Benthemplein Water Square, Rotterdam, The Netherlands

Background

Rotterdam is a coastal city located in South Holland province at the North Sea, within the delta of Rhine-Meuse-Scheldt river. It is the second largest city in The Netherlands, having a population of 0.65 million (2020). It covers an area of 319 sq. km. out of which 206.44 sq. km. is land area. It is the largest port city in Europe and is often known as ‘Gateway to Europe’.

Rotterdam has a high vulnerability of extreme events arising out of climate change as it is a coastal city which is below sea level in parts. As an initiative to build resilience regarding climate change, Rotterdam has been designing to manage floods due to extreme rainfall and sea level rise. The various initiatives include roof gardens, green roofs, floating buildings and water plaza.

Strategies and Interventions/ Innovation.

Water Plazas are areas specifically designed to flood, thereby collecting water and discharging it at a slower rate. Most of the time the water square will be dry and in use as a recreational space. The design is divided into two main parts: a sports area and a hilly playground. The space is captured by a green frame of grass and trees (fig: Concept Plan for Water Square).
When heavy rains occur, rainwater that is collected from the neighbourhood will flow visibly and audibly into the water square (fig.: Technical working of Water Square). Short cloudbursts will only fill parts of the square. When the rain continues, more and more parts of the water square will gradually be filled with water. The rainwater is filtered before running into the square.

The rainwater is held in the square until the water system in the city has enough capacity again. Then the water can run off to the nearest open water. The water square is therefore also a measure to improve the quality of the open water in urban environments. After it has been in use as buffering space, the water square is cleaned. The water square is designed to manage different levels of flooding based on different seasons and anticipated extreme events

**Additional/ Further information:**