PRESS RELEASE

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DELIVERING IN OFFSHORE ENERGY

For the last 10 years, BIM and digital technology has been a central part of Pinnacle Consulting Engineers, with the use of Tekla software helping the company to build strong customer relationships and successfully deliver projects within the offshore and energy sectors – such as the Leman Delta Platform de-complexing project.

Within the energy sector, a key area for Pinnacle is offshore projects, including decommissioning or de-complexing projects. Designed to improve the efficiency of aging stock and reduce operational costs of the gas platforms, these projects can often involve removing platform areas which are no longer required, such as helidecks or accommodation; carrying out maintenance of and replacing existing areas, such as staircases and handrailing; or installing new pipe systems and energy efficient solar panels.

"Having worked in a digital environment since the very start of the business, 10 years ago, BIM and Tekla are at the heart of what we do, here at Pinnacle", said Oliver Matthews, Pinnacle's Technical Director. "Not only does the technology help us in delivering these offshore projects, it has also proved invaluable in forging and maintaining strong client relationships – a key objective for any business."

Customer relationships

Oliver continued: "Shell is one of our biggest customers within the energy sector and, over the years, we've been fortunate to build a really strong relationship with them, thanks – in part – to BIM. Communication is something that is really valued by Shell, and indeed many of our customers, generating a sense of trust and confidence. The transition from 2D to 3D and the uptake of digital technology, such as BIM, has contributed significantly to this, opening up a channel of enhanced communication and coordination between project parties.

"For example, thanks to Tekla's open BIM approach, our teams are able to share current model versions as IFC files with Shell on a weekly basis, so the customer can get an instant visual update on progress."

Tekla and Offshore

"The use of BIM technology, such as Tekla Structures and Tekla Structural Designer, is perhaps especially useful on our offshore projects, delivering the high level of detail and visibility needed to deliver such complex works safely and successfully. Not only this, but the software also provides us with automatic clash detection, helping with problem solving and coordination between both structural components and disciplines. Even just a screenshot from a Tekla 3D model can tell a thousand words."

Leman Delta Platform De-Complexing

A great example of Pinnacle Consulting Engineers and Tekla software in action is the Leman Delta Platform de-complexing project, winner of the Industrial Project category in Tekla's 2020 UK BIM Awards. Forming part of Shell's ongoing review into operational expenditure and maintenance costs of some of its older gas platforms, Pinnacle was appointed as Engineering Consultant on the project.

Located in the North Sea, the aging Leman Delta platform is still bringing gas up to the surface. As a result, the decision was made that the platform would be de-complexed to extend the life span and reduce running costs.

Speaking about the project, Oliver said: "At Pinnacle, we worked closely with Shell to develop the initial programme of works, which included the removal of two helidecks, a vent tower and electrical containers, the replacement of four staircases and a handrail over three levels, and the installation of new solar panel frames and new deck extensions. Unsurprisingly, this required a significant level of strategic planning, both from a logistical and a safety point of view. It is here that our use of Tekla and digital technology really came into play."

With the original structural drawings dating back to the early 1970s, Pinnacle relied on a combination of the 2D drawings, the results of a cloud point survey and onsite visits to create a 3D model of the platform in Tekla Structures. This model then formed the basis of the project's early scheme designs.

Talking about the modelling process, Oliver said, "As well as the software's automatic material take offs, one of the main advantages of modelling the platform in Tekla was the ability to analyse tonnages and the centre of gravity for various structural elements to high

degrees of accuracy, whether for cut sections of a helideck, crane boom or new staircase section. This was especially valuable considering a key aspect of the brief from Shell was to remove sections in as large sections as possible, reducing the number of crane lifts, barge trips and, in turn, saving time and money. Thanks to the software's information-rich and accurate data, it allowed us to achieve the most efficient crane lifts, while simultaneously considering the reach and load capacities of the crane."

Using Tekla Structures, Pinnacle was also able to generate a weight control report from the 3D model, providing Shell with both the old weights and the new and an informed, detailed picture of what was left on the platform.

"Going back to the earlier theme of communication and BIM, the benefits of this digital and 3D way of working does not end even once a project is completed. As well as issuing a weekly IFC version of the model to our client, we can also provide clients with the completed 3D model at the end of a project. Given the fact that many gas platforms were constructed in the days before BIM, often there are only old 2D structural drawings available. In comparison to this, having a 3D model created of the structure is hugely valuable. It can be used for visualisation purposes, both on and offsite, shared with other disciplines (such as pipe contractors) during future works and used for future asset management."

For more information about Tekla, please visit <u>www.tekla.com.uk</u>. For more information about Pinnacle Consulting Services, please visit <u>www.pinnacleconsultingengineers.com</u>.

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