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Surgical Quay-wall Renovation

Renovation of 'RDM kraanbaan 13' quay-wall in Rotterdam Heijplaat

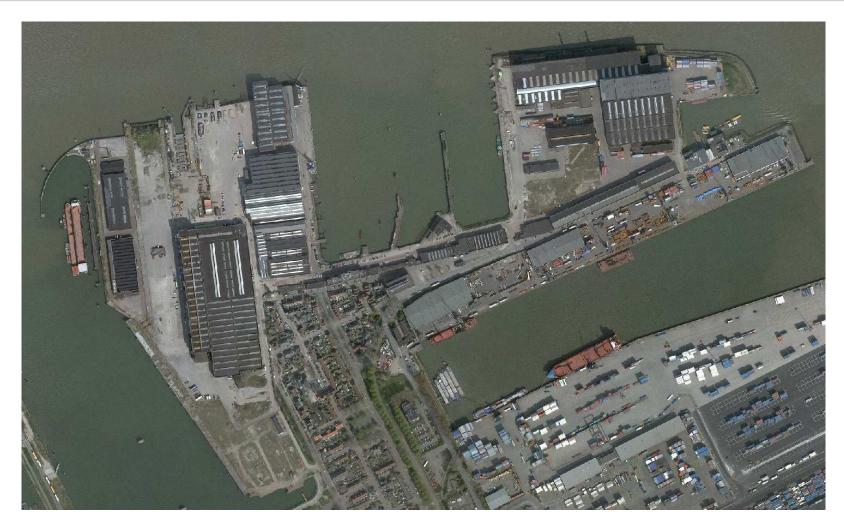
- Background
- Challenges
- Approach
- Lessons learned

Surgical renovation – RDM premises









Surgical renovation – flight through history









Surgical renovation – Source of information









Surgical renovation – What we started with







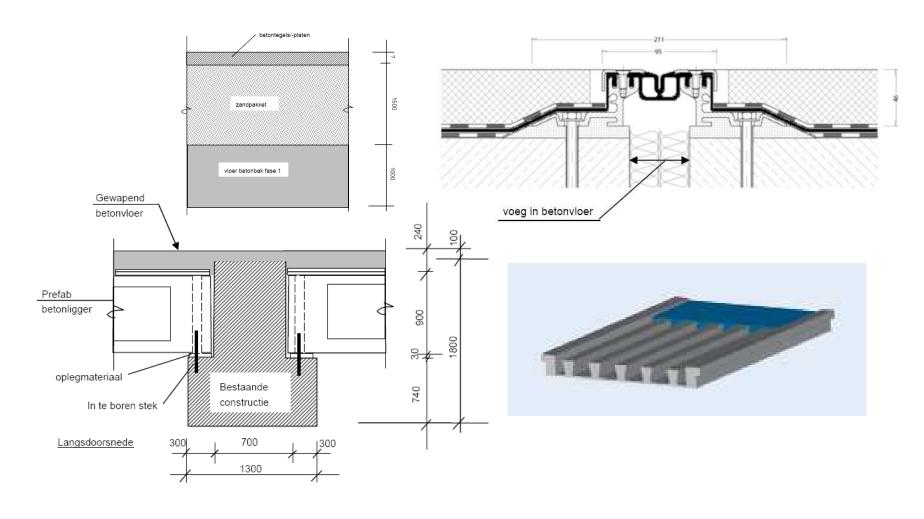


Surgical renovation – preliminary design















Traditional Approach

Full replacement of deck, keep all piles

Old structure

Failure

Replace or major renovation

Results: Good quality High impact High costs Environment?







Approach project team

Surgical quay-wall renovation



Results:
Good quality
Lower impact
Lower costs
Environment

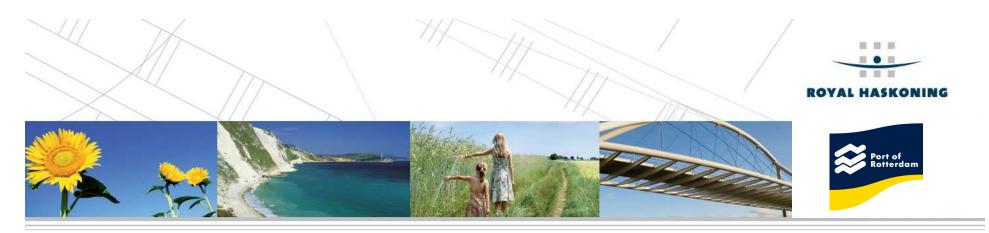
Surgical renovation – Save the structure!













Surgical renovation – Test!









Surgical renovation – All in parallel...







Task name	Date 7/9	14/9	21/9	28/9	5/10	12/10	19/10	26/10	2/11
1 Kick-off meeting	•								
2 Document review & Basis of design		•							
3 Technical inspections									
4 Interpretation of inspection results & Lab tests									
5 Preliminary design		•			•				
6 CPTs							>		
7 Preparations for field tests									
8 Field tests of l-beams							•		
9 Final design						•	4		
10 Tender documents						>			•
11 Publication of tender documents									▶ 3/11
12 Deadline for publication of tender									♦ 4/11







Summary approach

- 1. Detailed inspection, and tests
- 2. Team wants to save the structure
- 3. Back to original design & capabilities
- 4. Keep all that is still functional
- 5. All activities in parallel...







Advantages

- Lower construction costs
- 2. Significantly lower environmental impact

Disadvantages

- Higher preparation costs
- Increased management attention required







Lessons learned

- Follow the original design principles to prevent a cascade of modifications
- 2. Really want to keep as much as possible and design the renovation accordingly
- 3. Good communication and quick decision making