



The Basics of Dredging

IADC's Dredging and Reclamation Seminar

BY RIA VAN LEEUWEN

To optimize the chances of successfully completing a dredging project, it's best to fully understand the basics of dredging and the requirements of a dredging project. That is what the Dredging and Reclamation Seminar, offered by my organization, the International Association of Dredging Companies (IADC) is all about. Since 1993, we have been organizing this seminar all over the world—in Delft, Dubai, Abu Dhabi, Cape Town, Singapore, Brisbane, Mumbai, Panama, and Buenos Aires. The seminar has been developed for both technical and non-technical professionals in dredging-related industries, and it provides participants with a wealth of knowledge and a better understanding of this industry.

The seminar is given by experts from dredging contractors, such as Boskalis, DEME, Jan de Nul, and Van Oord. Experts in their field, they have worked on numerous complex dredging and reclamation projects

around the globe. The five-day course covers a wide range of subjects, including explanations about dredging equipment and methods, rainbowing sand and placing stone, project phasing, site and soil investigations, costing of a project, and dredging contracts.

Our purpose here is to provide an overview of the seminar held in Manila in October 2023. I hope the overview will show what companies can expect their employees to gain by taking the course.

Varied backgrounds

The seminar was attended by 26 participants, coming from the Philippines, Malaysia, Ghana, and Singapore, and whose ages ranged from early 20s to late 50s. Their backgrounds were also varied. The group contained consultants, dredging contractors, insurers, industry researchers, and professionals from governmental bodies and port authorities. The four lecturers were Pieter den Ridder of Boskalis, Maarten Dewint

of Jan De Nul, Robert Dijkema of Van Oord, and Luk Verstraelen of DEME, with support from me as a representative of IADC.

Workshops are an important and integral part of the five-day seminar. These workshop exercises cover a complete tender process from start to finish. Working in groups, team members take on different roles, such as business development managers, local fisheries, conservationists, and so forth, to complete various stages of the tender process. The aim is to be the group that is awarded the project based on their tender application.

Not everyone was in Manila for the same reason. Participants not only had different levels of experience or familiarity with dredging but also reported different reasons for joining the course. Motivations included wanting to:

- get insight from field experts and gain a deeper understanding of the technical and engineering side, as well as commercial, political, and social considerations of a reclamation and dredging project
- obtain more familiarity with the dredging contractors and growing their network of peers in the industry
- gain a better understanding of the requirements of dredging on the technical and contracting aspects

- know more about the basic principles of dredging and how it can be performed through a sustainable and environmental approach
- better understand the processes and terminologies used in a reclamation project
- get updated on current practices in dredging and apply that knowledge to their companies to help procure dredging projects, which are more effective and comparatively competitive.

Day one

The course kicked off with an introduction by IADC and the lecturers, followed by participants introducing themselves to the group. The aim of this first day had four aspects. The first was to highlight how dredging and reclamation can contribute to the development of new ports. The second was to create an understanding of the difference between capital dredging and the maintenance of existing ports. The third aspect was to discuss the various phases involved in project development and the sequence of activities during the tender process, and the fourth was to introduce the different types of dredgers and their main characteristics and working methods.

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The Basics of Dredging *continued*



Seminar participants in Manila prepare for their visit to the new Manila International Airport project.



Members of the winning team in the tender bid competition each received a copy of the book, *Dredging for Sustainable Infrastructure*.

Included in the day's program was the first workshop, which was based on what participants had learned so far. The group was divided into five teams and presented with an assignment on the theme, "The need for dredging: conflicting interests within potential dredging related projects" and a group discussion on a new access channel. What was interesting was how all of the teams both overlapped and differed in their thinking.

Back in the plenary room, discussions began between the different roles in each team. For example, all of the port directors discussed the various elements for a new access channel with all of the ecologists, moderated by one of the lecturers.

Day two

Tuesday started very early but was well worth it as the group had the unique

opportunity to visit the new Manila International Airport (MIA) project with the cooperation of IADC member Boskalis. The MIA project is the largest land reclamation project in Boskalis' history and will be the Philippines' largest and most sophisticated airport. Under this capital development scheme, some 1,700 hectares of land will be developed for the new facilities, located approximately 20 kilometers north from the heart of metro Manila in Bulacan Province. The land creation scheme was designed according to the highest technical and environmental standards and is aimed to withstand potential large earthquakes, local typhoons, and future sea level rise. The dredging works are moving ahead according to schedule and the massive project is expected to be completed by the end of 2024.

Upon arrival at the Baseco logistics yard and before boarding the boat transfer, the group received safety instructions and personal protective equipment to wear. After the transfer by boat to the MIA platform, the group got a tour of the works by Laurens Poelhekke of Boskalis and his colleagues. This kind of practical visit is invaluable, as participants gain a sense of scale and perspective that cannot be conveyed with theory lessons. They saw the world's largest trailer suction hopper dredger arriving at the platform and empty its hold by pumping the materials via a floating pipeline. They also saw with their own eyes the installation of the prefabricated vertical drains and the actual reclamation process at a very short distance. In addition, they had the opportunity to speak with people involved in a project on a daily basis and to get an idea of what is involved to ensure that a project runs smoothly.

In the early afternoon, the group returned to the hotel and after lunch it was back to the meeting room for three lectures. The aim of these lectures were as follows:

- to introduce other equipment, main characteristics and working methods
- to define type, purpose, and criteria of a hydraulic fill
- to create awareness of the effects of environmental aspects to the dredging process

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• to familiarize participants with the different types of contracts, contract information, risks, permits, and licences.

Day three

Today's aim was not only to familiarize participants with the importance of soil characteristics related to the type of dredger and the production process, but also to introduce the tender process for a contractor. Before lunch and in the afternoon, participants also worked in their groups on the tender workshops. The day ended with a wonderful dinner in People's Palace in Manila, hosted by IADC and the lecturers, which provided participants with an informal networking opportunity.

Day four

After a pleasant evening, it was time to get back to work. The morning's first topic was sustainable aspects of dredging. The lecturers provided participants with a greater awareness and understanding of how dredging costs are formulated and influencing factors, such as mobilization, demobilization and production costs, additional works, sub-contractors, survey, investments, and financial costs.

After lunch, the workshop continued and participants were given an assignment regarding the pricing and contractual aspects of a dredging and landfill project. An important part of the tender bidding process is the pre-bid meeting. During this meeting, groups (taking on the role of a dredging company) can raise questions to the client. This information, together with the results of their study and any additional data they may have gathered, allows the groups to develop and shape their tender bid.

Day five

The whole of Friday morning was spent by the groups working on their tender bids and documents. All bids needed to be presented in

time before a set deadline, otherwise teams faced elimination and the contract price was announced to all participants. After lunch, it was time for the lecturers to check and evaluate all of the tender bids submitted. It was good to see that nobody missed the deadline, so all of the groups took part in the bid proceedings, carried out in strict accordance with standard procedures.

While the lecturers were busy doing this, a guest speaker was invited to give a talk to the participants. Thomas Vijverberg from Boskalis dived deeper into the theme of dredging for sustainable infrastructure and gave a presentation supported by practical examples.

It was then time for the winning team to be announced. The lecturers evaluated each of the bids before announcing which team had been awarded the contract based on presenting the best technical solution as well as the best price. Each member of the winning team received a copy of the book, *Dredging for Sustainable Infrastructure*.

Survey says

Did the seminar meet the expectations of the participants? After reading the comments in the anonymous survey, it was clear that the majority of the group agreed that it was exactly as advertised and some participants felt it provided even more.

General remarks included the following:

- "With hugely experienced lecturers you cannot fail to know much, much more by the time the course ends"
- "I really enjoyed this course because the lecturers explained all aspects of dredging work to us, step by step"
- "I think employers who want to give their employees essential knowledge and real world experience needn't search any further, as it's an excellent provider of that"
- "I now realize the enormous time and financial pressure there is on the people and companies that have to carry out the

dredging work. Thanks to this seminar I now understand it much better. So I would recommend anyone who wants to brush up on their dredging knowledge to participate."

Jameson, one of the participants in Manila, wrote, "The seminar has benefited me as it was very insightful, engaging and exhilarating. In significance was the site visit which has provided us with a holistic view of a major dredging and reclamation project. The icing on the cake has been the assignment on the dredging and landfill project which has enhanced my understanding on the tender and contract aspects. This has allowed all of us to work alongside and learn from one another coming from various fields. I have truly benefited from the lectures."

In addition to the Dredging and Reclamation Seminar, we regularly organize, in cooperation with our partner, the Central Dredging Association, a 2.5-day course called Dredging for Sustainable Infrastructure. In that course, participants learn how to achieve dredging projects that fulfil primary functional requirements while adding value to the natural and socio-economic systems by acquiring an understanding of these systems in the context of dredging as well as stakeholder engagement throughout a project's development. Experienced lecturers from dredging contractors, consultants, and governmental bodies describe the latest thinking and approaches, explain methodologies and techniques as well as demonstrate—through numerous practical examples—how to implement the information in practice by engaging workshops and case studies. More information about all IADC events can be found at <https://www.iadc-dredging.com/seminars-courses/>

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