



WELKOM BIJ ECOSHAPE!





Innovation program Building with Nature

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Today's presentations

- Introduction: Building with Nature program
 - Motivation: Innovation is needed!
 - Ecodynamic Design
 - Objectives, partners, case studies
- Examples of BwN projects
 - Lynyrd de Wit (TUD): Turbidity near TSHDs
 - Tom Ysebaert (IMARES): Pilot experiments bio engineers Oosterschelde
 - Daan Rijks (DHV): Ecological landscaping in sand mining pits



Present situation (trends in market)

- Continuous growth of market for hydraulic infrastructure
- Development of large-scale projects characterized by uncertainties and delays
- Extensive EMPs and monitoring requirements
- Sustainable development increasingly important for clients
- Specialist role (knowledge) shifts from client to contracting parties



Sustainable development offers opportunities to reinforce competitive edge



“Sustainable development offers opportunities to reinforce competitive edge”



Maasvlakte-2 (NL)



Port of Khalifa (UAE)



Grensmaas (NL)

Port of Melbourne (AUS)





Building with Nature

Innovation is needed to do things differently!

“Ecodynamic Design”



| building with nature



Building with Nature approach

- **Dynamics of natural system** as starting point for design and realization of hydraulic infrastructure
- From defensive approach (minimize environmental impacts) to **offensive** approach (optimize full economic and environmental potential)
- **Integration** of disciplines: Engineering, Ecology & Governance

“Ecodynamic design”



Conformity with natural system behaviour





Utilization of natural processes

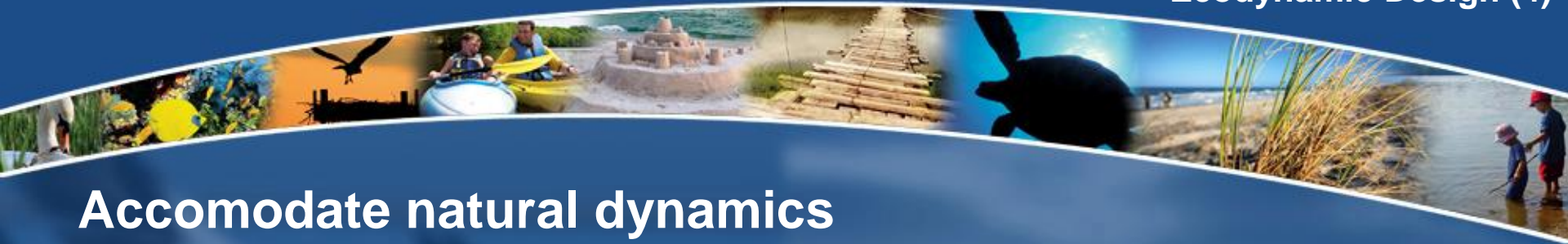




Explore potential for nature development

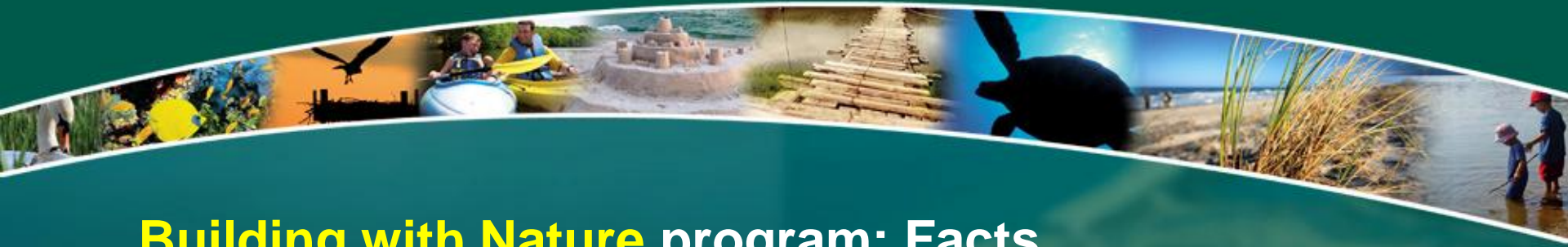


Natural shoreline protection (bio-engineers)



Accomodate natural dynamics





Building with Nature program: Facts

- Program duration 2008-2012
- Budget ca 29 mln Euro, partly funded by Ministry of Public Works and partly from partner contributions
- Programming developed & carried out by partners
- Foundation EcoShape responsible for program management & administration
- First products available in 2009 ...



Partners Building with Nature

- Initiative: Boskalis and Van Oord
- Scientific Institutes: Deltares, Imares, NIOO-CEME
- Consultants: Witteveen + Bos, DHV, Haskoning, Arcadis
- Industry: IHC Holland, VBKO
- Universities: Delft, Wageningen, Twente
- Port authority: Harbour of Rotterdam
- Government: RWS-DI, City of Dordrecht



BwN Program objectives:

1. Develop ecosystem knowledge enabling 'Building with Nature (BwN)'
2. Establish how to bring the BwN-concept forward in society and make it happen
3. Develop scientifically sound design rules and norms
4. Develop expertise to apply the BwN-concept
5. Make the concept tangible using practical BwN-examples



Programme Building with Nature – cases:

- Sustainable development
Holland coast
- Southwest Delta
- Markermeer – IJsselmeer
- Singapore
- Generic research
- Adaptive monitoring
- Data management





**Building with Nature is
Building our Future**