

From: Marcus Ripley [REDACTED]
Subject: Fwd: 1 Orchard Way Fontwell - Soakaway
Date: 21 April 2022 at 18:11
To: [REDACTED]



That's brilliant, thanks, Mark.

Noel, please can you put this together with all the other bits and pieces for the council for the discharge of condition 17 as a matter of urgency please?

Thanks,

Marcus

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From: [REDACTED]
Sent: Thursday, April 21, 2022 6:02:19 PM
To: 'Marcus Ripley' [REDACTED]; 'Joshua Knowles' [REDACTED]
Subject: RE: 1 Orchard Way Fontwell - Soakaway

Marcus/Josh,

Please see attached the updated plan.

As per Sarahs last email we have added the pipe network and levels (as provided by Josh), the chamber detail for each change of direction, the rodding eye detail, the pipe bedding details.

As per Sarahs email you can now make a formal discharge of conditions application with the planners based on this and the supporting calculations.

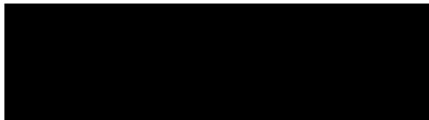
We have also updated the surfacing to show gravel as previously requested.

We trust this is suitable for your current purposes and should you have any questions please contact us.

Regards,

Mark Naumann BEng(Hons) CEng MICE

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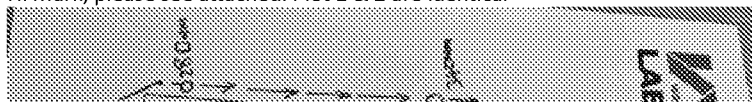
From: Marcus Ripley [REDACTED]
Sent: 21 April 2022 14:23
To: Joshua Knowles [REDACTED]
Subject: Re: 1 Orchard Way Fontwell - Soakaway

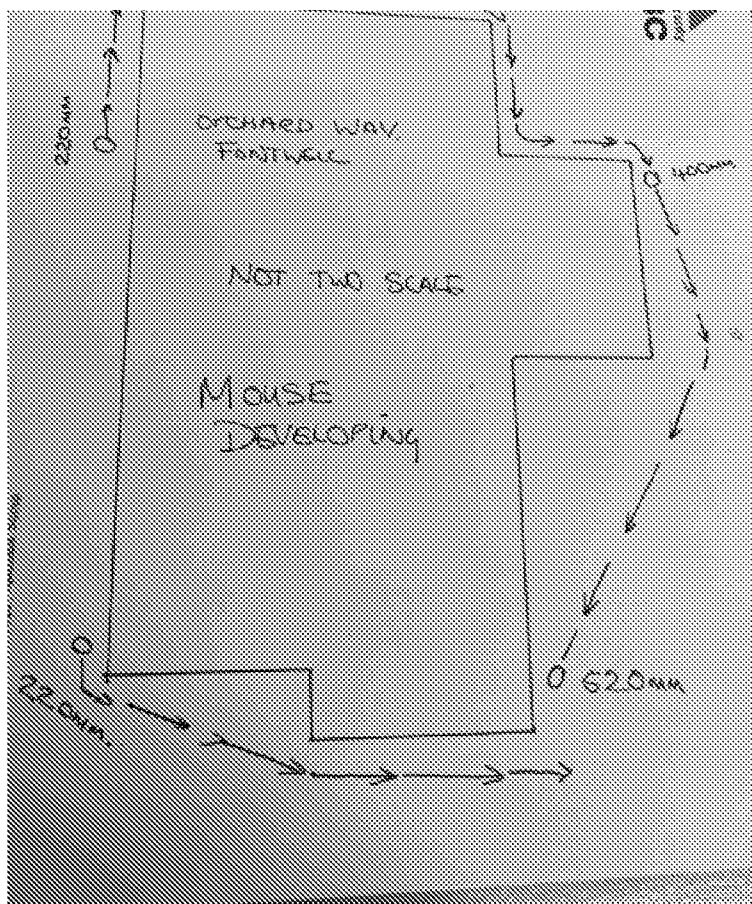
Hi Mark, any joy with the final lot of designs for our soakaway so we can put it in for discharge? Cheers, Marcus

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From: Joshua Knowles [REDACTED]
Sent: Monday, April 11, 2022 4:30:39 PM
To: [REDACTED]
Cc: Marcus Ripley [REDACTED]
Subject: Re: 1 Orchard Way Fontwell - Soakaway

Hi Mark, please see attached. Plot 1 & 2 are identical





Joshua Knowles
 DIRECTOR
 M: [07849 076592](tel:07849076592)
 E: josh@quaycontracts.com
 W: www.quaycontracts.com

On 11 Apr 2022, at 13:49

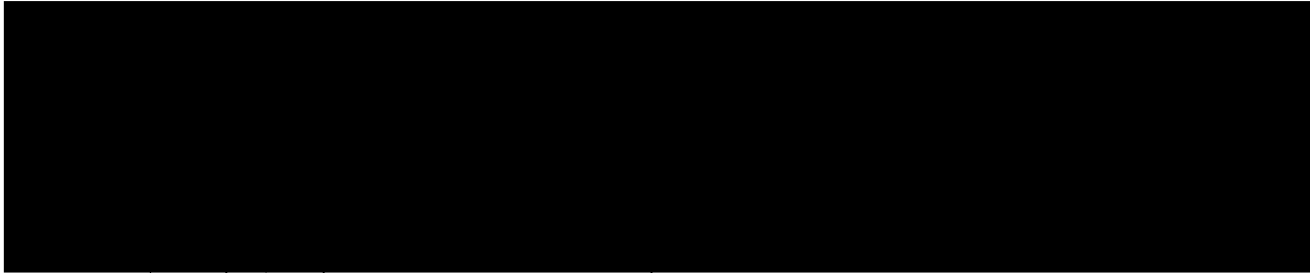
Josh,

From Sarahs email The Council will require invert levels at the start of each run and then at every change of direction.

We need to be able to show to the council that the pipe runs have adequate falls

Regards,

Mark Naumann BEng(Hons) CEng MICE
 Director
 <image001.png>



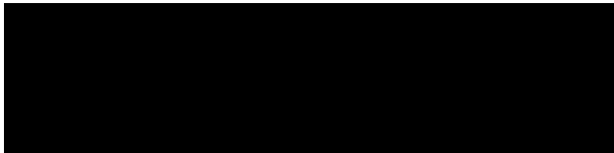
From: Joshua Knowles [REDACTED]
Sent: 11 April 2022 13:46
To: [REDACTED]
Cc: Marcus Ripley [REDACTED]
Subject: Re: 1 Orchard Way Fontwell - Soakaway

Hi Mark,

I've given you the invert level of the chamber at the front of plot 1, can you work it out from there? If not do you mind marking up your drawing, where you require levels and I will get it done.

Kind regards

Joshua Knowles
DIRECTOR



On 11 Apr 2022, at 13:30, markn@meridiandcivils.co.uk wrote:

Josh,

Did you send over the drainage levels? Once I have these I can show the extra access points on the plan Sarah required and add the extra constructions details so you can submit for the discharge of conditions.

Regards,

Mark Naumann BEng(Hons) CEng MICE
Director
<[image002.png](#)>
e: markn@meridiandcivils.co.uk
w: www.meridiandcivils.co.uk
p: 01273 102743

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From: Joshua Knowles <josh@quaycontracts.com>
Sent: 01 April 2022 12:08

To: [REDACTED]
Cc: Marcus Ripley [REDACTED]
Subject: Re: 1 Orchard Way Fontwell - Soakaway

Hi Mark,

I will get invert levels to you next week. Inspection chambers at change of direction is fine.

I notice the design assumes a block paving finish. We were going to gravel the driveway is that ok?

Kind regards
Joshua Knowles
DIRECTOR
[REDACTED]

On 31 Mar 2022, at 14:46, markn@meridiancivils.co.uk wrote:

Joshua/Marcus,

This is positive and, excepting the provision of the additional details, she seems happy with the proposed.

Please confirm you are happy to provide access at the pipe bends as requested and please can you provide levels on the pipework so we can add to the drawings and demonstrate the runs have suitable falls.

I'm away on leave next week but my colleague Sam (copied to this email) should be able to add the pipe bedding details and type 4 access chamber details to a drawing for you with the levels provided.

Regards,

Mark Naumann BEng(Hons) CEng MICE
Director
<[image005.png](#)>
e: markn@meridiancivils.co.uk
w: www.meridiancivils.co.uk
p: 01273 102743

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From: Sarah Burrow <Sarah.Burrow@arun.gov.uk>
Sent: 31 March 2022 10:14
To: markn@meridiancivils.co.uk
Cc: Paul Cann <Paul.Cann@arun.gov.uk>; 'Joshua Knowles' <josh@quaycontracts.com>

'Marcus Ripley' [REDACTED]
Subject: RE: 1 Orchard Way Fontwell - Soakaway

Good morning Mark,

Thank you for your patience on this whilst I discussed it with Paul. We are satisfied that infiltration is viable at 0.8mbgl. However, given that the rate is better than the one evidenced at 0.4mbgl at a drier time of year my preference would either be for you to use 2.3×10^{-5} m/s for the design or, if you use 4.68×10^{-5} m/s then you use a higher factor of safety.

I have reviewed the last updated plans (based on 2.3×10^{-5}) in the meantime to provide you with feedback.

The calculations are fine and require no adaptation. I am happy for you to include the install flow barrier but this is not strictly necessary as long as the diffusers are located at least 5m from the building.

I would prefer that you remove the bends in the pipe runs, either keep them straight or install a chamber at the junctions. Please include invert levels on the layout for all inspection chambers – not just the silt traps before the soakaway.

Please include a construction detail drawing for the junctions/inspection chambers. I also still require a construction detail drawing for the pipe bed and surround, showing the pipes encased in concrete due to the shallow depths.

Once these minor details have been addressed I would suggest you make the DOC application.

Kind regards

Sarah Burrow



Current working period Monday-Friday, 9am - 5.30pm

Arun District Council, Civic Centre, Millers Road, Littlehampton, West Sussex, BN17 6LP
www.arun.gov.uk

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From: [REDACTED]
Sent: 28 March 2022 12:46
To: Sarah Burrow [REDACTED]
Cc: Paul Cann [REDACTED]; 'Joshua Knowles' [REDACTED]
'Marcus Ripley' [REDACTED]
Subject: RE: 1 Orchard way Fontwell - Soakaway

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Sarah,

To inform you discussions with Paul our client has undertaken further testing at 800mm deep. These tests were run one after the other on the same day. It can be seen the rate drops with each test as the ground becomes more saturated. The final test result is shown as 4.68×10^{-5} m/s which is slightly better than the shallow 400mm deep test (2.3×10^{-5} m/s) but is of a very similar order. We hope this demonstrates the slightly deeper crate shown on the current proposals would be acceptable to Arun and allow our client to finalise the

works on site.

Please can you confirm your comments and how you would like our client to proceed.

Kind regards,

Mark Naumann BEng(Hons) CEng MICE

<image027.png>

From: Sarah Burrow

Sent: 23 March 2022 13:34

To:

Cc: Paul Cann 'hua Knowles'

'Marcus Riple

Subject: RE: 1 Orchard Way Fontwell - Soakaway

Dear Mark,

The full 'winter' period for which we ask for groundwater monitoring over for major development is October to March. This is separate from the time when we normally accept infiltration testing which is usually late December to early March. But is at the principal drainage engineer's discretion to agree to testing up until the end of March, if weather conditions are suitable. This year has been exceptionally dry, and I cannot guarantee that Paul will accept the results. However, at your risk you could complete infiltration testing now at the depth of formation. We would review results against other testing results and determine if they can be relied upon, it may be we require a higher factor of safety, given the test timing and weather conditions.

It is worth noting that if the process of running the three tests was enough to achieve the wetted ground conditions that I suggest then we would accept infiltration testing completed at any time of the year and this is not the case.

Alternatively, there may be ways that you can make the design work in terms of the surface area you cover, or the factor of safety that you use which can meet all the requirements for ourselves and Permavoid without carrying out further testing but as I have previously stated I need to discuss it with Paul.

Kind regards

Sarah Burrow

Engineering Assistant, Groundwater Services

<image026.jpg>

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www.arun.gov.uk

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<image029.jpg>

<image030.jpg>

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here

From:

Sent: 23 March 2022 10:36

To: Sarah Burrow

Cc: Paul Cann, Joshua Knowles, Marcus Ripley

Subject: RE: 1 Orchard Way Fontwell - Soakaway

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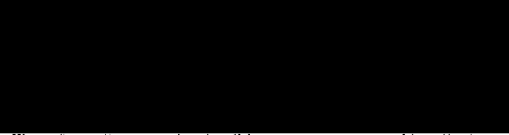
Sarah,

If our client runs an infiltration test at the proposed formation and this returns acceptable results would you be happy? At a Depth of 760mm the same as the proposed crate formation?

Alternatively we know the highway soakaway works at 4m deep (despite the water table being only 3m deep) so a much deeper test may also show better infiltration

Regards,

Mark Naumann BEng(Hons) CEng MICE



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From: Sarah Burrow

Sent: 23 March 2022 10:20

To:

Cc: Paul Cann, Joshua Knowles, Marcus Ripley

Subject: RE: 1 Orchard Way Fontwell - Soakaway

Hi Mark,

I am hitting a stumbling block in terms of your formation depth. I have not been involved in all of the dialogue on this site and so have had to do a bit of digging but this is my understanding:

1. Infiltration has only been proven to be viable at 0.4mbgl from testing done February 2022. The location of this testing is unclear.
2. Testing done at 1.3mbgl at the same time shows infiltration rates too slow to achieve satisfactory half drain times.
3. Infiltration testing done in February 2020 showed that infiltration may have been viable at 1mbgl but the results were extrapolated with all tests concluded after 60mins, these results cannot be relied upon for the design.
4. Strata that is similar (brown flinty clay) from 0.2mbgl to 3mbgl – yet obviously varying infiltration results.
5. Groundwater measured at 2.81mbgl, 3.11mbgl but no dates given. Assumed to be between December 2019 (pipe installation) and February 2020 (infiltration testing). Please confirm.
6. I note that the reason the original infiltration testing was not done in the south-west corner of the site, adjacent to the hedge fronting onto Orchard Way was because a “distinct gaseous odour was noted where upon inspection on the roadside signage indicated there was an underground gas pipework present in the locale.” Has this been considered in your design?

Now, due to the cover depths required we have a design which has a formation depth in places of 0.88mbgl. I am not sure that I am satisfied with the variation between the infiltration testing depth and the formation depth. This is something that I need to discuss

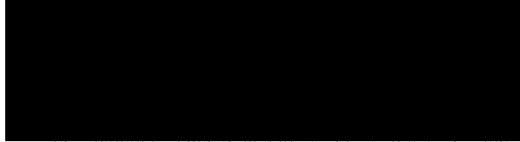
further with Paul upon his return from leave. I have some idea of how the situation may be resolved but as I am only an assistant I need to run it past him first. Please can you get back to me in the meantime with any further data that you can find to supplement, corroborate or correct what I have stated above?

I haven't scrutinised the detail of the design at this stage as I want to make sure the fundamental principles of the design are correct first.

Kind regards

Sarah Burrow

Permanvoid, A civil engineer, Gloucestershire, Gloucestershire



Arun District Council, Civil Engineer, Malvern Rd, Uddinghampton, West Sussex, BN17 6LP

www.arun.gov.uk

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From: [REDACTED]
Sent: 21 March 2022 15:00
To: Sarah Burrow [REDACTED]; Paul Cann [REDACTED]
Cc: 'Joshua Knowles' [REDACTED]; 'Marcus Ripley' [REDACTED]
Subject: RE: 1 Orchard way Fontwell - Soakaway

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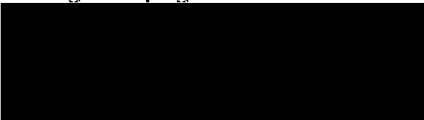
Sarah,

Permanvoid have commented that the 85mm crate isn't suitable (see attached email) so we have revised the crate to 450mm total depth and updated the levels and calcs as attached. This retains 300mm cover to crate which is suitable.

Regards,

Mark Naumann BEng(Hons) CEng MICE

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From: [REDACTED]
Sent: 18 March 2022 13:51
To: 'Sarah Burrow' [REDACTED]; 'Paul Cann' [REDACTED]
Cc: 'Joshua Knowles' [REDACTED]; 'Marcus Ripley' [REDACTED]
Subject: RE: 1 Orchard way Fontwell - Soakaway

Sara,

Please see attached the updated drawing showing the invert level of the incoming pipes from the house drainage and also the updated levels of the permavoid to accommodate the 1in10yr+40% event below the incoming invert as requested.

We also attached updated calculations with the side infiltration removed as requested. We have added the 1in10yr+40% event and it can be seen this is accommodated below the incoming invert (negative depth of 6MM is shown on the calcs)

Construction details are shown on the layout plan.

As you have requested the 1in10yr+40% rainfall event is accommodated below the incoming invert the cover to the crates is greater than the previous design. And therefore the minimum covers to the permavoid would be met so we would not normally consult permavoid on this basis. Even though cover is increased we would still recommend the permavoid install as cover is 365mm and permavoid offers the necessary load capacity.

In terms of groundwater monitoring there is a 4m deep WSCC highways soakaway in close proximity and at last inspection (in conjunction with WSCC highways 10TH March– see attached email) water depths were 3m BGL. I'm sure my client can keep tabs on water depths if required but we would be surprised if WSCC highways would install a large soakaway in a high groundwater area and highways have confirmed they have had no reports of any drainage issues in this location

We trust this is suitable and can be confirmed so our client can progress works.

Kind regards,

Mark Naumann BEng(Hons) CEng MICE
<image040.png>



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From: Sarah Burrow [REDACTED]
Sent: 14 March 2022 09:17
To: Paul Cann [REDACTED]; [REDACTED]
Cc: 'Joshua Knowles' [REDACTED]; Marcus Ripley' [REDACTED]
Subject: RE: 1 Orchard Way Fontwell - Soakaway

Hi Mark,

I apologise for the delay in reviewing your proposal. I am assuming that the design is for the purposes of discharging condition 17 on application WA/18/19/PL, if I am wrong please let me know. I have looked through it all this morning and whilst the general strategy is acceptable, I have the following questions and comments:

1. Please can you provide the groundwater monitoring data? I assume this has been done, but you have not referred to it.
2. Infiltration testing at 400mm depth is acceptable and the rate of 2.31×10^{-5} m/s is used for the design. For a shallow blanket infiltration system I would expect this to be applied to the base only, not the sides of the structure.
3. I will need to see more detail on the drainage layout, most importantly levels for the Permavoid structure and all inspection chambers. I have previously linked our drainage checklist on a consultation relating to this application, but I will again: [Microsoft Word - Surface Water Drainage Proposals Checklist \(arun.gov.uk\)](#). Please can you pay attention to the section headed 'Plans/Drawings/Diagrams', guidance note k describes the level of detail that is required on the drainage layout.
4. When you make the DOC application you will need to submit construction detail

drawings for all components. Guidance note I on the drainage checklist details our requirements for this. I will need to see that pipes are fully encased in concrete due to the shallow depth.

5. Without the detailed level information I cannot be sure that the level for the 1 in 10 year event (+40%) is below the invert level of the entry pipes to the Permavoid system. Please ensure that this is the case.
6. Once the design is finalised please provide the Permavoid review as suggested by yourself.

I hope this is helpful.

Kind regards

Sarah Burrow
Engineering Assistant, Engineering Services
<image037.jpg>



Arns District Council, Chivn Green, Matfeyns Rd, Litchampton, West Sussex, BN17 6LF
www.arns.gov.uk

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<image046.png>

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From: Sarah Burrow
Sent: 11 March 2022 11:04
To: Paul Cann <Paul.Cann@arns.gov.uk>; markn@meridiandivils.co.uk
Cc: 'Joshua Knowles' <josh@quaycontracts.com>; 'Marcus Ripley' <mj_ripley@hotmail.com>
Subject: RE: 1 Orchard Way Fontwell - Soakaway

Hi Mark,

I am hoping to look at this today but I have a lot to catch up on after some bereavement leave and COVID absence. If I do not manage it today then it will be top of my list on Monday next week when I am setting aside a couple of days to catch up on planning.

Kind regards

Sarah Burrow
Engineering Assistant, Engineering Services
<image050.jpg>
T: 01323 737895
E: sarah.burrow@arns.gov.uk
M: 07795 125766

Current working pattern: Monday Wednesday & Sun 1.30pm, Thursday & Sun Open, Friday & Sun 11.30am.

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<image046.png>

[here](#)

From: Paul Cann <Paul.Cann@arns.gov.uk>
Sent: 11 March 2022 10:37
To: markn@meridiandivils.co.uk
Cc: 'Joshua Knowles' <josh@quaycontracts.com>; 'Marcus Ripley' <mj_ripley@hotmail.com>

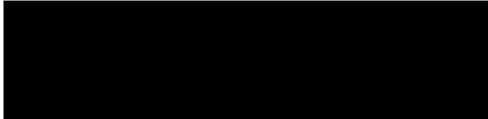
Subject: RE: 1 Orchard Way Fontwell - Soakaway

Hi Mark

This job will be looked at by my colleague Sarah Burrow. We will respond as soon as we can.

Regards

Paul Cann



Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 9LP
www.arun.gov.uk

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<image057.jpg>

<image049.jpg>

<image052.png>

[here](#)

From: [REDACTED]
Sent: 11 March 2022 09:57
To: Paul Cann [REDACTED]
Cc: 'Joshua Knowles' [REDACTED] 'Marcus Ripley'

Subject: RE: 1 Orchard Way Fontwell - Soakaway

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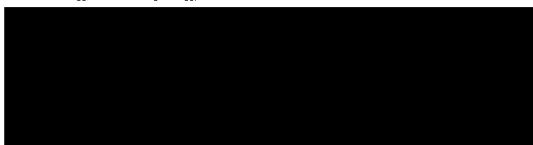
Paul,

Have you managed to have a look at the proposals attached to the email below for the Orchard Ways site?

Our client is keen to get this resolved so they can progress works.

Kind regards,

Mark Naumann BEng(Hons) CEng MICE
<image053.png>



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From: [REDACTED]
Sent: 03 March 2022 12:35
To: [REDACTED]
Cc: 'Joshua Knowles' [REDACTED] 'Marcus Ripley'

Subject: 1 Orchard Way Fontwell - Soakaway

Paul,

We are working with Marcus Ripley and Josh Knowles looking at stormwater drainage

options for the project at 1 Orchard Way Fontwell. Our clients have asked us to contact you with this proposal for managing storm water at the Orchard road property.

We have reviewed the infiltration testing and while the deeper infiltration testing carried out by the contractor failed at depth the shallow testing has returned promising infiltration results, based on the results provided, as per the attached Interp documents.

Based on the promising infiltration rates please see attached our proposal for a shallow infiltration solution at the site. We have attached the layout drawing, calculations and the shallow infiltration test interpretation.

We are proposing using 'Permavoid' crates laid at a shallow depth under the driveway and grassed areas to offer sufficient infiltration area to drain the roof runoff. We are proposing Permavoid crates rather than the usual Wavin (or similar) crates as the Permavoid are high load and suitable for the shallow cover and traffic load needed in this situation. Final design of the crate system would be subject to a Permavoid review.

We have shown the Permavoid crate 5m from the buildings as required for an infiltration device. The paving closer to the building is shown to drain only itself which is acceptable as outlined in the Ciria SuDS manual.

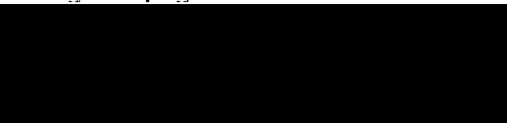
Your comments on the attached would be greatly appreciated as our clients are keen to find a solution for storm runoff at the site to enable them to finalise the site.

We trust this is suitable for your current purposes and should you receive any comments from Arun or have any questions on the scheme please contact us.

Kind regards,

Mark Naumann BEng(Hons) CEng MICE

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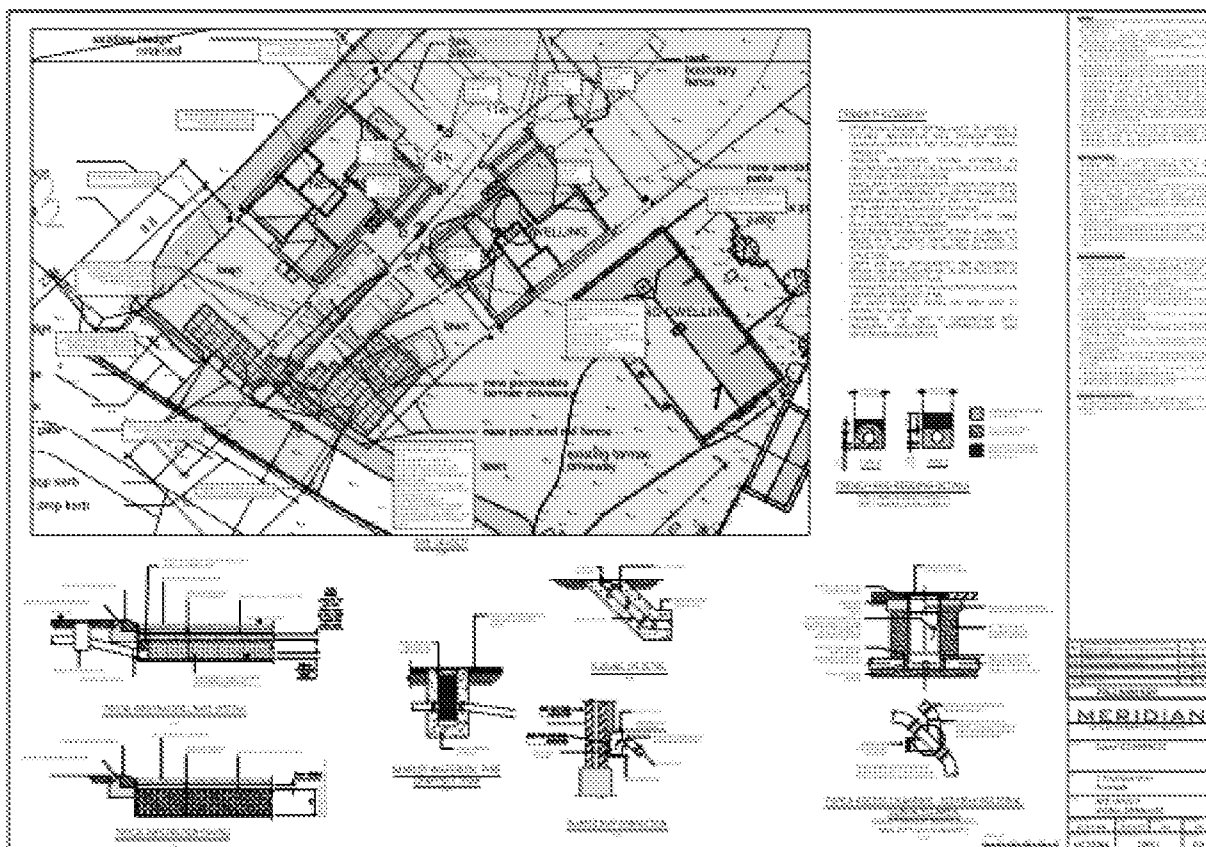
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