

Category 4: Surface Water Runoff

Sur 1 Summary Template – November 2010, Addendum (2014) England and Addendum (2014) Wales

Introduction

This template can be used to demonstrate compliance with the criteria specified in Sur 1 in the Code for Sustainable Homes November 10, Addendum (2014) England and Addendum (2014) Wales. **The template can be used by the Code Assessor to aid in assessing the Sur 1 issue and can be provided as supporting evidence in addition to the items listed in the schedule of evidence for Sur 1.** Completing this template is optional.

National policy documents have been used to set the standards for the mandatory element of Sur 1. Planning Practice Guidance (PPG)¹ for England/ Technical Advice Note 15 (TAN 15) for Wales and the SuDS manual are the key documents used. Further reading is listed in the References section of the Technical Guide.

Instructions

Where submitting this template as supporting evidence for a Code assessment please ensure that the **assessor completes the contact details (page 2)** and the **appropriately qualified professional completes the rest of the template, ensuring that it is signed using the Signature Line provided.**

If the template is incomplete and / or unsigned it will not be accepted as evidence supporting a Code assessment.

The Technical Guide states the calculation methodologies to be used to demonstrate compliance with some aspects of the criteria, for example the greenfield runoff rates. Although flexibility in choice of methodology is available for some of the criteria, best practice methodologies should always be used. If required, information regarding applicable calculation methodologies can be found in the SuDS Manual (CIRIA, 2007). Reputable software, such as Microdrainage, can be used for calculation purposes.

¹ Available at <http://planningguidance.planningportal.gov.uk/>

As of the 6th of March 2014, Planning Policy Statement 25 (PPS25) ceased to be a current document for planning purposes and was replaced by the new Planning Practice Guidance (PPG).

Guidance on when to use PPS25/PPG/TAN 15 for the purposes of your Code assessment

As of the 6th of March 2014, Planning Policy Statement 25 (PPS25) ceased to be a current document for planning purposes and was replaced by the new Planning Practice Guidance (PPG).

This change does not impact the technical requirements of Sur 1. The 'November 2010 Technical Guidance' and 'Code Addendum (2014) England' documents simply reference the planning guidance that was current at the time of publication.

In England, it is acceptable for the planning guidance (PPS25 or PPG) required for planning purposes to be used with the 'November 2010 Technical Guidance' and 'Code Addendum (2014) England'.

In Wales, TAN 15 must be used with the 'November 2010 Technical Guidance' and 'Code Addendum (2014) Wales'.

The below sections to be completed by the Assessor

Contact Details

Consultant/engineer details

Company Name*	Stuart Michael Associates
Company Address	Coombe House, Thatcham, RG19 4JF
Contact Name	Tim Wood
Contact Telephone Number	01635 867711

Developer/client details

Company Name*	
Company Address	
Contact Name	
Contact Telephone Number	

Development details

Development Name*	1C Victoria Road, Tilehurst
Development Address*	1C Victoria Road, Tilehurst
BRE Reference Number*	
Client Reference Number	
Number of dwellings on the site*:	
Number of Code dwellings on the site*:	1 proposed

Fields marked with * must be completed.



All of the following sections of the template to be completed by the Engineer / Consultant

MANDATORY REQUIREMENTS

Appropriately Qualified Professional

1.



I can confirm that I am an appropriately qualified professional in line with the Code definition.²

Assessment Information

2.

For sites containing a mixture of non-Code and Code assessed dwellings there are several assessment options for Sur 1. The first would be to assess the whole site (including the non-Code dwellings) under the Code criteria. The second would be to demonstrate with several separate templates that each group of Code dwellings (and the associated sub catchments serving those dwellings) on the site have met the criteria individually. Please tick one of the following boxes;



A. The site contains a mixture of Code and non-Code dwellings and the whole site has been assessed under the Sur 1 criteria including any associated sub catchments serving these dwellings.

OR



B. The site contains a mixture of Code and non-Code dwellings and there is more than one assessed area for Sur 1 within the site boundary.
Please write the number of assessed areas within the site in the space provided below (you will need to complete this template for each assessed area)³.

Number of assessed areas:

Dwellings included within this Sur 1 template:

OR



C. The site only contains Code assessed dwellings and the associated sub catchment serving those dwellings.

Site Information

3.

A. Please provide the site area⁴(select units of measurement from drop down)

m²

B. Please provide the impermeable area of the site pre-development (select units of measurement from drop down)

m²

C. Please provide the impermeable area of the site post development (select units of measurement from drop down)

m²

² Refer to the technical guide for details on the definition of an appropriately qualified professional.

³ It would aid the QA process to provide a site plan highlighting each assessment area and highlighting which area is being assessed in this template.

⁴ The site area must include all areas within the boundaries of the site, including both permeable and impermeable areas. The pre and post development site areas must always be the same. If box 2B has been ticked, the 'site area' will be only that for which this template demonstrates compliance. If 5A/B has been ticked, the 'site area' will exclude the area of the existing/adoptable highway.

How is the mandatory element of Sur 1 being assessed?

4.

Please tick the relevant box below to identify where a special case applies for the site:

Standard approach

A. Criterion 1, 2 and 3 are being met in the standard way.

Default case

B. The mandatory criteria can be deemed to be met by default as the site discharges rainwater directly to a tidal estuary or the sea.

*Note: where this applies, it is not necessary to complete points 5 – 16 of this template.***Special Cases⁵**

C. There is no increase in the man-made impermeable area as a result of the development and mandatory criteria section 1 and 2, have both been met by default.

Note: where this applies criterion 3 ([point 16 of this template](#)) of the mandatory criteria must still be satisfied.

D. A minimum flow rate or maximum storage requirement has been set by the sewerage undertaker (or other statutory body). Criteria 1 and/or 2 has been met by default.

Note: all remaining mandatory criteria must be satisfied

E. Planning approval has been granted for the detailed drainage strategy prior to the Code requirement being set for the development.

*Note: No credits for water quality can be awarded using this method.**Please [go to Point 18](#).*

F. The assessed dwelling is directly connected to existing infra-structure which pre-dates the Code requirement.

*Note: No credits for water quality can be awarded using this method.**Please [go to Point 18](#)***Adoptable/Existing Highways**

5.

Tick one or both of the following to confirm if some or all of the highways will be omitted from the site area in the calculations for one of the following reasons⁶:

A. The highways are being adopted

B. The Code dwellings are being built beside existing highways.

⁵ Refer to the Technical Guide for details on the supporting evidence required to demonstrate compliance with these special cases. This evidence must be provided to demonstrate how the special case is being met.⁶ Refer to the technical guide for details on when an adoptable road can be omitted from the assessment.



6.	Please confirm the following approach has been used and state the area of adoptable/existing/highway:
☐	The impermeable area of the adoptable/existing highway has been excluded from the site area and all calculations and sections below. Area of adoptable/existing highway: m² Note: a site plan pre and post development must be provided to highlight the area of the land that has been excluded from the pre and post development site area

SECTION 1: Peak Rate of Runoff (Criterion 1)

7.	<table border="1" style="width: 100%;"> <tr> <td style="width: 70%;">A. Pre-development peak rate of runoff for the 1 year return period event⁷</td> <td style="width: 30%; text-align: center;">0.2 l/s</td> </tr> <tr> <td>B. Post-development peak rate of runoff for the 1 year return period event⁷ including mitigation (this figure must be less than or equal to A, except where the 5l/s rule has been used)</td> <td style="text-align: center;">0.0 l/s</td> </tr> <tr> <td>C. Pre-development peak rate of runoff for the 100 year return period event⁷</td> <td style="text-align: center;">0.7 l/s</td> </tr> <tr> <td>D. Post-development peak rate of runoff for the 100 year return period event⁷ including mitigation (this figure must be less than or equal to C, except where the 5l/s rule has been used)</td> <td style="text-align: center;">0.1 l/s</td> </tr> </table>	A. Pre-development peak rate of runoff for the 1 year return period event ⁷	0.2 l/s	B. Post-development peak rate of runoff for the 1 year return period event ⁷ including mitigation (this figure must be less than or equal to A, except where the 5l/s rule has been used)	0.0 l/s	C. Pre-development peak rate of runoff for the 100 year return period event ⁷	0.7 l/s	D. Post-development peak rate of runoff for the 100 year return period event ⁷ including mitigation (this figure must be less than or equal to C, except where the 5l/s rule has been used)	0.1 l/s
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D. Post-development peak rate of runoff for the 100 year return period event ⁷ including mitigation (this figure must be less than or equal to C, except where the 5l/s rule has been used)	0.1 l/s								
8.	☐ Please tick this box to confirm that the 5l/s rule has been applied where the peak rates of runoff have increased post development, but are still equal to or less than 5l/s.								
9.	If, post-development, mitigation methods were used to reduce the peak rate of runoff to meet the Code criteria, please provide a brief explanation below describing how the peak rate was reduced. For example, 'soakaways reduce the peak rate of runoff to pre-development levels'.⁸ Peak rate is reduced as there is less greenfield area post development. All impermeable areas post dev. infiltrate. N/A ☐								
10.	☒ Please tick this box to confirm that the post development peak rate of runoff calculations include an allowance for climate change in accordance with current best practice (PPS 25/PPG/TAN 15).								

⁷ Peak rate of runoff calculations should be carried out for the range of storm durations up to and including the 6 hour storm. The peak rate of runoff for the storm event will then be the 'worst case' runoff rate for the range of storm durations. The climate change allowance should be added only to the post development calculations.

⁸ Note that detailed documentary evidence (as per the schedule of evidence table in the Technical guide) is required to demonstrate how the peak rate of runoff has been reduced.



11.	Please tick one of the following boxes as applicable to this site (where option F is selected, 2 ticks will be present):
☒	A. This is a greenfield site and is less than 50 ha therefore runoff rate calculations have been carried out in accordance with the IH Report 124 'Flood estimation for small catchments' (Marshall and Bayliss, 1994). The pro rata method on the size of catchment detailed in table 4.2 of the SuDS manual has been used.
☐	B. This is a greenfield site of 50 to 200 ha therefore runoff rate calculations have been carried out in accordance with the IH Report 124 'Flood estimation for small catchments' (Marshall and Bayliss, 1994).
☐	C. This is a greenfield site of more than 200 ha (or where there is a preference to do so and the catchment is considered suitable for its application) therefore runoff rate calculations have been carried out in accordance with the 'Flood estimation handbook' (Centre for Ecology and Hydrology, 1999).
☐	D. This is a greenfield site of more than 200ha where the Flood Estimation handbook is considered inappropriate for the development therefore the IH Report 124 has been used.
☐	E. This is a brownfield site and runoff rates have been calculated in accordance with current best practice simulation modelling.
☒	F. This is a brownfield site where the pre-development surface water drainage system is not known therefore the runoff rates have been calculated using the greenfield run-off model ticked above (please tick the relevant methodology), but using soil type 5.

SECTION 2: Volume of Runoff (Criterion 2)

Section 2A

12.	Please tick this box to confirm that the following post development volume of runoff calculations include an allowance for climate change in accordance with current best practice (PPS 25/PPG/TAN 15).
☒	
☒	Please tick this box to confirm that the following volume of runoff calculations are for the 100 year event of 6 hour duration.



13.	A. Pre-development volume of runoff	2.066	m ³
	B. Volume of runoff caused by the new development prior to mitigation	1.240	m ³
	C. Additional predicted volume of rainwater caused by the new development prior to mitigation (= 13B – 13A)	0	m ³
	D. If the answer to 13C is greater than zero, please provide a brief explanation below describing the mitigation methods used to reduce the additional volume discharged from the developed site, for example, 'soakaways will infiltrate all of the additional volume' ⁹ .		
	☐ N/A (criterion 2A cannot be satisfied, see point 13)		
	E. Has all of the additional volume of run off been reduced using the mitigation methods described in section 13D? If yes, go to point 16 . If no, go to 13F .	Select from drop down	
F. Please confirm the remaining additional volume of runoff discharged from the site when all (if any) mitigation measures described in 13D are in place.			m ³

⁹ Note that detailed documentary evidence (as per the schedule of evidence table in the Technical guide) is required to demonstrate how the volume of runoff has been reduced.

Justification for not meeting criteria 2A

14.

A. Where there is an increase in the volume of runoff as a result of the development and criteria 2A cannot be satisfied via infiltration or other SuDS techniques (as listed below), please provide justification(s) for not installing SuDS :

Note: justifications given below must be supported by evidence (see TGN 001 for examples of acceptable evidence)

Soakaways: Porous/Pervious paving: Rainwater re-use harvesting: Green Roof: Other surface infiltration techniques: N/A ☒ (all additional volumes of run-off have been dealt with)

Section 2B

- 15.** Where it has not been possible to reduce all of the additional volume of run-off by infiltration or other SuDS techniques and full justifications have been given in point 14 above, the volume of runoff should be discharged at the 'limiting discharge' (i.e whichever of the following rates of runoff, is the higher). Please tick one of the boxes below to confirm the level of flow control that has been achieved:
- ☐ A. The peak discharge rate has been reduced to pre development 1 year peak flow rate
- Please state the pre development 1 year peak flow rate l/s
- OR**
- ☐ B. The peak discharge rate has been reduced to the site's estimated mean annual flood flow rate (Qbar).
- Please state Qbar: l/s
- OR**
- ☐ C. The peak discharge rate has been reduced to 2l/s/ha.
- Please state the peak discharge rate at 2l/s/ha: l/s
- OR**
- ☐ D. The limiting discharge rate requires a flow rate of less than 5l/s at a discharge point, therefore a flow rate of up to 5l/s has been used.

SECTION 3: Designing for Local Drainage System failure (Criterion 3)

- 16.** ☒ Tick here to confirm that the consequences of system failure caused by extreme rainfall, lack of maintenance, blockage or other causes, have been considered and evaluated fully and there will be no increased risk to dwellings either on or off site.¹⁰

¹⁰ Refer to the technical guide for details on the evidence that would be required to demonstrate that this has been considered fully.

**SECTION 4: AWARDING OF CREDITS: WATER QUALITY CRITERIA (2 credits)¹¹**

17. /



A. Tick here to confirm that there will be no discharge from the developed site for rainfall depths up to 5 mm. Please provide a brief explanation below describing how the runoff from rainfall depths up to 5 mm will be prevented from leaving the site (1 credit):

☐ Via soakaways



B. Tick here to confirm that the runoff from all hard surfaces shall receive an appropriate level of treatment in accordance with the SuDS Manual to minimise the risk of pollution to the receiving watercourse. Please provide a brief explanation below describing how the hard surfaces will receive an appropriate level of treatment (1 credit):

☐ Roofwater will drain to soakaways which treat pollution.
private drive will have a layer of gravel which will treat pollution.

¹¹ Note that where the mandatory element has been met using certain special cases no credits can be achieved. Please refer to the 'Special Cases' in the Sur 1 issue for further information.

18. Signature

The following declaration should be signed by the appropriately qualified professional or developer responsible for ensuring that the development meets the Sur 1 mandatory criteria and the necessary criteria to allow the awarding of credits, where applicable.

I confirm that the information provided in this document is truthful and accurate at the time of completion.

Name of Appropriately Qualified Professional:

Tim Wood

Signature of Appropriately Qualified Professional:

 X SIGN HERE  REPLACE IMAGE WITH SCANNED SIGNATURE

Date:

22.11.2016

Name of developer:

Signature of developer:

X SIGN HERE REPLACE IMAGE WITH SCANNED SIGNATURE

Date:

Please note: If the template is incomplete and / or unsigned it will not be accepted as evidence supporting a Code assessment.

The following section is only applicable where an associated design stage Code for Sustainable Homes assessment has been certified and the solutions designed have been implemented as specified in the design stage evidence. Where this is the case, all applicable sections of the Sur 1 template (above) must be completed with the design stage information, including [point 17](#).

19. Post Construction Confirmation

The following declaration should be signed by the appropriately qualified professional or developer responsible for ensuring that the development meets the Sur 1 mandatory criteria and the necessary criteria to allow the awarding of credits, where applicable.

I confirm that the information provided in this document is truthful and accurate at the time of completion.

Name of Appropriately Qualified Professional:

Signature of Appropriately Qualified Professional:

X SIGN HERE REPLACE IMAGE WITH SCANNED SIGNATURE

Date:

Name of developer:

Signature of developer:

X SIGN HERE REPLACE IMAGE WITH SCANNED SIGNATURE

Date:

Please note: At post construction stage, where SuDS solutions have been installed, evidence must be provided to confirm that maintenance responsibilities have been defined.