



STUDY OF THE IMPLEMENTATION OF SUSTAINABLE DRAINAGE CRITERIA IN THE CITY OF SANT CUGAT DEL VALLES

1. Background

Increasing urbanization by development has led to higher impervious surfaces because the natural landscape is replaced by paved areas. Consequently, the urban areas loses its ability to absorb rainwater and much more of it turns into surface water runoff, which is directed into surface water drainage systems and sewers, often overloading them and causing floods.

Sustainable urban drainage systems (SUDS) is a new approach of the water structure in urban development. Its philosophy is about maximising the benefits (surface water is a valuable resource) and minimizing the negative impacts of surface water runoff from developed areas.

2. Viability of the application of SUDS in the city of Sant Cugat del Vallès

A specific research project promoted by the city of Sant Cugat del Vallès has proved the viability of the application of SUDS systems in its territory integrating them into the urban landscape, which allows protecting people and properties from increasing flood risk, increasing the water quality and replenishing depleted groundwater levels.

3. Examples of the application of sustainable drainage criteria in Sant Cugat

Nowadays, there are a several public spaces in Sant Cugat that are examples of good practices in terms of the implementation of sustainable drainage criteria. They are located mainly in gardens and parks (*Can Magí, Víctor Català, Turó de Can Mates, Arboretum, Pollancrea* and *Central*), at public building surroundings (*Monestir* and *Poliesportiu Municipal*), or in new urbanisations areas such as *Turó de Can Mates*.



Infiltration trenches, permeable paving and retention and infiltration basin (Parc Can Magí)



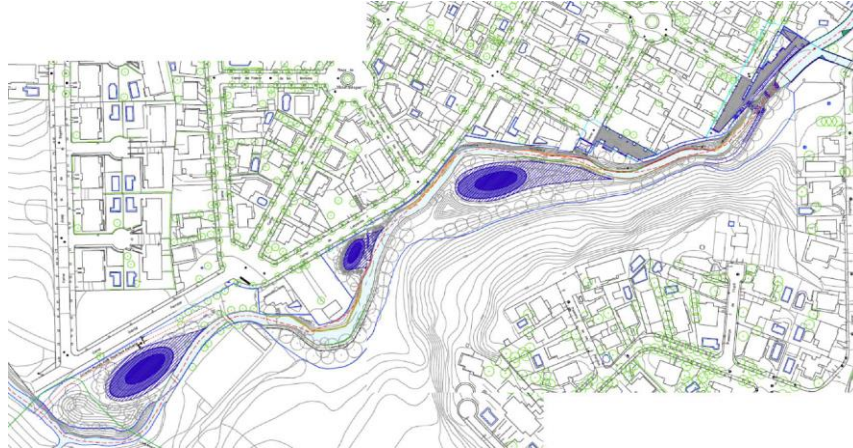
Grass waterway concentrating runoff in the area of influence of trees (Parc de l'Arboretum) and use of pervious pavements that contribute to the infiltration (surroundings of the Monastery)



In addition, the City Council intends to develop several infrastructure projects in the short term. The most significant are:

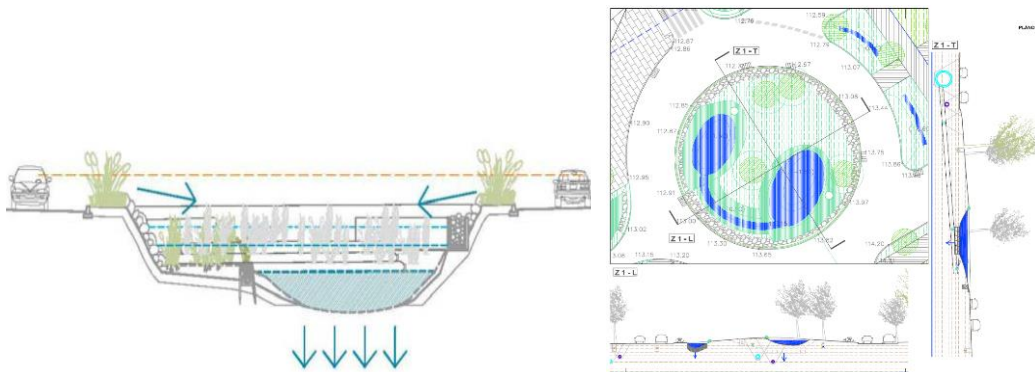
Urban integration project of *Torrent d'en Xoriguer* and improvement of the *Torrent de Can Cabassa*

Sustainable drainage criteria are applied to improve the hydraulic behaviour of the water stream, protect and stabilize the river banks and the channel, and integrate the natural and urban landscape with new spaces for the citizens. The project includes retention ponds and permeable pavements, as well as the application of bioengineering techniques for the stabilization of river banks slopes and channel restoration.



Incorporate SUDS elements at the roundabouts of Sant Cugat del Vallès (waste to resource)

With the current design, roundabouts are water consuming spaces (waste). Adding SUDS elements inside them such as rain gardens, filter strips or infiltration basins, they turn into a water resource.



Runoff at a roundabout applying a SUDS system, and proposal for application at the roundabout of Rambla del Celler - C. Cesar Martinell