planning for the future
stormwater management

One of the most important environmental challenges facing the UK is how best to deal with extreme weather conditions, particularly bad cases of stormwater. Following the severe flooding that parts of the UK experienced at the start of the year, it is becoming increasingly clear that the most effective course of action would be to prioritise planning for how to manage these situations in advance. Here, ***Terry Sloman,*** *regional sales support manager for Burdens Utilities, discusses the key considerations around stormwater management and how to prepare for extreme weather by future-proofing properties and developments...*

The subject of stormwater management is fast becoming one of the UK's primary concerns in the area of environmental issues that we need to be prepared for. According to the Department for Environment, Food and Rural Affairs (DEFRA), more than five million properties in the UK are at risk of flooding, which equates to one in every six homes in the UK[1]. Meanwhile, the UK Government has recently published its National Adaptation Programme[2], detailing plans to enhance the UK's resilience to a changing climate and increasing weather extremes. Yet, while the Government has announced that it is taking measures to better protect more than 64,000 more homes through 93 new flood defences[3], the £294m scheme has been criticised for favouring the big cities rather than rural areas that were significantly hit by high levels of flooding in winter 2013/14.

Since rain records began in 1766, the amount of rainfall has continued to increase in the UK. It is estimated that flood damage costs the UK more than £1 billion[4]. High volumes of stormwater run-off placed increased stress on existing drainage systems and urban watercourses.

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Burdens Utilities

When a previously undeveloped site is built on and paved over, stormwater run-off from the newly impermeable surface increases by up to 80%, which places greater pressure on existing watercourses and drainage infrastructure. This can lead to downstream flooding, localised erosion, the destruction of habitats and combined sewer overflows. The traditional means of dealing with increased stormwater is just not viable any more.

Vortex flow control in pre-assembled weir wall chamber for surface water attenuation

Fully inspectable geocellular stormwater attenuation installation under airport car park

Packaged bioretention system for surface water treatment

Joining up the water cycle and making better use of rainwater will help significantly reduce the risk of water stress on developments and the health and safety of the general public. As we move forward, we need to acknowledge the challenges that stormwater presents, but then consider how we can future-proof new and existing developments to cope with these growing pressures and harness water as an opportunity.

Flooding has a dramatic impact on people's lives. Ever since the Pitt Review in 2007[5], the importance of considering surface water risk has become enshrined in a development's planning stages. The report identified some of the key issues that needed to be addressed and the lessons learned following the floods in the summer of 2007. These include maintaining power and water supplies, protecting essential services, providing better advice and help to those affected by flooding, and ensuring the highest standard of resource and care is delivered. However, to improve our ability to withstand the levels of flooding witnessed in recent years, section three of the Pitt Review, entitled *Reducing the risk of flooding and its impact,* should still be the top priority.

The latest Sustainable Urban Drainage Systems (SuDS) have been developed to cope with the demands that heavy rainfall can place on an area. Indeed, integrated systems incorporating attenuation tanks, large capacity drainage channels, lagoons or ponds, porous paving and rainwater harvesting are now an essential part of any new development. Fully-integrated SuDS is a combination of several product systems that form an end-to-end solution that guarantees performance, while offering the customer optimum value. The solutions available include stormwater infiltration modular cells, large diameter pipework, separation tanks and flow control regulators.

In order to achieve smarter stormwater management, a collaborative relationship between all stakeholders is required. Nevertheless, the benefits this will realise are numerous. Urban regeneration will improve public open spaces and surrounding buildings, plus there is even the possibility of using surface water to create features that form part of the urban realm. It is our responsibility to take action for delivering a more effective stormwater management strategy in the UK today, to improve our quality of life in the future.

References

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