

From: Amanda Scholes on behalf of Planning.Responses
Sent: 18 January 2021 11:29
To: Planning Scanning
Subject: FW: CM/48/201/DOC - Bairds Farm Shop, Field Rear of Crookthorn Lane, Climping, BN17 5SN
Attachments: 2868-BCH-ICS-PH1-XX-DR-C-003-P07-S2-Proposed Drainage Strategy.pdf; UC468-75-SI Report..pdf; 2868-BCH-ICS-SC-C-01.022.pdf; Soakaway E.pdf; Soakaway D.pdf; Soakaway B.pdf; Soakaway C.pdf; Soakaway A.pdf

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

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Save the environment - think before you print.

From: Anita Gardner <Anita.Gardner@arun.gov.uk>
Sent: 15 January 2021 18:08
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 add details to the above application

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From: Tim Trotman [REDACTED]
Sent: 15 January 2021 13:41
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,

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

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From: Laura Gibbons [REDACTED]

Sent: 15 December 2020 11:03

To: Tim Trotman [REDACTED]

Cc: 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

Hi Tim,

Thank you for your email.

It does not appear that the use of infiltration has been maximised on site. The rate of 6.58×10^{-6} 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 <[redacted]> 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.

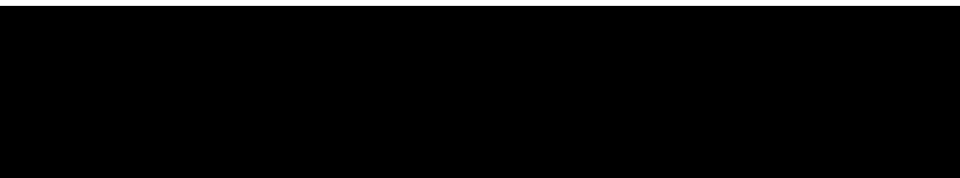
Regards

Tim

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