HOW SHOULD STORM WATER IN URBANISED AREAS BE DEALT WITH?
The demands on storm water management infrastructure in European cities are set to intensify. We need to improve storm water management in a way that is sustainable, effective and contributes to liveable cities.

What is storm water? Storm water primarily originates from heavy rain and snowmelt. Storm water can mix with other material such as soil, organic matter, and litter, fertilisers from gardens and oil residues from driveways. Without effective management, storm water can affect the lives of citizens living, working and moving through urban areas, and prevent the movement of goods and information.

MANY CITIES AND MUNICIPALITIES LACK SUSTAINABLE STRATEGIES TO MEET FUTURE CHALLENGES
Existing conventional urban drainage systems are insufficient to meet current and future challenges. Why? Greater population densities and expanding impervious surfaces in urban areas intensify pressure on storm water drainage systems. Other challenges such as climate change, and the need for better living standards, including improved health, imply the need for change and a move towards storm water management that is more sustainable.

INNOVATIVE APPROACHES TO STORM WATER MANAGEMENT ARE NEEDED
Effective storm water management in urbanised catchment areas can be achieved by using Blue-Green Infrastructure (BGI) and Sustainable Drainage Systems (SuDS) as a methodological approach.

Innovative approaches are needed to reduce flooding from storm water drains and sewers, increase biodiversity and reduce the costs of wastewater treatment. SuDS offer a more sustainable and integrated approach. The design of sustainable urban drainage systems does not exist as a stand-alone procedure: it requires the full involvement and co-operation of citizens and stakeholders in the urban planning process.

What is BGI? BGI plays an important role in the design of storm water management measures. It combines “natural” measures like green roofs, planters, green belts, swales, wetlands, grassed dry retention ponds or raingardens and other, more “artificial” measures, for example underground infiltration and detention and retention tanks to create sustainable storm water management. This approach to storm water management can bring many benefits compared to traditional drainage systems, such as pollution control, cost savings, improved habitats for wildlife and more efficient flood prevention and reduction.

BGI can also contribute to the achievement of six of the UN Sustainable Development Goals (SDGs), including sustainable management of water, making cities safe and resilient, and ensuring inhabitants’ health and well-being. However, to date, the process of implementing BGI across all urban areas in Europe has so far been slow. Many European cities are poorly prepared for storm water management.
THE WAY FORWARD – WHAT YOU CAN DO

In the report “From threat to opportunity – Reevaluating storm water management in urban areas” Sweco’s experts outline some recommendations for moving forward with BGI and protecting our cities from storm water.

- Raise awareness of the multiple benefits of BGI, in particular those relating to health, cost savings and the contribution to achieving the SDGs.
- Establish stronger and clearer legislation, requiring BGI in new developments and existing urban areas.
- Establish sustainable and verified design principles, facilitating the implementation of BGI.
- Focus on partnership and co-operation between city planners, architects, urban drainage engineers, ecologists and landscape architects to find new solutions.

BGI could be a sustainable solution, preparing us for the challenges ahead. Click here to learn more about how we can transform storm water from a threat to an opportunity in Sweco’s report.

NEW AND WELL-FUNCTIONING SOLUTIONS

Below are some examples of how storm water management and innovative use of SuDS can add value to cities and citizens, with creativity and sustainable solutions. Ill. 1 illustrates a variety of measures which can be used when implementing SuDS. Ill. 2 and 3: Show water storage basins that retain water during rain events, and also provide space for recreation.

Ill. 1 (above left): The RSPB and the Wildfowl & Wetlands Trust.¹

Ill. 2 (above right): SuDS providing an attractive community space, Australia Road, London. Photo: Robert Bray Associates

Ill. 3 (below right): City centre open space with SuDS – Benthemplein Water Square. Photo: Arnoud Molenaar, City of Rotterdam