

A century of experience in just five days...

IHS DPC's **Lisa Maher** reports on the recent IADC seminar on dredging and reclamation – and why companies should consider it for their employees

With hugely experienced lecturers who, between them, have worked on the world's biggest, best or simply most complex dredging and reclamation projects, students on the recent IADC seminar couldn't fail to know much, much more about the subject by the time the five-day course ended.

The International Association of Dredging Companies (IADC) holds this seminar every year in Europe, and then either in Asia, the Middle East or South America. So I seized the chance to attend. My course had 25 attendees from Bangladesh, Brazil, China, Cyprus, Egypt, Germany, Hong Kong, Indonesia, Iran, Kenya, Mexico, the Netherlands, Nigeria, Singapore, Sri Lanka, and the UK and ages ranged from early twenties to early-50s. Backgrounds were also varied: from governmental bodies, port corporations, carrier companies, water management students, logistics companies, dredging contractors, insurers and industry reporters.

The three main lecturers – Frans Uelman of Boskalis, Philip De Nys of Jan De Nul and Robert Dijkema of Van Oord – were ably supported by Pieter De Ridder of Boskalis,

IADC seminar organiser Jurgen Dhollander and IADC president René Kolman. Between them, they have more than a century of dredging experience and managed to turn a disparate set of individuals into four focused teams who worked together for the workshops and tender process (see below).

Motivations

Not everyone was there for the same reason – participants have differing levels of experience or familiarity with dredging or engineering. UNESCO-IHE student Juma Yusuf Haineni attended the course “to get a practical insight of dredging work, which is part of my MSc programme in coastal engineering and port development.” The course was offered to MSc students as a complete module; fellow students Elena Zervou and Nawiswor Pringgo agreed that the intensive five-day course was “a little difficult” while maintaining their usual course assignments in parallel.

Non-students, such as Atradius' Marije Hensen, had a slightly different impetus “As an environmental and social advisor at an export credit agency, I'm regularly looking into dredging projects for insurance. After two years, I've gained much more knowledge about the environmental issues of dredging, but I lacked some basic

knowledge about how dredging is performed.” Port of Tanjung Priok's Eko Afrilianto added “One of my responsibilities is to maintain the basin depth at the port – that's why I wanted to learn more about dredging.” And ‘PortAnonymous’ (not his real name!) told me “I've taken up a new role with a port authority and, although an experienced engineer, I'm new to the technical elements of dredging. It was advertised as an introduction to dredging and appeared to cover the key points of dredging methods, machinery, soils and the like.” Others followed colleague recommendations “I knew about the course from my friend who attended in 2010; he told me it was good and it fits in with my job,” said Indonesia Port Corporation's Mulyadi Iskandar.

Working together

For our first workshop, all teams were given a scenario where, based on what we'd learned so far, we had to ‘blue-sky’ dredging and reclamation ideas for a particular port. What was interesting here was how each of the four teams both overlapped and diverged in their thinking. By the way, the lecturers had about 40 possibilities for projects in and around the port; altogether, the groups came up with a total of about 25. So think laterally when it's your turn! Then, within each group, we had to role-play specific parts – contractor, port manager, tourism representative etc – reacting to a given scenario. One of the key



Visiting the Botlek project
Marjje Hensen

lessons to come out of this, as ‘AnonymousShipping’ (also not his real name) put it “Find out right from the start who’s who in your group and their background; this will help a lot in task division when it comes to the tender process, saving a lot of time.”

And saving time was crucial for the second and third workshops. Given one particular scenario and background information, each team then had to prepare a competing bid – including costings – and submit it on time. The depth of information provided meant there was no one simple solution. However, everything you needed to know – or were required to know in order to ask the right questions – was provided.

Each group had to decide how and from where it would get material; whether that needed treatment and if so how that would impact on time and costs; whether more information was needed and/or available; what the production rates could or should be; and what other costs needed to be taken into consideration. To achieve it all in time, each team member needed to focus on a given task, keep others in the group informed, and then produce their results in time for it to be put into a cohesive whole.

No-one missed the deadline – which *has* been known to happen – so all our groups (now called North, South, East and West) took part in the bid proceedings, carried out in strict accordance with standard procedures. I will admit there was a heart-stopping moment for our group – the lecturers like to have their fun too. As ‘PortAnonymous’ said “The look on all your faces was priceless”. However, I’m not allowed to give precise details – as the saying goes, “If I told you, I’d have to kill you...”

The winning bid was put in by East – Eko Afrilianto, Mohammed Mostafa, Georg Stegmann, Sifat Sarwar, Saegusa Hiroyuki and Thais da Costa Borba who won copies of the *Hydraulic fill manual: for dredging and reclamation works* (see the IHC DPC August book review).



Frans Uelman



Philip De Nys



Robert Dijkema

From Botlek to Moerdijk

However, it wasn’t unadulterated lectures and workshops – we also had two site visits.

The first was to the **Botlek Tank Terminal**: a joint venture between DEME subsidiary **de Vries & van de Wiel Kust-en Oeverwerken** and **GEKA Bouw**. This €11.975M design and build contract is for a 5ha reclamation project to enlarge the terminal at the Port of Rotterdam, create 450m of quay wall and transport around 500,000m³ of sand. It started in July 2012 and Phase 1 was due to finish ahead of schedule within days of our visit. Phase 2 is scheduled for completion in April 2014.

On arrival we were kitted out in our personal protection equipment, before getting a guided tour of the site. Walking across reclaimed land, we came to the finished part of the new quay walls: these were constructed using sheet piles to +4.5 NAP (local reference height) with pre-fab concrete sheets, then thin layers of recovered silt were previously covered with layers of sand, behind the new quay wall.

We then moved to view the part still being built; as we watched, the trucks and land-based bulldozers kept a steady stream of material moving from the overburden to fill the area nearest the existing tanks. We concluded the visit with facts, figures, video presentations and insight by Herald Vervoorn of contract managers **Royal HaskoningDHV** and Ive De Schutter of **DEME**. A really useful and informative visit – thanks to all our hosts and guides for the day.

The following day which ended with a superb dinner in Delft, hosted by the IADC and our lecturers, saw us visit **Van Oord’s Moerdijk yard** for a comprehensive tour – and a test of our knowledge so far! One of the highlights was being there as the self-propelled cutter suction dredger *Artemis* arrived back from her recent dredging job in La Rochelle (see *DPCs passim*).

In addition, we got to take a brief trip on a survey vessel seeing a real-time demonstration of hydrographic equipment; we visited the onsite soil- and water-testing laboratories; and we toured the yard, admiring trailing suction hopper dredger *Geopoties 14*, stone carrier *Ham 601*, split hopper dredger *Johan Van Veen*, and much more. And as we toured, we were given a test: while all participants did respectably – a credit to what they’d been shown and taught – almost a third got 10 out of 10. So thanks must go to all at Van Oord who showed us around and put up with our many questions.

The value of such practical visits cannot be overstated; you get a sense of scale and perspective that doesn’t usually come across on paper. You speak to people involved on a day-to-day basis with the project. You get some idea of the preparation that goes into making a project run smoothly.

“When I got back [to the office],” said Hensen later, “we’d received an application for a new dredging-related transaction that needed to be insured.

Having walked the site at Botlek, when I looked at the equipment and soil information,



» Dredging and reclamation seminar programme:

UNESCO-IHE, Delft, the Netherlands

Day One – 08:45-17:45

Introduction; Workshop 1: part 1: identifying the need for dredging; project phasing; Workshop 1: part 2: group discussion on specific dredging proposal; homework.

Day Two – 08:45-17:30

Dredging equipment; site visit to IADC member de Vries & van de Wiel's Botlek Tank Terminal project.

Day Three – 08:45-22:00

Dredger production rates depending on soil characteristics; site visit to IADC member Van Oord's Moerdijk yard including quiz; participants' dinner, Delft.

Day Four – 08:45-20:00

Monday's homework re-visited; hydraulic fill; the tendering process; Workshop 2: preparing to tender; cost pricing of dredging and reclamation works; Workshop 3: pricing and contractual aspects of preparing the tender; pre-bid meeting; Workshops 2/3 continued.

Day Five – 08:45-18:00

Dredging contracts; Workshops 2/3 continued; bid presentation; guest speakers: Karoune Nipius, Royal Boskalis Westminster on the 'Sand Engine' plus winner of the Young IADC paper, Max Radermacher; Workshops 3 results – acceptance of winning bid; presentation of certificates and drinks reception.

Note: the next seminar is in Singapore: 21-25 October 2013.

I could imagine the situation much better than before.”

Meeting expectations?

So did the seminar deliver? The majority of the group agreed it was exactly as advertised

but the rest felt it provided even more: Zervou noted “I never thought that five days could contain so many activities,” while Mohammed Mostafa (Marine and Coastal Construction Service) said “Meeting people from different parts of the world and different

fields of work – whether from the private sector or from port authorities – and working with them were the most important success factors for me.”

Hensen added “I hoped to get a better view of the amounts involved; how do the different dredgers work; what are the issues, both when actually dredging and when tendering for a project. And that's what I brought back. I also had some nice contacts with whom we may get involved in the future.”

“Yes, it was a good introduction to the practicalities of dredging and reclamation, focusing on the technical side and not getting bogged down in the legal/environmental aspects, which will differ from country to country,” said 'PortAnonymous'. “I'd like to think that [I'm] now more conversant with the technicalities of dredging and better able to plan and oversee the work we carry out,” he added.

Afrilianto concurred “My company sent me to this seminar to get a better perspective of how to calculate dredging costs in detail – which this gave me. I will advise my colleagues to participate in this course next

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year.” “This is a major part of my employer’s planning, because our port faces such problems every day, so it was good to learn more from the experts,” said Pringgo.

There were a few ‘tweaks’ that the participants would make to the course. The students found it hard to cope with their normal assignments as well as the seminar’s workshop tasks, and even some non-students found it a bit tougher than they expected.

In an ideal world, around half of the participants would have liked the information spread over longer – eight or even 10 days were suggested – however, that would preclude most non-students from attending. And let’s not forget that the lecturers have full-time jobs too – it’s not certain they could be away from their roles for more than five days either. “Getting approval for five days out of the office was tough enough,” a fellow attendee told me. “Being absent for longer is simply not an option.”

Finally...

But everyone I spoke to would recommend the course – to employers or participants “It



will definitely be a plus on my CV,” Zervou told me.

“I really enjoyed this course because the lecturers explained all aspects of dredging work to us, step by step,” said Iskandar.

Mostafa added “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 know how many uncertainties there are in dredging and how frustrating the tender process and dredging work can be if

you have a lack of good information to start with,” said Hensen.

“I realise the enormous amount of time/money pressure there must be on those people carrying out dredging. This makes me feel I’ve got a much better understanding now. So I would advise everybody who wants to get up to speed with their dredging knowledge to participate.”

Just make sure you take notes, re-read everything that you are given and, most of all, *listen!* **DPC**

» www.iadc-dredging.com

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