

Appendix (F)

Arun District Council Drainage Design Parameters

From: [Laura Gibbons](#)
To: [Christian O'Brien](#)
Cc: [Leon Darrell](#); [Terry Seymour](#); [Chris Harrison](#); [John Richards](#); [Paul Cann](#); [Sarah Burrow](#)
Subject: RE: Fontwell - Drainage Strategy
Date: 15 October 2019 12:56:39

Hi Christian,

I have reviewed the infiltration test results, these are okay. When a revised submission is provided please include these rates on a layout drawing summarising groundwater and infiltration test results.

The following points should be used in design:

1. Closest infiltration testing results should be used in design with the worst infiltration rate used.
2. If the base of infiltrating structures is included within design, the factor of safety applied must be in accordance with the following:

Factor of Safety Table						
Size of Area to be Drained	Consequences of failure					
	No damage or inconvenience		Minor inconvenience, e.g. surface water on car park		Damage to buildings or structures or roads.	
	Cv=1.0	Cv=0.75	Cv=1.0	Cv=0.75	Cv=1.0	Cv=0.75
<100 m ²	1.5	2	2	3	10	13
100m ² to 1000m ²	1.5	2	3	4	10	13
>1000m ²	1.5	2	5	6.5	10	13

3. An allowance for the rainfall falling directly upon the infiltration basin must be included in calculations.
4. The soakaway nearest to a property should be the one serving that property.
5. 5m easement between soakaways and the red line site boundary should be provided.
6. If the infiltrating structure does not half drain in 24 hours for the 100 year plus climate change event please provide half drain time results for the 1 in 10 year plus climate change event. It is likely if this drain time is less than 24 hours that it will be accepted.
7. A minimum of 100mm freeboard will be provided between the base of infiltrating structures and maximum recorded groundwater level.
8. I note that you stated that layout revisions are to occur and this will therefore have a knock on impact upon the surface water drainage design.

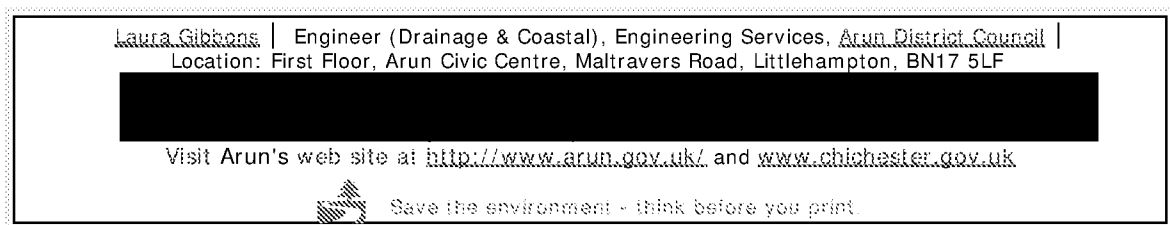
The outstanding points from my previous consultation response are as follows:

1. Calculations are missing for areas 9 and 11.
2. The infiltration rate used in the design of the soakaway for area 14 appears to be incorrect (significant overestimation).
3. Soakaways for areas 24 are within 10m of existing buildings and therefore need to be moved/ re-designed.
4. Soakaways for areas 6, 7, 8, 24, 26, 31A are in close proximity to the red line boundary. Is there any opportunity to increase these easements?
5. Has the rain falling directly onto the infiltration basin been accounted for in design?
6. I presume from impermeable areas, and location that area 22 also serves plots 309-313

- despite this not being stated in the plot numbers column. Please confirm.
7. The soakaway for area 26 has a modelled water depth which exceeds the crate depth.
 8. Plots 322 and 323 and 332 and 333 are not draining to the soakaways adjacent to them. Have you considered swapping these over so they do?
 9. The infiltration rate used for area 27 appears to be incorrect. Please review.
 10. Draining plots 347-350 to area 29 seems optimistic, please demonstrate how you would get the water here.
 11. The soakaway for area 30a is set too deep.
 12. As discussed previously some of the soakaways as currently proposed will not work if infiltration rates are found to be near the lower end of the range observed between nearby test locations. When is infiltration testing going to be completed? I would be keen to see these results before determination of the application.
 13. Some of the soakaways are located considerable distances away from the properties which they are serving. Are you confident that connections can be made and minimum falls achieved?
 14. Are covenants going to be put in place to ensure householders permit access for maintenance?

Kind Regards,

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



From: Christian O'Brien [redacted]
Sent: 14 October 2019 16:06
To: Laura Gibbons [redacted]
Cc: 'Leon Darrell' [redacted]; 'Terry Seymour' <[redacted]>
Chris Harrison [redacted] John Richards [redacted]
Subject: RE: Fontwell - Drainage Strategy

Hi Laura,

Please can you also confirm the acceptance and requirements of the following principles:

- 1) all hard standing areas to be permeable
- 2) all roof drainage to infiltration trenches, which are to be offset from proposed units, existing buildings and boundaries
- 3) residual roof drainage to attenuation basis in south west catchment

Kind regards,

Christian O'Brien
Engineering Manager
Dandara logo



[REDACTED]
Dandara Ltd, Roman House, South Hampshire Industrial Estate, Eddystone Road, Totton, SO40 3SA

From: Christian O'Brien

Sent: 14 October 2019 15:24

To: Laura Gibbons [REDACTED]

Cc: Leon Darrell [REDACTED]; Terry Seymour [REDACTED]

Subject: Fontwell - Drainage Strategy

Importance: High

Hi Laura,

Many thanks for the meeting last week with myself and Leon at RCP with regards our site at Fontwell.

With your departure only days away, we would very much appreciate a position statement which makes it crystal clear which aspects of the drainage strategy are agreed and where there are any outstanding matters in your view.

We would also appreciate confirmation that the most recent testing results that I sent over to you are acceptable with our proposed drainage strategy and that we have acquired sufficient testing across the site to advise the detailed design of the drainage strategy, even if the layout is to change slightly.

Kind regards,

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