

# Retrofitting SuDS

Bell Road



**Sustainable Drainage Schemes (SuDS) reduce flood risk using a natural approach to water management within the urban environment, combining green spaces and sustainable water management.**

Existing highways drainage and sewer networks are increasingly being exceeded during periods of heavy rainfall. Exceedance of a combined sewer network, can lead to flooding containing sewage, therefore posing a risk of pollution to watercourses and coastlines.

Retrofitting SuDS can create greater attenuation and slow the flow of water, before water enters the existing drainage system.

Using green assets to manage water within the urban setting can create multifunctional spaces, providing many benefits such as:

- ◆ Reduced flood risk
- ◆ Increased biodiversity
- ◆ Recreational areas
- ◆ Improved water quality
- ◆ Increased resilience to climate change
- ◆ Improved groundwater recharge
- ◆ Improved liveability for the community
- ◆ Enhanced educational areas

**Bell Road, Sittingbourne** experienced frequent flooding during short duration intense rainfall events.

The existing drainage network was unable to cope with these rainfall events leading to excess water flows collecting around Glovers Crescent, flooding the road, property curtilages and garages.



Open space before the project

**The initial feasibility study** focused on placing drainage features in the highway and within the open space alongside Bell Road and Glovers Crescent, to temporarily store excess surface water collected from Bell Road itself.

This location was chosen as there is a large green space with ground conditions that are suitable for new attenuation and infiltration drainage features.

**This project was** 1 of 2 pilot projects in Kent part funded by the Interreg Europe BEGIN programme .

BEGIN (Blue Green Infrastructure through Social Innovation) proposes an approach to climate resilience for cities that mimics nature's potential to deal with flooding.



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Construction of the geocellular soakaway

In March 2019 construction of the new drainage system commenced.

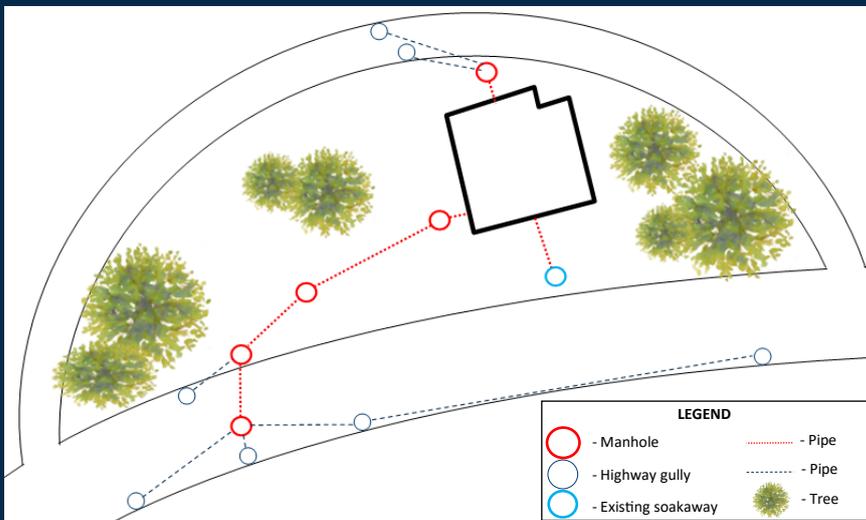
The new drainage system comprises of a 312m<sup>3</sup> capacity geocellular soakaway with associated new highway drainage, pipework and landscaping.

**Geocellular soakaways** comprise of individual lightweight, modular cells that can be layered to create storage, and allow infiltration, of surface water.

This underground system allows the above space to be landscaped and continue to be used for recreational purposes.



Construction of the geocellular soakaway



During small rainfall events, the surface water from Bell Road will continue to utilise the existing drainage system.

The inlet to the soakaway has been installed at a higher level than the existing outlet to the existing system. This means during heavy rainfall events, when water cannot discharge quickly enough into the existing system, the water will be discharged into the new geocellular soakaway.

The completed project has been designed to increase the standard of flood protection to 1 in 100 years to 12 properties, rather than the previous 1 in 10 years.

Once construction of the soakaway was completed, the area was turfed and planted to maximise the benefits to the local community.

The area was planted with crocus and Tenby daffodil bulbs and wildflower seeds were sown to increase biodiversity and amenity.



Completed project with wildflower planting