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A CITY PARK ON TOP OF SHOPS AND A DIKE

INTRODUCTION

Dr.ir. Peter van Veelen is Delta Coordinator for the Delta, Infrastructures and Mobility Initiative at TU Delft University of Technology. In the STW-MFFD program he worked as a PhD candidate in the project 'Urban design challenges and opportunities of multifunctional flood defenses'.

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The Roof Park ('Dakpark') is an elevated park on a former railway yard in the Delfshaven quarter in Rotterdam. The park is located on top of the roof of a new shopping centre, which includes a parking garage (hence its name, 'dak' means 'roof'). The park is the largest green roof in Rotterdam and one of the largest in the Netherlands. The park offers a playground, communal garden and a Mediterranean garden with an orangery (figure 9). The Roof Park is 1,000 m long and 80 m wide. The park is situated 9 m above street level. There is 25,000 m² retail spaces under the city park, and the structure includes a car park with space for about 750 cars. The gardens bring more nature to the district, and the project as a whole has provided more employment. The Roof Park is combined with a dike, the 'Delflandse Dijk', that is part of dike ring 14, which protects the urban area of the Randstad.

The idea for a large city park is part of an old agreement with residents to add more green space that stems from the urban renewal process of the surrounding district 'Bospolder - Tussendijken'. The parties involved in its inception include the Municipality of Rotterdam, the Water Authority of Delfland, and DURA Vermeer (Stichting Dakpark Rotterdam, 2012). Initially, the Water Authority of Delfland strongly opposed this project, but under strong pressure from the Rotterdam Municipality, the project was finally realized. The Water Authority was only involved as a licensing authority and the municipality has promised to pay the extra costs involved in strengthening the flood defenses in the future (Siemerink, 2012).

The district authority finally decided to designate 80% of the space that became available for 'green' purposes. The project developer and

owner of the area, the Rotterdam Port Authority, intended to develop a commercial and industrial zone, which was conflicting with the residents' ideas. Ultimately a multifunctional structure has been designed that accommodates shops, offices, and a parking garage on the ground floor and first floor and a park with leisure functions on the rooftop (Kenniskbank Platform31, 2013). Important issues that had to be solved were the division of the costs, the presence of objects like stair-cases in the flood defence, and the by-law of the Water Authority which contains regulations regards building in the vicinity of the flood defence (Van der Leeuwen, 2008).

The original dike is not integrated into the new structure of the Roof Park building itself (Figure 4). Actually, the shopping/offices/parking complex is situated next to the old dike and the space in between the complex and the dike has been filled out by soil. Meanwhile, the crest height of the dike was raised to make it 'climate-proof', which means that a worst-case scenario has been taken into account for the design lifetime of the flood defence. The complex is situated in the outer zone, the 'influence zone' of the flood defence according to the definition of the Water Authority. This is only allowed under exceptional circumstances, but in this case it is compensated by reinforcement of the park strip. Several agreements, e.g., about foundations in the core zone, and inspectability, ensure the flood protection function in the future (City of Rotterdam, 2008).

This text is an adapted version of part of the chapter 'Design challenges of multifunctional flood defenses. A comparative approach to assess spatial and structural integration' published in Flowscapes. (2015). All authors contributed equally to this chapter.



Figure 1 (left). Mediterranean garden plus orangery on the Roof Park (Photo courtesy Mark Voorendt).



Figure 2 (bottom left). Frontside of the Roof Park (Photo courtesy Mark Voorendt).



Figure 3 (bottom right). Backside of the Roof Park (Photo courtesy Mark Voorendt).