





Using sediment as a resource

RENOVATION OF A CONTROLLED FLOOD AREA IN THE SCHELDT ESTUARY USING DREDGED MATERIAL FROM THE DURME RIVER

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Content

- USAR-project and partners
- Project area Durme
- Investigation of sediments
- Design
- Project execution and planning



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River Scheldt basin







Project area: river Durme



Problem: severe floods in winter time (2010)



European Regional Development Fund





Urgent need to dredge the river Durme



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Urgent need to dredge the river Durme

- 265.000 m³ of sediment to be removed
- increase the discharge capacity of the river
- improve flood defense at high water levels (storm events, storm tide)
- create new fresh water marshes



Historical and current industrial activities USAR



Interreg

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Fieldwork: taking samples

European Regional Development Fund













Environmental assessment of the sediment quality



> limits construction material
(TPH, heavy metals)

< limits construction material

Increased levels PFAS and BFR



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Geotechnical assessment of the sediment quality





Parameter	Value	Unit
dry matter content	40-65	%
plasticity index	15-50	-
organic matter	2.0-5.0	%DM
particle size distribution		
sand (63 μm - 2 mm)	10-80	%
silt (2 μm - 63 μm)	10-55	%
clay (< 2 μm)	10-25	%
тос	1.9-5.8	%DM





Design infrastructure works







Using sediment as a resource for embankment construction: benefits and challenges

Benefits

- Sediment is used beneficially instead of dumped in landfill site
- Local use of dredged sediments: less transport!
- Double improvement of flood defense: river is dredged + embankments are reinfocred

Challenges

- 26.000 m³ of sediment is contaminated and needs to be treated
- the geotechnical quality of the sediment needs to be improved





Design infrastructure works



Example of on site treatment of sediments













Planning

Completed:

- Design of dredging and embankment works
- Geotechnical and environmental asessment of the sediment
- Environmental impact assessment
- Construction and environmental permits
- Tendering procedure
- In progress (2019-2023)
- Preliminary testing
- Execution of dredging and embankment works

USAR-team: Thanks for your attention!

Dredging and Restoration of Brightlingsea Harbour

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