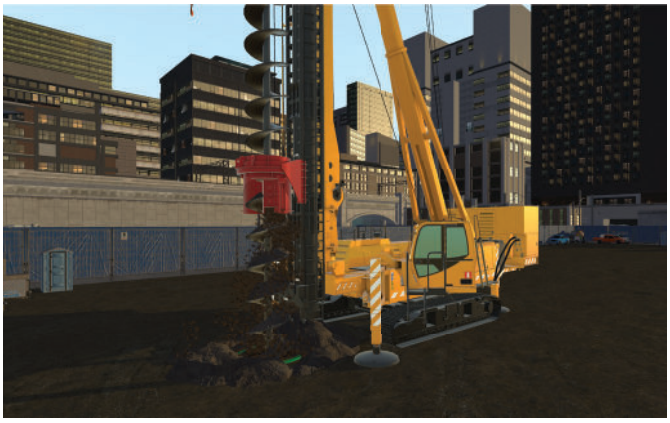
CM Labs Supplies IHC FUNDEX with Unique Training and Engineering Simulator for Flagship Drill Rig

Based in Goes (The Netherlands), IHC FUNDEX Equipment designs, manufactures, and delivers multifunctional foundation rigs all over the world.

Along with a mandate to develop custom-built machinery, its in-house engineering department also focuses on continuous product innovation. This prompted them to seek a supplier that could create a simulator for one of its flagship products, the IHC FUNDEX F3500.

The F3500 is used for a variety of drilling and pile-driving methods, such as soil displacement drilling, CFA drilling, cast-in-situ and pre-cast pile-driving, and is one of the larger machines in the range of IHC FUNDEX Equipment multifunctional foundation rigs.

"Machines are getting bigger and increasingly complex," says Andre Rottier, IHC FUNDEX Engineering, "and although safety is becoming more and more important, people do not necessarily have as much time to gain experience as in the past.



But with a simulator, we can supply training to our clients' operators — in fact, there is a market to sell training to customers all over the world."

During their search for a simulation provider, the engineering team discovered CM Labs Simulations, and were impressed by their extensive experience designing construction equipment simulators as well as custom simulators.

An additional benefit was the option to adopt the Vortex Studio simulation platform that CM Labs uses to create their own simulators — this would give IHC FUNDEX the ability to pursue additional simulation-based product engineering and development later.

The Organisation

Based in Goes (The Netherlands), IHC FUNDEX Equipment designs, manufactures, and delivers multifunctional foundation rigs all over the world.

The Situation

IHC FUNDEX Equipment was seeking a supplier that could create a simulator for one of its flagship products, the IHC FUNDEX F3500.

The Solution

The exceptional quality of CM Labs' simulator allows IHC FUNDEX to use it as a tool for engineering, training, and sales.

"We chose to work with CM Labs due to their combination of proven track record, industry experience, and innovative technology," says Rottier.

CM Labs proceeded to develop a custom simulator equipped with a motion platform, and integrated with actual F3500 seating and controls system.

CM Labs also provided a dedicated Instructor Operating Station (IOS), a trainee monitoring and assessment tool that automatically captures and reports on operating metrics during training sessions.

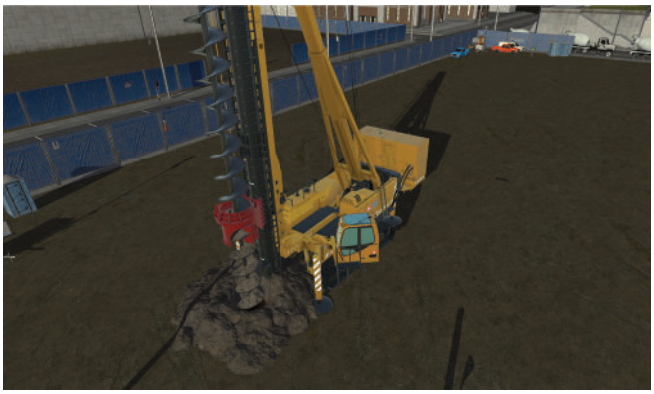
The IOS also allows instructors to select different exercises, time of day, and weather conditions, or to inject various machine faults into training sessions — including pressure faults, filter clogs, coolant over-heating and more.

> ***"CM Labs' simulator makes it possible for us to test and iterate more quickly."***

Developing a drill rig simulator is a complex challenge. In addition to simulating the rotational forces that characterise the interaction between drill and soil, replicating the real-world outputs of the drill rig controls is a significant feat of engineering innovation.

Due to the exceptional quality of the CM Labs simulator, IHC FUNDEX's engineering team is now able to make use of the simulator as an engineering tool as well as a training tool.

Indeed, the CM Labs simulator serves as a definitive proof of concept that simulation-based engineering with Vortex Studio can be used to test automation algorithms and parameters for other IHC FUNDEX drill rig machinery.



"Our mandate is to develop improvements all the time," says Anton Hectors, IHC FUNDEX Engineering. "Bearing in mind that the real drill rig is not always available, CM Labs' simulator makes it possible for us to test and iterate more quickly. We can measure time savings in days, not hours."

"Without a simulator, we would need the rig to test any improvements we might want to make to the control system," Hectors explains.

"However, we have limited access to the rig, because of course the client is looking to get the machine sooner rather than later. With the simulator in our office, we can do more testing ahead of time so that we can truly take advantage of the time that we do have with the rig."

The benefits of simulation extend beyond training and engineering, he adds. "With a simulator that displays true-to-life behaviour, it's easy for our sales department to show our machine more often at tradeshows as well as here in our offices. Our customers can also try the simulator, whether the real machine is available from the factory or not."

Overall, Rottier describes his experience working with CM Labs as very positive. "What stands out is CM Labs' well structured way of executing projects, as well as their enthusiasm and professionalism. They're very good to work with."

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