

To register to receive notification of planning applications in your area please go to
www.arun.gov.uk/planning

Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk

Sign up to our newsletter **[here](#)**



From: Anita Gardner <Anita.Gardner@arun.gov.uk>

Sent: 17 February 2021 15:53

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

Subject: FW: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Please can these details be added to the application

Anita Gardner

Principal Planning Officer,
Directorate of Place

T: 01903 737529

E: **anita.gardner@arun.gov.uk**



Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF
www.arun.gov.uk

Sign up to our newsletter **[here](#)**



To register to receive notification of planning applications in your area please go to
www.arun.gov.uk/planning

From: Tim Trotman [REDACTED]

Sent: 17 February 2021 15:38

To: Laura Gibbons [REDACTED]

Cc: Anita Gardner <Anita.Gardner@arun.gov.uk>; David Brill [REDACTED]

Subject: RE: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Afternoon Laura,

Thanks for the speedy response.

That's fine and we have added a cap on the permeable paving as requested. To ensure there are no issues we have added a secondary soakaway within the soft landscaping to provide the 'buffer' should this be needed.

Also attached are the updated details drawing showing the baffle detail and the detail for where we have soakaways below the permeable paving.

Updated calcs also attached for your files.

Any other queries, please let me know.

Regards

Tim

From: Laura Gibbons [REDACTED]

Sent: 17 February 2021 14:25

To: Tim Trotman [REDACTED]

Subject: Re: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Hi Tim,

You haven't included a cap volume depth within your calculations. The 0.3 porosity does not extend to the height that is in the calculations, water is above the sub-base. Please apply an appropriate cap volume depth.

Please provide a construction detail drawing which clearly shows the linkage of the permeable paving sub-base with the crates here. I note you have also now introduced a baffle into the sub-base here, please provide a construction detail drawing of this.

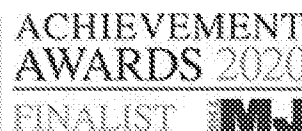
Kind regards,

Laura Gibbons

Engineer, Adur & Worthing Councils

Website: www.adur-worthing.gov.uk

Address: Facilities & Technical Services, Worthing Town Hall, Chapel Road, Worthing, West Sussex, BN11 1HA



On Tue, 16 Feb 2021 at 18:26, Tim Trotman [REDACTED] wrote:

Afternoon Laura,

Thanks for the email. Our intention is/was to extend the sub base of the permeable paving above soakaway E down to the top of the crate storage to interlink them hydraulically. We've expanded the note on the drawing to make this clearer.

We've also provided an additional calculation which assumes the crate soakaway is saturated and attach this for your files.

Therefore if there is a 1 in 100yr + 40% storm at the same time as a high groundwater level, the system will still function as designed.

We trust this additional information addresses your remaining concern, however as always, please don't hesitate to call if you require anything further.

Regards

Tim

From: Laura Gibbons [REDACTED]
Sent: 16 February 2021 10:57
To: Tim Trotman [REDACTED]
[REDACTED]
Subject: Re: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Hi Tim,

Please see my comments below in *red*.

Kind regards,

Laura Gibbons

Engineer, Adur & Worthing Councils

Website: www.adur-worthing.gov.uk

Address: Facilities & Technical Services, Worthing Town Hall, Chapel Road, Worthing, West Sussex, BN11 1HA



On Fri, 29 Jan 2021 at 11:35, Tim Trotman [REDACTED] wrote:

Morning Laura,

[REDACTED]

Further to your email we have added additional information to the proposals and attach these for your information. In relation to the comments raised, we can respond accordingly;

1. We have added on the groundwater test locations and referred the depths back to existing ground levels to provide the levels of the groundwater. *Okay, point closed.*
2. Soakaway E does have a low invert however this is purely a result of having to provide additional cover over the crates to ensure that they will be able to take vehicle loadings. Lifting the crates higher will compromise their strength however we intend to link the permeable sub base with the soakaway to provide additional hydraulic storage to address this. We attach the calculations for the soakaway and soakaway plus permeable paving. *The peak groundwater level in this area is above the top of crates. It doesn't appear that you have sufficient volume in the permeable paving sub-base alone. I have calculated you have 22.68m³ volume available in the permeable paving sub-base, calculations indicate you require 55.6m³ of volume. Adequate storage must be provided above peak seasonal groundwater level, please demonstrate you can provide this. Please confirm how you intend to link the crate and permeable paving, is it via increasing the sub-base depth, if so then you may be providing the storage required.*
3. Please find attached the catchment plan. *Okay, point closed.*
4. Pipe runs have been labelled with pipe size and gradients. *Okay, point closed.*
5. Updated details drawing and maintenance plan attached. *Okay, point closed.*

If you need anything further to address your concerns, please don't hesitate to call.

Regards

Tim

From: Laura Gibbons [REDACTED]
Sent: 19 January 2021 14:03
To: Tim Trotman [REDACTED]
Subject: Re: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Hi Tim,

Thanks for sending over the revised proposals. I am pleased to see that the use of infiltration should work here. I have the following comments:

1. Please supply a figure showing the groundwater monitoring locations.
2. I note that Soakaway E has an invert at over 1m depth, based on the groundwater monitoring results near this location the design may need to be revised. (potentially link provided between permeable paving and this soakaway to ensure you have the required volume above peak groundwater level?)
3. Please supply a catchment plan- i.e. a layout which clearly shows the areas (and the size of these areas) that are draining to each soakaway.
4. Please label all pipes with diameters and falls.
5. We will require updated construction detail drawings and maintenance manual. Please include on the construction detail drawings the required crate type- or criteria they have to fulfil in terms of minimum acceptable cover depth.

Kind regards,

Laura Gibbons

Engineer, Adur & Worthing Councils

Website: www.adur-worthing.gov.uk

Address: Facilities & Technical Services, Worthing Town Hall, Chapel Road, Worthing, West Sussex, BN11 1HA



On Fri, 15 Jan 2021 at 13:41, Tim Trotman [REDACTED] wrote:

Afternoon Laura,

Belated Happy New Year and hope lockdown 3.0 isn't too bad for you.

Following your useful comments below we have revisited the drainage scheme to see what can be achieved.

To refresh your memory we have infiltration rates of 6.58×10^{-6} m/s, and although we had a high groundwater table, you requested that we further investigate the use of infiltration to remove the pumped element if possible.

Having digested the latest SI information, the highest recorded groundwater level was secured in November 2020, where the ground water peaked at approx. 0.80m below ground level.

We have therefore developed the attached infiltration proposal by placing the base of the soakaways at this level and have run the drainage with minimal falls to achieve gravity connections into the various soakaways.

Attached is the latest proposal with the associated calculations to substantiate the design and would welcome a discussion if this addresses your earlier comments.

For clarity we also attach the latest SI report which reflects the peak groundwater level.

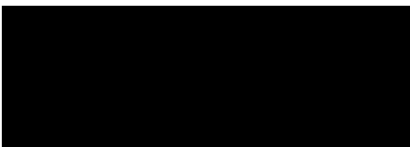
Regards

Tim

T. S. TROTMAN

M.Eng (Hons) C.Eng C.Wem MCIWEM FIHE

Managing Director



INFRASTRUCT CS LTD

Consulting Civil Engineers

Infrastruct CS Ltd, The Stables, High Cogges Farm, High Cogges, Witney, Oxon, OX29 6UN.

[REDACTED]

All opinions and statements expressed within this message are those of the author and not necessarily those of Infrastruct CS Ltd. Email is used as a convenient medium for the rapid transfer of digital information and any contractual correspondence sent or received by email will not be considered valid until received in writing by letter.

Think before you print - only print this email if necessary.

From: Laura Gibbons [REDACTED]

Sent: 15 December 2020 11:03

To: Tim Trotman [REDACTED]
[REDACTED]

Subject: Re: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN

Hi Tim,

Thank you for your email.

It does not appear that the use of infiltration has been maximised on site. The rate of $6.58 \times 10^{-6} \text{m/s}$ is a fair rate for infiltration, there are areas where further soakaway crates could be used, i.e. blanket crate soakaways in the garden areas. We will need to see the maximum area that can be drained to infiltration before we accept discharge to any surface water body, this is to ensure the drainage strategy follows the hierarchy for sustainable drainage.

I also note that there may be potential to increase the sub-base depth within the car park and for this to take some roof water. Calculations show that you only currently need 125mm depth sub-base to drain the water falling on the paving, with 1m depth to groundwater it certainly looks like the car park area can drain a larger area.

As you are aware we do not require 1m clearance to groundwater, the base of soakaways should be located above peak recorded groundwater level. As long as diffuser blocks are located 5m away from buildings it is usually acceptable to have the sub-base within the 5m easement.

If we do accept that a connection to surface water body is required (which we do not currently) then regarding the other options it is worth noting the following:

- We are aware that in some locations Icosa Water has been prepared to requisition new sewers to watercourses, therefore this may be an option worth considering and investigating.
- Means of reducing the depth of surface water drainage systems should be considered. I.e. shallower storage and conveyance via swales and or permeable paving should be considered instead of via pipes.
- We believe the system you propose to connect to is likely to be classified as either a culverted ordinary watercourse or a highways drain, if the option to connect to this is pursued we will need to establish what the system is and further permissions will be required.

Kind regards,

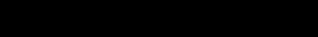
Laura Gibbons

Engineer, Adur & Worthing Councils



Address: Facilities & Technical Services, Worthing Town Hall, Chapel Road, Worthing, West Sussex, BN11 1HA



On Wed, 9 Dec 2020 at 10:03, Tim Trotman  wrote:

Morning Laura,

It's nice to be working with you again and hopefully this site will present a few less 'hidden' challenges!

We've been sent your comments on the development we are looking at Bairds Farm Shop in Climping.

We note your comments on the application and can provide the following responses to justify the drainage system as proposed.

The use of infiltration systems has been impacted by the high ground water table (approx. 1m BGL) and the relatively low infiltration rates (6.58×10^{-6} m/s). As such the use of conventional cellular soakaways is not viable.

The design has therefore looked to maximise the infiltration potential of the site and will infiltrate as much as possible with the use of permeable block and asphalt road construction to drain the 1222sqm of hard standing. Attached is a copy of the surface finishes plan, which outlines these areas.

We have then looked at the various options for draining the proposed roof areas.

A thorough review of the options has been detailed below;

- Surface Water ponds to western boundary – unfortunately the ownership of these has not been established and from a review, a visible outlet to this pond could not be established. Also the water level has been recorded at 4.15m, and as this lies approximately 1m below the site levels, we believe that this pond is isolated and the water within it relates to the ground water levels of the area. As such this option was discounted.
- Ordinary Watercourse to west of Climping Street – A connection into this watercourse was investigated. Unlike the pond mentioned above, this system runs in a southerly direct down Climping Street and ultimately into the Ryebank Rife. Unfortunately, this system falls within 3rd party land and no connection can be secured into it. It also is at a level of approx. 3.90m, and as such a gravity connection could not be established from the development site, which is only 1.3m higher and land locked along its western boundary.
- Surface Water System with Climping Street – There is a public surface water sewer which runs within Climping Street and the head of the run is approximately 75m from the southern edge of the site. We liaised with Southern Water who permitted a connection into this system at a reduced rate of 2l/s.
- Ditch system to the south of the site – To the south of the site (east of Climping Street) there is a section of ditch which runs east to west and discharges into the aforementioned public surface water sewer. The level of this system is approx. 3.60m. The route to this ditch is however land locked and even if a connection could be secured, a gravity connection would not be feasible.
- Surface water system to the east of the site – Through discussions with the landowner, we were made aware of the surface water system to the east of the site which runs from the main road and connects into the aforementioned ditch system. A connection into this system is feasible in land ownership terms, however after establishing the exact route and level via CCTV and topographic survey, a gravity connection into this system is not feasible.

Following a review of these options, the design team considered the potential to lift the building in order to provide a gravity connection into the system, however the scheme was awarded on appeal and the visual impact of the site was an important consideration, so elevating the building to achieve a gravity connection was not considered an option.

With the FFL of the building set at 5.35m, to run a gravity pipe from one side of the building to a central outfall requires approx. 140m of pipework. With the head of the system 0.6m below FFL, and running

pipework at minimal grade (1 in 100), the last chamber within site would be at a level of 3.65m. This level falls below all of the potential surface water outfalls.

As such a pumped approach is required, however we also share your views on using pumps for surface water disposal and have ensured that the design will fail safe. Although there is not sufficient fall to achieve a gravity connection for the site, we have ensured that the system incorporates a high level overflow. Should there be a complete pump failure or extended power outage, we have incorporated into the design a high level overflow from the piped system into the end discharge chamber. As such when the cellular storage is exceeded and reaches a level of 4.70m (650mm below FFL), any excess water can exit the system via the high level connection via gravity.

We trust the above provides a little more clarity into our due diligence in determining the drainage strategy for the site, but as always, we're more than willing to discuss with you if you have any further queries.

Regards

Tim

T. S. TROTMAN

M.Eng (Hons) C.Eng C.Wem MCIWEM FIHE

Managing Director



INFRASTRUCT CS LTD

Consulting Civil Engineers

Infrastruct CS Ltd, The Stables, High Cogges Farm, High Cogges, Witney, Oxon, OX29 6UN.



All opinions and statements expressed within this message are those of the author and not necessarily those of Infrastruct CS Ltd. Email is used as a convenient medium for the rapid transfer of digital information and any contractual correspondence sent or received by email will not be considered valid until received in writing by letter.

Think before you print - only print this email if necessary.

This email and any attachments are confidential and intended solely for the persons addressed. If it has come to you in error please send it back to us, and immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment. Whilst every care has been taken to check this e-mail for viruses, it is your responsibility to carry out checks upon receipt.

This email and any attachments are confidential and intended solely for the persons addressed. If it has come to you in error please send it back to us, and immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment. Whilst every care has been taken to check this e-mail for viruses, it is your responsibility to carry out checks upon receipt.

This email and any attachments are confidential and intended solely for the persons addressed. If it has come to you in error please send it back to us, and immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment. Whilst every care has been taken to check this e-mail for viruses, it is your responsibility to carry out checks upon receipt.

This email and any attachments are confidential and intended solely for the persons addressed. If it has come to you in error please send it back to us, and immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment. Whilst every care has been taken to check this e-mail for viruses, it is your responsibility to carry out checks upon receipt.