RotH$_2$O: a roundabout for rainwater harvesting and reuse

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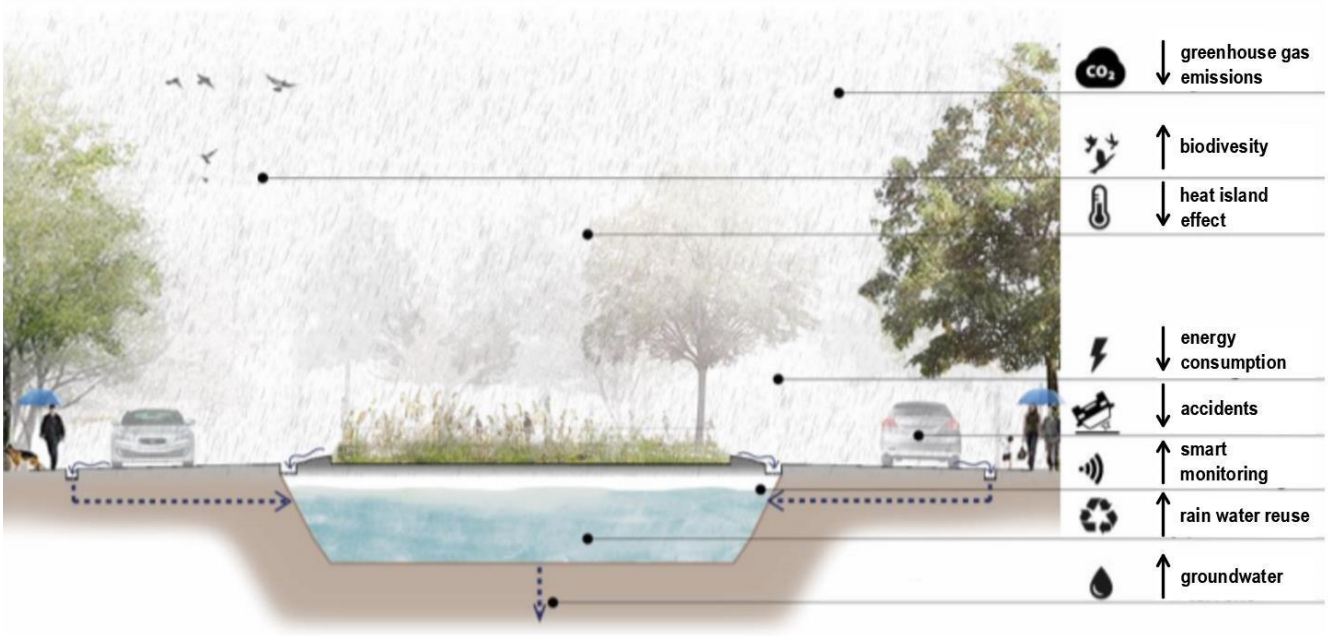
Link to video: https://youtu.be/Wn40NGPORA0



RotH$_2$O is a water harvesting green roundabout that collects rainwater through an underground water tank.

Flooding is not only caused by rivers but also by heavy precipitation. Scarce permeable surfaces in cities cause all the rainwater to be conducted to the sewage system. Due to its limited capacity, it cannot handle excessive quantities of water, leading to flash floods. Extreme weather events, among which those related to intense precipitation, will become more common and intense as a result of human-induced climate change, causing damage to infrastructure, private properties and limiting mobility. RotH2O helps to address this challenge by creating a permeable surface that helps to relief the pressure on the drainage system.

Thanks to RotH$_2$O, stormwater is collected underground in a tank and can be reused in the neighbourhood for purposes that do not require high water quality (i.e. cleaning the roads, watering gardens). Through the sustainable reuse of rainwater, RotH$_2$O will reduce the city's overall water demand.

Consequently, RotH$_2$O can be part of the Sustainable Drainage System that Leicester is planning to implement.

Moreover, RotH$_2$O is a win-win solution as it also provides benefits in non-emergency situations. Firstly, all those connected to regular roundabouts: traffic reduction cutting CO_2 emissions, less severe car accidents, less energy consumption due to less traffic lights. Secondly, it brings new advantages thanks to the vegetation installed on top. Plants absorb pollutants, mitigate the urban heat island effect and create a small island of biodiversity inside the city.

Although RotH$_2$O takes some extra time and budget to be built, it will help to avoid costs caused by flooding and pollution. The same solution can be adapted to other urban elements such as traffic islands and bicycle paths, creating an archipelago of resilient islands in any city that faces urban flooding challenges.