provided.

I will provide further comments upon the supply of this further information."

Dan

-----Original Message-----

From: Daniel Vick

Sent: 21 October 2019 16:20

To: Tony Trist [REDACTED]; Pete Davies [REDACTED]

Subject: RE: 4 Lake Lane -ground infiltration rate.

Mr Trist,

Thanks for this - I believe it is our engineers who have asked for the information so I will forward it to them for comment.

Daniel Vick

Daniel Vick | Area Team Leader, Planning Services, Arun District Council | Location: Phoenix House, Maltravers Road, Littlehampton, BN17 5LF

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-----Original Message-----

From: Tony Trist [REDACTED]

Sent: 18 October 2019 19:23

To: Daniel Vick <[REDACTED]>; Pete Davies <[REDACTED]>

Subject: 4 Lake Lane -ground infiltration rate.

Hi Daniel ,

Peter Davies has asked me to respond to the SWA and to yourself.

SWA have requested the discharge rate from the two attached houses that have been built on the site of no 4 Lake Lane.

Following my visit to this site I have prepared an As - Built drawing indicating the extent of the new impervious ground cover and the foul and storm water disposal systems.

The impervious areas now comprise the 100 m2 roof scape and two areas of pcc paving slabs which drain from their edges onto lawned areas, or other areas surfaced with timber chipping or single size gravel.

Based upon the hourly rainfall rate of 75 mm the run off from the roof scape would be approx 2.1 litres per second

You are no aware that the subsoil conditions to some depth are stiff clay having an extremely low infiltration rate that was felt at the time to be unsuitable for disposal by infiltration of the rain water discharged from the roof scape.

The Rife which forms that rear boundary to the site has a permanent water flow that rises close to ground level during periods of heavy sustained rainfall.

The banks to this watercourse are lined with panels of Wattle fencing which serves to keep the subsoil over the adjacent well saturated and therefore there seemed little point in considering ground infiltration as the means of surface water disposal.

On the advice from a senior engineer working for the Arun DC the final 6.0 m runs of the two 100 mm dia. storm drains serving the roof scape were constructed using 100mm dia. perforated pipes surrounded and with the trenches filled using a single size gravel to form French Drains.

Finally the Discharge Pipe size was throttled from 2/ 100 mm dia. pipes to 1/ 75 mm dia pipe discharging into the Rife through a pcc paving slab buried in the bank behind the Wattle panel lining.

I trust you can accept that

Peter Davies as done as much as was practically possible to endure that this new development could have only an extremely small impact upon the future flood conditions in the immediate area .

Regards,

Tony Trist.

Sent from my iPhone

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

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