

## PROGRAMME

10–11 NOVEMBER 2011

AHOY ROTTERDAM, THE NETHERLANDS

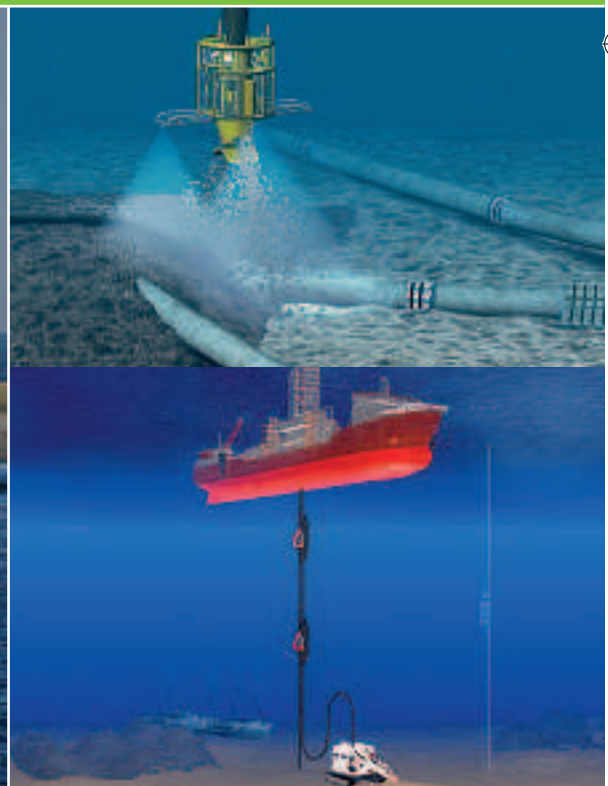
Pre-event technical visit on 9 November 2011

# CEDA DREDGING DAYS 2011

CONFERENCE AND EXHIBITION

## *Dredging and Beyond*

*Themes:* Building with Nature, Deepsea Mining, and Dredging and Rock Dumping for the Offshore Oil and Gas Industries



In conjunction with

**EUROPORT 2011**  
connecting the maritime world

[www.cedaconferences.org/dredgingdays2011](http://www.cedaconferences.org/dredgingdays2011)

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#### CEDA Dredging Days 2011

#### *Dredging and Beyond*

November 10-11, 2011  
Ahoy Rotterdam, Rotterdam  
The Netherlands

#### Pre-event Technical Visit

9 November 2011

#### In Conjunction with Europort 2011

November 8-11, 2011

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## WELCOME TO CEDA DREDGING DAYS

### From CEDA President Anders Jensen

One of the charms of our industry is that, even as society and our lives change, it rises to the new demands and challenges that come with those changes.

*CEDA Dredging Days* has a reputation for being the premier technical forum for presenting and debating new ways of thinking, innovative approaches and cutting-edge dredging tools and technology. It's therefore no surprise that this year's conference focuses on areas where clearly a new trend is emerging, namely when dredging becomes part of broader, more integrated projects such as offshore oil and gas winning and deepsea mining.



Although these industries have used the dredging sector's services for many years, their requirements are changing fast as their operations move to deeper and deeper waters. As you'll discover at *CEDA Dredging Days 2011* in Rotterdam, the dredging industry is responding fast too.

Another area that's creating change is what we often call 'building with nature' – or 'working with nature' – a process whereby we build hydraulic engineering infrastructure while enhancing natural processes and creating new opportunities for nature. The building with nature/working with nature concept itself is not new and has been used in the past for creating wetlands, beach nourishments, coastal restoration and so on, but recently more effort is being put into applying it. These developments present new demands for the dredging sector and bring exciting new opportunities and intriguing, novel technical challenges. As ever, the sector is prepared to respond to these with vigour and creativity – the proof is in the programme: *CEDA Dredging Days 2011* is packed with presentations giving us a first-hand account of remarkable technological advances, out-of-the-box thinking and new approaches. The conference programme will be complemented by a technical visit and a dredging exhibition – where leading CEDA member companies will showcase their most recent results relating to the conference topics. There will also be opportunities for networking and socialising – an important aspect of the event – including a programme for accompanying persons.

I'm looking forward with great anticipation to *CEDA Dredging Days 2011* and, on behalf of the CEDA Board and the Technical Papers Committee, I look forward to welcoming delegates, exhibitors and partners to Rotterdam. I encourage you to take full advantage of the opportunities to learn from the experts – and from each other – and to share some enjoyable moments with your colleagues and friends.

## PROGRAMME AT A GLANCE

### TUESDAY 8 NOVEMBER

- 10:00 Europort 2011 opens
- 18:00 Europort 2011 closes for the day

### WEDNESDAY 9 NOVEMBER

- 10:00 Europort 2011 opens
- 13:00–18:00 Technical Visit to IHC Merwede's Kinderdijk shipyard, hosted by the Deep Sea Dredging & Mining division
- 18:00 Europort 2011 closes for the day
- 18:00 Dredging Exhibition build-up

### THURSDAY 10 NOVEMBER

- 08:00–09:00 Dredging Days Registration Desk open
- 09:00–10:20 **SESSION 1: Opening and Keynote Speeches**
- 10:00 Europort 2011 opens
- 10:20–10:50 Coffee and tea served in the exhibition area
- 10:50–12:10 **SESSION 2: Building with Nature: From Legislation to Practice**
- 12:10–13:30 Lunch – sponsored by IRO and served in the Port 1 and Port 2 Restaurant on the 1st floor, followed by coffee and tea in the exhibition area
- 13:30–14:30 **SESSION 3: Dredging for the Offshore Industry**
- 14:30–14:50 Coffee and tea served in the exhibition area
- 14:50–16:10 **SESSION 4: Building with Nature: Modelling & Monitoring**
- 16:10–16:40 Coffee and tea served in the exhibition area
- 16:40–17:25 **SESSION 5: CEDA Environment Commission in the Spotlight**
- 17:25–18:00 CEDA's AGM
- 18:00–19:00 CEDA Netherlands Reception
- 22:00 Europort 2011 closes for the day

### FRIDAY 11 NOVEMBER

- 08:00–16:15 Dredging Days Registration Desk open
- 10:00 Europort 2011 opens
- 09:00–10:40 **SESSION 6: Academic Session**
- 10:40–11:10 Coffee and tea served in the exhibition area
- 11:10–12:30 **SESSION 7: Deepsea Mining**
- 12:30–14:00 Lunch served in the Port 1 and Port 2 Restaurant on the 1st floor, followed by coffee and tea in the exhibition area
- 14:00–15:00 **SESSION 8: Building with Nature: Case Studies**
- 15:00–15:10 Presentation of the IADC Best Paper Award
- 15:10–15:20 Conference Chairman's Closing Remarks
- 15:20–16:15 CEDA Farewell Drinks

The organisers wish to thank the following organisations for their support

Main Sponsor:



Sponsors:



## ACCOMPANYING PERSONS' PROGRAMME

- 08:45 Meet guide at Manhattan Hotel
- 09:02 Train to The Hague
- 09:33 Arrival at The Hague Central Station
- 10:00 Visit Binnenhof and have lunch at Het Plein
- 12:30 Visit Mauritshuis
- 14:00 Visit Pulchri Studio
- 15:00 Shopping
- 16:30 Depart to The Hague Central Station
- 16:51 Train to Rotterdam Central Station
- 17:15 Arrival at Rotterdam Central Station –  
well in time for the CEDA Netherlands Reception

DREDGING EXHIBITION

EUROPORT 2011



## CONFERENCE INTRODUCTION

**Professor Cees van Rhee of Delft University of Technology – and chairman of CEDA Dredging Days 2011 Papers Committee – outlines this year's event**

The two themes of this year's conference are:

- 1) *Dredging and Rock Dumping for the Offshore Oil and Gas Industries and Deepsea Mining*
- 2) *Building with Nature – for Soft and Hard Dredging Solutions both Coastal and Inland.*

The dredging industry's involvement with the offshore oil and gas industries is not new, but contractors are facing fresh challenges as those industries move to ever deeper water. The scene will be set in two keynote speeches delivered by prominent representatives of the mining and offshore sectors:

- **Professor Peter Halbach** from the Free University, Berlin, will give a talk entitled *Mining of Deepsea Minerals – Fundamentals and Future Perspectives*
- **Hans de Boer**, managing director of the Association of Dutch Suppliers in the Oil and Gas Industry (IRO), who will share his insights in a speech entitled *Dredging Opportunities In The Dutch Offshore Industry.*

The keynotes will be amplified in following sessions – that on *Dredging for the Offshore Industry*, for example, will feature talks about the actual and ongoing involvement of the dredging industry, while that on *Deepsea Mining* will cover ongoing research, including the design of safe and reliable pump-riser systems, innovative dredging systems and coal mining at great water depths.

Turning to *Building with Nature* (BwN) – or *Working with Nature* as it's sometimes called – this is a concept that's becoming an essential part of dredging projects. Natural processes are used to improve a project's outcome, with the result that dredging – formerly seen almost solely as a threat to the environment – is starting to be regarded as a contributor in how to improve it. This topic will be explored in three technical sessions, the session titles of which speak for themselves:

- 1) ***Building with Nature: from Legislation to Practice*** – presentations in this session will give an introduction and a more general treatment of the subject. Representing PIANC's Environment Commission, this session will be chaired by Ms Jan Brooke who was instrumental in developing the 2008 PIANC position paper 'Working with Nature', which CEDA formally endorsed and to which it contributed. In this context, Ms Brooke will explain the sometimes confusing terms used in professional circles to label the concept.
- 2) ***Building with Nature: Modelling and Monitoring*** – a prerequisite to using natural processes to meet both economic and environmental objectives is to know them. Although our knowledge of natural systems has significantly increased in recent decades, a lot of questions still remain. This session will give an insight into the most recent challenges and research results.

- 3) ***Working with Nature: Case Studies*** – speakers will share their insights and experience regarding the practical use of the BwN concept in various countries.

The traditional *Academic Session* offers young professionals the opportunity to present their latest achievements and developments – the talks will cover a broad range of topics from the application of electrical resistance tomography in a sand-slurry loop, to the analysis of a sediment management concept by the use of a 3D numerical model.

In all, thanks to the authors and the papers committee, we're confident that we've put together an interesting programme that will bring you up to speed with dredging's latest developments.

### Organising Committees

#### Technical Papers Committee

**Cees van Rhee**  
(chairman), Delft University of Technology, the Netherlands  
**Anna Csiti** – CEDA, the Netherlands  
**Ronald van der Hout**  
– Van Oord Dredging & Marine Contractors, the Netherlands  
**Claus Iversen** – Femern Bael, Denmark



Prof Cees van Rhee at CEDA Dredging Days 2009

**Bernard Malherbe** – Jan De Nul, Belgium  
**Johan Pennekamp** – Deltares, the Netherlands  
**Daan Rijks** – Royal Boskalis Westminster, the Netherlands  
**Dirk Roukema** – Blue Pelican Associates, the Netherlands  
**Henrich Röper** – Hamburg Port Authority, Germany  
**Marc Sas** – IMDC, Belgium  
**Marc Vandenbroeck** – DEME, Belgium  
**Jort van Wijk** – IHC Merwede, the Netherlands

#### Co-ordinating Committee

**Anna Csiti** – CEDA, the Netherlands  
**Anders Jensen** – CEDA, Denmark  
**Cees van Rhee** – CEDA, the Netherlands

#### Conference Secretariat

**Sylvia Minten** – Minten Projectmanagement, the Netherlands



Networking over lunch

## CONFERENCE PROGRAMME

### Thursday 10 November 2011

#### 09:00–10:20 SESSION 1 – Opening

**Chair:** van Rhee C – Technical University Delft, the Netherlands

- 09:00** **Opening Remarks:** Anders Jensen – CEDA president, Femern Baelt, Denmark
- 09:05** **Introduction:** Prof Cees van Rhee – Technical Papers Committee chairman, Technical University Delft, the Netherlands
- 09:15** **Keynote Address:** Mining Of Deepsea Minerals - Fundamentals And Future Perspectives by Prof Peter Halbach – Department of Earth Sciences, Free University Berlin, Germany
- 09:45** **Keynote Address:** Dredging Opportunities In The Dutch Offshore Industry by Hans de Boer – managing director of the Association of Dutch Suppliers in the Oil and Gas Industry (IRO), the Netherlands
- 10:05** **Young CEDA Update:** Daan Rijks – Young CEDA chairman, Royal Boskalis Westminster, the Netherlands
- 10:20** *Coffee and tea served in the exhibition area*
- 10:50–12:10 SESSION 2 – Building With Nature: From Legislation To Practice**  
**Chair:** Brooke J, PIANC Environment Commission/ independent consultant, Belgium/UK
- 10:50** **Marine Works In The Context Of Ecosystem Processes**  
Mink FJ – Interel European Affairs, Belgium
- 11:10** **Introducing Guidelines For Eco-Dynamic Development And Design**  
Van Koningsveld M – Van Oord/Technical University Delft/Ecoshape, the Netherlands; van Raalte GH – Boskalis/Ecoshape, the Netherlands
- 11:30** **Handling The Knowledge Challenge In Building With Nature Projects – Lessons From The Pilot Sand Engine Delfland**  
Janssen SKH – Deltares/Wageningen UR, the Netherlands
- 11:50** **Sediment And Ecology: How To Minimise Impacts Of Dredging And Create Opportunities For Restoration On Tropical Coasts?**  
Bouma TJ, Erfteijer PLA, Jeuken MCJL – Deltares, the Netherlands; Balke T, Horstman EM, Yaakub SM, Tanzil JT, Friess DA, Galli D – Singapore-Delft Water Alliance, the Netherlands; Dohmen-Janssen CM – University of Twente, the Netherlands; Todd PA, Webb EL – National University of Singapore, Singapore
- 12:10–13:30** *Lunch – sponsored by IRO and served in the Port 1 and Port 2 Restaurant on the 1st floor, followed by coffee and tea in the exhibition area*



#### 13:30–14:30 SESSION 3 – Dredging For The Offshore Industry

**Chair:** de Boer H – IRO, the Netherlands

- 13:30** **Taking Dredging Precision To The Extreme**  
Osnabrugge J and Braaksma J – IHC Systems, the Netherlands
- 13:50** **Using Life Cycle Analysis Methodology To Assess The Sustainability Of Dredging Equipment And Its Manufacturing Processes**  
Goncalves Castro MB, Holtkamp MJ, Vercruyjsse PM – MTI Holland, the Netherlands; van Woerden D – IHC Beaver Dredgers, the Netherlands
- 14:10** **BritNed UK – Netherlands Interconnector HVDC Cables: Pre-sweeping and Rock Placement To Ensure Accurate Cable Protection**  
Vreys MMR – Tideway Offshore Contractors, the Netherlands; Snip DW – Primo Marine, the Netherlands
- 14:30** *Coffee and tea served in the exhibition area*
- 14:50–16:10 SESSION 4 – Building With Nature: Modelling & Monitoring**  
**Chair:** Pennekamp J – Deltares, the Netherlands
- 14:50** **Ecomorphological Modelling Of Seabed And Coastal Zone**  
Luijendijk AP, Tonnon PK, Ye Q and van Daltsen J – Deltares, the Netherlands

- 15:10** **Biogeomorphological Interactions On A Nourished Tidal Flat: Lessons Learned From Building With Nature**  
Borsje BW – Deltares /University of Twente/ Ecoshape, the Netherlands; Ysebaert TI – IMARES/NIOO-KNAW/Ecoshape, the Netherlands; de Mesel I – IMARES/Ecoshape, the Netherlands; Holzhauer H and Cronin K – Deltares/Ecoshape, the Netherlands; Hibma A – Ecoshape, the Netherlands
- 15:30** **Monitoring The Impact Of Land Reclamation On Siltation In An Inland Lake**  
de Wit L and Bliet AJ – Svašek Hydraulics, the Netherlands; Frieling JH – Ingenieursbureau Amsterdam, the Netherlands
- 15:50** **Field Tests And Plume Measurements In The Fehmarnbelt**  
Bundgaard KE, Lumborg U and Brøker I – DHI, Denmark; Jensen A – Femern A/S, Denmark; Andersen TJ – University of Copenhagen, Denmark
- 16:10** *Coffee and tea served in the exhibition area*

#### 16:40–17:25 SESSION 5 – CEDA Environment Commission (CEC) In The Spotlight

**Chair:** van Rhee C – Technical University Delft, the Netherlands

- 16:40** **Update on CEC's Activities**  
Labyrie P – chairman CEC, Witteveen+Bos, the Netherlands
- 16:55** **CEDA Position Paper: Underwater Sound**  
Thomsen F – chairman CEDA Working Group on Underwater Sound, DHI, Denmark

## CONFERENCE PROGRAMME

**17:10** **CEDA Information Paper: Climate Change Adaptation As It Affects The Dredging Community**  
Hakstege P – chairman CEDA Working Group on Climate Change Adaptation, Ministry of Infrastructure and Environment, the Netherlands

**17:25** **CEDA's Annual General Meeting**

**18:00-19:00** **CEDA-Netherlands Reception (invitation only) in the exhibition area and co-sponsored by the Vereniging van Waterbouwers**



### Friday 11 November

#### 09:00-10:40 **SESSION 6 – Academic Session**

Chair: Sas M – IMDC, Belgium

**09:00** **Application Of Electrical Resistance Tomography In A Sand-Slurry Loop**  
Talmon AM – Technical University Delft/Deltares, the Netherlands; Schut RA – Technical University Delft, the Netherlands

**09:20** **Numerical Simulation Of Sedimentation Using The Mixture Model**  
Goeree JC – Technical University Delft/MTI Holland, the Netherlands

**09:40** **An Investigation Of The Effects Of Screen Structures In The Flow Through And Around A Silt Screen**  
Vu TT – DHI-NTU Centre, Nanyang Technological University, Singapore; Tan SK – Nanyang Environment & Water Research Institute, Nanyang Technological University, Singapore

**10:00** **Analysis Of A Sediment Management Concept For The Elbe Estuary By Use Of A Three-Dimensional Numerical Model**  
Maerker C and Malcherek A – University of the German Armed Forces Munich, Germany; Weilbeer H – Federal Waterways Engineering and Research Institute, Germany

**10:20** **Analysis Of Dune Ploughing In Rivers**  
Bots H – Rijkswaterstaat/Deltares, the Netherlands; Talmon AM – Technical University Delft/Deltares, the Netherlands; Sieben J – Rijkswaterstaat, the Netherlands

**10:40** *Coffee and tea served in the exhibition area*

#### Conference Proceedings

All papers have been peer reviewed and published on a CD-ROM that will be available to all registered delegates at the start of the conference. Additional copies of the CD-ROM can be ordered at an extra cost of €60 for CEDA, EADA and WEDA members and €90 for non-members (prices don't include packing and postage).

#### 11:10-12:30 **SESSION 7 – Deepsea Mining**

Chair: van der Hout R – Van Oord Dredging & Marine Contractors, the Netherlands

#### 11:10 **An Experimental And Numerical Study Of Vertical Hydraulic Transport For Deepsea Mining Applications**

van Wijk JM and Vercrujisse PM – MTI Holland, the Netherlands; Lucieer PA – IHC Merwede Deep Sea Dredging and Mining, the Netherlands; van Rhee C and Talmon AM – Technical University Delft, the Netherlands

#### 11:30 **Offshore Deepsea Dredging Applications And Operational Viability Of The Ro-Ro Deep Dredge System**

Winkelman MO and van Duursen EA – Damen Dredging Equipment, the Netherlands

#### 11:50 **Hydraulic Mining Of Coal At Great Water Depths**

Huijsmans MGM – Witteveen+Bos Raadgevende Ingenieurs, the Netherlands

#### 12:10 **Into The Deep: A Risk-Based Approach For Research To Deepsea Mining**

Verichev S, van Gelder R, Alvarez Grima M and van Wijk J – MTI Holland, the Netherlands; Heeren J – IHC Merwede Deep Sea Dredging and Mining, the Netherlands

**12:30-14:00** *Lunch served in the Port 1 and Port 2 Restaurant on the 1st floor, followed by coffee and tea in the exhibition area*

#### 14:00-15:00 **SESSION 8 – Building With Nature: Case Studies**

Chair: de Vriend H – EcoShape, the Netherlands

#### 14:00 **Dredging Works In The Westerschelde To Deepen The Navigation Channel And To Create Ecologically Valuable Areas**

Sas M and De Sutter R – IMDC, Belgium; Beirinckx K and Aerts F – Flanders Ministry of Public Works, Belgium

#### 14:20 **Dredging In Panama And New Caledonia: Caring For Habitats From Rainforest To Coral Reefs**

Van Parys M, Schiettecatte W and Cras S – Jan De Nul, Belgium

#### 14:40 **Fehmarnbelt Fixed Link Between Continental Europe And Scandinavia – Innovative Technology To Optimise Mechanical Dredging Operations**

Iversen C and Andersen J – Femern AS, Denmark; van Putten E – tunnel engineering consultant, the Netherlands

#### 15:00 **Presentation of the International Association of Dredging Companies' Best Paper Award**

Kolman R – IADC secretary general, the Netherlands

#### 15:10 **Conference Chair's Closing Remarks**

van Rhee C – Technical University Delft, the Netherlands

#### 15:20-16:15 **Farewell Drinks in the exhibition area**

*Please note: The CEDA Dredging Days 2011 Papers Committee reserves the right to adjust or change the programme as necessary.*



## ABOUT THE PAPERS

On these pages you'll find brief summaries of each paper's contents

**Thursday, 10 November 2011**

### 09:00–10:20 SESSION 1 – Opening Ceremony

**09:00 Opening Remarks: Anders Jensen, president of CEDA, Femern Baelt, Denmark**



Anders Jensen

**09:05 Introduction: Prof Dr Cees van Rhee, chairman Technical Papers Committee, Technical University Delft, the Netherlands**



Prof Cees van Rhee

**09:15 Keynote Address: Mining Of Deepsea Minerals – Fundamentals And Future Perspectives, By Prof Dr PE Halbach, Free University Berlin, Germany**



Prof Peter Halbach

- Marine Mineral Deposits – polymetallic oxidic and sulfidic deepsea deposits may play an important role in future supplies
- Deepsea Mining Challenges – new technologies need to be developed
- Future Development – some first drafts for mining systems exist, but much more development's needed

**09:45 Keynote Address: Dredging Opportunities In The Dutch Offshore Industry by Hans de Boer of the Association of Dutch Suppliers in the Oil and Gas Industry (IRO)**



Hans de Boer

- Overview of the Dutch upstream oil and gas industry
- Role of the Dutch supply and service industry
- Opportunities for the dredging industry

**10:05 Young CEDA Update: Daan Rijks, Young CEDA chairman, Royal Boskalis Westminster, the Netherlands**



Daan Rijks

### 10:50–12:10 SESSION 2 – Building With Nature: From Legislation To Practice

**10:50 Marine Works In The Context Of Ecosystem Processes Mink FJ, Interel European Affairs, Belgium**

- The ecosystem approach seeks to maintain the integrity of ecosystems while benefiting from their riches
- Recent European environmental regulation embraces the concept as an instrument to protect nature and biodiversity
- Marine works can be designed and executed to respect and enhance ecosystem quality
- The ecosystem approach balances environmental impacts of dredging and infrastructure and their benefits for society

#### IADC Best Paper Award

The International Association of Dredging Companies' secretary general René Kolman will present the Best Paper Award for an author under 35 years of age at 15:00hrs as the conference closes.

**11:10 Introducing Guidelines For Eco-Dynamic Development And Design**  
**Van Koningsveld M, Van Oord/Technical University Delft/ Ecoshape, the Netherlands; van Raalte GH, Boskalis/Ecoshape, the Netherlands**



*Opportunities and challenges in Building with Nature*

- Guidelines for eco-dynamic development and design
- Key end product of the Building with Nature innovation programme
- Based on outcome of the programme itself as well as on external sources
- Description of the wiki-based guideline development process
- Illustration of progress based on practical applications already available

**11:30 Handling The Knowledge Challenge In Building With Nature Projects – Lessons From The Pilot Sand Engine Delfland**  
**Janssen S, Deltares, Wageningen UR, the Netherlands**

- Building with Nature (BWN) poses new challenges on knowledge in decision making
- One of the main knowledge challenges is integrating different functions and hence different disciplines
- We propose a framework considering all the different elements of knowledge integration
- We present knowledge integration conditions for an integrated BWN design
- Lessons drawn from the Sand Engine pilot project in Delfland



*Artist's impression of the Sand Engine*

**11:50 Sediment And Ecology: How To Minimise Impacts Of Dredging And Create Opportunities For Restoration On Tropical Coasts?**

**Bouma TJ, Erfteijer PLA, Jeuken MCJL, Deltares, the Netherlands; Balke T, Horstman EM, Yaakub SM, Tanzil JT, Friess DA, Galli D, Singapore-Delft Water Alliance, the Netherlands; Dohmen-Janssen CM, University of Twente, the Netherlands; Todd PA, Webb EL, National University of Singapore, Singapore**

Dredging in tropical regions can damage ecosystems such as coral reefs, seagrasses and mangroves. In a major research programme, four PhDs and one post-doc study two main questions:

- What determines the tolerance and resilience of corals/seagrasses to turbidity and sedimentation?
- What's the role of sediment in controlling mangrove dynamics and vice versa?

We conclude with a project overview and preliminary results



*Fieldwork in mangroves is a muddy business – photo Alison Wee Kim Shan (NUS)*

**13:30–14:30 SESSION 3 – Dredging For The Offshore Industry**

**13:30 Taking Dredging Precision To The Extreme**  
**Osnabrugge J and Braaksma J, IHC Systems, the Netherlands**

- Advanced dynamic positioning and dynamic tracking capability
- High positional accuracy by steering the draghead
- Calculating the most efficient dredging coverage
- Preventing high spots with a fully automated positioning system



*Steering the draghead*

## ABOUT THE PAPERS

**13:50 Using Life Cycle Analysis Methodology To Assess The Sustainability Of Dredging Equipment And Its Manufacturing Processes**  
Goncalves Castro MB, Holtkamp MJ, Vercrujisse PM, MTI Holland, the Netherlands; van Woerden D, IHC Beaver Dredgers, the Netherlands

- Assessing the environmental performance of dredging equipment using life cycle analysis
- Assessing the environmental performance of a manufacturing process using life cycle analysis
- Product optimisation – focus on energy efficiency
- Optimisation of the manufacturing process: focus on energy efficiency, waste minimisation and high impact materials
- Testing a fuel cell aboard an IHC Beaver 40 cutter suction dredger

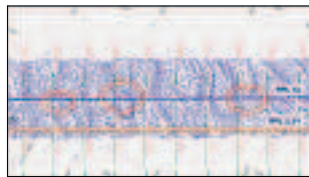


Beaver 40 using a fuel cell during trials

**14:10 BritNed UK-Netherlands Interconnector HVDC Cable: Pre-sweeping And Rock Placement To Ensure Accurate Cable Protection**

Vreys M, Tideway Offshore Contractors, the Netherlands; Snip W, Primo Marine, the Netherlands

- Partial removal of sand waves prior to cable installation
- Engineering and accurate dredging techniques significantly reduced the volume to be dredged
- Marine engineering in a constantly shifting environment



Monitoring progress

**14:50–16:10 SESSION 4 – Building With Nature: Modelling & Monitoring**

**14:50 Ecomorphological Modelling Of The Seabed And Coastal Zones**  
Luijendijk AP, Tonnon PK, Ye Q and van Dalfsen J, Deltares, the Netherlands

- Mining and placing of sand may affect ecology and morphology in coastal systems
- Interaction ecology and morphology are not included in present tools nor design studies
- An ecomorphological model has been developed to aid the design of mining pits and nourishments
- Model facilitates interaction hydrodynamics, ecology and morphology through two-way coupling
- Innovative ecodynamic design tool for engineering practice



Sand Engine project, which started earlier this year

**15:10 Biogeomorphological Interactions On A Nourished Intertidal Area: Lessons Learned From Building With Nature**

Borsje BW, Deltares/University of Twente/ Ecoshape, the Netherlands; Ysebaert TI, IMARES/NIOO-KNAW/Ecoshape, the Netherlands; de Mesel I, IMARES/Ecoshape, the Netherlands; Holzauer H and Cronin K, Deltares/Ecoshape, the Netherlands and Hibma A, Ecoshape, the Netherlands

- Nourishing tidal flats is investigated as a solution to the degradation of intertidal areas worldwide
- A pilot nourishment with a volume of 130,000m<sup>3</sup> is implemented on the Galgeplaat in the Eastern Scheldt estuary
- Impact on geomorphological and ecological systems is monitored and modelled
- Dimensions, construction method and timing of the nourishment placement influence benthic recolonisation
- Morphological model used as a tool to investigate different scenarios



Construction of the Eastern Scheldt pilot scheme

**15:30 Monitoring The Impact Of Land Reclamation On Siltation In An Inland Lake**  
de Wit L and Bliet AJ, Svašek Hydraulics, the Netherlands; Frieling JH, Ingenieursbureau Amsterdam, the Netherlands

- Comparison impact of a land reclamation with natural turbidity
- Focus on silt screen effectiveness
- Innovative siltation measurements with high accuracy (+/-1mm)
- Monitored impact on benthos



Overview of the project site

**15:50 Field Tests And Plume Measurements In The Fehmarnbelt**

**Bundgaard KE, Lumborg U and Brøker I, DHI, Denmark; Jensen A, Femern A/S, Denmark; Andersen TJ, University of Copenhagen, Denmark**

- Determination of plume properties through field measurements and large scale testing
- Assessment of the relation between primary particle size distributions in the plume and the in-situ particle size distributions in the plume
- Median particle sizes in the plume as a function of the distance to the dredger
- Length of transition period where particle sizes in the plume have not reached a natural level



Sediment slurry in a dredger, ready for dispersion at the test site

**16:40–17:25 SESSION 5 – CEDA Environment Commission (CEC) In The Spotlight**

**16:40 Update On CEC's Activities**  
**Laboyrie P, chairman CEC, Witteveen+Bos, the Netherlands**

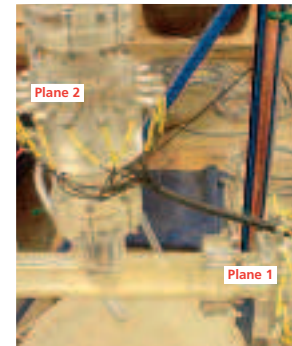
**16:55 CEDA Position Paper: Underwater Sound**  
**Thomsen F, chairman CEDA Working Group on Underwater Sound, DHI, Denmark**

**17:10 CEDA Information Paper: Climate Change Adaptation As It Affects The Dredging Community**  
**Hakstege P, chairman CEDA Working Group on Climate Change Adaptation, Ministry of Infrastructure and Environment, the Netherlands**

**Friday, 11 November 2011**

**09:00–10:40 SESSION 6 – Academic Session**

**09:00 Application Of Electrical Resistance Tomography In A Sand-Slurry Loop**  
**Talmon AM, Technical University Delft/ Deltares; Schut RA, Technical University Delft, the Netherlands**



Test set-up

- Hydro-transport of sand
- Laboratory tests
- Electrical resistance tomography (ERT)
- In-pipe sand concentration profiles
- Temperature correction ERT method
- Possibilities to measure the velocity field

**09:20 Numerical Simulation Of Sedimentation Using The Mixture Model**

**Goeree JC, Technical University Delft/MTI Holland, the Netherlands**

- In recent years, dredged materials increased to high density values
- In order to describe (high) density mixtures, the mixture model is used
- Closure relations are incorporated describing the sediment transport
- A fractional step method is used to numerically solve the governing equations

**09:40 An Investigation Of The Effects Of Screen Structures In The Flow Through And Around A Silt Screen**

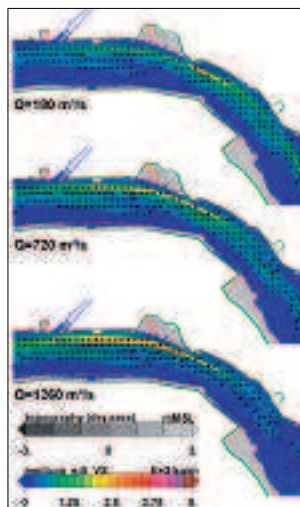
**Vu TT, DHI-NTU Centre, Nanyang Technological University, Singapore; Tan SK, Nanyang Environment & Water Research Institute, Nanyang Technological University, Singapore**

- Investigation of the flow around a silt screen using laboratory experiments and numerical simulation
- Description of the evolution of velocity profiles in the vicinity of a silt screen
- Effects of silt screen properties (weaving structures and screen length) on flow characteristics
- Discussion of the possible effects of a silt screen on sediment paths

**ABOUT THE PAPERS**

**10:00 Analysis Of A Sediment Management Concept For The Elbe Estuary By Use Of A Three-Dimensional Numerical Model**  
Maerker C and Malcherek A, University of the German Armed Forces Munich, Germany; Weilbeer H, Federal Waterways Engineering and Research Institute, Germany

- Analysis of dredging and disposal operations within the Elbe Estuary
- Description of flow and sediment transport characteristics
- Methodology of the investigation
- Modelling of erosion and drifting from disposal sites
- Simulation of different scenarios for sediment near Hamburg



Drifting of fine sediments from a disposal site at different headwater discharges

**10:20 Analysis Of Dune Ploughing In Rivers**  
Bots H, Rijkswaterstaat/Deltares, the Netherlands; Talmon AM, Technical University Delft/Deltares, the Netherlands; Sieben J, Rijkswaterstaat, the Netherlands

- Efficiency of maintenance dredging in Dutch rivers needs to improve
- Removal of river dunes using a plough
- Scale model test to investigate plough behaviour and find key parameters
- Theoretical verification of the scale model
- Force model and force measurements show a good similarity



Tug and plough

**11:10–12:30 SESSION 7 – Deepsea Mining**

**11:10 An Experimental And Numerical Study Of Vertical Hydraulic Transport For Deepsea Mining Applications**

van Wijk JM and Vercrujisse PM, MTI Holland, the Netherlands; Lucieer PA, IHC Merwede Deep Sea Dredging and Mining, the Netherlands; van Rhee C, Technical University Delft, and Talmon AM, Technical University Delft/Deltares, the Netherlands

- Deepsea mining requires the vertical transport of solids from the seabed to the surface
- Hydraulic transport through a riser is a promising means of vertical transport for deepsea mining
- Concentration peaks and even riser blockage can occur due to continuity and solids' properties
- Research aims to predict the long-term macro scale mixture behaviour
- Proper prediction of vertical transport processes is necessary for hydraulic design and operational risk mitigation

**11:30 Offshore Deepsea Dredging Applications And Operational Viability Of The Ro-Ro Deep Dredge System**  
Van Duursen EA and Winkelman MO, Damen Dredging Equipment



Sailing and loading test at Marin for operability evaluation

- Explanation of the system's layout
- Model tests for operational parameters
- Evaluation of transport distance and operating costs
- Applications in sand winning, offshore operations, mining and processing

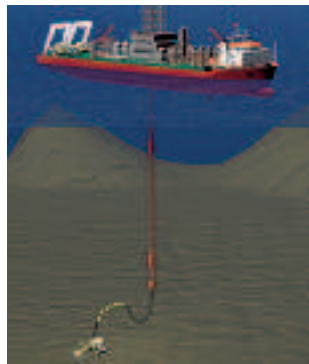


Dredging at a coal mine site

**11:50 Hydraulic Mining Of Coal At Great Water Depths**  
Huijsmans MGM, Witteveen+Bos Raadgevende Ingenieurs, the Netherlands

- History of hydraulic mining and transportation of coal
- Dredging industry versus coal mining, a challenging co-operation
- Dredging hard material at water depths greater than 30m – equipment specifications
- Project characteristics: large quantities (coal and overburden), coal parameters, separation of coal and water and power plant input requirements

**12:10 Into The Deep: A Risk-Based Approach For Research To Deepsea Mining**  
**Verichev S, van Gelder R, Alvarez Grima M, van Wijk J, MTI Holland; Heeren J, IHC Merwede Deep Sea Dredging and Mining, the Netherlands**



How it could work

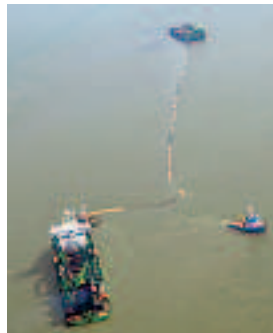
- Risk analysis: the biggest challenges in deepsea mining system design
- Prediction of seabed conditions using core samples and a geostatistical toolbox
- Hyperbaric rock cutting
- Flow assurance for vertical hydraulic transport of solids
- Riser motions and their influence on operability

**14:00–15:00 SESSION 8 – Building With Nature: Case Studies**

**14:00 Dredging Works In The Westerschelde To Deepen The Navigation Channel And To Create Ecologically Valuable Areas**

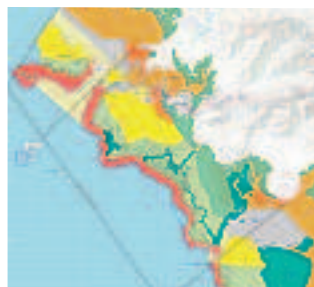
**Sas M, De Sutter R, IMDC, Belgium; Beirinckx K, Aerts F, Flanders Ministry of Public Works, Department of Maritime Access, Belgium**

- Third deepening and enlargement scheme of the Westerschelde navigation channel
- Final 'flexible disposal strategy' aims at creating new intertidal areas
- Execution methods for dredging and disposal activities
- Follow-up, decision framework and process during the project



Spray pontoon Thornton connected to TSHD Lange Wapper placing sand on the edge of a sandbar

**14:20 Dredging In Panama And New Caledonia: Caring For Habitats From Rainforests To Coral Reefs**  
**Van Parys M, Schiettecatte W, Cras S, Jan De Nul, Belgium**



New Caledonia – Koniambo habitat map

- In New Caledonia, a project was constructed with special care for nearby coral reefs
- While dredging on the Panama Canal's Atlantic side, the focus was on wildlife rescue and sediment control

**14:40 Fehmarnbelt Fixed Link Between Continental Europe And Scandinavia – Innovative Technology To Optimise Mechanical Dredging Operations**  
**Iversen C and Andersen J, Femern AS, Denmark; van Putten E, tunnel engineering consultant, the Netherlands**



Ideal job? Backhoe dredger Nordic Giant awaits the call

- Challenges in dredging extremely hard clay in the Fehmarnbelt's deeper sections
- Dredging near protected areas and re-using material to create natural landscapes
- Installing and backfilling 89 tunnel elements in a pre-dredged trench
- Assuring safe marine working areas in a busy commercial shipping channel
- Creating a production facility to construct nearly 18km of immersed tunnel



CEDA Belgian Section chairman Freddy Aerts surrounded by students at CEDA Dredging Days 2008 in Antwerp

**CEDA Student Programme**

Under the programme, CEDA offers a considerable number of free registrations to graduate and post-graduate students – granted to students who've shown great affinity with dredging technology in their studies. Organised and co-ordinated by Young CEDA, the programme reaches out to around 20 European universities and institutions of higher professional education, which are each offered three free registrations. Students who aren't accepted for the programme can still attend CEDA Dredging Days 2011 at a significantly reduced rate – €150 excluding VAT.

## TECHNICAL VISIT

### To IHC Merwede's Kinderdijk Shipyard

**Wednesday, 9 November 2011 – 13:00-18:00**

IHC Merwede combines centuries of experience in dredging, mining and offshore technology to create technical innovations for customers. By continuous development of new technology, the firm seeks to meet the requirements of companies operating in the mining and offshore energy industries that are responding to the growing need for resources – such as marine minerals – and to create infrastructures in deep waters.

It's thus most appropriate for *CEDA Dredging Days 2011* – with dredging for the offshore oil and gas industry and deepsea mining amongst the main topics – to include a technical visit to IHC Merwede, hosted by its Deep Sea Dredging & Mining Unit in Kinderdijk. The aim is to ensure that participants will greatly benefit from the visit; they'll have the opportunity to visit the slipway where vessel construction takes place – and if it's possible, they'll also tour one of the ships under construction.

In addition, participants will be given an insight into OceanFLORE, the joint venture between IHC Merwede and DEME for the development of deepsea mining activities. IHC Merwede's responsible for developing and building technical solutions, while DEME's responsible for operations. OceanFLORE will provide services on a cost-per-ton basis, lowering the entry barrier for ocean-mining ventures.

**NB:** You must register for the tour in advance – please refer to the registration form. It's an extra €50 (excluding VAT) and as the number of places is limited to a maximum of 50, they'll be allocated on a first-come, first-served basis.

The coach will depart from Intell Hotels Rotterdam Centre at Schiedamsedijk 140, Rotterdam, at 13:00 hours and will return to the same hotel at approximately 18:00 hours. Participants registering for the visit will receive detailed joining instructions from the Conference Secretariat.

Please check the conference website –  
**[www.cedaconferences.org/dredgingdays2011](http://www.cedaconferences.org/dredgingdays2011)**  
– for up-to-date information.



*Fascinating – IHC Merwede's Kinderdijk yard*



*Hydrohammer is an example of IHC Merwede's offshore innovation*

## ACCOMPANYING PERSONS' PROGRAMME

### Enjoy The Hague's Treasures

**Thursday 10 November, 08:45-17:15 hours**  
**The Hague, Binnenhof and Mauritshuis**

Half an hour away from Rotterdam, on the North Sea coast, you find a unique city – The Hague. It's not only the residence of the nation's royal head of state and where the Netherlands' government is based, but it's also the world's city of justice and peace. And of course, The Hague's been synonymous with world class painting for centuries. The programme reflects both facets and includes visits to:

- **The Binnenhof** – literally 'Inner Court', this complex of buildings has been home to the Dutch parliament since 1446. Buildings were constructed around the court, several of which are well known in their own right, such as the Ridderzaal (Knight's Hall), where the queen gives her annual speech. One of the towers, simply known as het Torentje (Little Tower and next to the Mauritshuis Museum) has been the office of the Netherlands' prime minister since 1982.

More info at <http://english.binnenhofbezoek.nl>

- **Mauritshuis Museum** – a unique 17th century palace and one of the most beautiful examples of Dutch classicist architecture. It was named after the man who had it built – Count Johan Maurits of Nassau-Siegen – who was governor of the Dutch colony in Brazil from 1636 to 1644. He entrusted the project to the best architects of the time, Jacob van Campen and his assistant Pieter Post. Today, the museum's collection consists of around 800 paintings – including the famous Girl with a Pearl Earring by Johannes Vermeer – 50 miniatures, 20 sculptures, plus drawings and prints.

More info at [www.mauritshuis.nl](http://www.mauritshuis.nl)

- **Pulchri Studio** – an important art institution and studio, it began in 1847 at the home of painter Lambertus Hardenberg as a result of growing discontent among The Hague's young artists because of insufficient opportunities for training and development. Today it's a showcase for both new and established artists.

More info at [www.pulchri.nl](http://www.pulchri.nl)

The day will conclude with shopping in **The Passage**, the only remaining example in Holland of this type of late 19th century covered shopping street, popular in major European and American cities.

More info at [www.denhaag.nl/en/residents/to/The-Passage.htm](http://www.denhaag.nl/en/residents/to/The-Passage.htm)

It all starts at Rotterdam's Manhattan Hotel at 08:45 where we'll meet our guide, then take the 09:02 train to The Hague. We'll be back in Rotterdam at 17:15 – in good time for the CEDA Netherlands reception at 18:00. The fee is €55 (excluding VAT) and includes return train tickets, lunch, coffee, entrance fees and guide.



Beauty and function – The Binnenhof

Photo: Den Haag Marketing



Mauritshuis – you'll recognise the poster!

Photo: CEDA

### Timetable

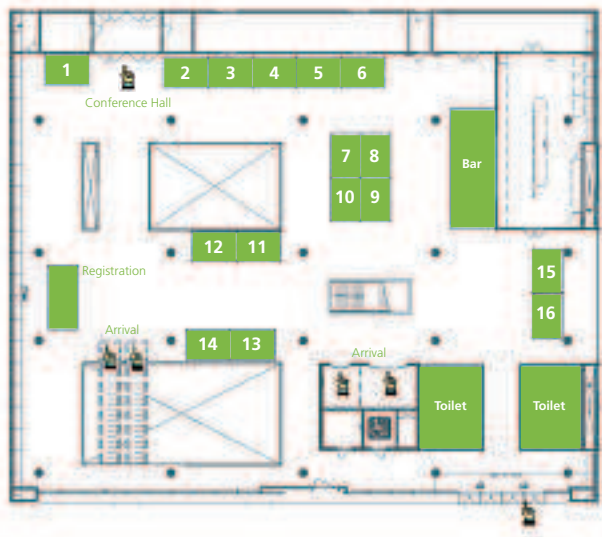
<b>08:45 hours</b>	Meet at Manhattan Hotel with guide
<b>09:02 hours</b>	Departure by train to The Hague
<b>09:33 hours</b>	Arrival at The Hague Central Station
<b>10:00 hours</b>	Visit Binnenhof*, including lunch at Het Plein
<b>12:30 hours</b>	Visit Mauritshuis
<b>14:00 hours</b>	Visit Pulchri Studio
<b>15:00 hours</b>	Shopping
<b>16:30 hours</b>	Departure to The Hague Central Station
<b>16:51 hours</b>	Departure train to Rotterdam Central Station
<b>17:15 hours</b>	Arrival at Rotterdam Central Station

\*All buildings that will be visited are used by the Dutch Parliament and it's possible that one or more buildings will be closed to guided tours



**TECHNICAL EXHIBITION**

**CEDA DREDGING DAYS 2011**  
Dredging Exhibition



**Dredging Exhibition Stands in Numerical Order**

Stand	Company
01	QPS The Netherlands
02-03	DEME Belgium
04	Prolec United Kingdom
05	Aqua Vision The Netherlands
06	Nortek Oceanografische Instrumenten en Diensten The Netherlands
07	IHC Merwede The Netherlands
08	Van Oord Dredging and Marine Contractors The Netherlands
09-10	VOSTA LMG The Netherlands
11	Damen Dredging Equipment The Netherlands
12	Seatools The Netherlands
13	Fugro Satellite Positioning The Netherlands
14	Denialink Spain
15	Central Dredging Association The Netherlands
16	Rotonics Manufacturing United States of America

**Technical Exhibitors at CEDA Dredging Days 2011**

*In alphabetical order by company name – we've given every exhibitor a chance to tell you something about their abilities and scope*

**AQUA VISION**

Stand Number: 5

Address: Servaasbolwerk 11  
3512 NK Utrecht  
The Netherlands  
Tel: +31 (0)30 245 9872  
Email: [info@aquavision.nl](mailto:info@aquavision.nl)  
Website: [www.aquavision.nl](http://www.aquavision.nl)  
Contact person: Mr Peter Meijer



Aqua Vision is an independent hydrographic and oceanographic consultancy with clients including government agencies, the dredging and offshore industries and engineering companies worldwide. We offer a comprehensive range of services including inland and coastal surveying, hardware and software development, representation of leading industry manufacturers and leasing from our extensive instrument pool. ViSea, our in-house developed software, is used worldwide for ADCP data collection, validation and presentation.

Curious as to how we can serve your needs? More info via our website!

**CENTRAL DREDGING ASSOCIATION**

Stand Number: 15

Address: CEDA Secretariat, Radex Building  
Rotterdamseweg 183c, 2629 HD Delft  
The Netherlands  
Tel: +31 (0)15 268 2575  
Fax: +31 (0)15 268 2576  
Email: [ceda@dredging.org](mailto:ceda@dredging.org)  
Website: [www.dredging.org](http://www.dredging.org)  
Contact person: Ms Anna Csiti



The Central Dredging Association (CEDA) is an internationally recognised independent professional association. It's an easy-to-access leading platform for the exchange of knowledge and an authoritative reference point for impartial technical information. CEDA actively strives to contribute towards sustainable development by strongly recommending working with nature. CEDA members are corporations, professionals and stakeholders involved in a diversity of activities related to dredging and marine construction and who live and work in Europe, Africa and the Middle East. CEDA encompasses a wide range of disciplines and activities and does not represent the interests of any particular sector of the industry.

**DAMEN DREDGING EQUIPMENT**

Stand Number: 11

Address: PO Box 1021  
3860 BA Nijkerk  
The Netherlands  
Tel. +31 (0)33 247 4040  
Fax +31 (0)33 247 4065  
Email: [info@damendredging.com](mailto:info@damendredging.com)  
Website: [www.damendredging.com](http://www.damendredging.com)  
Contact person: Mr David Tenwolde



Damen Dredging Equipment is a specialised supplier of dredging equipment and dredging instrumentation and automation. Based in Nijkerk, the Netherlands, and fully owned by the Damen Shipyards Group, the company has over 60 years of experience in the design and construction of dredging equipment, serving the worldwide dredging industry. Our dredging tools are all built to specific customer requirements, making use of a wide range of standard equipment. Damen Dredging Equipment is at the forefront of new developments in the dredging business and would like to draw your attention to:

- The Ro-Ro dredge, the latest development in high efficiency dredging
- Trailing suction pipe systems for hopper dredgers
- Cutter suction dredgers available from stock
- The versatile DOP submersible dredge pumps
- Instrumentation and automation for the dredging industry.

**DEME**

Stand Number: 2+3

Address: Scheldedijk 30 – Haven 1025  
B-2070 Zwijndrecht  
Belgium  
Tel: +32 (0)3 250 5211  
Fax: +32 (0)3 250 5650  
Email: [info@deme.be](mailto:info@deme.be)  
Website: [www.deme.be](http://www.deme.be)  
Contact person: Ms Karen Hoorelbeke



DEME is a group of Belgian hydraulic engineering, dredging and offshore contractors that specialises in the construction and development of offshore renewable energy projects; harbours; artificial islands; estuarial dams; canals and inland waterways; dike construction and reinforcement; beach replenishment, and coastal protection. DEME has been gradually extending its range of activities and offers an impressive array of services in the environmental field, sea aggregate winning, complex marine construction – such as design and installation of foundations – as well as turbine erection on offshore windfarms, offshore heavy-lifting, maritime infrastructure and general maritime services and salvage activities.

**DENIALINK**

Stand Number: 14

Address: Assagador de Santa Lucia 27  
03700 Denia (Alicante)  
Spain  
Tel: +34 965 788 373  
Fax: +34 965 782 204  
Email: [info@denialink.com](mailto:info@denialink.com)  
Website: [www.denialink.com](http://www.denialink.com)  
Contact person: Mr Egbert Wibbelink



Denialink is a young and dynamic company created in 2002 and active in various fields related to Marine Construction. We supply new EMSTEC and used rubber hoses, self floating or subsea hoses in a variety of available interior diameters. Additionally, we have a range of floating devices and sleeves for steel and HDPE pipes. We represent IRM Offshore – an Indian manufacturer of rubber marine fenders with a complete product line from pneumatic fenders to solid marine fenders – and we're the representative in Spain and Portugal for Damen Dredging Equipment: we can supply a full range of dredge pumps and dredge equipment. We also provide marine brokerage services for all types of auxiliary work vessels and equipment.

**FUGRO SATELLITE POSITIONING**

Stand Number: 13

Address: Dillenburgsingel 69  
2263 HW Leidschendam  
The Netherlands  
Tel: +31 (0)70 317 0960  
Fax: +31 (0)70 317 0924  
E-mail: [marinestar@fugro.com](mailto:marinestar@fugro.com)  
Website: [www.fugro.com](http://www.fugro.com)  
Contact person: Mr Hans Visser



Fugro Satellite Positioning offers high performance correction services for the American GPS and Russian GLONASS navigation satellite systems. Correction services – with decimetre level accuracy – are available worldwide with data delivery over eight 'L-band' geostationary satellites. Applications include dredging, scientific research, hydrographic and defence vessels.

**IHC MERWEDE**

Stand Number: 7

Address: Molendijk 94  
3361 EP Slidrecht  
P.O. Box 204  
3360 AE Slidrecht  
The Netherlands  
Tel: +31 (0)184 411 555  
Email: [info@ihcmerwede.com](mailto:info@ihcmerwede.com)  
Website: [www.ihcmerwede.com](http://www.ihcmerwede.com)  
Contact person: Ms Katja Jansen



IHC Merwede is focused on the continuous development of design and construction activities for the specialist maritime sector. It's a global market leader for efficient dredging and mining vessels and equipment – with vast experience accumulated over decades – and a reliable supplier of custom-built ships and supplies for offshore construction. IHC Merwede has in-house expertise for engineering and manufacturing innovative vessels and advanced equipment, as well as providing life-cycle support. Its integrated, systematic approach has helped to develop optimum product performance and long-term business partnerships. The company's broad customer base includes dredging and offshore contractors, oil and gas corporations and government authorities.

**NORTEK OCEANOGRAFISCHE INSTRUMENTEN EN DIENSTEN**

Stand Number: 6

Address: Schipholweg 333a  
1171 PL Badhoevedorp  
The Netherlands  
Tel: +31 (0)20 654 3600  
Fax: +31 (0)20 659 9830  
Email: [info@nortek-bv.nl](mailto:info@nortek-bv.nl)  
Website: [www.nortek-bv.nl](http://www.nortek-bv.nl)  
Contact person: Mr Sicco Kamminga



Nortek develops and produces acoustic doppler current profilers (ADCP) for use in oceans, rivers and the laboratory. The instruments are for sale globally and we give worldwide support. We install instruments and perform measurement campaigns of currents, waves and water quality. For dredging projects, we provide data buoys and all services. Nortek has expanded its product range with the Seadarq system, a radar solution for the measurement of currents, waves and the detection of oil spills that's capable of conducting real-time, continuous monitoring over a wide area. Seadarq processing software provides a time-series of recordings and images to reflect changes of currents and sediment displacement during different weather conditions in a specified time.

### PROLEC

Stand Number: 4

Address: 25 Benson Road  
Nuffield Industrial Estate  
Poole BH17 0GB  
Dorset  
UK  
Tel: +44 (0)1 202 681 190  
Fax: +44 (0)1 202 679 09  
Email: [info@prolec.co.uk](mailto:info@prolec.co.uk)  
Website: [www.prolec.co.uk](http://www.prolec.co.uk)  
Contact person: Mr Gary Tuffy



Prolec is a 25-year innovator and recognised leader in productivity solutions for construction plant. A global supplier of systems with high accuracy and reliability, our components are recognised for their ruggedness and accuracy. The only supplier with experience in both civil and marine markets, Prolec sees the dredging sector as a focus market and our premier machine guidance product, pcX-Pro, provides highly customisable yet cost-effective solutions and is used by the world's premier dredging contractors. Systems can be customised for both onshore and offshore work.

### QPS

Stand Number: 1

Address: Huis ter Heideweg 16  
3705 LZ Zeist  
The Netherlands  
Tel: +31 (0)30 694 1203  
Fax: +31 (0)30 692 3663  
Email: [sales@qps.nl](mailto:sales@qps.nl)  
Website: [www.qps.nl](http://www.qps.nl)  
Contact person: Mr Rob van Woudenberg



QPS has a strong presence in the dredging industry and is the developer of market leaders QINSy and Fledermaus software, which are used worldwide in a variety of applications – Fledermaus, for example, can be used to process and visualise survey data in 3-D. QPS' software developments are focused on total system integration – from acquisition, processing and visualisation to ENC production and GIS integration. And the range includes:

- QINSy – for data acquisition and data validation
- Qcloud – area-based 3D data cleaning
- ENC production platform
- Qomposer – S-57 ENC editor and maintenance Fledermaus range of products

### ROTONICS MANUFACTURING

Stand Number: 16

Address: 5677 W. 73rd Street  
Indianapolis, IN 46278  
USA  
Tel: +1 317 328 8000  
Fax: +1 317 328 8080  
Email: [sales@rotonics.com](mailto:sales@rotonics.com)  
Website: [www.rotonicsflotation.com](http://www.rotonicsflotation.com)  
Contact person: Ms Terri Carruth



Rotonics Manufacturing is the solution for your dredging requirements. Rotonics carries a full line from 2.5" line floats to 30" surface floats for all types of applications. All pipe/hose/line floats are made with seamless, one-piece construction. Featuring high impact resistance, even at sub-zero temperatures, these floats are unaffected by chemicals, solvents, and fuel.

### SEATOOLS

Stand Number: 12

Address: Jan van der Heydenstraat 11  
3281 NE Numansdorp  
The Netherlands  
Tel: +31 (0)186 680 000  
Fax +31 (0)186 680 001  
Email: [info@seatoools.com](mailto:info@seatoools.com)  
Website: [www.seatoools.com](http://www.seatoools.com)  
Contact person: Mr Arjen Klop



Seatoools consists of a team of specialists with many years of experience in underwater and offshore technology and has proven qualities in the design and building of high quality tailor-made equipment. Seatoools' track record clearly demonstrates the experience with a wide range of products that are used worldwide in the dredging, offshore and civil underwater industries.

Seatoools' staffing is such that it can provide a complete solution to complex problems in-house, including sectors such as mechanical, hydraulic, electrical/electronic and software design and implementation. Once the design is completed, manufacture of components is outsourced, but assembly, testing and commissioning are always carried out by Seatoools' own staff.

### VAN OORD DREDGING & MARINE CONTRACTORS

Stand Number: 8

Address: Jan Blankenweg 2  
4207 HN Gorinchem  
The Netherlands  
P.O. Box 452  
4200 AL Gorinchem  
Tel: +31 (0)18 364 200 (Office)  
Email: [area.off@vanoord.com](mailto:area.off@vanoord.com)  
Website: [www.vanoord.com](http://www.vanoord.com)  
Contact person: Willemien Kloet



Van Oord is a world-class marine contractor with a modern and versatile fleet of specialised vessels and auxiliary equipment. We work on dredging, offshore and marine engineering projects around the world. The separate business unit Van Oord Offshore offers offshore and EPC services, including high-precision subsea rock installation; trenching and backfilling; landfill installation; pipe pulling, and SPM & GBS installation. With an extensive global track record in the offshore construction industry, Van Oord Offshore has proven its expertise to provide clients with solid and innovative solutions for their offshore structures – in accordance with the highest quality and safety standards.

### VOSTA LMG

Stand Number: 9+10

Address: Klaprozenweg 75E  
1033 NN Amsterdam  
The Netherlands  
P.O. Box 37194  
1030 AD Amsterdam  
The Netherlands  
Tel.: +31 (0)20 493 6666  
Email: [info@vostalmg.com](mailto:info@vostalmg.com)  
Website: [www.vostalmg.com](http://www.vostalmg.com)  
Contact person: Mr Rudolf Dietze



VOSTA LMG is an engineering and contracting company that serves the worldwide dredging industry. Apart from custom-built and standard dredgers, the company also markets various dredge component packages and offers engineering and contracting services. VOSTA LMG has nine offices – one in Amsterdam, the Netherlands; two in Germany (Lübeck and Hamburg); two in China (Zhuhai and Beijing); one in the USA (Sebastopol, California); one in the United Arab Emirates (Dubai); one in India (New Delhi), and an office in Singapore.

## YOUNG CEDA

### Planning For The Future

**The youngest commission within the Central Dredging Association, suitably named Young CEDA, was formed in 2009 – its chairman Daan Rijks outlines progress to date**

Young CEDA (YC) is a unique, international network of students and young professionals in the dredging sector, representing research institutes, universities, government agencies, contractors and consultants.

Originally named the Development Committee, YC's main objectives are to involve younger members more closely with the Association, challenge the board of directors with new ideas and provide constructive feedback.

We do that by organising a range of activities, including technical excursions and seminars, with the absolutely indispensable after-activity drinks party that offers ample opportunities for YC members to exchange ideas, gain new technical insights and expand their networks with valuable new contacts.

We follow up with presentations and discussions about the experiences young professionals have had and also tap into more experienced CEDA colleagues' extensive knowledge – all of which helps keep CEDA alive, up-to-date and buzzing with new ideas.

#### Activities

In 2010 Young CEDA concentrated on four specific areas:

**1). Expanding the network** – through a special YC page on the CEDA website, a LinkedIn group and regular input for the CEDA newsletter and DPC.

**2). Educational and at the same time entertaining seminars** – held in Belgium and the Netherlands for students and young professionals on 'Working in the Dredging and Marine Infrastructure Sector'.



Site visit to Maasvlakte 2



Learning about the dredging industry



Relaxing together



YC chairman Daan Rijks at Technical University Delft



Networking during one of the seminars

**3). A technical excursion to Maasvlakte 2** – for over 100 young professionals who received high-level presentations, an extensive site visit to this 1,000ha Port of Rotterdam expansion project and a well-earned informal BBQ with drinks to catch up and meet new people.

**4). Participation in CEDA commissions** – submitting feedback and suggestions, including topics and issues for future CEDA Information Papers, to make proposed actions attractive for younger members.

During 2011, Young CEDA built on the progress made, highlights including:

- **A second technical visit** – this time to Hollandsch Diep, the 10M m3 confined underwater disposal facility
- **CEDA Dredging Days 2011 and WODCON XX** – YC has representatives on both Technical Papers Committees
- **CEDA-IADC Forum on Early Contractor Involvement** – YC accepted the organising committee's invitation to take on the role of rapporteurs and produced a detailed account of the discussions in the interactive working sessions (see Terra et Aqua, August 2011)
- **A new series of seminars** – now being prepared in England and Germany
- **New YC members** – being introduced on various CEDA commissions.

#### Finally...

Young CEDA's looking at possibilities to expand its commission whilst keeping a much-needed geographical and professional balance.

In particular, we're looking for new members from southern Europe, but anyone interested in helping to organise an activity is most welcome.

We're also currently investigating whether there's any interest on the part of CEDA's sister organisations, WEDA and EADA, to set up young sections. YC would be happy to help and to share its experience in any way possible.

More information? Feel free to contact any Young CEDA member; become a member of the YC LinkedIn group, and take a look at the dedicated YC pages on [www.dredging.org](http://www.dredging.org) – follow the Young CEDA link.

EUROPORT 2011

**Advanced And Pioneering Technology**

**Over 30,000 international maritime professionals from all sectors of the industry are brought together at Europort – arguably one of the world’s most diverse marine exhibitions**

Europort’s identified by many as the ultimate platform to launch pioneering technology to the international market – and with 900 exhibitors this year, Europort 2011 is certain to see many innovations unveiled.

**CEDA Dredging Days 2011** is held in conjunction with Europort and both take place at Ahoy Rotterdam, the latter from 8-11 November.

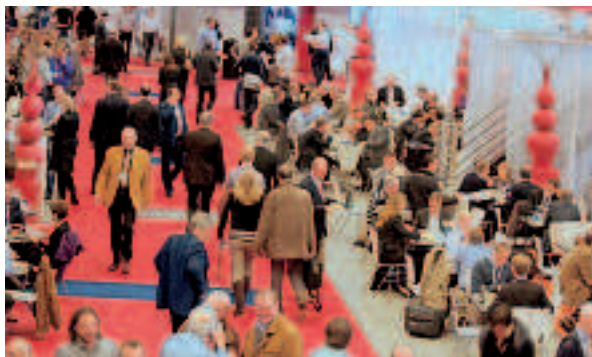
Themed *Advanced Technology: Your Access To The Future*, Europort also hosts a wide range of other conferences, meetings and activities. And advanced technology is at the heart of the Dutch shipbuilding industry where companies bid to bring cost-effective, efficient solutions to the market. Saving fuel, cutting emissions, green technology and the slow steaming issue are just some of the topics to be discussed.

**On Offer**

Exhibitors include manufacturers and suppliers for:

- Shipbuilding, repair and conversion
- Propulsion and manoeuvring
- Electronics, communication and navigation
- Mechanical and auxiliary systems
- Deck, safety and special equipment
- Maritime services – including classification, finance, media, government and sector associations.

Delegates to CEDA Dredging Days 2011 have free access to Europort and will receive an email from the Conference Secretariat at the beginning of November which will allow them free entry to Ahoy. Anyone without an email will need to have registered in advance (for free) as a Europort visitor in order to receive a digital admission voucher on arrival at Ahoy. *Take a look at [www.europort.nl](http://www.europort.nl) for more details.*



*Around the halls at the 2009 Europort*



*Nothing if not international!*

**Europort 2011 Essential Information**

- **Venue** – Ahoy Rotterdam, Ahoy-weg 10, 3084 BA Rotterdam, the Netherlands
- **Opening Times** – 10:00-18:00 on Tuesday, Wednesday and Friday, 8, 9 and 11 November, with late opening to 22:00 on Thursday 10 November
- **Contacts** – phone the Europort project team on +31 (0)10 293 3250 or email them at [info@europort.nl](mailto:info@europort.nl)
- **Public Transport** – from Rotterdam Central Station, take the metro (direction De Akkers or direction Slinge). Get off at Zuidplein, which is in front of Ahoy and just a five-minute walk. **NB:** a public transport chip card is mandatory for the Rotterdam metro. Buy it at Rotterdam Central Station, at the entrance to the metro, or order one in advance via [www.ret.nl](http://www.ret.nl)
- **Water Taxis** – find out more via [www.watertaxirotterdam.nl](http://www.watertaxirotterdam.nl)
- **Hotels** – Europort has a dedicated site at <https://registration.akm.ch/hotel/book?congress=655&lang=2>
- **Registration** – free for visitors via [www.europort.nl](http://www.europort.nl)

## REGISTRATION INFORMATION



Ahoy Rotterdam, the venue for Dredging Days 2011

**CEDA Dredging Days 2011 will be held in the Conference Centre at Ahoy, Ahoy-weg 10, 3084 BA Rotterdam, on Thursday and Friday, 10 and 11 November and in conjunction with Europort**

### You can register in two ways:

- Online registration via [www.cedaconferences.org/dredgingdays2011](http://www.cedaconferences.org/dredgingdays2011) is possible until 12:00 on Tuesday 8 November 2011.
- Contact the Conference Secretariat for CEDA Dredging Days 2011, c/o Sylvia Minten, Minten Projectmanagement, P.O. Box 12107, 3004 GC Rotterdam, the Netherlands. Tel: +31 6 1660 3947, Fax: +31 84 215 0053, Email: [sylvia@mintenprojectmanagement.nl](mailto:sylvia@mintenprojectmanagement.nl).  
**NB:** Same details apply throughout the conference.

### Registration Desk Location and Opening Hours

When you arrive at CEDA Dredging Days 2011, contact the registration desk – you'll find it located on the second floor at the entrance to the Conference Centre foyer.

**NB:** To enter Ahoy on the first day you'll be asked to show an email provided by the Conference Secretariat. We'll send it to you a couple of days before the conference.

- **Wednesday 9 November** – exhibitors only from 18:00
- **Thursday 10 November** – from 08:00 to 19:00
- **Friday 11 November** – from 08:00 to 16:15

**NB:** If you are an exhibitor, you may set up your stand from 18:00 on Wednesday 9 November; breakdown will be from 16:15-17:30 on Friday 11 November.

### Registration Entitlements

Conference delegate and student registration fee includes:

- Conference sessions on 10 and 11 November
- Free entrance to the Europort 2011 exhibition
- A full set of conference documents
- The official Europort 2011 exhibition catalogue
- Morning coffee, lunch and afternoon tea on 10 and 11 November, as well as the CEDA Netherlands Reception at 18:00 on 10 November, plus the Farewell Drinks at 15:20 on 11 November.

Accompanying persons programme registration fee includes:

- Return train ticket to The Hague
- Coffee, lunch, entrance fees and guide on 10 November
- Entry to the CEDA Netherlands Reception on 10 November
- Entry to the Farewell Drinks on 11 November

Exhibition staff registration fee includes:

- Refreshments during breaks
- Lunch on 10 and 11 November, as well as the CEDA Netherlands Reception on 10 November and the Farewell Drinks on 11 November.

**NB:** This fee does not include the conference papers CD-ROM nor entry to the conference sessions. Staff who would like to attend the technical sessions should register as conference delegates.

Technical visit registration fee includes:

- Transportation
- Site visit and refreshments.

### Name Badges

These will be issued to all registered delegates, accompanying persons and exhibitors. Badges must be worn for entrance to all technical sessions, the exhibition, social functions, accompanying persons' programme and the technical visit. Those not wearing a badge will be refused entrance. Name badges will be colour coded as follows:

Participant	Code
Conference Delegate	White
Accompanying Person	Blue
Exhibitor	Orange

### Liability and Insurance

Registration fees do not include insurance of any kind. It is strongly recommended that when registering for the conference and booking travel arrangements, participants should arrange personal insurance cover for the following:

- Loss of registration and tour fees, deposits, hotel costs and airfares through cancellation of the conference for *force majeure* or any other reason
- Failure to utilise pre-booked arrangements due to airline delays for *force majeure* or any other reason
- Medical expenses and loss or damage to personal property.

CEDA, Minten Projectmanagement and Ahoy will not accept responsibility for any personal injury, damage or loss of property that may occur in connection with the conference. The insurance is to be purchased in the participant's own country.

### ORGANISATION

CEDA Dredging Days 2011 is organised by the Central Dredging Association. Minten Projectmanagement has been appointed as the Conference Secretariat.



The Central Dredging Association (CEDA) is an internationally recognised independent professional association. It is an easy-to-access leading platform for the exchange of knowledge and an authoritative reference point for impartial technical information. CEDA actively strives to contribute towards sustainable development by strongly recommending working with nature. CEDA members are corporations, professionals and stakeholders involved in a diversity of activities related to dredging and marine construction. CEDA represents the common interest of all fields related to dredging and marine construction and does not promote the interest of any particular industry sector or organisation. For more information visit: [www.dredging.org](http://www.dredging.org).

**AFTER HOURS**

**Culture And Cuisine**

**Rotterdam might lack the attractiveness of an old city centre, but it compensates with modern architecture, splendid museums and lovely places to eat and drink – resident Miriam Monteiro-Lima shares her secrets**

If you love museums, you'll be happy in Rotterdam – and if like me you love to combine something cultural with a great place to eat, my favourite combinations are sure to appeal.

- **Museum Of Photography** – on Rotterdam's south side, it always has interesting exhibitions, plus a fixed digital collection, and is perfect for a short cultural intermezzo.

Combine it with a treat, high tea at the **Hotel New York** – on the same street and definitely one of Rotterdam's hot spots. It used to be the Holland-America line HQ, so it's full of history. If it's dinner you're after, take the water taxi to Veerhaven on the other side of the river where you'll find great restaurants. My favourites are **Z&M**, which offers a mix of Italian and French cuisine, and **Zinc**, a fun place with a homey feel that doesn't have a menu, but works with seasonal products.



Photo: Hotel New York

More info at [www.nederlandsfotomuseum.nl](http://www.nederlandsfotomuseum.nl) + [www.hotelnewyork.nl](http://www.hotelnewyork.nl) + [www.zenmdelicatessen.nl](http://www.zenmdelicatessen.nl) + [www.restaurantzinc.nl](http://www.restaurantzinc.nl)

- **Museum Boijmans van Beuningen** – the best museum in Rotterdam in my opinion! If you have to choose only one, please choose this as it perfectly combines old and modern masters with contemporary art and design. And drop in at the **Kunsthall**, just a few minutes walking distance, which is a striking building designed by Rem Koolhaas with an equally striking art collection.



Rotterdam's best museum?



Striking – the Kunsthall



Vibrant – Witte de Withstraat



Exotic – Bazar

Combine it with a stroll to Witte de Withstraat, one of Rotterdam's most vibrant streets, for a drink at bar **De Witte Aap** and dinner at **Bazar**. Once voted one of the world's best bars, De Witte Aap is always filled with people and has a good vibe, while Bazar offers colourful tables, striking lamps and serves mainly North African and Middle Eastern food. It's affordable too – €9 buys you the daily menu.

More info at [www.boijmans.nl](http://www.boijmans.nl) + [www.kunsthall.nl](http://www.kunsthall.nl) + [www.dewitteaap.nl](http://www.dewitteaap.nl) + [www.bazarrotterdam.com](http://www.bazarrotterdam.com)

- **Delfshaven** – in the midst of one of the city's most multicultural quarters, you'll find the historic and typically Dutch harbour of Delfshaven that's surrounded by antique shops, art galleries, the famous De Distilleerkerel mill, shipyard De Delft and Pilgrim Fathers Church. Combine it with two of my favourite eateries – **Café Soif** and tapas restaurant **De Abrikoos**. Sit on the terrace for a few drinks at Café Soif, or have an affordable (€12 to €20) meal. And at De Abrikoos, typical Mediterranean tapas await at around €5 to €8.

More info at [www.rotterdam.nl/delfshaven](http://www.rotterdam.nl/delfshaven) + [www.soif.nl](http://www.soif.nl) + [www.rotterdam.abrikoos.nl](http://www.rotterdam.abrikoos.nl)

**Finally...**

**...if you're up for trips outside Rotterdam, there are three cities within 20 minutes by car or train that are must sees:**

- **The Hague** – CEDA Dredging Days 2011 accompanying persons get to visit our capital. See page 17 for more info
- **Delft** – apart from being home to one of the Netherlands' best technical universities and the great painter Vermeer, it's renowned for its pretty canals, decorated porcelain, historic churches and very good restaurants. More info at [www.delftnetherlands.info](http://www.delftnetherlands.info)
- **Gouda** – a typical Dutch town with picturesque canals and many historic buildings in the old quarter. Don't miss the famous cheese and the less famous *stroopwafel* (treacle waffles).

More info at [www.virtualtourist.com/travel/Europe/Netherlands/Provincie\\_Zuid\\_Holland/Gouda](http://www.virtualtourist.com/travel/Europe/Netherlands/Provincie_Zuid_Holland/Gouda)  
Trust me, you'll want to see more!