

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

Internal: 37736 | External: +44 (0) 1903 737500 ext 37736 | E-mail: amanda.scholes@arun.gov.uk



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Save the environment - think before you print.

From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 30 April 2020 16:05
To: Planning.Responses <Planning.Responses@arun.gov.uk>
Cc: Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Subject: RE: Planning Consultation on BN/30/20/DOC

Comments on surface water drainage (these comments also relate to BN/28/20/DOC);

1. It is noted that ground levels are being raised over much of the site, some significantly. This creates surface water run off issues on the eastern boundary which have been partly addressed but is discussed further in the comments below. The planning officer has been advised of the ground raising to determine any other potential planning considerations.
2. Infiltration has been discounted on this site due to the very high water table and poor infiltration at shallow depths, which is reflected on adjoining sites. Unless, you have evidence to suggest otherwise.
3. The main surface water sewers are to be adopted by Southern Water and highway drainage adopted by West Sussex County Council. We will need to see their comments on the design and their requirements incorporated.
4. The pond is too close to the southern ditch ie. top of pond slope to be at least 3m from the top of the ditch bank. Reconfigure and include dimensions on plan.
5. Permeable paving to be included in all parking areas/driveways. Please adjust and remove any yard gully's as necessary.
6. Show permeable paved finished surface levels, based levels on sloping formation pavements (ie, adj. plots 79-82 and 76-78), sub base thickness, on plans. Ensure that all incoming pipes to the permeable paving is raised as high as possibly above formation level but obviously totally within the sub base. A number of connecting pipes have inverts made at formation level. Please investigate raising these.
7. Show finished road/surface levels.
8. Building east of plots 48/50. The low ground levels are noted here, however, soakaways are not considered suitable – rethink needed.

9. Remove irrelevant tree symbols (circles) from plans and only include existing trees to be retained and trees to be planted (including associated root protection zones), in order that any impact on drainage can be assessed.
10. Catchpits required immediately upstream of any connection to a permeable pavement.
11. All connections to pipelines not made to a manhole to be connected via oblique 45 degree junctions. Add note.
12. Site access road – is some of this area to drain into Yapton Road – provide drainage details/discharge rate.
13. Add pipe diameters immediately upstream of all distribution tanks.
14. Vicinity of plot 44 – provide manhole where drain from plots 42/43/ joins.
15. Plot 42 – RWP not connected.
16. Plot 53 – rodding eye invert level lower than downstream invert level.
17. Provide a positive gradient between SCP5 and distribution tank.
18. Plot 56 – RWP connected against flow.
19. Plot 58 orifice control – is this necessary?
20. Permeable pavement area 2.000 – outlet pipe/distribution tank invert higher than permeable pavement formation.
21. All orifices less than 50mm diameter – can these been increased in diameter to at least 50mm?
22. A blue line surrounds some permeable paved area – remove blue line as it confuses with the drainage. Some areas were not included within this blue line – not sure why? Make it clear on the plans/legend as to the areas of permeable paving.
23. Western boundary ditch – 3m (free of buildings/fences) from the top of the bank has not been entirely achieved on the development side. In order to discuss this further, please provide an accurate plan showing your clients legal boundary in respect to the ditch and clearly mark your proposed fences/boundaries for the properties. A site visit may be required subsequently.
24. Footpath between plots 14/15 – is this permeable paving? Indicate how it drains.
25. All pipes to connect soffit to soffit unless otherwise stated (add note).
26. Where pipes are connecting to larger pipes, show the invert level of the connecting pipes to show that item 25 is complied with. This includes the main pipelines in the estate road.
27. Road gully east side of S15 – show connection clearly.
28. Can the visitor spaces/laybys on the estate road be made permeable?
29. Road gullies west side of S2 not showing connections and road gully on east side connecting against the flow.
30. RWP plot 41 – connect direct to SCP5A rather than the distribution tank.
31. RWP plot 38 garage – connect downstream of rodding eye.
32. RWP plot 36 garage – no connection shown.
33. Link from permeable paving area 3.000 to 7.000 – specify pipe diameter. Pipes need to connect at formation level of the pavements.
34. Orifice manholes – include symbol on legend but adjust symbol to make them more obvious.
35. Permeable paving area 3.000 – outlet pipe invert is lower than formation level.
36. Ensure all outlet diffuser unit symbols are different to incoming diffuser unit symbols.
37. Plot 26 RWP connecting against flow.
38. Plot 79 – manhole upstream of distribution tank needs moving to accommodate pipe connections.
39. If there are alternative options to running pipes under garages, then please consider.
40. RWP's rear plots 22, 26, 27, 78, 85 & 86 not connected.
41. 2nd central ditch – add note to say 'to be filled in and banks on southern ditch to be made good'.
42. Plot 95 parking area construction appears too close to the ditch bank.
43. Add note 'all ditches for which your client has riparian responsibility to be cleared/desilted to the satisfaction of the ADC drainage engineer'.
44. Provide erosion control measures between the toes of pond inlet headwalls and the base of the pond.
45. HWMH17 to S6 – should connect soffit to soffit at S6 and clashes with pipe from plots 90-95. Redirect 90-95 to S6?
46. SW corner culvert – existing culvert to be removed entirely. New culvert to be of shorter length as possible and min. 600mm pipe (twin walled polypipe or concrete). Provide section drawing. Specify bedding, gradient, upstream & downstream invert levels. Provide headwall construction details (no grilles required). Pipe inverts to be set at 'true' bed level ie. not silt level.

47. Land Drainage Consent required for culvert works in SW corner. The existing consent application for the outfall to the ditch will need to consider any necessary modifications resulting from this email.
48. Hydrobrakes – provide manufacturers technical data sheets.
49. Where pipes cross the diverted foul rising main – has this been checked for clashes?
50. 450mm inlet pipes to pond to have ‘cranked’ grilles.
51. Overflow at S11 – is this required?
52. Pond outlet pipe specified as 150mm and 225mm diameter?
53. Pond outlet headwall requires cranked grille – may need to adjust proposed headwall construction to suit.
54. SMH control manhole on pond outlet – overflow pipe shown on plan?
55. SMH hydrobrake specified with 1.6m head but this cannot be achieved based upon the levels provided.
56. Road gullies outside plot 84 connecting against flow on 450mm pipe.
57. Manhole south east corner plot 63- move to improve pipe angles ie. not <90 degrees.
58. Ditch on eastern boundary – any section to be retained must have a maintenance corridor of 3m from the top of the bank (free of buildings/fences). I would suggest retaining the ditch from where it meets the southern ditch up to a point just south of plot 64. This section is to be cleared and desilted to the satisfaction of the ADC engineer – add note. Indicate proposed bed levels to achieve true bed levels. No granular material or crates to be placed into the ditch. North of here I would suggest laying a french drain/gravel filled trench (wrapped in permeable geotextile) all the way up the eastern boundary to intercept run off flowing towards the gravel boards and adjacent retaining walls. This would also replace any proposed crates. Headwall required where the french drain meets the shortened ditch. Adjust layout plan and provide construction details. Land drainage consent is also required for the ditch/headwall works.
59. Road construction south of plot 64 is very close to the ditch bank – please advise and adjust to prevent any detriment to the road or ditch.
60. Drg. 19812-GS-Z1-XX-DT-C-5106 – Make it clear that no part of the headwall structure should encroach into the profile of the ditch.
61. Orifice chambers – specify weir levels.
62. Is there scope to raise the pond outlet pipe level in order to provide more freeboard between ditch bed and pipe invert?
63. Southern and western ditches – provide proposed levels along its length to achieve true bed levels. These levels will need to tie in with true bed levels downstream of the site.
64. Hydrobrake chamber detail – rings to be surrounded in 150mm thick concrete and to be extended down to the bottom of its base. All to be ST4 concrete. Add benching construction notes and include hydro international details referred to.
65. PCC ring catchpit detail – unsure if this type is being specified anywhere? If, so detail where and include brickwork under manhole cover/frame and extend concrete surround up to top of cover slab. Specify ring diameter.
66. Provide catch pit detail for all manholes immediately upstream of permeable paving connections.
67. Adoptable outfall headwall detail – remove flat grille and specify cranked including bar spacings, etc. Incorporate Athlon detailed drawing within this drawing. Pond bed level shown as 7.800 but 7.900 on plans.
68. ‘Impermeable’ paving detail shows drilled holes below. If Impermeable what is the purpose of the holes?
69. Permeable paving detail – show impermeable membrane wrapping at bottom and up sides, unless there are areas where permeable can be specified (bearing in mind ground raising) where some infiltration can be achieved and also ensuring that peak recorded groundwater levels will not be located within the sub base.
70. Provide sloping formation permeable paving detail.
71. Baffle detail – Make it clear that the top of the concrete is level with the top of the sub base.
72. Provide pond construction detail including impermeable liner and any necessary anti-buoyancy measures. Floatation calcs to be provided.
73. Provide construction detail distribution tanks on permeable paving outlets.
74. Provide detail concrete bag inlets to pond.
75. I note the pond bed is lower than the outlet from the pond. Are you looking to achieve a ‘wet’ pond. If so, is there to be a planting scheme? Provide details.
76. The Microdrainage calcs will be reviewed once they have been revised to suit the comments in this email. However, the calculations will need to simulate against a surcharged outfall. Flooding was noted on the calculations – it needs to be proven that any flood water can be retained on site without detriment to property. Ensure that no water emanates from the road gully in the SE corner of the site which is likely to be one of the lowest spots.

77. The pond perimeter will require 300mm freeboard about the top predicted water levels.
78. Maintenance manual;
- a) Remove any reference to any infiltration from the pond.
 - b) Explain via commentary as to how surface water drainage system is designed to work, so it can easily be understood by the management company/residents.
 - c) Include maintenance for orifice's, hydrobrakes, grilles and the eastern boundary french drain.
 - d) Adjust the manual to suit a 'wet' pond or primarily 'dry' pond bearing in mind item 75.
 - e) Include the removal of tree saplings that may root within the pond.
 - f) Approved drawings will eventually need to be included in the manual.
 - g) The 'responsibility' drawing will need updating.
 - h) Ditch clearance – specifically refer to the removal of silt in the ditch base. Make it clear that all ditches for which the management company will have 'riparian' responsibility to be included for maintenance. Make reference to bird nesting season and the limitations on maintenance during that time.

Look forward to receiving 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 5LF

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

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Save the environment - think before you print.

From: Planning.Responses <Planning.Responses@arun.gov.uk>

Sent: 30 March 2020 13:34

To: Land Drainage <Land.Drainage@arun.gov.uk>

Subject: Planning Consultation on BN/30/20/DOC

To: Engineers (Drainage)

NOTIFICATION FROM ARUN DISTRICT COUNCIL

TOWN AND COUNTRY PLANNING ACT 1990

APPLICATION NO: BN/30/20/DOC

Registered: 26-MAR-20

Site Address: Land At Angels Nursery Yapton Road Barnham PO22 0AY

Description of Works: Approval of details reserved by condition imposed under ref BN/93/19/PL relating to Condition Nos 3 - surface water drainage, 5 -

discharge of flows to watercourses, 6 - SuDs and 16 - detailed level survey

The Council have received the above application to discharge conditions. I shall be pleased to receive any observations you may wish to make in respect of those conditions relating to your field of expertise.

[Click here to view the Discharge of Condition application](#)

[Click here to view conditions on original application - click on decision tab](#)

Should you have any comments to make, these should be sent [by replying to this email](#) by 13th April 2020.

www.arun.gov.uk/planning

Please be aware that any comments you may make will be available on our website so please do not insert personal details or signatures on your reply.

In the absence of a reply within the period stated, I shall assume that you have no observations to make.

The officer dealing with this application is Michael Eastham who can be contacted on telephone number 01903 737772.

Thanking you in anticipation

Planning Case Officer
Arun District Council

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