

# Fact sheet Watermanagement

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## Bachelor Programme Watermanagement

September 2008, Rotterdam University of Applied Sciences has started with a new bachelor course Watermanagement in the Netherlands. This new degree programme focuses on water management in delta cities and urbanized lowlands. Given the demographical and climate challenges that delta cities are facing today the importance of sound water management is widely recognised.

Design and implementation of such water management is a difficult task. Water managers are needed with both technical and social competences. Rotterdam University aims to educate professionals, who design, develop and maintain complex infrastructural and urban planning projects from a water perspective, addressing the complete water system and taking sustainability, climate robustness and innovation as starting points.

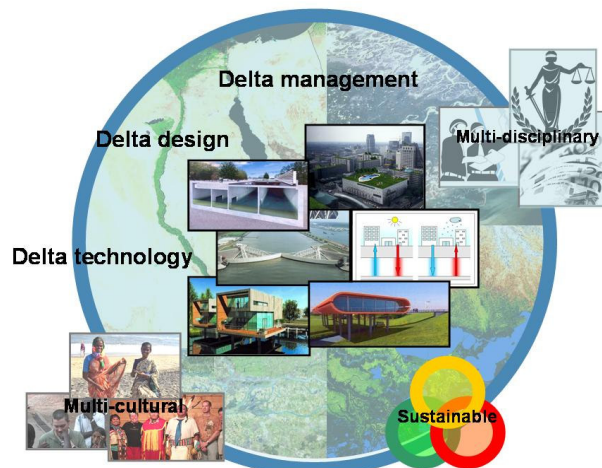
## Facts

The facts presented illustrate the relevance of the bachelor programme Watermanagement:

- Dutch engineers and water managers are globally respected pioneers in the field of water management. The Dutch Delta Works, but also large irrigation schemes in countries such as Indonesia and Afghanistan, have made Dutch water management famous. More recently, Dutch expertise is used in Dubai, New Orleans, Oman and Indonesia.
- Rotterdam is an international city, the Watermanagement students are therefore diverse in terms of ethnic background, study background and gender.
- The bachelor Watermanagement has a strong international component and has been developed in close cooperation with water professionals from the public and private sector in the Rotterdam area.
- Strong links with foreign universities offering water management programs. (participation of Rotterdam University in the EU SAWA-project (Strategic Alliance in Integrated water management Actions).
- Research on water management issues is performed by professionals, staff, and students through the chair "City and Water" led by Piet Dircke, director water at Arcadis.
- The water sector is globally one of the fastest growing sectors. The average growth of the sector over the past years was estimated at 11% per year, worldwide.
- Presently, the demand for water managers in the Netherlands can not be fulfilled.

## The Curriculum

The Watermanagement curriculum is built upon three pillars: delta technology, delta design and delta management, and has been developed in close corporation with professionals. Students learn to apply knowledge of these pillars in professional situations including policy making, spatial planning, management of the built environment and consultancy. Special emphasis is put on water management in an international context.



**Figure 1;** Delta Technology , Delta Design and Delta management are the three pillars of the degree programme Watermanagement of the Rotterdam University of Applied Sciences.



## Sustainability & Water management

Adapting delta cities to climate change, while creating a sustainable living environment for their increasing population, is a key challenge for today's water managers.

Sea level rise, increased river discharges, more frequent summer droughts are just a few examples of consequences of climate change that affect the Netherlands. Meanwhile other deltas in the world are experiencing the consequences of sea level rise and extreme weather events as well. Recent floods in New Orleans and Manila in October 2009 are just a few examples.

Climate change causes major water challenges. For delta cities, these challenges are even more urgent. More than half of the world's population lives in delta cities. All these people need protection against flooding, clean drinking water and sanitation to prevent water borne diseases. However, water is not only a nuisance. Attractive water bodies, boulevards along rivers and fountains for example increase the living quality in a city.

Rotterdam has strong ambitions to become a sustainable (water) city and a leading example within the field of delta technology and delta design. The city participates in the Bill Clinton Climate Initiative and is one of the hotspots of the Knowledge for Climate programme. Rotterdam's ambitions can also be seen in the recently published city water management plan entitled "Waterplan 2 Rotterdam, towards an attractive city".

## Examples of Co-operation

### Floating pavilion

RDM Campus forms an illustrative example in the cooperation between educational institutes and the profession field. At this former port area, the Port Authority of Rotterdam, Rotterdam University of Applied Sciences, Albeda college (a school for intermediate vocational education) and Woonbron (a housing corporation) are developing a creative environment for innovation within the fields of building, transport and energy. At RDM campus, students from both Rotterdam University and Albeda work together with innovative companies to stimulate interaction between students and professionals. Rotterdam University is intending to build a floating pavilion on the RDM campus together with professionals from DURA Vermeer and Flexspace, a first step towards floating communities.

### Waterfront development Hamburg & Copenhagen

Because of the trans-boundary nature of water management issues and the export potential of knowledge about delta design, delta technology and delta management, the bachelor programme Watermanagement has a strong international component. An example of an international project assignment is waterfront development for Rotterdam, Hamburg and Copenhagen. This project was part of a first year student excursion and organised in close co-operation with Hafencity University Hamburg, Leuphana University and Copenhagen University.

### Rotterdam Climate Proof

During the international conference "Rotterdam Waterstad", a joint effort of the municipality of Rotterdam and Rotterdam University of Applied Sciences, students presented the results of their first project on water challenges of mega cities to the international audience. Among the audience was a range of private sector representatives and Ruud Lubbers, chair of Rotterdam International Advisory board and former Prime Minister of The Netherlands.

### Knowledge centre TransUrban

Within the Rotterdam University of Applied Sciences, applied research is performed by knowledge centres, with a research agenda based on demands from the professional field. Research is performed by professionals, staff and students in mixed teams. Strongly involved in the water management education is the knowledge centre Transurban through the chair "City and Water" led by Piet Dircke, director water at Arcadis. Research themes are: the safe water city, the attractive water city, the sustainable water city and port water proof. Concrete activities are Twinning USA, where water knowledge is exchanged between the Netherlands and the USA, namely Louisiana and California.

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