

HOTSPOTS COMBINE THEORY AND PRACTICE OF CLIMATE ADAPTATION

Rotterdam Climate Proof with Dutch hotspot approach

How can the urban region of Rotterdam, situated below sea level, with its international seaport, industries, economic activity and its many residents, be protected against climate change? Hotspot Rotterdam Region incorporates expertise, practical strategy and policy to make the region climate proof.

MAARTJE SMEETS



Water comes to Rotterdam from four different directions. The region is situated on the sea coast and the rivers Rhine and Meuse flow through the area. Precipitation has been increasing as a result of climate change and, combined with the rising sea level, is destabilizing the groundwater level. To prepare itself, the region has developed a long-term vision based on scientific research. Rotterdam Climate Proof - as part of Rotterdam's Climate Initiative - has translated that vision into more concrete action programmes that tackle issues and design concrete measures for the short-term.

“The hotspot approach enables us to acquire knowledge and learn from experience which climate adaptation measures are effective and which aren't”, says Arnaud Molenaar, coordinator of the Hotspot Rotterdam Region. The work is based on the scenarios developed by the Delta Committee and the Royal Netherlands Meteorological Institute (KNMI). However, these scenarios contain national rather than regional data whereas urban deltas would benefit far more from knowledge concerning regional and local effects of climate change. “Farmers, for instance, often know a great deal about local climate patterns.” Erik Hovingh, staff member of the Schieland and Krimpenerwaard District Water Board explains. “They can forecast very accurately whether a rain shower will move

Water plazas, Rotterdam.

ILLUSTRATIONS FROM THE BOOK 'THE URBANISTEN AND THE WONDROUS WATER SQUARE'.

across the river or not. But their knowledge is not scientific. The hotspot programme has initiated regional research in cooperation with the KNMI. The research findings should result in developing a local weather atlas, upon which the region can base its policy and take the appropriate measures.”

In a hotspot the focus is not only on the distant future but also on tackling issues that are causing problems right now for residents and the business sector. After heavy rainfall, basements used for storage in the centre of Rotterdam are regularly flooded. For a long time the Dutch authorities told the population: “Go to sleep peacefully, we’ll make sure there will be no flooding.” But today the government wants citizens to participate. What can the government do and what can you do yourself? In the case of the flooded basements it means that the government will adopt mitigating measures to combat climate change. The occupants themselves should

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make their basements waterproof and only store things that won’t suffer too much damage if flooding occurs. If your company is located outside the dikes, you should install your computers on the first floor, a very simple but effective measure that will save you a lot of trouble.

The government, of course, ensures that the dikes won’t break. But according to Hovingh, it will cost too much to guarantee

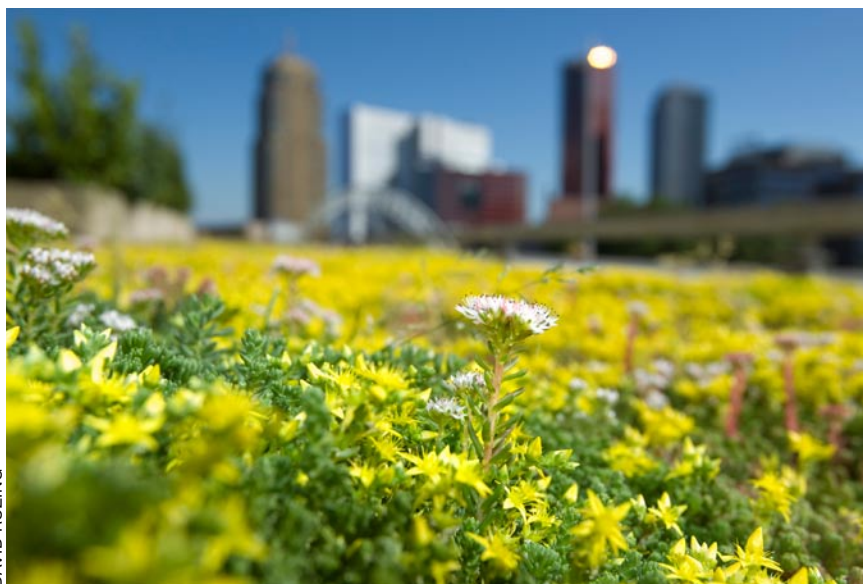
that, in a densely populated region like Rotterdam, citizens will keep their feet dry at all times. “That’s why, for instance, we are now looking at ways of incorporating excess water into the infrastructure and into high-quality public space. So we accept that there will be excess water but we will look for spaces to store it.” Water plazas are an example of this approach. These plazas are designed to store excess water after heavy rainfall, thus preventing streets and basements from being flooded.

Molenaar adds that it is important that delta cities continue to exchange their expertise, as happened during the ‘Deltas in Times of Climate Change’ conference. “The measures we have devised for Rotterdam cannot simply be implemented in other cities without any adjustments. But cities can pick and choose what is relevant to them. We have learned a lot from the evacuation drills that are being held in Shanghai, for instance, or from the way New Orleans is now being redeveloped. Japan has a great deal of expertise when it comes to mediating for land expropriation. In this way, every city and every country is seeking the best possible solutions, which others can tap into”.

Following the Dutch tradition of consensus, Hotspot Rotterdam Region has invited different parties for consultation to achieve the best possible result. The Port of Rotterdam Authority, for instance, is taking part in the discussion on the flexible closure of the Rijnmond area. Molenaar: “The economic damage to the port of Rotterdam will be limited if the closure is flexible. These kinds of considerations and input are extremely important because Rotterdam needs to adapt to climate change but at the same time it must remain an attractive place to establish business. The strength of the hotspot lies in its ability to facilitate close cooperation between public and private parties.” ■

Arnoud Molenaar
Coordinator of the Hotspot Rotterdam Region
and Manager of Rotterdam Climate Proof
T. +31 102672939
a.molenaar3@bsd.rotterdam.nl

Erik Hovingh
District Water Board Schieland and
Krimpenerwaard
T. + 31 104537485
e.hovingh@hnsk.nl



DAVID ROZING

Rotterdam Climate Proof

Permanent protection and accessibility of the city and the port are key elements of the programme. The full focus is on creating additional opportunities to enhance the attractiveness of the city in terms of living, recreation, working and investments. Rotterdam Climate Proof (RCP) has stimulated the development of green rooftops, which can retain rainwater longer. Another example is the Museum Park garage, which has a water storage capacity of 10,000 litres. Research is being done to gain an understanding of the local climate, urban heat islands, the rise in sea level and the increase in river discharge. Last but not least, RCP wants residents to participate. The authorities cannot cope with the anticipated extreme changes on their own; citizens are called upon to play an active role, one example being the subsidy that has been granted for creating green rooftops.