**MAKING SUDDS THE FIRST-CHOICE OPTION**

For some years the use of Sustainable Drainage Systems (SuDS) has been strongly advocated by policy (England, Northern Ireland) for all new major development or required by law in Scotland, for development that drains to the water environment (except coastal waters), and in Wales from January 2019 for all construction work that has drainage implications. But what about SuDS for existing developments?

Retrofitting SuDS into existing developed areas is also recognised to have multiple benefits, particularly as building new sewers and drains, or upsizing existing ones is not a sustainable solution. SuDS retrofitting is being used as a different approach to the management of surface water to address flood risk and water quality issues, to facilitate future modification to cope with climate change as it is more adaptable and flexible, to support the water cycle, and to help with the greening of urban areas (assisting with improvements in air quality, biodiversity and wellbeing). It also fits with the ecosystem services approach and is cheaper.

Although advocated to bring far wider benefits than piped systems, until recently barriers including ownership, adoption and long-term maintenance have made it slow and difficult for water companies to engage, invest and deliver SuDS. However, momentum is growing within the water industry to tackle these challenges, and the industry wants more sustainable solutions. Key elements of its success are its implementation as part of a green/blue/grey approach, building partnerships, and engaging with stakeholders and the community.

Since privatisation, the water industry has invested heavily in grey infrastructure and end-of-pipe solutions. With the gradual erosion of capacity in our networks and compliance issues at downstream works, extra sewer capacity and storage are often the default solutions for flooding and managing water quality impacts from combined sewer overflows. Yet these problems remain, as standards and levels of acceptability change, along with new emerging challenges and the need to create resilient infrastructure for a changing world. To deal with these issues, grey infrastructure solutions should no longer be our first choice, with SuDS seen as the premier option. To achieve this, we must consider a wide range of measures, engage multi-disciplinary teams and overcome industry skepticism.

Good relationships with other risk management authorities and stakeholders is central, and fundamental to the support of projects, with DEFRA’s surface water management guidance encouraging organisations to “work together and develop a shared understanding of the most suitable solutions to surface water flooding problems”. In practice, this means building strong partnerships between flood risk authorities and finding solutions that provide better outcomes for all stakeholders by:

1. Working towards common outcomes rather than isolated solutions by sharing information, agreeing common standards and specifications and developing holistic solutions that satisfies (or exceeds) all organisations’ needs;
2. Sharing responsibility for the life cycle by sharing costs for data collection, design and construction, combining different funding streams, applying individual organisations strengths and regulatory powers to overcome red tape, and agreeing up-front the most appropriate organisation for adoption and whole life maintenance; and

3. Engaging with the community by providing regular and appropriate information using the right media, addressing concerns and actively involving them.

Like any intervention, SuDS present short-term disruption during construction and potentially significant change to the environment during operation. Good SuDS deliver attractive, pleasant, useful and living urban environments, with additional benefits to water quality, biodiversity and wellbeing. These benefits offer opportunities to connect with the wider community, particularly early in the planning process, and proactively seek to engage people to:

- Change negativity or ambivalence into positive support for projects and organisations;
- Manage expectations for construction and finished features which may take time to mature; and
- Change attitudes to the environment and stormwater management.

SuDS schemes focused on flooding typically use larger measures such as swales and bunds to intercept overland flow routes and carry surface water to safe management locations such as detention basins. However, SuDS are particularly well suited to addressing ‘everyday’ rainfall that can lead to frequently spilling overflows and water quality problems.

Designing smaller SuDS closer to source which cope with smaller storms and still enable flows to enter the existing system for larger events provides an alternative approach.

As the water industry moves to address the challenge of frequently spilling overflows, flooding, creating capacity for development and having a more resilient network, the implementation of SuDS at the local level, in and amongst our communities will be key. Strong partnerships and community engagement provide the components of success to manage our future challenges and risks.

Adapted by Janet Langsford, Principal Environmental Planner, Stantec from an article in Institute of Water magazine, July 2017 by Dr Chris McLarnon, Technical Delivery Manager for Stantec and Prof. Chris Digman, Technical Director for Stantec and visiting Professor at the University of Sheffield, September 2018