

The use of a floating quay for container terminals

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Gemeentewerken

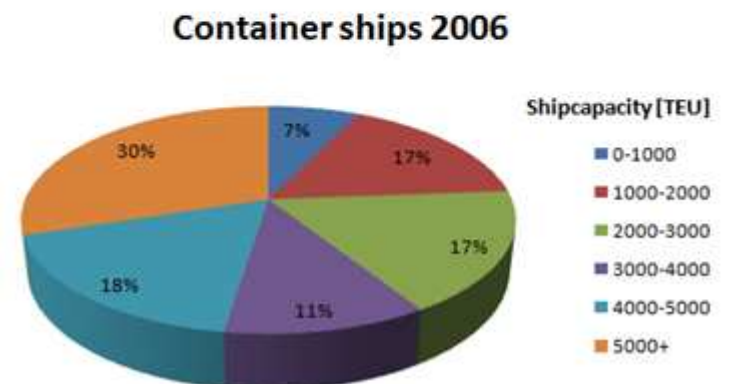
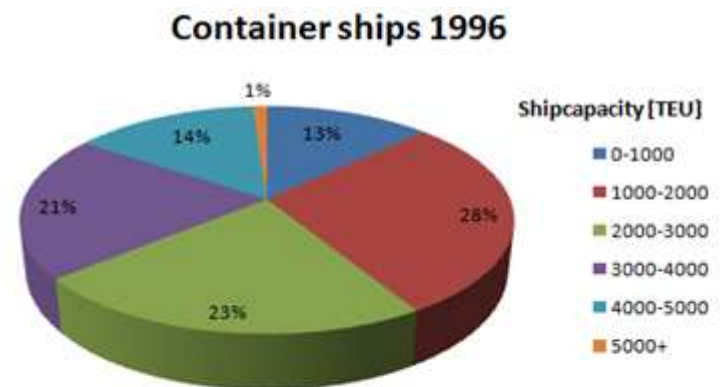
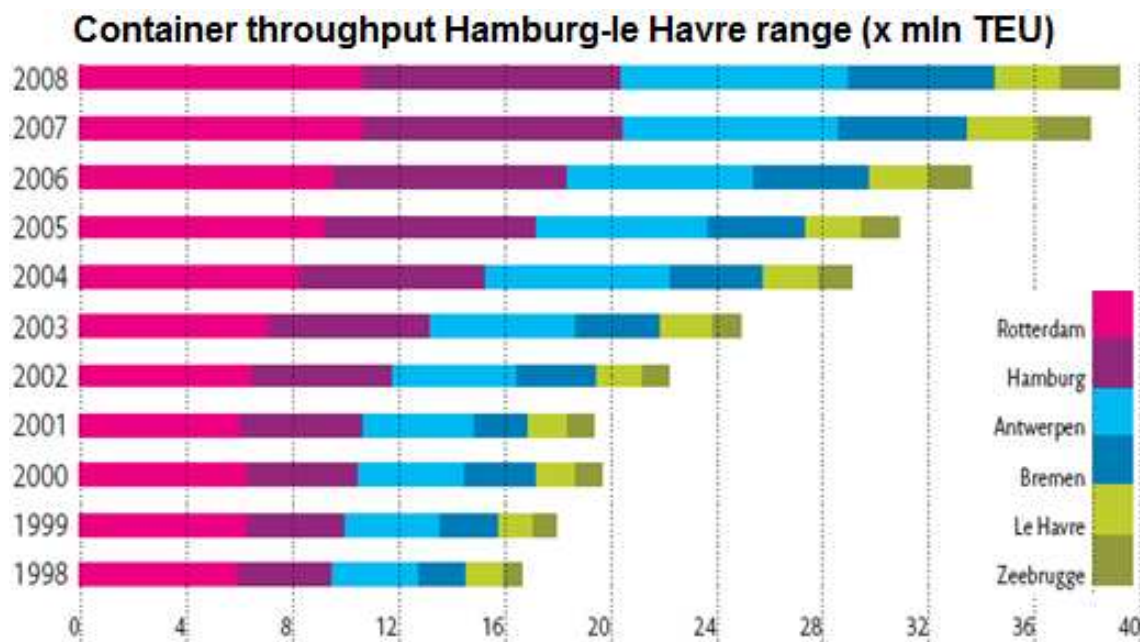
Content

- Introduction
- Concept
- Design considerations
- Chosen design
- Stability
- Conclusions and recommendations



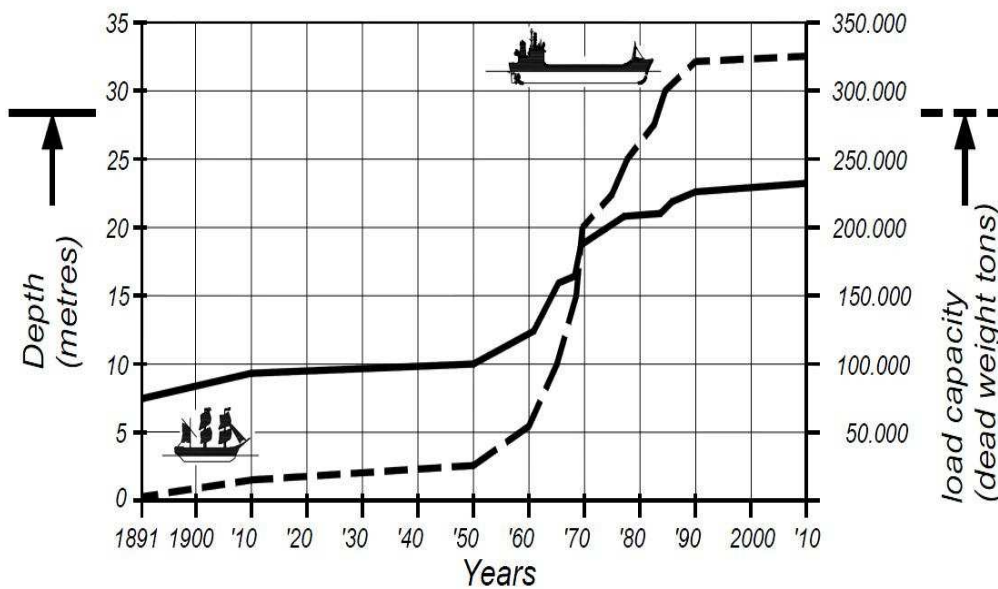
Introduction

- Increase of container transport
- Scale increase of vessels



Introduction

- Port expansion to deeper water
- Increasing retaining height quays



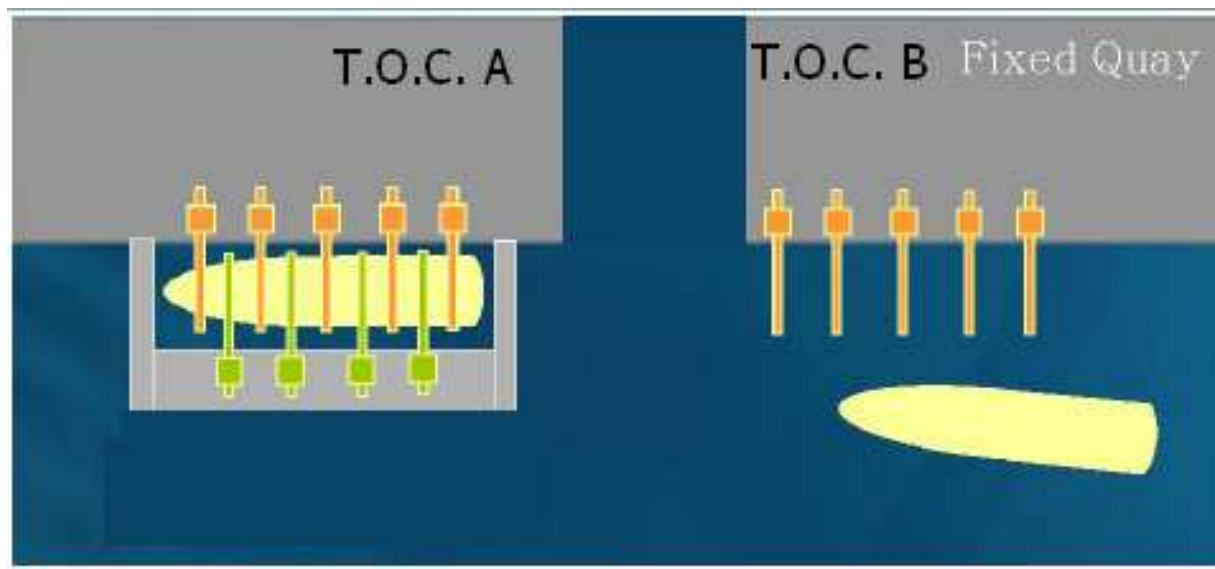
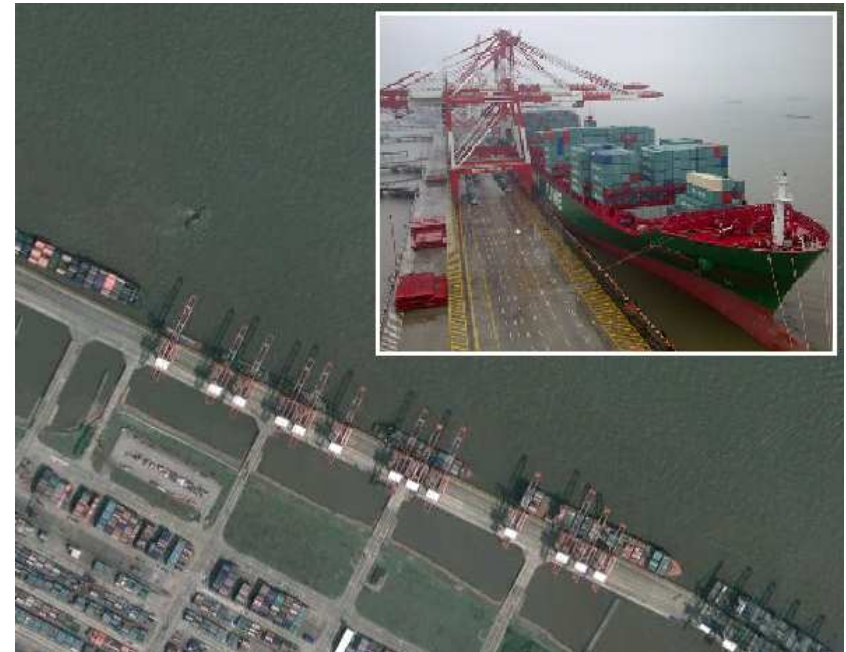
Introduction

- Vessels up to 12.500 TEU
- Service time ≤ 24 h



Concept

- Based on indented berth principle
- Flexible



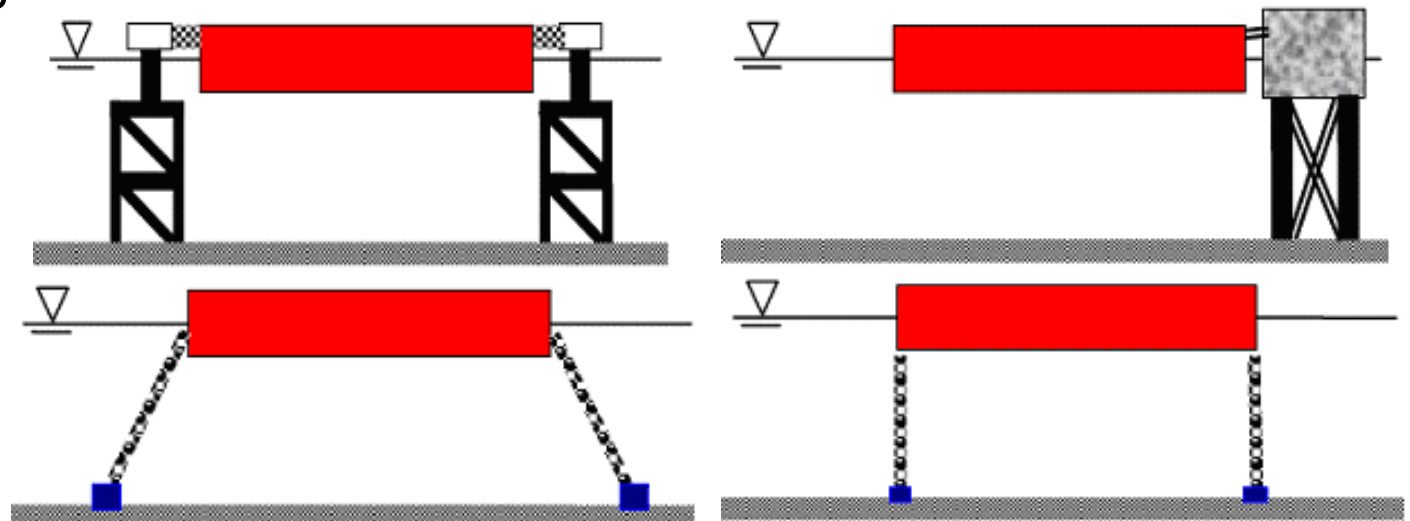
Design considerations

- Dedicated versus multi-user system
 - Stacking versus no stacking
 - Number of cranes
 - Placing of cranes
-
- Increasing dimensions leads to decreasing transportability
 - Decisions should be made at strategic level



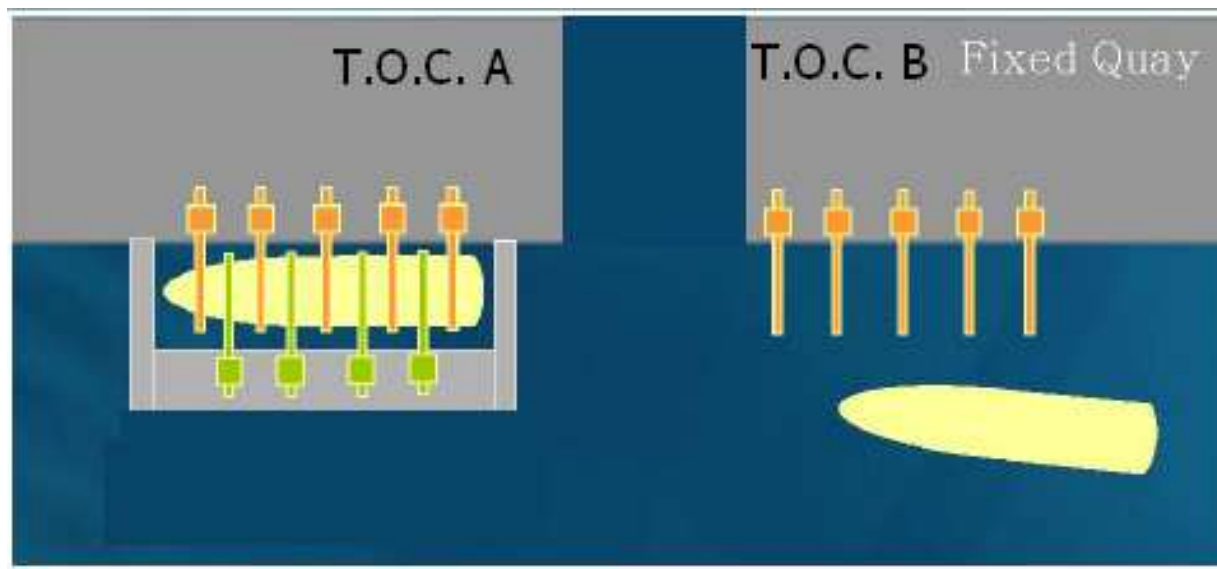
Design considerations

- Elements
- Connections
- Material
- Positioning



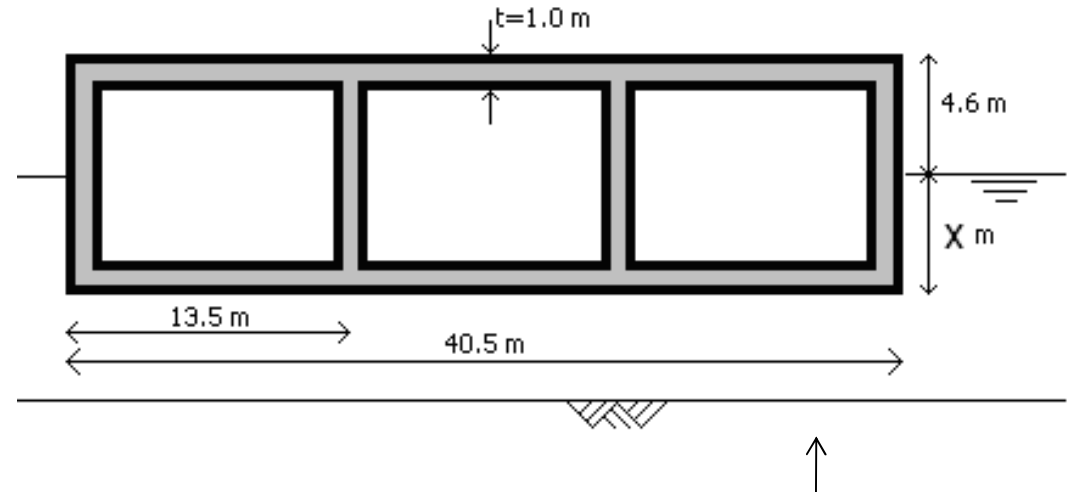
Chosen design

- Multi-user system
- No stacking
- Four cranes working on one side

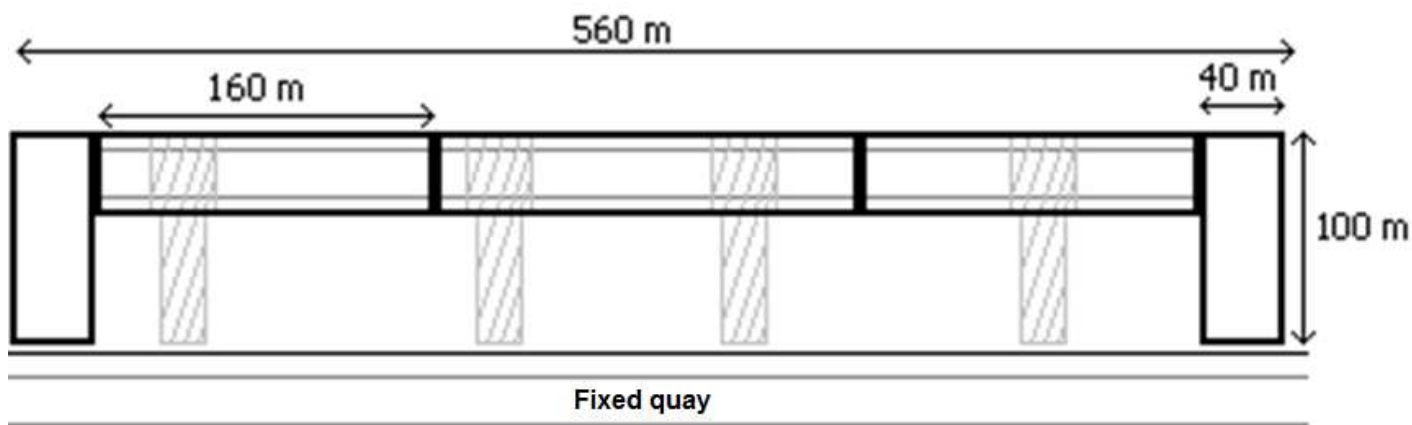


Chosen design

- Two designs



↑
Cross-section

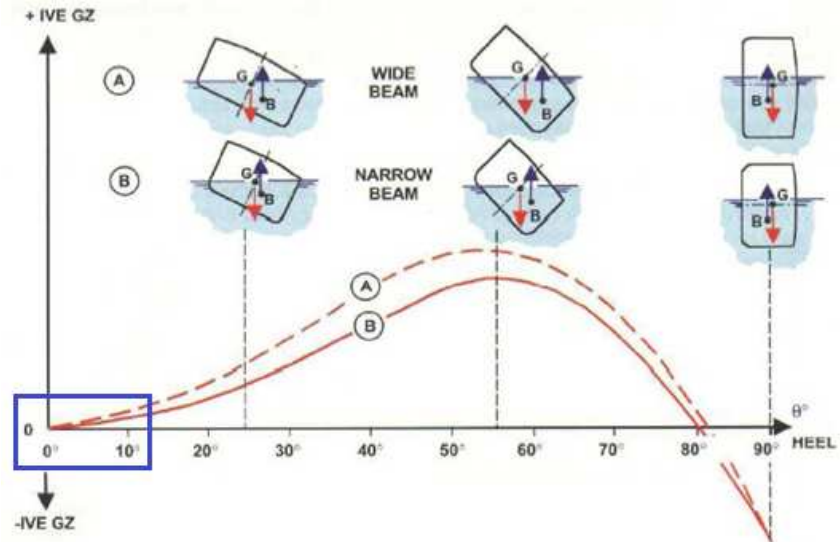
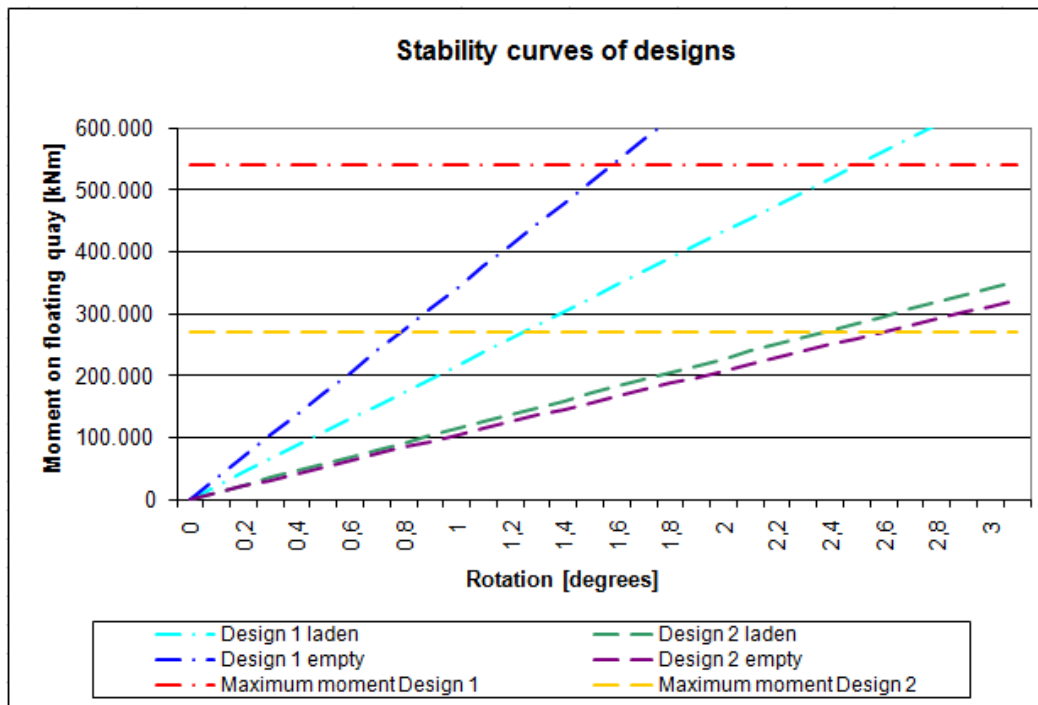
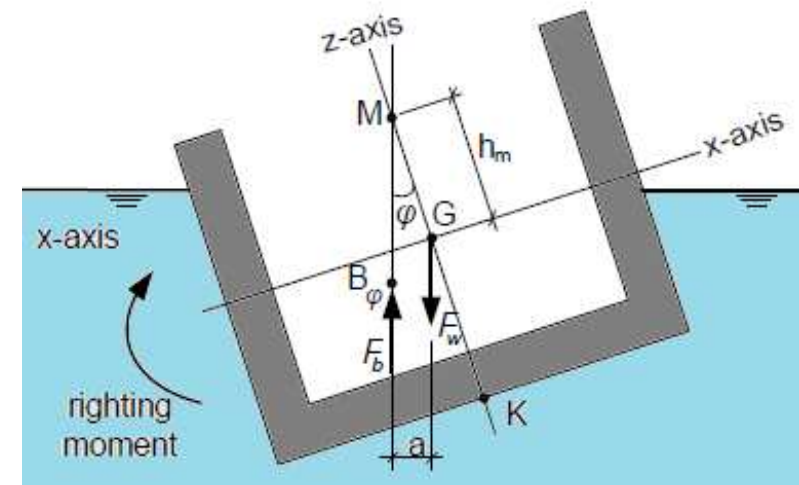


← Overview



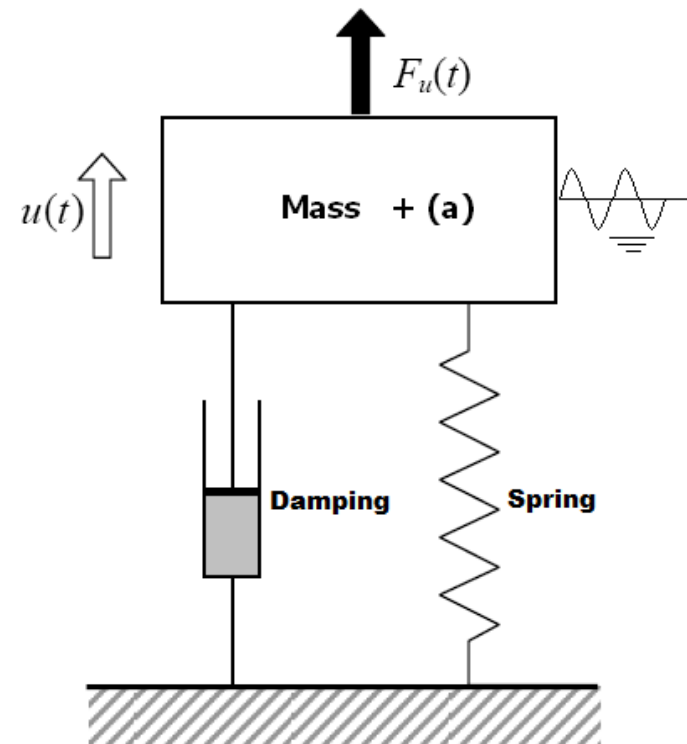
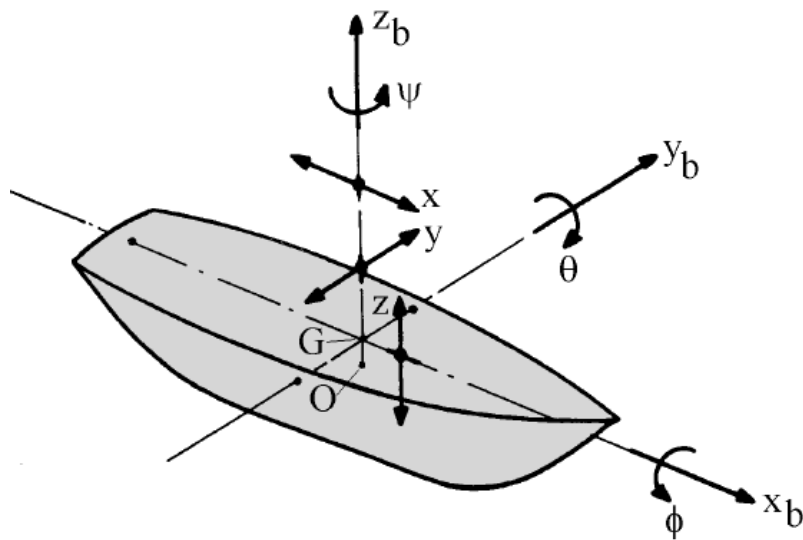
Stability

- Static stability



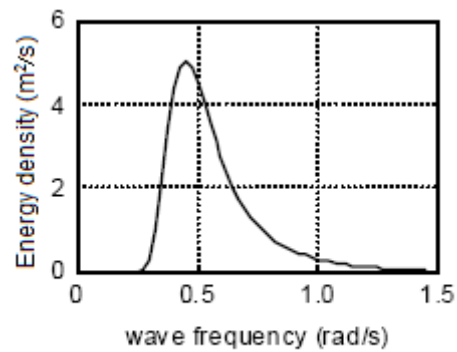
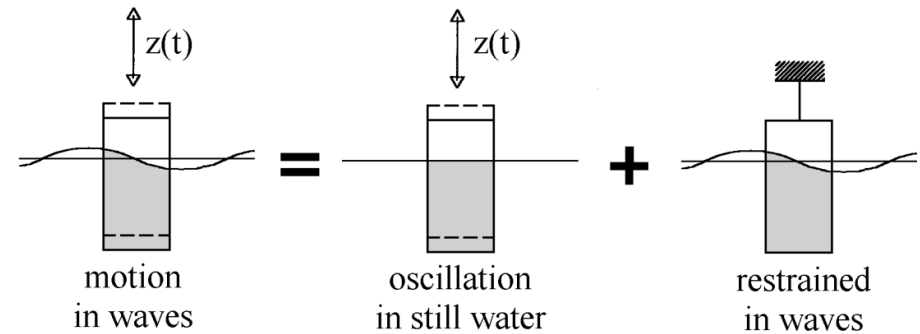
Stability

- Dynamical stability

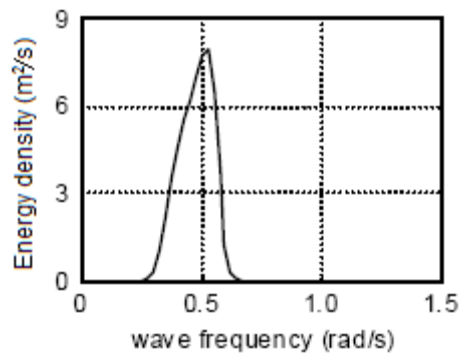


Stability

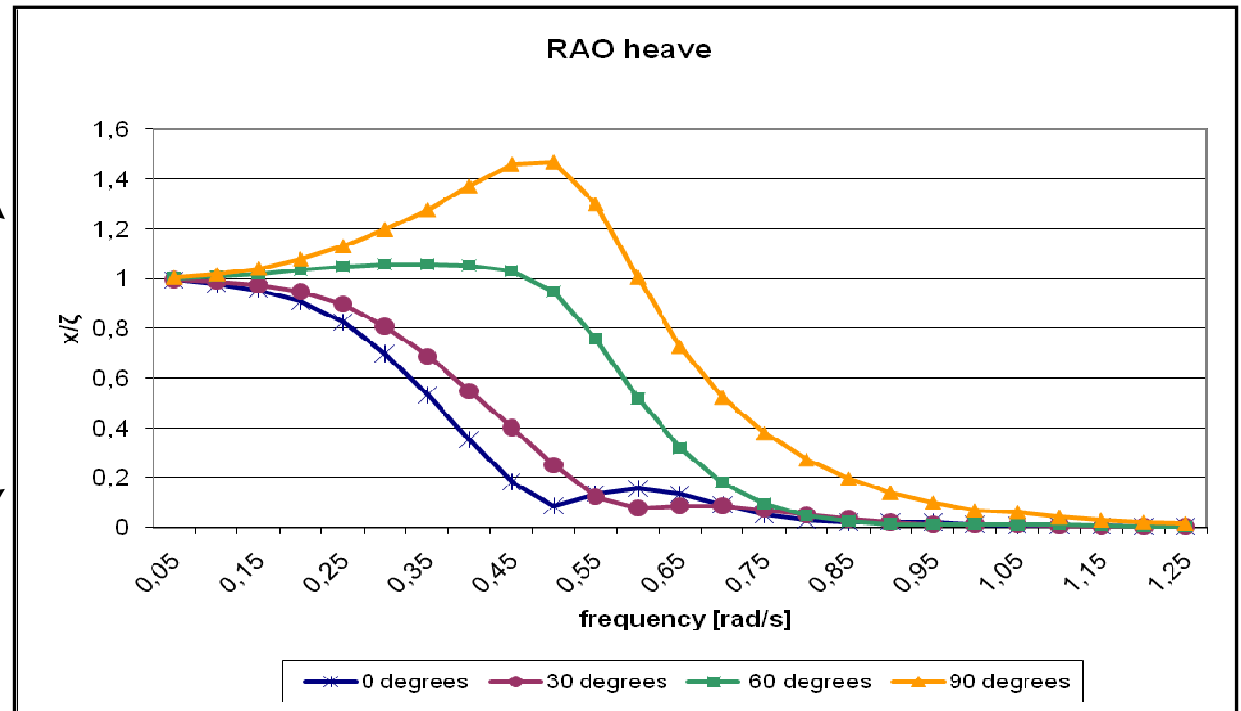
- Dynamical stability



Energy density spectrum waves

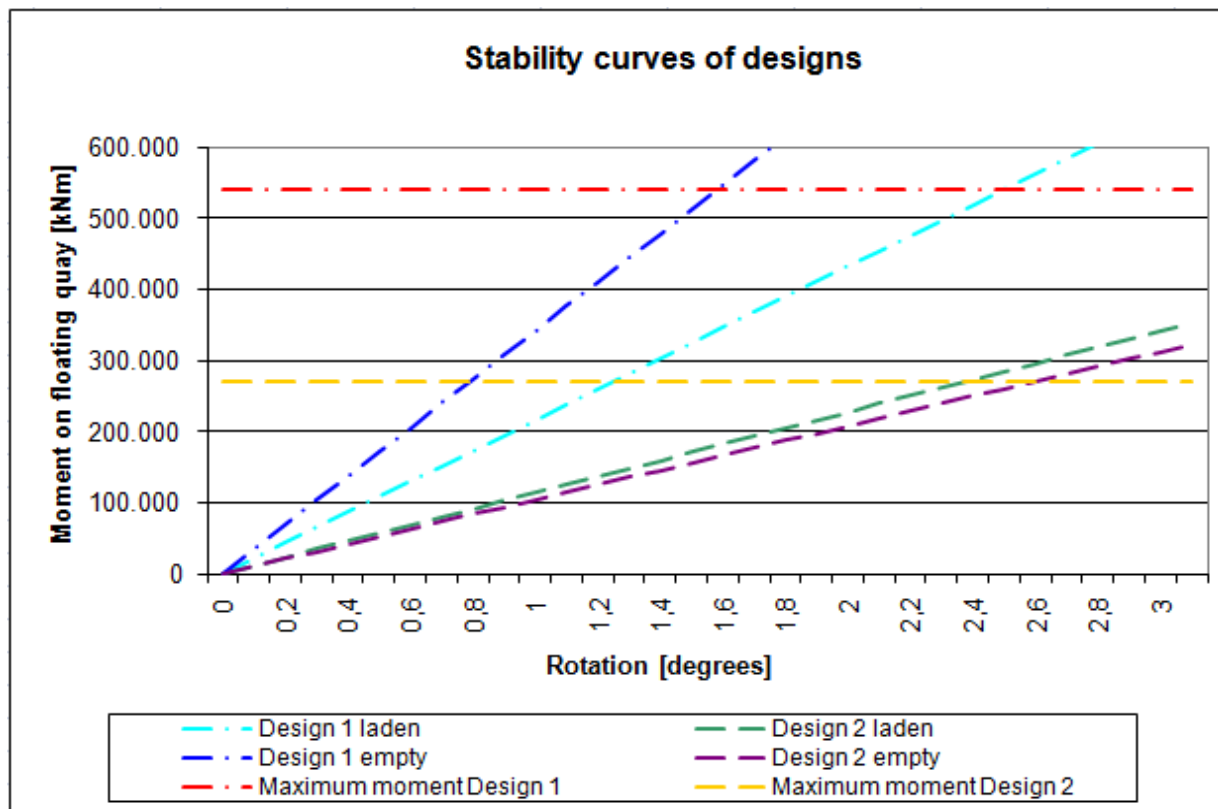


Energy density spectrum motions



Stability

- Operational load



Conclusions and recommendations

- Floating quay offers extra capacity and flexibility
- Several options to design a floating quay
- Both static and dynamic stability important
- Further research is recommended



End of presentation

- Questions?

