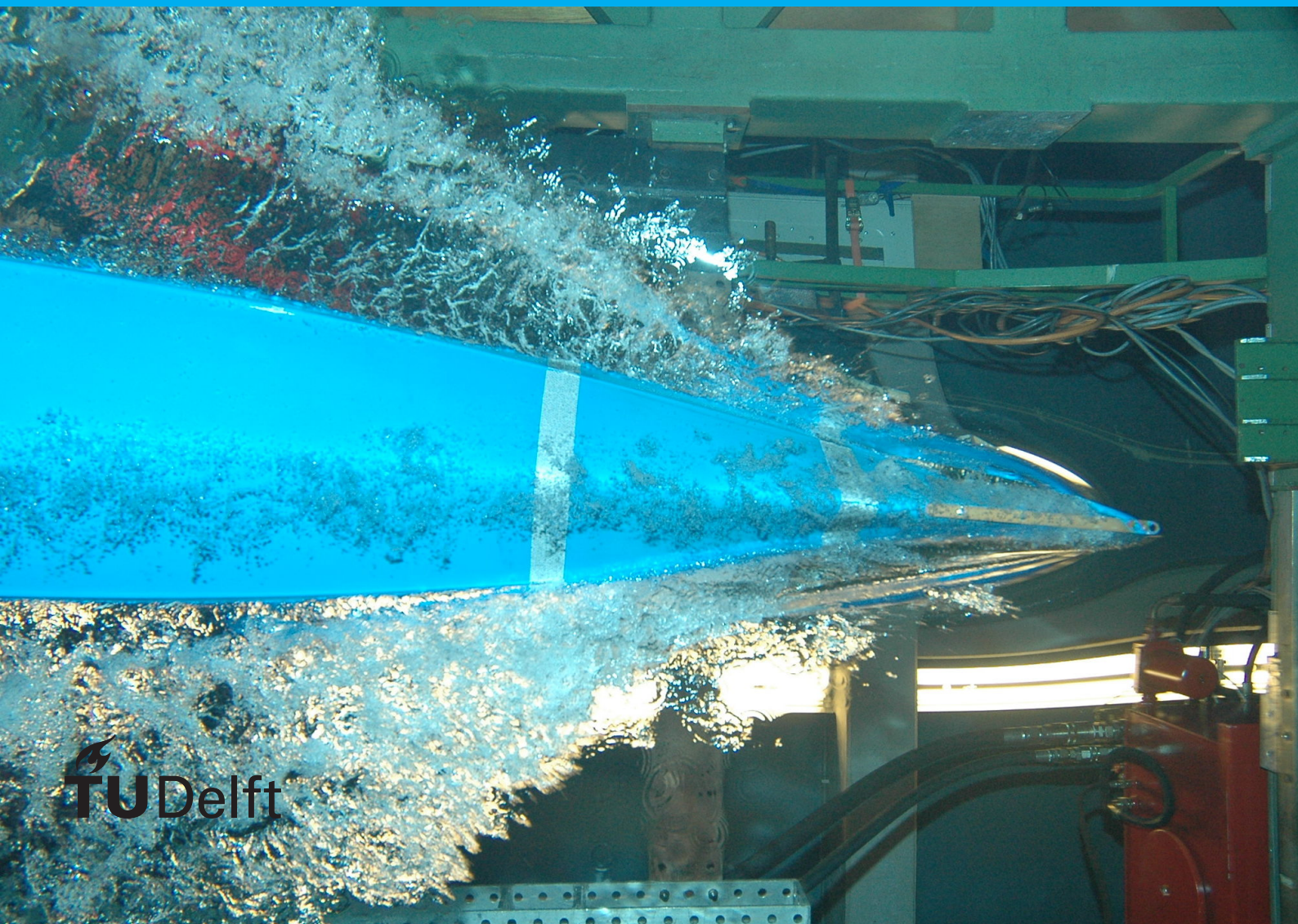


CIE5308

Breakwater Rehabilitation Romano Port

J. Gundlach – C. Rozas – L. Lange

Group 3



CIE5308

Breakwater Rehabilitation Romano Port

by

J. Gundlach – C. Rozas – L. Lange

Student numbers: 4450426 – 4519388 – 4512022
Project duration: March 18, 2016 – April 1, 2016

Contents

1	Notes	1
1.1	18.03.16 - lecture introducing exercise	1
2	Introduction	3
2.1	General Task	3
3	Design Criteria	4
4	Boundary Conditions	5
4.1	Location	5
4.2	Subsoil	5
4.3	Reference levels	5
4.4	Bathymetry	5
4.5	Waves.	5
5	Design Calculations	6
6	Drawing	7
7	Construction Method and Planning	9
8	Further Research and Validation	10
A	Function GumbelUnc.mat	11
	Bibliography	12

1

Notes

1.1. 18.03.16 - lecture introducing exercise

Main aim: design breakwater

1. new breakwater
2. adjust existing one

Location:

- ..

Present situation:

- cross-section, what they were supposed to build
- slide 9: measured cross-section

Assignment:

- three locations
- three design lifes: after so many years needs to be maintained/rebuild, not for design cinditions!
- something with the existing (Bas)...?

Design:

- assume: subsoil no problem
- Any idea where the rock comes from? Quarries in ALbania? Albania exports a lot of Marble to Italy. How about the stones sorted out?
- Infra structure in Albania not as good.
- Google Earth because you can check time. Check -design period and +design period from present.
- Play with colors in picture editor. Image processing for bathymetry stuff.
- Map Room: Libarary of faculty of architecture, first floor within library. And webpage of this library? And webapp.navionics.com (not working for 4G).
- Check wave data from design wind speed → should be in same magnitude as from Argoss (verify data)

Argoss:

- sells wave data
- www.waveclimate.com
- TuDelft DuT4321 valid until 31.3.
- Size of piece: find balance (density of data is the same, too big, not appropriate anymore, too small, not enough data any more)
- 1D, 2D, 3D
- don't use their model for nearshore

B.C.:

- B.C. damage vs. B.C. operation of port
-

Presentation:

- Why did you make this choices you made?
- Presentation and questions of group will be graded.
- No obvious information in the presentation
-

Report:

- Indicate 2.1 to 2.6 clearly in report
- Make it possible to enable contractor for a pricing
- Drawing on A3
- only cross-section, only one
- head needs not to be designed?
- only 10 pages text
- report should be understandable without annex
-

Calculation:

- bonus for differences due classical and probabilistic approach
- No assessment on skills in maths
-

PIANC:

- kennisbank waterbouw
- "codes, standards and design guides"
- ...
- "Books and reports"

Check:

1. google earth
2. make pdfs from ppt's
3. Argoss book online or from library
4. check demands on slides, slide 21 e.g.
- 5.

2

Introduction

2.1. General Task

By *Group 3* the breakwater in the South is looked at:

- adjacent to roundhead, axis 315°
- rubble mound single layer cubes
- rehabilitation
- 100 years design life
- quay wall in future

[1] ← this can be deleted as soon, as there is any other citation we can place, so to prevent error messages due to “no citations found”

Parameter	Value	Comment
Design life	100 years	
Annual downtime	3%	
Quay level	AL+2.0m	
Current rock armour (seaward)	3 to 5 tons	
Current rock armour (landward)	0.5 to 3 tons	
Current core material	0 to 1000 kg	quarry run material

Table 2.1: Parameters given by exercise

3

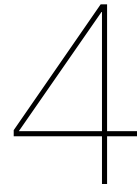
Design Criteria

see exercise 3.1

- Earth quakes: slope not steeper than 1:1.5, p. 4 of 5 Memo
- Maintenance road

Requirement	Return period	Verification method(s)	Design value	Calculated value
this is supposed to be a very long text to check whether it will automatically insert a line break	this is supposed to be a very long text to check whether it will automatically insert a line break	this is supposed to be a very long text to check whether it will automatically insert a line break	this is supposed to be a very long text to check whether it will automatically insert a line break	this is supposed to be a very long text to check whether it will automatically insert a line break
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x
x	x	x	x	x

Table 3.1: List of requirements



Boundary Conditions

see exercise 3.2

4.1. Location

4.2. Subsoil

4.3. Reference levels

4.4. Bathymetry

4.5. Waves

5

Design Calculations

see exercise 3.3

6

Drawing

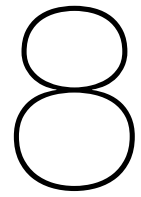
see exercise 3.4

This is one single page, where we can add the folded A3 of our drawing after printing. Included to not interrupt counting of pages.

7

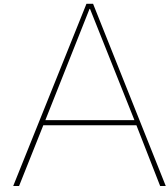
Construction Method and Planning

see exercise 3.5



Further Research and Validation

see exercise 3.6



Function GumbelUnc.mat

Whatever XX

Bibliography

- [1] A. K. Geim and H. A. M. S. ter Tisha. Detection of earth rotation with a diamagnetically levitating gyroscope. *Physica B: Condensed Matter*, 294–295:736–739, 2001. doi: 10.1016/S0921-4526(00)00753-5.