



OFFSHORE STRUCTURES

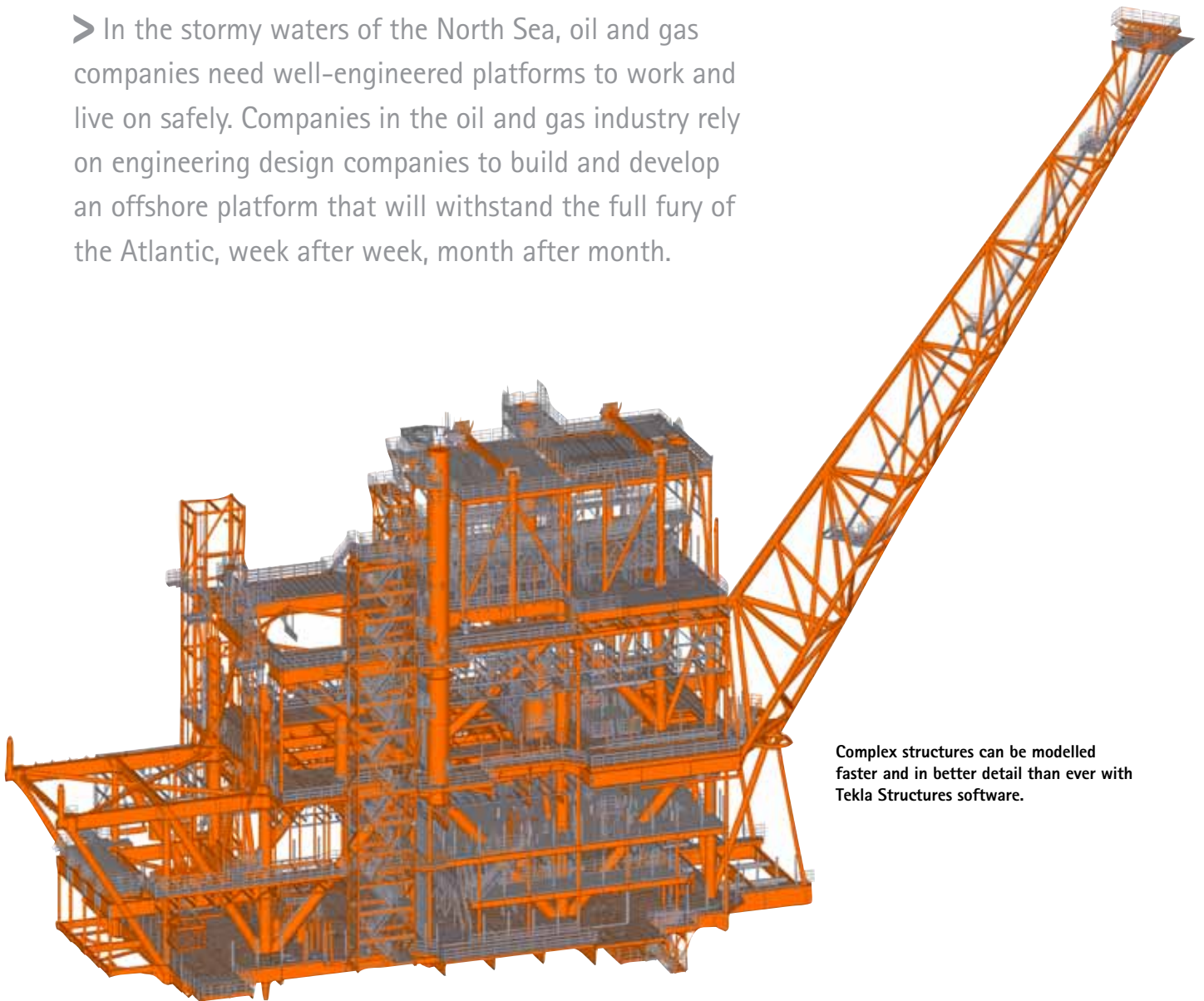
IV-CONSULT, MALAYSIA & THE NETHERLANDS



TEKLA HELPS BUILD

OIL AND GAS RIGS *COST-EFFECTIVELY*

➤ In the stormy waters of the North Sea, oil and gas companies need well-engineered platforms to work and live on safely. Companies in the oil and gas industry rely on engineering design companies to build and develop an offshore platform that will withstand the full fury of the Atlantic, week after week, month after month.



Complex structures can be modelled faster and in better detail than ever with Tekla Structures software.

Workmen connecting cables at the Bremen Bridge in Germany



COST-EFFECTIVE SOLUTION THANKS TO AUTOMATION

➤ One of the companies that oil and gas companies often turn to is the multi-disciplinary Dutch engineering company Iv-Groep, which is headquartered in Papendrecht, The Netherlands.

Iv-Groep's subsidiary, Iv-Oil and Gas, designs the offshore oil platforms which, when approved, are then handed over to another subsidiary, Iv-Consult Sdn. Bhd. The Kuala Lumpur-based Iv-Consult handles the detailing and produce the workshop drawings for the topsides of the oil platforms as well as their jackets, which are the tubular foundations piled into the seabed to anchor the platform.

➤ According to **Robert Van Der Waal**, the director of Iv-Consult Sdn. Bhd., Tekla plays an important role in the company. "Tekla Structures software enables us to work much more cost-effectively," he said.

"Over the years, we have automated almost all beam-to-beam connection macros as well as polygon welds within Tekla Structures." This automation speeds up the designing of basic structures and thus allows the designers to focus on more challenging work.



Valhall 2/B topside being towed to its final location in the North Sea



"With Tekla, we have saved another 50 percent as we moved from 2D to 3D."

- Robert Van Der Waal, Iv-Consult Sdn. Bhd.

Centrica F3 FA topside — from a computer screen to thousands of tonnes of steel and hardware.

The 3-D models produced using Tekla software are also used by the fabricators in various ways depending on how the fabrication facility is automated.

"Within Tekla Structures, we have extended the functionality of the user-defined properties so that we can generate a wide range of additional information about the parts," Van Der Waal said.

"For example, in the last two years, Iv-Consult has offered its clients the option of modelling all the welds of the structure into the detailing model. The properties of these welds include weld type, size, volume, number and length.

"As a result, an extended weldlist of a particular area, or floor or even the whole structure can be provided. This is highly appreciated by our clients' fabrication planning officers as it is a big time saver.



Valhall 2/B Topside in the Norwegian North Sea

Iv-Consult



> Iv-Consult is an engineering company that focuses on the challenging engineering design of complex structural and mechanical projects, such as the Rotating Tower, Calatrava's Campus Maastricht and ship lifts. The company has the know-how and experience to engineer large-scale projects like power plants and harbours. For clients varying from end-users to developers, architects to contractors, it provides engineering services with a creative mindset and a sharp focus on cost-effective design.

Iv-Consult provides services from preliminary design up to detail design and is a market leader in the area of detailed design of steel structures.

Apart from the head office in Papendrecht, The Netherlands, Iv-Consult also has offices in Almere, The Netherlands, and Kuala Lumpur, Malaysia. The Kuala Lumpur office provides first-rate workshop detail drawings under Dutch supervision, which reduces engineering costs substantially.

www.iv-consult.com.my

A RELIABLE PARTNER IN WORKSHOP DETAILING

> Iv-Consult has been using Tekla for more than a decade, and over the years the company has made extensive use of the software. Iv-Consult has been handling the bulk of the workshop detailing for the Iv-Groep since 1999 and it has been responsible for hundreds of major structures around the world.

"We have found Tekla Structures to be a strong tool to help us produce a quality product. At the same time, it has helped us to meet our clients planning targets that are often very tight," said Van Der Waal.

"I have a detailing background and started with the company as a detailer myself in 1992. Since that time, the productivity of an average draftsman has improved enormously with the help of the software programmes.

"In the beginning, on average you spent 25 hours on one handmade A0 size drawing. Later with the 2D software, this decreased to an average of 15 hours for one A0. Today, with Tekla, we take about seven hours to produce one drawing, which includes modelling time.

"Therefore, it is reasonable to say that moving from hand drawing to 2D, we saved about 40 percent of the time spent on an average project. With Tekla, we have saved another 50 percent as we moved from 2D to 3D."

NOT JUST OIL-RIGS

> Apart from offshore structures, the company has used Tekla to design the complex steel structure of the Kuala Lumpur Convention Centre's skylight, a 4,200-tonne cable bridge in Germany, a 1,900-tonne hanging cable bridge in Belgium, a 650-tonne pipelay stinger used for offshore pipe laying and many other types of steel structures.

In the Netherlands, Iv-Consult relied on Tekla to design lockgates that are widely used to channel water in the many waterways of the country. In addition, they are currently designing new lockgates for the Panama Canal. Each lockgate there weighs about 4,000 tonnes.

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OUR AMBITION IS TO MULTIPLY YOUR POTENTIAL TO THINK AND ACHIEVE BIG



> With an ambition to multiply its customers' potential to think and achieve big, Tekla provides a BIM (Building Information Modeling) software environment that can be shared by contractors, structural engineers, steel detailers and fabricators, as well as concrete detailers and manufacturers.

The highly detailed as-built 3D models created, combined and distributed with Tekla software enable the highest level of constructability and production control.

Centralizing building information into the model allows for more collaborative and integrated project management and delivery. This translates into increased productivity and elimination of waste, thus making construction and buildings more sustainable.

> With its software, Tekla Corporation drives the evolution of digital information models and provides more and more competitive advantage to the construction and infrastructure industries. Tekla was established in 1966, and today it has customers in 100 countries, offices in 15 countries and a global partner network.

Tekla software is used worldwide to model all types of buildings. Visit our website to read more about Tekla solutions and references for building and construction.

www.tekla.com

