



13th April 2016 – Environment Overview & Scrutiny Committee

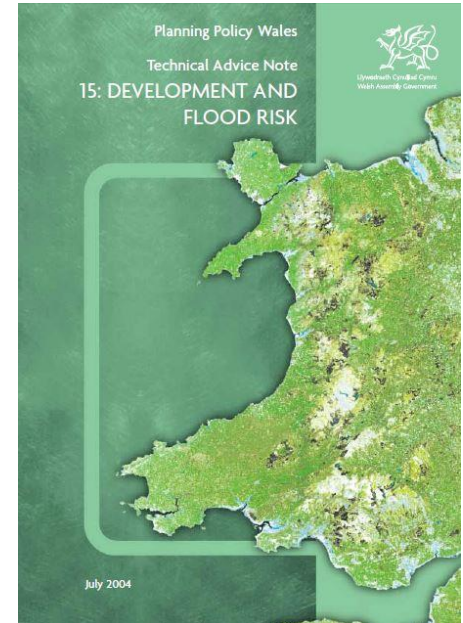
Management of Surface Water for New Development

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Flood & Coastal Erosion Risk Management

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Flood Risk to New Development



Flood Consequence Assessment.

Assessed by NRW.

Surface Water Flood Risk from New Development



Key Terms

- » **Surface Water Run-off:** Occurs when rainfall exceeds the rate that water can infiltrate the ground and flows on the surface.
- » **Surface Water Flooding:** usually means, where surface water run-off rates cause flooding and/or exceed the capacity of the drainage systems to remove it.
- » **Green-field run-off rate.**
- » **Brownfield run-off rate.**

Surface Water Flood Risk from New Development



TAN 15: "Development in one part of a catchment may increase run-off hence flood risk elsewhere, therefore the aim should be for new development not to create Additional run-off when compared to the undeveloped situation and for redevelopment to reduce run-off where possible".



Surface water & new development: the roles of the Risk Management Authorities.



FWMA 2010 became a Lead Local Flood Authority with responsibility to lead in managing flood risk from local sources – including surface water



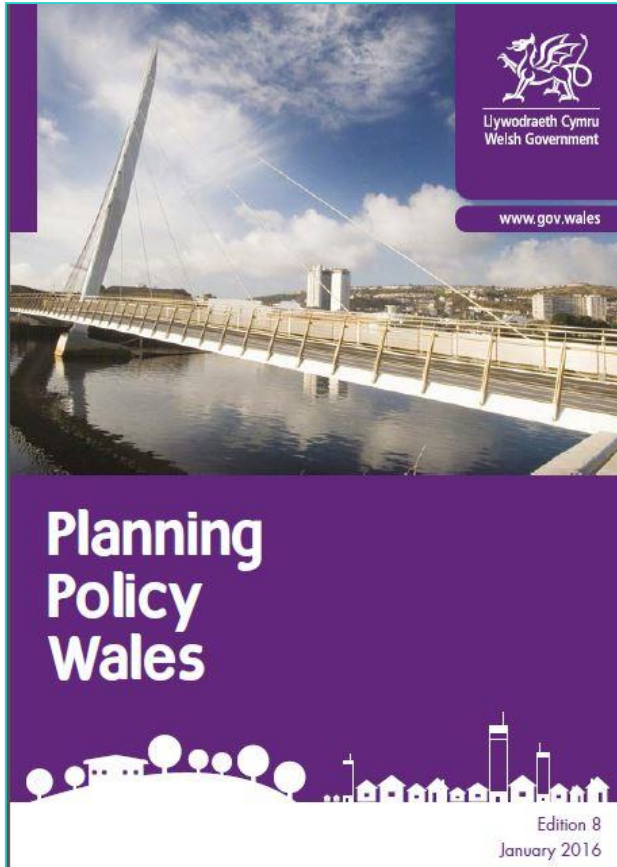
Dŵr Cymru
Welsh Water

Responsibility for floods from water supply, public foul and surface water sewerage systems



NRW have a wider oversight role for all flood risk management in Wales.

Surface water management and the planning process



“In determining applications for development, local planning authorities should work closely with NRW, drainage bodies, sewerage undertakers, prospective developers and other relevant authorities to ensure that surface water run-off is controlled as near to its source as possible by the use of sustainable urban drainage systems.

They should ensure that development does not increase the problem of surface water run-off”



Planning Application Forms

12. Foul Sewage

Please state how foul sewage is to be disposed of:

- Mains sewer
 Cess pit
 Package treatment plant
 Septic tank
 Other

Are you proposing to connect to the existing drainage system? Yes No

If Yes, please include the details of the existing system on the application drawings and state references for the plan(s)/drawing(s):

21. Assessment of Flood Risk

Is the site within an area at risk of flooding? (Refer to the Welsh Government's Development Advice Maps website - <http://data.wales.gov.uk/apps/floodmapping/>) Yes No

If Yes, and you are proposing a new building or change of use, please add details of the proposal in the following table:

Floodplain Area	Residential (Number of units)	Non-residential (Area of land - hectares)
Floodplain C1		
Floodplain C2		

If the proposed development is within an area at risk of flooding you will need to consider whether it is appropriate to submit a flood consequences assessment. (Refer to Section 6 and 7 and Appendix 1 of TAN 15 - <http://wales.gov.uk/topics/planning/policy/tans/tan15/?lang=en>)

Is your proposal within 20 metres of a watercourse (e.g. river, stream or beck)? Yes No

Will the proposal increase the flood risk elsewhere? Yes No

How will surface water be disposed of?

- Sustainable drainage system
 Soakaway
 Main sewer
 Existing watercourse
 Pond/lake

Planning Conditions

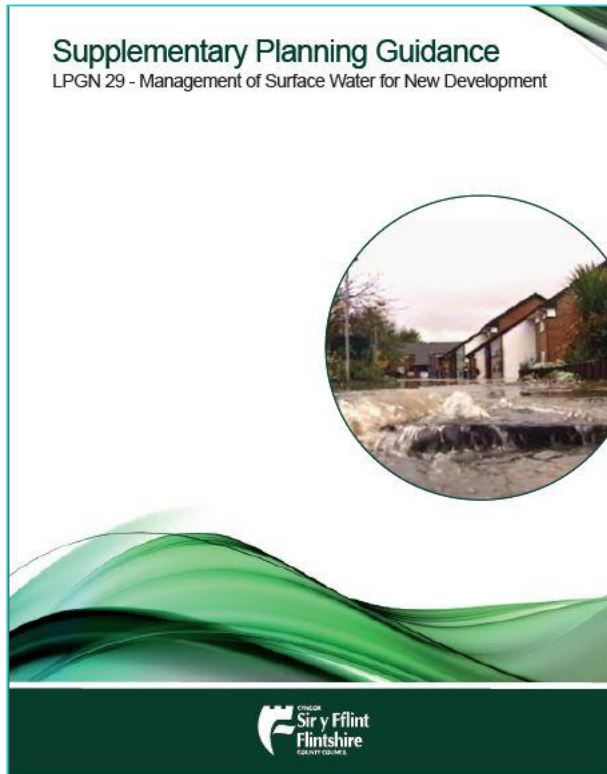
“Prior to the commencement of the development hereby approved, a scheme indicating the proposed methods of disposal of foul, surface and land drainage waters from the site, shall be submitted to and approved in writing by the Local Planning Authority”



What should be known before planning permission

- » Is there a suitable receptor for surface water to discharge to?
- » What discharge rate is appropriate?
- » How will volumes be attenuated on site?
- » Where will that volume be attenuated on site?
- » What are the future maintenance arrangements for the surface water system?

Supplementary Planning Guidance

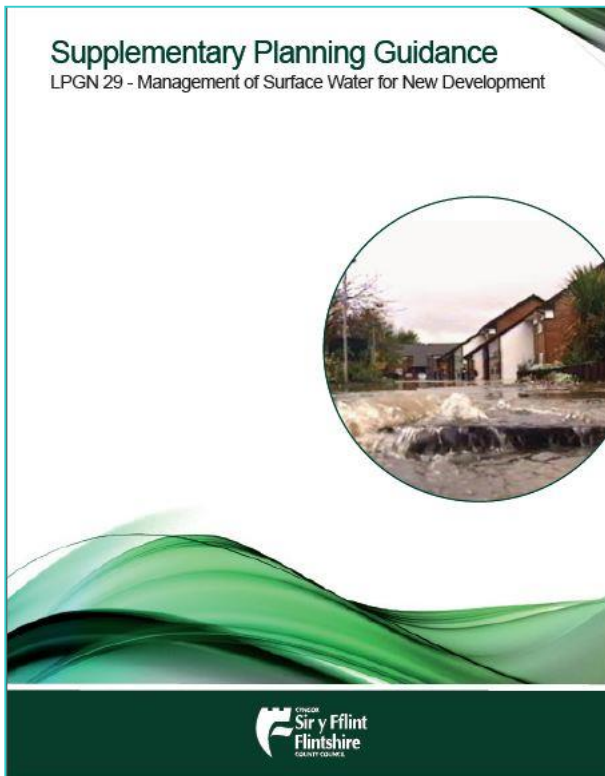


“It is essential to consider sustainable drainage early in the development process because there may be implications for land purchase or the design and layout of the roads, buildings and public open spaces”.

“The earlier it can be determined that the drainage proposals are viable, the less chance of delay, wasted effort and costs for all parties involved”.

“This approach ensures that conditions are not attached to a planning permission which could later prove to be impossible to implement for legal or technical reasons”.

Supplementary Planning Guidance



Clarifies:

- » Who to consult and when.
- » Surface water design criteria
- » Hierarchy of receptors for surface water.

Provides:

- » Proformas to be completed and submitted as part of the planning application, so the applicant provides the required information.

PRO-FORMA A - INDICATIVE DRAINAGE PROPOSAL

The information required below is considered the minimum amount of information acceptable to demonstrate that the proposed approach is feasible and/or that the detailed design could be covered by way of a planning condition.

1	Site location details with site address and national grid reference.	
2	A plan of the existing site, noting its topography and how it presently drains.	
3	A plan of the proposed site, its topography and proposed future drainage arrangements. A fully detailed design is not required at this stage. Sufficient information should be submitted to demonstrate that the system requirements have been considered and are achievable.	
4	Area in m ² of permeable and impermeable land for the existing site.	
5	Area in m ² of permeable and impermeable land for the proposed development site.	
6	Explanation of how the drainage hierarchy (Infiltration-watercourse-sewer) has been followed	
7	Evidence that the site has a satisfactory point of discharge*	
8	The existing surface water run-off rates from	
9	An indication of the post development discharge include an explanation of how this has been	
10	An indication of the volume of attenuation : should be based on the 100 year critical storm for climate change for the site and the allow	
11	The method of proposed attenuation and the	
12	A plan indicating a suitable location for the development.	
13	An explanation of how it is proposed to manage the proposed system over the lifetime of the development requirements for access for future maintenance	
14	For large phased sites an explanation of how water drainage at all stages of the development	
<p>In addition to 1 to 14 in Pro-forma A, please include:</p>		
15	Detailed drawings/plans of the proposed drainage system including dimensions, levels, pipe sizes, manhole details etc.	
16	Details of the proposed discharge control.	
17	Details of the storage required based on the above discharge control and how this attenuation will be achieved on site.	
18	<p>Calculations or modelling of the proposed systems. This will need to show how the design addresses the following criteria:</p> <ul style="list-style-type: none"> No on-site flooding for rainfall up to the 3.33% design event (1 in 30 year). How surface water arising from rainfall between the 3.33% (1 in 30 year) and 1% (1 in 100 year +climate change) events is managed on site. <p>Residual Risk and Designing for Exceedance: There should be an assessment of the effect of rainfall in excess of the design events and/or the result of system failures e.g. blockage. It is expected that the development will be designed to minimise the consequences of such scenarios.</p>	



Priority of Surface Water Disposal Destinations

Priority level 1: Surface water runoff is collected for use



Priority level 2: Surface water runoff is infiltrated to ground



Priority of Surface Water Disposal

Priority level 3: Surface water runoff is discharged to a surface water body (watercourse);

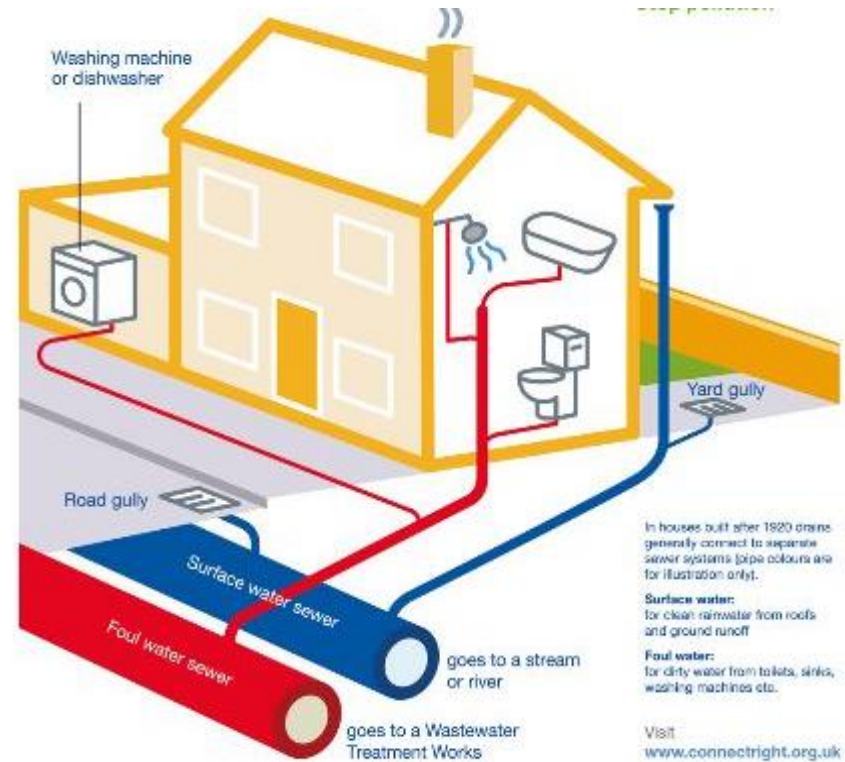




Priority of Surface Water Disposal

Priority level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system.

Priority level 5: Surface water runoff is discharged to a combined sewer.



Challenges

- » Schedule 3 (SuDS) of Flood Water Management Act 2010, yet to commence.
- » Adoption and long term maintenance of the surface water systems once constructed.
- » Conflicting standards between Risk Management Authorities.
- » Planning Authority resources to review technical submissions as NRW no longer reviewing surface water.
- » Cumulative impacts of smaller scale developments.

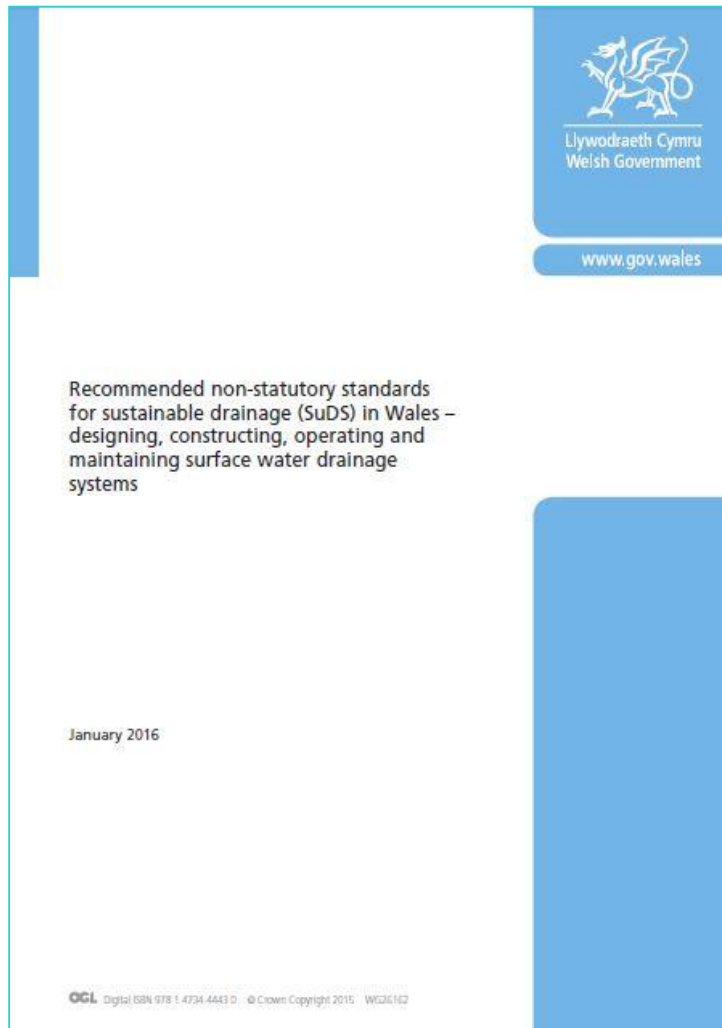
Sustainable Drainage Systems



- » Following the independent Pitt Review (2007), proposals to increase the uptake of SuDS in new developments were included in the Flood and Water Management Act 2010. SuDS are an effective way to reduce the risk of 'flash-flooding' which occurs when rainwater rapidly flows into sewerage/drainage systems. SuDS slow the rate of surface water run-off, improve infiltration and mimic natural drainage in both rural and urban areas.



The Future?



- » On 5 January 2016 the Welsh Government published recommended non-statutory standards for SuDS in Wales.
- » Allow local authority staff and developers to test their operation on a voluntary basis. This will help to identify the best way to embed the SuDS approach in all new developments in Wales

» Should Welsh Government decide to commence the SuDS provisions (Schedule 3) of the Flood and Water Management Act 2010 for Wales, requiring new developments to manage surface water using the SuDS approach, these standards could form the basis of statutory standards.

» SuDS Approval Body





Questions?