

Developing local districts

Climate adaptation in practice

To be future-proof, neighbourhoods need to be energy-neutral, climate-proof and green, and they need to have good social cohesion. For the latter, resident and business participation is crucial. How can this be achieved? The answer is to involve them in the process from an early stage.

Zomerhofkwartier

For a long time, the Zomerhofkwartier district (ZoHo) was a forgotten area at the periphery of the centre of Rotterdam. Office buildings stood empty, new plans were put on hold because of the economic crisis, and it became increasingly unsafe. A number of parties, including the Havensteder housing corporation, De Urbanisten (who also designed the Bentheplein water square in this area), the Schieland en Krimpenerwaard regional water authority, STIPO (office for urban development), and Rotterdam City Council, decided not to demolish the neighbourhood, but instead opted for a process of gradual urban development, or 'slow urbanism'. Linking this development to solving the problems of flooding after heavy rain turned the Zomerhofkwartier district into a laboratory for spatial adaptation, where new applications and concepts can be tested and demonstrated. Zomerhofkwartier project manager Bart Peters says: "We started to encourage and facilitate bottom-up initiatives. Because of the low rents, more businesses started returning to the district. ZoHo and the adjacent Agniesebuurt district are very stony in appearance. That is why we made the new tenants responsible for making the outdoor environment greener.

This led to the creation of the rain garden and the Katshoek Rain(a)way Garden. These are among the many solutions for reducing flooding on the streets, which in turn relieves the burden on the drainage systems and curtails the level of flooding." More plants, flowers, and trees mean not just a greener appearance, but also offer a more pleasant living environment. Greater social cohesion is created, because residents and businesses work side-by-side in the gardens. "In the Zomerhofkwartier, we are combining climate-proofing measures with local development, wherever possible. Increasing greenery and improving outdoor spaces go hand-in-hand. For example, maintenance work on the drains can be combined with putting extra greenery in place."

The Zomerhofkwartier has gained new life as a result of all these developments. Around 100 businesses and residents are now actively involved. Working on the district both top-down and bottom-up leaves greater scope for innovation, generates support among the population, and enables the work to be carried out more quickly.



For the Katshoek Rain(a)way Garden, 100 metres of parking spaces have been converted into areas of greenery. A special tile, the Rain(a)way tile, captures excess rainwater on the façade and ensures that the water is absorbed slowly into the ground.

This means that there is less of a burden on the drainage system during periods of heavy rain. This is a new concept by designer Fien Dekker that has been inspired by Japanese architecture.



Building a rain garden

Robert Fruinstraat

Another local project in Rotterdam is the Robert Fruinstraat in the Middelland district, between the centre and Delfshaven. The street consists of residential addresses and various organisations, including a primary school and an artists' cooperative. On the face of it, it is a pleasant and lively tree-lined street, home to many families. However, it does have a problem - during heavy rain, the back gardens become flooded.

"The drains have to be replaced and a new electricity network is going to be installed," says Laurence Peels, the Robert Fruinstraat project manager. "Given that the street has to be dug up, we are going to see if there is anything else we can do. Public spaces have always been tackled in a one-dimensional manner - physically. But what actually makes a

district liveable? Are the people in this area happy? What could be improved? We decided to ask the residents and now we're organising workshops with them and with other interested parties. The water stays in the gardens, which are not public spaces, so we have involved the housing corporations and homeowners as well. We have delivered flyers and asked a few key people in the street to help organise this. Of the almost sixty addresses in Robert Fruinstraat, seventeen people have indicated their willingness to contribute ideas on the future of the street, which is quite a high number.

You need a small group of committed residents: it is a question of quality, not quantity. We will be using workshops to explore with the people in question what they believe to be important, and will be discussing such themes as greenery, water, energy, and social cohesion. The aim is to create a robust and energy-neutral street that the residents can be proud of.

A street where people say, "I want to stay here." A district with dry rear gardens, with solar panels on the roofs, for example, where children can play without a care.

If we bring all our various dreams and plans together, the street could become an example for all streets where the drainage system has to be replaced in the future. Once all the plans are clear, we will be organising a party for the whole neighbourhood."

Leonidas

In the De Esch district, building work is underway on a remarkable residential area. The former Leonidas hockey site is going to be home to detached sustainable houses in a green setting, and buyers will be able to design their own homes. Leonidas will be a sustainable district, with buildings made as much as possible from natural materials, and with little or no energy consumption. An innovative climate-adaptive building method has been chosen, whereby the ground is not preloaded and therefore may not be raised. That means that the homes have to rest on a special construction so that they 'float' on the peat or on the water, or stand on piles. Leonidas project manager Henk Koedijk says, "Only forty percent of the area may consist of hard surfaces, with the remainder being left for

water storage. With most construction projects, you force the water out of the ground and puddles appear elsewhere. Using this method of building allows the water to seep down into the ground. We now have no problems in this area, although things could be different in ten years' time, as a result of climate change. However, using this method means we are able to anticipate the problems."



Bart Peters is involved with complex urban development projects that enhance social, economic and ecological value. He graduated in economics from the University of Amsterdam and took a Master's in City Development at Erasmus University Rotterdam.



Laurence Peels has been working as a project manager for Rotterdam City Council since 2007. She is involved mostly with water-related innovation projects and large-scale maintenance of the major bridges in Rotterdam.



Henk Koedijk has been working for the 'Stadsontwikkeling' ('urban development') cluster in various positions since 2014: area development programme coordinator, food markets process manager, and Leonidas project manager.



Leonidas



The tidal parks have been made possible in part by LIFE funding from the European Union.

