# Career Sheet: Leading Professional in Water Resilient Cities

## Nanco Dolman, Leading Professional in Water Resilient Cities, RHDHV

I am leading professional in Water Resilient Cities at Royal HaskoningDHV, with a Master of Science (MSc) in Civil Engineering from Delft University of Technology (1998), specialized in water management in urban areas. Between 2006-2008 I did part of the landscape architecture study at Amsterdam Academy of Architecture. And from 2011 to 2016 I was part time lecturer Adaptive Urban Development at the Rotterdam University of Applied Sciences. As one of the front runners in Water Sensitive Urban Design (WSUD), I worked in various flood resilience strategies for delta cities, like 'Bangkok Adaptive City 2045', the 'Rotterdam Adaptation Strategy', the 'Greater New Orleans Urban Water Plan' and the 'Comprehensive Urban Water Strategy for Hoboken'. Currently I am involved in two international research projects: 'CATCH' which focusses on applying the Water Sensitive City framework for climate adaptation in the North Sea Region, and 'Blue-Green Futures' – an UK-USA-China-Netherlands collaboration focusing on multifunctional Blue-Green Infrastructure to address water challenges.

## OVERVIEW OF THE JOB

As a leading professional in Water Resilience Cities, I strive for bridging the gap between hydrological engineering and ecological design. The emphasis of my work lies in the search for nature-based solutions to ensure sustainable water management, improve climate resilience and enhance liveability. My job is often balancing on the cutting edge of urban hydrology, landscape architecture, ecology and (water) planning.

## WHAT INSPIRED YOU

Water as the driving force in nature. 90% of major disasters are associated with water-related hazards. Water is the connecting challenge in making cities resilient with nature as the inspiration for climate and multifunctional solutions, becomes a way of looking at cities and at how to make them climate- and future-proof.

## TYPICAL WORKING DAY

Besides (too many) meetings, I do research on effects of extreme weather events (e.g. floods), work on producing reports (e.g. adaptation strategies), making blue-green infrastructure contributions to urban master plans and landscape design (e.g. urban wetlands), and facilitate the dialogue process between

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stakeholders. Considering my projects are both national and international this requires a high degree of flexibility. Besides projects I get energy from writing publications, delivering guest-lecture and as an editor for the IWA Journal of Water & Climate Change.

## STUDY & CAREER PATH

After secondary school I decided to study Civil Engineering. Topics of water and the environment quickly caught my attention. After graduation in 1998 as Master of Science, I started working as an urban hydrologist at engineering firm Oranjewoud (now: Antea). Some years later I switched to Royal HaskoningDHV because of more international possibilities and substantive deepening in urban water, spatial planning and climate resilience projects. The latter also motivated me to study landscape architecture at the Amsterdam Academy of Architecture, between 2006-2008. Although I didn't finish the master, I was and still am heavily inspired by the power of urban and landscape design. From 2011 to 2016 I combined my work as a consultant with being a part time lecturer in Adaptive Urban Development at the Rotterdam University of Applied Sciences.

Most of my colleagues have a somewhat more traditional professional path. Yet, I am a strong believer in the power of bridging disciplines. We need more young professional who can sit between delta design, delta engineering and delta governance.

## KEY SKILLS

In my job the focus lies on analytical, communication and technical skills, especially:

- Consulting by delivering strategic advice to our clients.
- Research, e.g. performing feasibility studies, modelling nature-based solutions to determine performance and effects and participate as practitioner in research projects.
- Collaboration is key. Implementing blue-green infrastructure and nature-based requires support and commitment of actors and stakeholders.
- System analysis is like the foundation of my work, e.g. water system analysis to understand how the natural system works and how urbanisation and climate change affects the natural balance.

## CAREER PROSPECT

There is a recognised need for a fundamental change in how cities implement nature-based solutions in its urban planning to achieve resiliency to climate change and support healthy urban living. Climate

change and the COVID-19 pandemic highlights the value of green space in cities. Careers can be found in a wide range of sectors, especially engineering, architecture, local governments and even contractors.

## CHALLENGES

Both water and climate change may trigger the next financial crisis (World Economic Forum), in particular when it is considered how little tangible action has been taken to address climate change adaptation and the water crisis. So many plans are produced, and strategies have been developed. And many cities and regions lack sufficient resources and knowledge, including nature-based solutions. Therefore, I see challenges in promoting knowledge development, cooperation and finance.

## YOUR ADVICE TO STUDENTS

Choose a study or specialization you like, and never stop learning and developing. Try to find your place in between the traditional disciplines.

## YOUR ADVICE TO TEACHERS AND PARENTS

Tell students and your children about nature, encourage an ecologically attuned lifestyle. After all we are part of the urban ecosystem.

## LEARN MORE

To learn more about my work and nature-based solutions in cities, please check out the following online resources:

- Nature-based solutions, iReport Royal HaskoningDHV (2020).
- Nature-Based Solution in Cities, GPSC-webinar (2020).
- Blue-Green Futures blog series (2019-2021).
- Blue-Green Infrastructure: the theory and practice – Rotterdam, ICE-webinar (2020).
- CATCH Interreg NSR project website (2017-2021).
- 'Integration of water management and urban design for climate resilient cities' chapter 2 of 'Climate Resilient Urban Areas' book (Palgrave Macmillan, 2021).