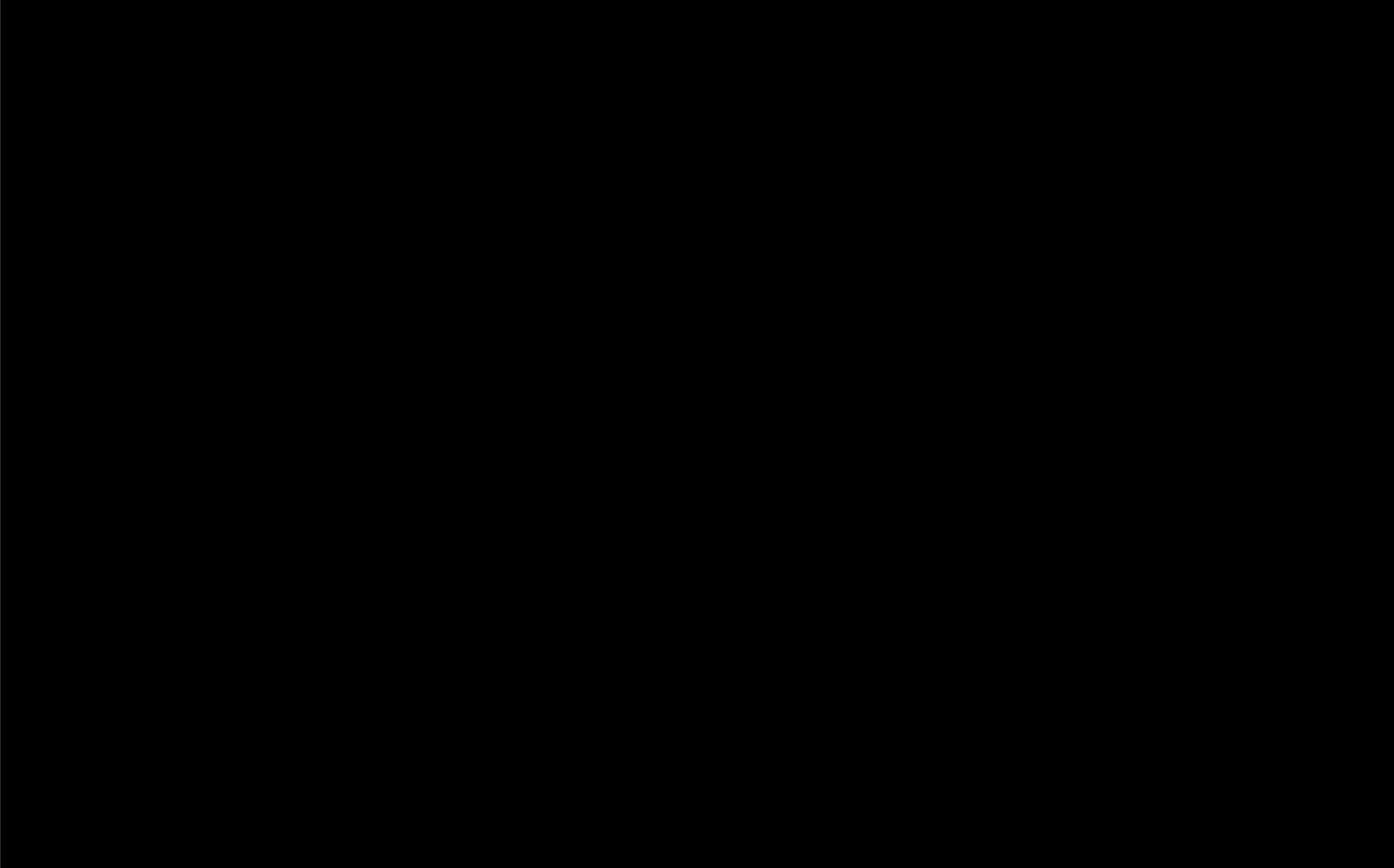




From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>

Sent: 04 October 2019 09:46

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

Subject: RE: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions

Hi Anita,

The details submitted indicate that a drainage solution should be obtainable with the proposed layout. Final drainage details can be secured by conditions.

Please apply the following conditions:

PCENG D2

“Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA. Winter groundwater monitoring to establish highest annual ground water levels and winter Percolation testing to BRE 365, or similar approved, will be required to support the design of any Infiltration drainage. No building / No part of the extended building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.”

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W SP1, W DM1, W DM2 and W DM3 of the Arun Local Plan. This is required to be a pre-commencement condition because it is necessary to implement the surface water drainage system prior to commencing any building works.

And the accompanying informative:

INFORMD

"Infiltration rates for soakage structures are to be based on percolation tests undertaken in the winter period and at the location and depth of the proposed structures. The percolation tests must be carried out in accordance with BRE365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm between the invert of the entry pipe to the soakaway, and the base of the structure. It must also have provision to ensure that there is capacity in the system to contain below ground level the 1 in 100 year event plus 40% on stored volumes, as an allowance for climate change. Adequate freeboard must be provided between the base of the soakaway structure and the highest recorded annual groundwater level identified in that location. Any SuDS or soakaway design must include adequate groundwater monitoring data to determine the highest winter groundwater table in support of the design. The applicant is advised to discuss the extent of groundwater monitoring with the Council's Engineers.

Supplementary guidance notes regarding surface water drainage are located here

<https://www.arun.gov.uk/surfacewater> on Arun District Councils website. A surface water drainage checklist is available here <https://www.arun.gov.uk/drainagechecklist> on Arun District Councils website, this should be submitted with a Discharge of Conditions Application."

PCENG3

"The development shall not proceed until details have been submitted to and approved in writing by the Local Planning Authority for any proposals: to discharge flows to watercourses; or for the culverting, diversion, infilling or obstruction of any watercourse on or adjacent to the site. Any discharge to a watercourse must be at a rate no greater than the pre-development run-off values. No construction is permitted, which will restrict current and future land owners from undertaking their riparian maintenance responsibilities in respect to any watercourse or culvert on or adjacent to the site. "

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W DM1, W DM2 and W DM3 of the Arun Local Plan. And to ensure that the duties and responsibilities, as required under the Land Drainage Act 1991, and amended by the Flood and Water Management Act 2010, can be fulfilled without additional impediment following the development completion. It is considered necessary for this to be a pre-commencement condition to protect existing watercourses prior to the construction commencing.

And the accompanying informative:

INFORMD2

"Under Section 23 of the Land Drainage Act 1991 Land Drainage Consent must be sought from the Lead Local Flood Authority (West Sussex County Council), or its agent (Arun District Council land.drainage@arun.gov.uk), prior to starting any works (temporary or permanent) that affect the flow of water in an ordinary watercourse. Such works may include culverting, channel diversion, discharge of flows, connections, headwalls and the installation of trash screens.

The development layout must take account of any existing watercourses (open or culverted) to ensure that future access for maintenance is not restricted. No development is permitted within 3m of the bank of an ordinary watercourse, or 3m of a culverted ordinary watercourse."

PCENG4

"Development shall not commence until full details of the maintenance and management of the surface water drainage system is set out in a site-specific maintenance manual and submitted to, and approved in writing, by the Local Planning Authority. The manual is to include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life. Upon completed construction of the surface water drainage system, the owner or management company shall strictly adhere to and implement the recommendations contained within the manual."

Reason: To ensure that the proposed development is satisfactorily drained in accordance with policies W DM1, W DM2 and W DM3 of the Arun Local Plan. It is considered necessary for this to be a pre-commencement condition to ensure that the future maintenance and funding arrangements for the surface water disposal scheme are agreed before construction commences.

Kind Regards,

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

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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

Sent: 23 September 2019 10:43

To: Laura Gibbons <Laura.Gibbons@arun.gov.uk>

Subject: FW: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions

Importance: High

Hi Laura,

Please can you confirm if the attached information alters your original comments and which conditions you would suggest are imposed?

Thanks

Anita

Anita Gardner | Principal Planner, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37529 | External: +44 (0) 1903 737529 | E-mail: anita.gardner@arun.gov.uk

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From: Matthew Utting [REDACTED]

Sent: 21 September 2019 07:29

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

Cc: Laura Gibbons <Laura.Gibbons@arun.gov.uk>; 'Kevin Wawman' <[REDACTED]>; 'Ian Sellar' <[REDACTED]>; 'Kazys Narbutas Consulting' <[REDACTED]>

Subject: FW: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions

Importance: High

Morning, Anita,

I refer to your email sent yesterday (as below) to my client's Drainage Consultant, Kazys Narbutas.

As you know, Kazys has satisfactorily concluded direct negotiations with your Authority's Drainage Engineer, Laura Gibbons, to the extent that Laura has confirmed in her email dated 18 September 2019 (as below) that all matters relating to foul and surface water drainage can be dealt with by pre-commencement conditions. As such, please regard the two strings of emails attached, including their attachments, as forming part of my client's planning application; and by all means formally re-consult Laura on the same.

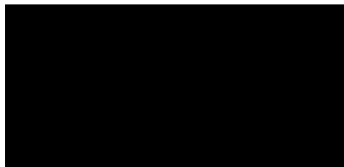
I hope this email is helpful – please contact me if you have any queries. Otherwise, I am aware that you have been contacted by my client's solicitor with regard to the application's S106 Agreement – please confirm that you have issued the necessary instructions to your Authority's Legal Department to expedite this matter.

Many thanks and regards,

Matthew Utting BSc (Hons) DipTP MRTPI
Director



7 Siskin Gate
Bracknell
Berkshire
RG12 8BF



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From: Kazys Narbutas Consulting [REDACTED]
Sent: 20 September 2019 15:42
To: 'Matthew Utting' [REDACTED]
Cc: 'Kevin Wawman' [REDACTED]; Ian Sellar [REDACTED]
Subject: FW: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions

Matthew

Please see response from Anita. Not sure what information you need to submit to her that she doesn't already have. You should have all the details I have supplied to Laura along with e-mails. Let me know if I can supply anything further.

Regards

Kazys

Kazys Narbutas

KAZYS · NARBUTAS · CONSULTING
Civil Engineering Consultant

Roughton
A2 Omega Park

Electron Way
Chandlers Ford
Hampshire
SO53 4SE

From: Anita Gardner <Anita.Gardner@arun.gov.uk>
Sent: 20 September 2019 14:53
To: Kazys Narbutas Consulting [REDACTED]
Subject: RE: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions

Dear Kazys,

Please can you request that the agent, Mr Utting, provides me with the additional drainage information so that it can be scanned against the application and then I can reconsult Laura Gibbons.

Regards

Anita Gardner

Anita Gardner | Principal Planner, Directorate of Place, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37529 | External: +44 (0) 1903 737529 | E-mail: anita.gardner@arun.gov.uk

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From: Kazys Narbutas Consulting <[REDACTED]>
Sent: 20 September 2019 14:23
To: Anita Gardner <Anita.Gardner@arun.gov.uk>
Cc: Laura Gibbons <Laura.Gibbons@arun.gov.uk>; Matthew Utting <[REDACTED]> 'Kevin Wawman'
<[REDACTED]> Ian Sellar <[REDACTED]>
Subject: Mayflower Way, Angmering: Planning Consultation A/46/19/PL-Drainage Conditions
Importance: High

Anita

I'm writing to you to advise that I have had discussions with Laura Gibbons and furnished her with sufficient details to enable her to advise you that pre-commencement conditions relating to drainage can be applied to a consent.

I'm sure Laura will be advising you directly.

Regards

Kazys

Kazys Narbutas

K A Z Y S · N A R B U T A S · C O N S U L T I N G
Civil Engineering Consultant

Roughton
A2 Omega Park
Electron Way
Chandlers Ford

Hampshire
SO53 4SE

[REDACTED]

From: Laura Gibbons <Laura.Gibbons@arun.gov.uk>
Sent: 18 September 2019 15:42
To: Kazys Narbutas Consulting [REDACTED]
Subject: FW: Mayflower Way, Angmering: Planning Consultation A/46/19/PL

Kazys,

As a result of the level of information supplied to date we would be okay with pre-commencement conditions.

Thanks,

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

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre,
Maltravers Road, Littlehampton, BN17 5LF
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From: Laura Gibbons
Sent: 18 September 2019 09:24
To: [REDACTED]
Subject: FW: Mayflower Way, Angmering: Planning Consultation A/46/19/PL

Kazys,

I've had a look and permeable driveways and ch0-20 okay.

Thanks,

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

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre,
Maltravers Road, Littlehampton, BN17 5LF
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From: Laura Gibbons
Sent: 11 September 2019 15:03
To: [REDACTED]

Cc: 'Kevin Wawman' [REDACTED]; Matthew Utting [REDACTED] 'Paul Spratt' [REDACTED]; Ian Sellar [REDACTED]

Subject: RE: Mayflower Way, Angmering: Planning Consultation A/46/19/PL

Kazys,

Thank you for providing the information. I have the following comments:

1. What gives you confidence that better infiltration rates will be obtained to the south east of the site? I.e. you have presumed zone 3 will extend across, but what is there to evidence that zone 2 will not extend down into the areas of plots 1-4?
2. Please clearly provide invert and cover levels on plan. Please also clarify what the depth of soakaway at each location is.
3. Please provide finish and formation levels of permeable paving on plan.
4. I am not keen on seeing road drainage being taken to domestic soakaways. Please examine alternatives.
5. Please examine alternatives to using a reduced factor of safety, the base of the infiltrating structures and the loop in zone 2. Given that infiltration rates were very poor, rates were determined from extrapolation, and three repeat tests were not completed I have significant concerns. I am also not confident that the ground will not just become saturated around SA14-17. We would allow a deep round of testing to be completed now if required, from experience of sites in the area we would expect you to find gravel at 4-5m depth. If this was found a potential solution which could be considered is permeable paving (to ensure storage above groundwater level) linked to ring soakaways to get connectivity to good strata.

Kind Regards,

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

Laura Gibbons | Engineer (Drainage & Coastal), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

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From: kazys [REDACTED]

Sent: 02 September 2019 02:00

To: Laura Gibbons <Laura.Gibbons@arun.gov.uk>

Cc: 'Kevin Wawman' [REDACTED]; Matthew Utting [REDACTED]; 'Paul Spratt' [REDACTED]; Ian Sellar [REDACTED]; mandy I [REDACTED]

Subject: Mayflower Way, Angmering: Planning Consultation A/46/19/PL

Laura

Crayfern have passed over your drainage planning comments, dated 22nd July, for the above site, apologies for the delay in responding.

I am attaching further information that should hopefully enable you to advise your planning colleague that the works and information required have been submitted to you and it will not be necessary to apply the conditions you suggested.

I believe you are in receipt of the groundwater monitoring results that showed water was only present in two readings at a depth of 3.84 in one well. I therefore believe that groundwater is not an issue on this site.

For your information I attach a copy of these results

In order to assess the suitability of infiltration methods as the means of surface water disposal, tests to BRE365 were undertaken on 4th March this year at depths that it was proposed to construct the domestic soakaways and utilise sub-base construction for draining drives and access roads. Attached are the results of the tests as undertaken by Soils Ltd. The results have been transposed to the attached drawing ES1539-500-00 and the site divided as shown in order to assist with the design of the infiltration proposals.

I have produced a detailed drainage strategy and this information can be seen on the attached drawing ES1539-502- Using the figures obtained for the shallow infiltration tests we were unable to achieve a satisfactory design for the domestic drives and access road, using a FoS of 5, 24hour half drain times were not achievable. This could only be achieved

with a FoS of 3 on the Shallow Zone 2 (SZ2) areas. Unless you are willing to accept a FoS of 3 on the drives in SZ2, (these are Plots 1-7 & 23-24) I feel that the drives will have to drain to domestic soakaways in the rear gardens. Unfortunately I cannot see an alternative solution to draining Ch0-30 of the access road to that which I have proposed.

This area has been designed with a FoS of 3 and is just slightly above the 24hours half drain time.

Shallow Zone 1 (SZ1) has a lower infiltration rate than SZ2 and a half drain time was not achievable even with a Fos of 1. I feel the only option for drives and the sections of access road in this zone is to drain them to domestic soakaways In the rear gardens of Plots 8,9 &10.

The low infiltration rate achieved on the eastern side of the site has necessitated a long narrow soakaway to serve the roof drainage for Plots 18-24. Things to note here are that the soakaway extends slightly deeper than the trial pit tests, although I feel the slope of the site should be regarded as a mitigating factor. I could only achieve a FoS of 2 in this location and that was in conjunction with including the soakaway base in calculations.

Utilising these results we have prepared MicrDrainage calculations substantiating the proposed design and a full set of these calculations are included with this submission. To help your assessment I have produced a tabulation on the drainage drawing that gives all the information on the soakaways.

I have also attached a *SuDS Operations and Maintenance Manual* for the site together with a *Water Quality Management Manual*.

Hopefully you will find the proposed designs to be acceptable given the limitations we are faced with, please give me a call

To discuss the proposals or if necessary I will arrange a meeting with you to discuss the proposals.

Many thanks.

Regards

Kazys

Kazys Narbutas

ESCHER · SILVERMAN
Civil & Structural Consulting Engineers

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