

# Ecotechnologies as urban solutions for sustainable water management

## Vegetated systems for water reuse and recycling

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Sustainable Water Management urges for the use and treatment of water and/or wastewater in an efficient way. The use of ecotechnologies with the later purpose arise as promising solutions, requiring understanding of the structures and processes of ecosystems and societies. They intent to address an issue from a holistic point of view. Green roofs and planted beds, or also called constructed wetlands, are two ecotechnologies that in an urban context play important roles in order to mitigate, for example, heat island effects, biodiversity loss, stormwater and flooding events, besides the aesthetic importance. Guidelines are still scarce, although great effort in research and development is being carried out in order to support good practices towards application of these systems.

### . Green roofs for water collection and plant production

Green roofs technology, or living roofs, are multilayer roof constructions comprising vegetation on the top of a building. They have already demonstrated numerous advantages and nowadays, they arise as potential solutions for the improvement of stormwater runoff quality, including its reuse. In that context the major goal of the project developed by UCP-ESB is to present the establishment of an efficient green roof system, planted with autochthonous plant species and easy to maintain, aiming to water collection for reuse and plant production.

» Example of green roof implemented by ESB-UCP



» Examples found worldwide



### . Planted beds to improve water quality towards reuse

Planted beds represent a phytoremediation low-cost technology for water treatment, enabling recycling and reuse from domestic, industrial, urban runoff and other sources, that are integrated in urban or rural areas. Constructed wetlands are biologic man-made systems with the purpose of water depuration. The research carried out by UCP-ESB focus on the use of different ornamental plants species to treat water, besides biodiversity increment and ecosystem restoration. Their versatile and dynamic configuration enable them to be applied in almost any location in the world.

» Example of constructed wetland implemented by ESB-UCP



» Examples found worldwide



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