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## **EXPANSION OF SUDS SCHEMES WILL HELP ALLEVIATE FLOODING EVENTS**

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It may be difficult to remember, after all that's happened in 2020 so far, but we entered the year from the wettest autumn and winter on record in many parts of the UK, with severe flooding in areas not previously known for it. So it is appropriate to talk about SuDS – sustainable drainage systems – as they should help solve some of the issues we saw.

It is essential to look at the causes of flooding rather than just the symptoms. Surface water adds to the upstream and downstream issues, and therefore good SuDS should be an integral part of the overall approach, rather than just an add-on. If SuDS systems are incorrectly installed, the excess water will just move elsewhere.

Changes in regulations, standards and guidance have incorporated more tools into the SuDS toolset and should help encourage wider take-up of surface water management and reduce flood events in the UK. Whether for new developments or the retrofitting of such facilities within older developments, SuDS can only help our efforts to keep excess water at bay.

### **Progress so far**

Different parts of the UK are making different levels of progress in this area. For example, Wales has adopted the Floods and Water Management Act Schedule 3 which mandates that local authorities, through SuDS approval bodies (SABs) insist on SuDS for all new developments and will adopt them once they are commissioned.

There was a rush by some developers in Wales to put in planning applications without SuDS before the 10 January 2019 deadline, but since that date planning applications have been running at much lower levels. This is expected to improve when the current uncertain times (Brexit and the Coronavirus) return to a new normality. It is interesting to note that some areas that were previously exempt such as e-agricultural building extensions and even forestry logging tracks are now covered under the legislation.

Scotland has taken a different route to Wales, as items like geocellular tanks have been adoptable by Scottish Water for some time under their Sewers for Scotland guidance, currently at Version 4. Both Wales and Scotland are considered to be significantly ahead of England in these respects.

In England, every planning application (except for small development) is supposed to have a surface water management scheme as part of the application. In practice, there are many applications where this is not enforced, for various reasons. Concerning for the developers is that the local authority will normally only adopt SuDS in public open spaces, leaving the question of who owns and maintains non-adoptable SuDS. Equally concerning for the public is that there is no real mechanism in place for verification that the approved SuDS have been installed correctly and are as designed.

English water and sewerage companies (WaSCs) seem mixed in their attitudes towards SuDS. The Ofwat Code for Adoption of Sewers, which replaced the Sewers for Adoption guidance, came into effect in April 2020, and part of it was intended to create a level playing field for the design and adoption of SuDS elements, where they could be defined as sewers. However, some WaSCs still have concerns about ongoing maintenance and have been challenging the definitions, wanting a review and tighter definitions on what should be adopted.

### **Common sense approach**

In reality, SuDS should be on every new development and redevelopment including brownfield. Houses should not be built on flood plains and developers should include flood risk assessments in their plans. Local flood authorities should ultimately look closely at plans to ensure SuDS are being properly incorporated.

On the bright side, solutions are gradually being developed with SuDS featuring more centrally, and clarification is growing regarding who is responsible for ongoing maintenance. In addition, European Standards such as the new ones on geocellular systems (BS EN 17152-1 and supporting standards) have been published.

Achievable and successful SuDS incorporate a combination of control of the volume and flow rate and the quality of the water leaving the site. Ideally, amenity and biodiversity elements

should also be included where feasible. In all cases continual improvement should be the aim – every new site can use the lessons learnt on the previous one. Where physical or geotechnical constraints restrict the use of so-called ‘natural’ components, ‘engineered’ components such as geocellular attenuation systems (below-ground tanks) with flow controllers, can help the designer achieve the requirements.

Up till now, progress has been slow in the take-up of SuDS but it is improving, and design guidance such as the BPF Pipes Group’s on using geocellular systems is a significant step towards improving practical and workable schemes for design engineers and helping them make informed choices.

The BPF Pipes Group guidance is available at <https://www.bfppipesgroup.com/support-downloads/specification-guidance/> and is referenced on the CIRIA website, providing a case study and worked example to aid designers of geocellular drainage systems in applying CIRIA C737 ‘Structural and geotechnical design of modular geocellular drainage systems’.