

Climate Change Adaptation Through Stormwater Management

Section: Environment and ecology

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In our daily lives, when we walk through the streets of the city or the town we live in, we are so focused on what is happening on the surface that we don't stop to think about everything that's going on beneath it, or we simply take it for granted. However, on Friday, I had the opportunity to visit the underground workings of the city of Barcelona: [the stormwater regulation tank beneath Joan Miró Park](#).

Located under Joan Miró Park, this tank has a capacity of 55,000 cubic meters, equivalent to 22 Olympic-sized swimming pools. It is one of the most iconic in the city and is used for educational and cultural visits.

Barcelona has developed an extensive network of underground stormwater tanks as part of its strategy to prevent flooding and manage water resources sustainably. These are large underground cisterns that store rainwater during episodes of heavy storms. They are connected to the sewer system and are activated automatically when the water level on the streets reaches a critical threshold. Once the rain stops, the stored water is released in a controlled manner to treatment plants, preventing flooding and reducing sea pollution. These tanks are a key element in the resilience of Mediterranean cities in the face of climate change, which is expected to bring more intense and concentrated rainfall. [In a scientific study](#)

[conducted in Alicante](#), another Mediterranean city, the results show that rainwater has become highly important in urban water management, “as the city is now using a resource that previously went to waste and created problems”. Therefore, [as shown by another study conducted in Ontario](#), stormwater management has become a key measure in the governance of climate change adaptation.

Currently, Barcelona has 15 underground tanks with a total capacity of up to 500,000 cubic meters. The City Council plans to build 31 additional tanks, with an investment of 20 million euros, as part of its Comprehensive Sanitation Master Plan for Barcelona (PDISBA). This expansion aims to improve the city’s resilience to extreme weather events and climate change.