Let it rain...

Designing a local waterplant including a museum and restaurant to solve urban rainwater problems

Rotterdam (The Netherlands)

About the project

This architecture project is designed for the graduation studio, Delta Interventions at TU Delft. This is an interdisciplinary studio in which students are challenged to find innovative and endurable build interventions that deal with the changing climate, water problems and the Delta.

The project is situated in the city centre of Rotterdam, beside the Rotte, the Hoogstraat and a historical church. It combines a museum, restaurant and open air theatre with the local rainwater system. Like a waterplant, it collects, stores and purifies rainwater and makes it possible to re-use. It can easily provide the surrounding buildings and enclosed functions with fresh water.

Rain & Climate Change

The climate is changing, that is general knowledge. The frequency of rain showers will decrease, which leads to longer periods of dryness. The content of a rain shower will increase, so more rain will fall in a shorter period of time. Extreme showers will occur more often in the future.

In hardened areas, like urban areas, the rainwater flows into the sewer, combined with the waste water from houses, offices and factories. During heavy rainfall the polluted sewage water is discharged into streams, canals, ditches or rivers. In the future the extreme showers will increase the amount of overflow! This infects the environment and causes water problems. In the case of Rotterdam the rainwater is discharged in the Westersingel, which frequently overflows.

Sustainability

The design collects rainwater, temporary stores it and therefore makes the sewer system unnecessary. It can provide its surrounding buildings with fresh water and purify waste water. The building is only partly heated to reduce energy use and solar energy cells are integrated panels in the facade design.

Project info:

Name: Let it Rain
Concept: using a local waterplant to solve rainwater problems & integrated water in the architectural design
Date: October 2011
Location: Hoogstraat 177, city of Rotterdam
Functions: water museum, restaurant, open air theatre
Area: 3700 sqm

Water system - connecting surrounding buildings