

Flood Safety Durban



Introduction

Flood safety Durban is a student project, non-profit engineering initiative that aims to create a safe and appealing living environment in Durban, South Africa. The research will focus on the coastline of Durban and its Central Business district. The project, commissioned by the municipality of Durban, will commence on August 22 2016 and will continue over a period of 10 weeks.

Our multidisciplinary team of 6 Master students of Delft University of Technology sees a major challenge in solving a complex problem by combining our respective knowledge of Coastal Engineering, Transport, Infrastructures & Logistics and Construction Management & Engineering. The project is recommended by respected directors and professors and supported and supervised by senior engineers from Delft University of Technology.

The project partially relies on support from companies in this industry. We kindly invite you to read more about this project and our project team, hoping that you will consider participation in Flood safety project Durban.

Flood safety Durban project team,

Martijn Bregman, Freek Gulden, Cecile Maan, Jasper Hoek, Sanne Aelfers and Dyonne op het Veld (f.l.t.r.)



Guidance



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Committee of recommendations



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Ms. Marisa Gerards
Ambassador of the Kingdom of the
Netherlands to South Africa

Problem definition

The city of Durban is one of the largest cities of South Africa located at the coast adjacent to the Indian Ocean. This coast suffers regularly from floods which occur during high waves induced by bad weather conditions and high tide. This leads to flooding of, among other areas, the beachfront and Central Business District of Durban. The occurrence of floods is likely to increase when taking sea level rise into account. Furthermore, little is known about the catchment runoff of the affected areas and the robustness of the infrastructure when evacuation would be necessary.

Goal

The project group Flood Safety Durban aims to develop a widely supported integrated solution for preventing floods and minimizing the consequences if a flood nevertheless occurs. In order to achieve this goal it is necessary at first to have a clear overview of the stakeholders involved in the spatial planning and coastal management of Durban. Furthermore the coastal engineering boundary conditions need to be identified clearly in order to gain insight in the flood probabilities and consequences. The insight into the stakeholders combined with the knowledge about the coastal situation will be used to create an optimal coastal defence strategy. Based on this strategy a master plan for a coastal defence system will be developed, possibly accompanied by evacuation plans in order to minimize the flood risk.

Martijn Bregman



MSc: Hydraulic Engineering
Specialization/Track: Coastal Engineering

Martijn Bregman (22) started in Delft with a Bachelors in Civil Engineering. After three years he was elected to take place in the central student council of TU Delft for one year full time. Representing 20.000 students directly towards the Executive Board was an enjoyable experience and gave much understanding in interaction between different stakeholders within an organization. Despite this he decided without doubt for a Master's in Hydraulic Engineering, specializing in the field of Coastal Engineering. Besides his studies Martijn also works part time for the recently established Green Office department of the TU Delft, which is dedicated to making the campus more sustainable.

Planned start of internship:
February 2017. Looking for a company to do an internship

Planned start of graduation:
May 2017

Graduation topic:
Unknown, looking for a company to graduate

Freek Gulden



MSc: Hydraulic Engineering
Specialization/Track: Coastal Engineering

Last year Freek Gulden (23) started with his Master Hydraulic Engineering at Delft University of Technology specializing in the field of Coastal Engineering. The first year of his master he has spend most of his time as a chairman of the Student Windsurf Association Plankenkoorts learning a lot about management, internal and external affairs and how to deal with them. He is looking forward to combine these skills with his technical background in a real life project together with an ambitious (multi disciplinary) group of students.

Planned start of internship:
November 2016. Looking for a company to do an internship

Planned start of graduation:
February 2017

Graduation topic:
Unknown, looking for a company to graduate

Cecile Maan



MSc: Transport, Infrastructure and Logistics

Specialization: Engineering

Cecile Maan (23) previously studied Business Analytics at the Vrije Universiteit of Amsterdam and is now a first year MSc Transport, Infrastructure and Logistics student at the Delft University of Technology. She is currently organizing the Study Tour to South America for the study association. Cecile enjoys working with others and she loves to travel. For these reasons this project really speaks to her.

Planned start of graduation:

February 2017

Graduation topic:

Unknown, looking for a company to graduate

Jasper Hoek



MSc: Hydraulic Engineering
Specialization/Track: Coastal Engineering

Jasper Hoek (23) followed a Bachelors in Civil Engineering at the TU Delft and also participated in the Bachelors Honours Program for excellent students. At the start of his Masters Jasper went to Kuala Lumpur, Malaysia, for eight months for an internship at the subsea structures department of an offshore consultancy firm. Currently he is following the Coastal Engineering track at the TU Delft and is looking forward to working on the Flood Safety Durban project together with his teammates.

Planned start of graduation:
December 2016

Graduation topic:
Unknown, looking for a company to graduate

Sanne Aelfers



MSc Transport, Infrastructure and Logistics Specialization: Engineering

In 2011 Sanne Aelfers (23) started with her Bachelors System Engineer, Policy analysis & Management at Delft University of Technology. In between of her bachelors and masters she participated in a voluntary project on micro entrepreneurship in the Philippines and got acquainted with different cultures in the Asian countries she explored after the project. Currently she is doing her Masters in the field of Transport, Infrastructures & Logistics. During her masters, she organized the Business Tour to several companies in Europe for her study association.

**Planned start of graduation:
February 2017**

**Graduation topic:
Unknown, looking for a company to graduate**

Dyonne op het
Veld



MSc: Construction Management and Engineering

Dyonne op het Veld (23) started in 2011 with the Bachelor programme Architecture, Building Sciences and Technology at the Delft University of Technology. After these three years she took place in a full-time student board of YES!Delft Students. During this year she was responsible for the financial part of the organization. Besides this a lot of students became enthusiastic about entrepreneurship by organizing 90 events a year. At this moment she is a first year student of the Master Construction Management and Engineering and works part-time as a student assistant at the Valorisation Centre to think about entrepreneurship at the DUT at strategic and organizational level.

Planned start of internship:

February 2017. Looking for a company to do an internship

Planned start of graduation:

April 2017

Graduation topic:

Unknown, looking for a company to graduate



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Flood Safety Durban



www.floodsafetydurban.com

