REGULATORY ENVIRONMENT

Balancing SuDS in urban development

Urban water drainage

Many would argue that the implementation of Schedule three of the Flood and Water Management Act in England and Wales has been largely ineffectual and piecemeal due to a lack of political will to address the issues surrounding flooding and diffuse pollution seriously. Yet the guidance to support and drive through the changes exists. The updated *SuDS Manual* (C753) was introduced in late 2015 and brings together a logical and hierarchical approach to surface water management.

Planning requirements in relation to drainage design vary across national boundaries, but also between counties leading, inevitably, to confusion amongst engineers. Some lead local flood authorities in England have embraced the updated guidance spearheaded by the *SuDS Manual* and call for improvements to surface water quality from development and infrastructure schemes, whilst others are waiting for a statutory framework to be in place.

Some of the remaining debate seems to revolve around compliance with the Water Framework Directive, particularly when considering the use of green infrastructure to provide water quality improvements in urban environments. Their appropriateness for delivering a commercially-attractive solution, considering their land take requirement, has long been a problem that engineers have had to jostle with. In such circumstances, the *SuDS Manual* supports the use of proprietary (manufactured) treatment systems since they can provide reliable performance against a specific range of pollutants at a fraction of the land take.

A commonly specified green technique is that of porous block paving, a solution that has its exponents and seemingly an equal number of those who would choose to avoid it. Undoubtedly it has its part to play, if designed appropriately, and correctly installed, it can provide benefits for volume and water quality control.

However, there are a number of applications where the use of porous paving is inappropriate, steep sloping sites, service yards and heavily trafficked access routes to name but three, additionally some have concerns about maintenance and lasting performance.

D-Rainclean is a source control solution that provides a commercially viable alternative to porous paving in heavily and regularly trafficked car parks and service yards, as well as on sloping sites. It can be used for infiltration or as part of an attenuation solution.

As a porous treatment channel D-Rainclean removes contaminants from surface water run-off allowing direct infiltration to ground, or conveyance to a watercourse or sewer. As such this allows engineers to specify a more cost effective, conventional tarmac or impermeable surface in conjunction with D-Rainclean. The system can reduce construction time and costs by decreasing road construction depths and the need for use of specialised aggregate and separation layers.

D-Rainclean meets the 0.8+ mitigation indices detailed in the *SuDS Manual* for the three main pollutant groups – TSS, heavy metals and hydrocarbons. The filter media can last as long as 20 years as certified by its independent DIBt testing. Providing primary, secondary and tertiary treatment, the Re-Medi8 filter media removes high values of sediment, hydrocarbons and heavy metals, and requires virtually no maintenance over the media service life.

The Re-Medi8 filter media can also be used in soft SuDS infrastructure to provide reliable performance and high mitigation indices. Additionally, the media can be used in existing SuDS structures to improve water quality particularly where there is a recognised ongoing issue, such as priority outfalls.

Both D-Rainclean and Re-Medi8 have a long history of use throughout Europe and have been used in the most demanding of diffuse polluting environments. For further information contact Neill Robinson-Welsh on 01455 502222 or email neill@storm-water.co.uk