Appendix F

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Nadine Hassan
Site name:	Campfield
Site location:	Southwater

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.01117° N
Longitude:	0.34779° W
Reference:	2629767661
Date:	Nov 26 2024 16:23

Runoff estimation approach

IH124

Site characteristics

Total site area (ha): 4.5

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	778	778
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	24.58	24.58
1 in 1 year (l/s):	20.9	20.9
1 in 30 years (l/s):	56.54	56.54
1 in 100 year (l/s):	78.42	78.42
1 in 200 years (l/s):	91.94	91.94

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Nadine Hassan
Site name:	Campfield
Site location:	Southwater

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.01117° N
Longitude:	0.34779° W
Reference:	2160317202
Date:	Nov 27 2024 14:59

Runoff estimation approach

IH124

Site characteristics

Total site area (ha): 1.375

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	778	778
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	7.51	7.51
1 in 1 year (l/s):	6.38	6.38
1 in 30 years (l/s):	17.28	17.28
1 in 100 year (l/s):	23.96	23.96
1 in 200 years (l/s):	28.09	28.09

Appendix G

Nadine Hassan

From: Stephanie.Bryant [redacted]
Sent: 25 October 2024 16:12
To: Nick Billington
Cc: Angela Moore
Subject: RE: Pre-app submission - Land at Campsfield, Southwater

Hi Nick,

I confirm the below reflects our discussion and wider pre-application advice for this site.

Kind regards,
Steph

Stephanie Bryant
Senior Planning Officer

Telephone: [redacted]
Email: [redacted]

Horsham District Council, 50 YEARS

Horsham District Council, Parkside, Chart Way, Horsham, West Sussex RH12 1RL
Telephone: 01403 215100 (calls may be recorded) www.horsham.gov.uk Chief Executive: Jane Eaton

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From: Nick Billington [redacted]
Sent: 25 October 2024 16:07
To: Stephanie.Bryant [redacted]
Cc: Angela Moore [redacted]
Subject: RE: Pre-app submission - Land at Campsfield, Southwater

Hi Stephanie,

I should clarify – I didn't mean to suggest below POS would have to be outside of areas of Medium and High surface water flood risk – just roads.

Regards,

Nick Billington
MRTPI
Principal Planning Consultant - Environmental & Social Impact Assessment

O [redacted]
M
E

SLR Consulting Limited
Mountbatten House, 1 Grosvenor Square, Southampton, Hampshire, United Kingdom SO15 2JU

From: Nick Billington [redacted]
Sent: 25 October 2024 16:00
To: Stephanie.Bryant [redacted]
Cc: Angela Moore [redacted]
Subject: RE: Pre-app submission - Land at Campsfield, Southwater

Hi Stephanie,

Thanks for your call. Was good to talk through those couple of points on sequential test and trees. Just to confirm what we discussed:

Application of sequential test
Based on our conversation, you indicated you would be inclined not to require the application of the Flood Risk Sequential test to the site if any proposed roads and POS were located in areas at 'low' (as opposed to very low) risk of surface water flooding and provided they avoided any medium or high risk areas. Homes should be located in the lowest risk areas of surface water flooding.

Trees and RPAs
You confirmed that the tree officer had informed your comments on the RPAs in your most recent addendum response and that based on this it is unlikely, given the site is currently undeveloped, that any encroachment in RPAs would be supported by officers.

If you could please confirm my understanding of our conversation is correct that would be really helpful.

Have a great weekend when you get there.

Kind Regards,

Nick Billington
MRTPI
Principal Planning Consultant - Environmental & Social Impact Assessment

O [redacted]
M
E

SLR Consulting Limited

Appendix H

Project Name:	Campfield, Southwater
Document Reference:	091.5018/DTN/2
Document Name:	Drainage Technical Note
Prepared By:	N Hassan (June 2024)
Checked By:	D Pearson (June 2024)
Approved By:	C Owen-Hughes (June 2024)

Revision Record				
Rev	**Date**	**By**	**Summary of Changes**	**Aprvd**
1	06/06/24	NOH	First Draft	COH
2	11/06/24	NOH	Client comments addressed	COH

1. EXECUTIVE SUMMARY

1.1 The site falls entirely within flood zone 1

1.2 A small area of (0.136ha) is subject to medium risk of surface water flooding, out of a total site area of 4.2ha.

1.3 None of the proposed dwellings are located in an area of medium surface water flood risk.

1.4 The area of medium surface water flood risk is contained within the landscaped area along the northern boundary, and a small portion of the proposed carriageway.

1.5 Two attenuation swales have been proposed to mitigate the existing surface water flood risk.

1.6 The estimated flood depths a less than 300mm, which is a safe depth to allow emergency access for vehicles.

1.7 The decision to undertake a sequential test for the site lies entirely within the scope of Horsham District Council. However, as demonstrated in the following assessment, the risk posed to the proposed site by surface water flooding is minimal, with any medium surface water flood risk confined to a small area on the northern boundary of the site, far from any proposed dwelling. The recent judgement by the England and Wales Court of Appeal (Civil Division) in the case of Whittaker-Fayed v Secretary of State for Levelling Up, Housing and Communities [2024] EWCA Civ 507 found that local planning authorities should seek to take a balanced and pragmatic approach in the application of the sequential test, and, where suitable, should seek to impose conditions to manage flood risk instead of an automatic application of the sequential test.

1.8 A surface water drainage strategy shall be prepared in accordance with West Sussex County Council's Pro Forma and shall include SuDS features to manage water volume and quality prior to discharging at Qbar rate into an existing watercourse west of the site.

1.9 This drainage technical note should be read in conjunction with Drainage and Flood Risk section within the Pre-App letter.

INTRODUCTION

1.10 This Technical Note has been prepared by Paul Basham Associates on behalf of Miller Homes Ltd. to support the Pre-Application to Horsham District Council, specifically in relation to the sequential test for the proposed site in Campfield, Southwater.

1.11 The proposed development is located entirely within Flood Zone 1, as shown in Figure 1 below.

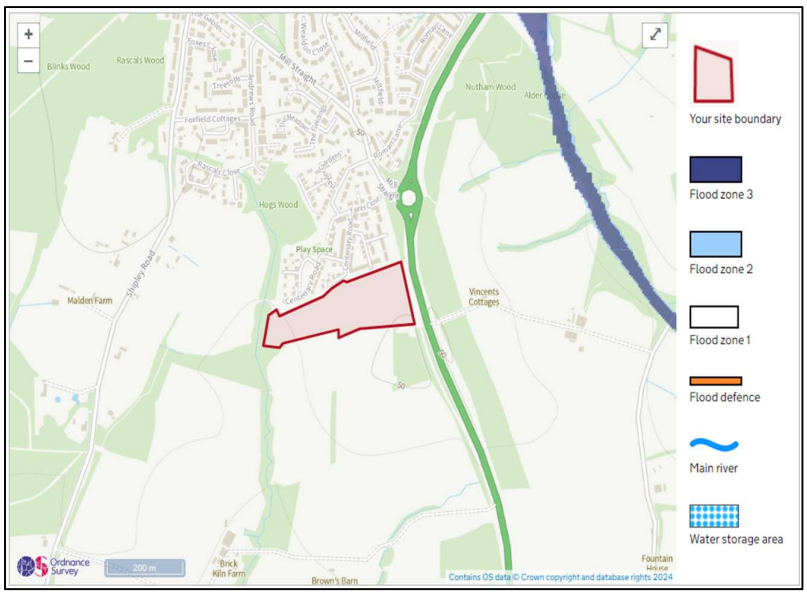

Figure 1: Environment Agency's Flood Map for Planning

1.12 The Environment Agency's (EA) flood risk mapping has been reviewed and a summary of the flood risk is outlined in below. It should be noted that a detailed flood risk assessment showing the EA's flood maps and discussing residual flood risks shall accompany the outline application for the proposed site. This technical note focusses primarily on the flood risk from surface water.

Source of Flood Risk	Flood Risk based on EA mapping
Fluvial/ Tidal	Very Low
Surface Water (Pluvial)	Medium Risk
Ground Water	Unlikely
Reservoirs	Unlikely

Table 1: Summary of EA long-term flood risk

1.13 The surface water flood risk map is shown in Figure 2 and indicates that the site is considered to be at medium risk of surface water flooding, near the northern boundary. A small area of (0.136ha) is subject to medium risk of long-term surface water flooding, out of a total site area of 4.2ha

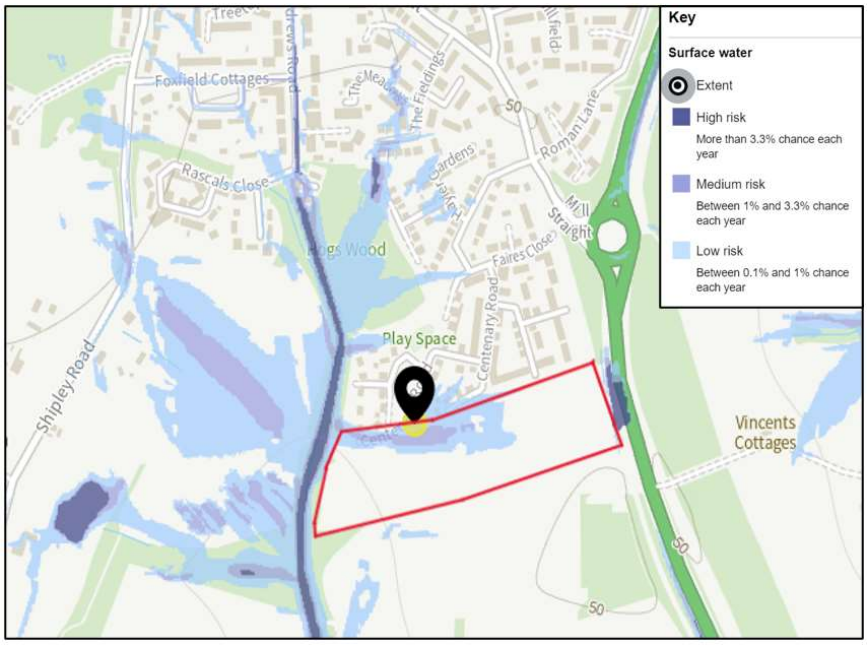

Figure 2: Long term flood risk from surface water

1.14 Figure 3 is extracted from the EA's online flood mapping and indicates the flood depths associated with the medium risk flooding from surface water. The map indicates that flood depths are below 30cm.

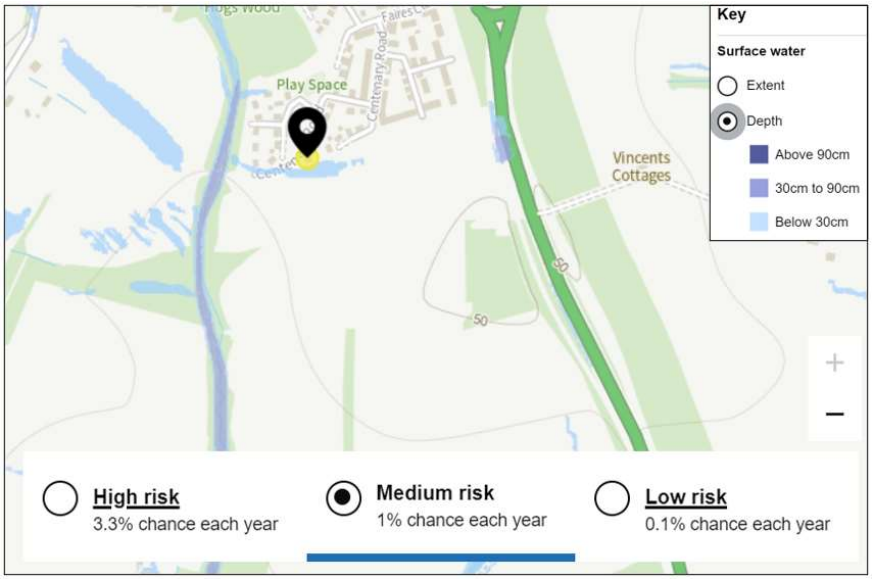

Figure 3: Depth of Surface Water Flooding (Medium Risk)

1.15 Figure 4 shows the EA surface water flood map extents overlaid onto the proposed site layout. Localised areas subject to medium risk of surface water flooding are mostly within a landscaped area, adjacent to the northern boundary and the spine road. Only a very small portion lies across the road, however it should be noted that the maximum estimated flood depths is less than 30cm, which would still allow safe access for vehicles through this portion of the road.

1.16 The medium risk surface water flood extents do not conflict with any proposed dwellings.

1.17 Two inter-connected attenuation swales with a total volume of 413m^3 (inclusive of 0.3m freeboard) shall be proposed as shown in Figure 4 to contain the current medium risk surface water floods. The area of the medium risk extents (hatched in purple below) was estimated to be 1359m^2. Assuming a flood depth of 300mm across the hatched area, the total surface water volume generated from the medium risk area is estimated to be 408m^3.

1.18 An enlarged image of the swales is shown in Figure 5, showing existing tree constraints.

Figure 4: Flood Mapping and Proposed Layout

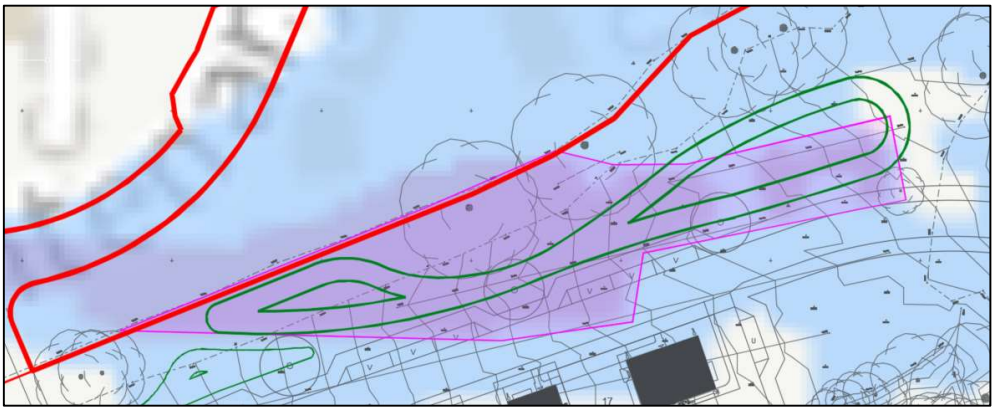

Figure 5: Close-up on Proposed Conveyance Swales

2. SURFACE WATER DRAINAGE PROPOSAL

2.1 A review of the British Geological Survey (BGS) mapping indicates that the bedrock geology beneath the site is *''weald clay formation – mudstone. Sedimentary bedrock formed between 133.9 and 126.3 million years ago during Cretaceous period''*. The site is unlikely to be suitable for infiltration.

2.2 The surface water drainage proposal is to manage surface water runoff at source, attenuate it on site and discharge at Qbar rate to the existing watercourse, which runs along the western boundary of the site.

2.3 Surface water runoff shall be collected and attenuated within a basin proposed in the western portion of the site. The discharge from the basin shall be via a wide earthwork, similar to a shallow swale, to allow water to flow through the woodland as a sheet in effort to minimise impact on the woodland.

2.4 A variety of SuDS features shall also be incorporated such as permeable block paving for carparks and conveyance swales.

3. PLANNING POLICY

3.1 Horsham District Council's (HDC) Local Validation List states that:

"A Sequential Test (followed by an Exceptions Test if applicable) will be required for all development where all or part of the site falls within Flood Zones 2 or 3, and/or ***where there is a medium or high risk of surface water flooding or flooding from other sources****. Exceptions are where the site has been specifically allocated for development in either the local plan or a neighbourhood plan where it was previously subject to a sequential test (provided there have been no significant changes to the known level of flood risk to the site, now or in the future which would have affected the outcome of the test)"*

3.2 Per the above, the area of surface water flood risk is minimal, and is confined to a localised depression. There is no flow path crossing the site, and as per Figure 3, the flood depths are estimated to be lower than 300mm.

4. CONCLUSION

4.1 The site falls entirely within flood zone 1

4.2 A small area of (0.136ha) is subject to medium risk of surface water flooding, out of a total site area of 4.2ha.

4.3 None of the proposed dwellings are located in an area of medium surface water flood risk.

4.4 The area of medium surface water flood risk is contained within the landscaped area along the northern boundary, and a small portion of the proposed carriageway.

4.5 Two attenuation swales have been proposed to mitigate the existing surface water flood risk.

4.6 The estimated flood depths a less than 300mm, which is a safe depth to allow emergency access for vehicles.

4.7 The decision to undertake a sequential test for the site lies entirely within the scope of Horsham District Council. However, as demonstrated in the following assessment, the risk posed to the proposed site by surface water flooding is minimal, with any medium surface water flood risk confined to a small area on the northern boundary of the site, far from any proposed dwelling. The recent judgement by the England and Wales Court of Appeal (Civil Division) in the case of Whittaker-Fayed v Secretary of State for Levelling Up, Housing and Communities [2024] EWCA Civ 507 found that local planning authorities should seek to take a balanced and pragmatic approach in the application of the sequential test, and, where suitable, should seek to impose conditions to manage flood risk instead of an automatic application of the sequential test.

4.8 A surface water drainage strategy shall be prepared in accordance with West Sussex County Council's Pro Forma and shall include SuDS features to manage water volume and quality prior to discharging at Qbar rate into an existing watercourse west of the site.

4.9 This drainage technical note should be read in conjunction with Drainage and Flood Risk section within the Pre-App letter.