



Doosan Heavy Industries & Construction, Korea

Key Facts

Company: Doosan Heavy Industries & Construction

Website: www.doosanheavy.com

Industry: Power

Country: Korea

Products Used:

- Intergraph Smart® Construction

Key Benefits:

- Ability to extract materials lists from various 3D modeling sources and transfer them to the in-house Completions & Commissioning Management System (CMMS) for further management, scheduling and work package planning
- View progress in all stages of construction and gain a real-time picture of construction status
- Access to accurate engineering data and complete transparency in work packages improves the accuracy and consistency of construction quantity management and facilitates smoother construction

Doosan Heavy Industries & Construction optimizes with Intergraph Smart® Construction

Korean EPC reports significant gains in project visibility, materials management and decision-making capabilities

Doosan Heavy Industries & Construction (DHIC) is a leading Korean engineering, procurement and construction (EPC) contractor offering services ranging from the manufacture of castings and forgings to power generation systems and desalination facilities for power plants.

Founded in 1962, DHIC is now one of the fastest-growing infrastructure support businesses in the world. It provides communities across five continents with the fundamental solutions, tools and structures they need to prosper.

The Challenge

At the core of DHIC's long-term business strategy is the ongoing investment in information technology to optimize the delivery of its EPC projects.

In managing a recent construction project, DHIC saw the need to improve information management, in particular, the millions of details and numerous complex variables it handles, including construction materials.

According to DHIC's Lee Young Geun, "We wanted a more efficient way to plan and manage work packages. That meant we needed access to the most accurate information, such as construction quantities, to make more informed decisions."

In short, a work package planning solution was required that would allow DHIC to check the construction status of projects using current information from various sources including 3D models, and animate the works with detailed schedules.

The Solution

A long-term customer of Hexagon's Asset Lifecycle Intelligence division, DHIC selected Intergraph Smart® Construction, a dynamic work package planning solution, to enhance productivity during construction.

Key to the decision was the functionality and interoperability of Smart Construction. In particular, DHIC wanted to integrate the solution with its existing range of Intergraph design solutions, including Intergraph Smart 3D, as well as its in-house CMMS.

Smart Construction is helping DHIC to better manage construction materials for key projects based on 3D models. The company has the ability to extract materials lists from various sources and transfer them to the CMMS.

DHIC's Smart Construction team leader explains: "Intergraph Smart Construction allows us to achieve better planning and management of our projects. We can use information from various sources such as 3D models to create accurate materials lists and generate precise construction quantities."

The Results

Adopting Smart Construction and integrating it with the CMMS has resulted in quality, efficiency and productivity gains.

"Intergraph Smart Construction provides a platform for us to review 3D models, generate materials lists, and check information," explains DHIC's Smart Construction team leader. "It allows us to precisely record field construction status based on configured rules of credit, and report on this status. We can view progress in all stages of construction and make informed decisions with confidence."

With Smart Construction's 4D technology, DHIC planners can now sequence construction to optimize projects and visualize complex schedule information. The solution is helping DHIC identify project-critical paths and resequence work packages to achieve project deadlines more easily.

The seamless integration of Smart Construction with DHIC's CMMS is improving productivity. Real-time material integration availability reports can be produced to provide dynamic re-planning capabilities, and a configurable planning window enables planners to make economical modifications before issues arise.

The benefits from data integration have been enormous. Employees now have instant access to accurate engineering data and complete transparency in work packages. Overall, the accuracy and consistency of quantity management has greatly improved, which in turn has facilitated smoother construction.

Key Learnings

- **Information accuracy is key:** When working on major construction projects involving numerous workers, details and complex variables, managing data effectively is key.
- **Integration delivers efficiencies:** Having the ability to integrate information from various sources such as 3D models, 2D engineering tools, materials management and project control and scheduling systems ensures accurate and timely decisions can be made.
- **Build on proven technology:** Partner with an organization that has the industry experience, technology, and integration expertise to address the specific IT needs of your business.
- **Invest in change management:** Providing training for new systems ensures fast adoption and helps to overcome the resistance your teams may have to new tools.

The Future

DHIC's vision is to enhance the functionality of its CMMS in alignment with Smart Construction to further streamline the construction management processes.

Young Geun Lee concludes: "In our business, it's all about improving CAPEX efficiency. That's why we are focused on continually improving the accuracy of the information available, so we can better manage people and materials to deliver our projects on-time, on-budget and in the safest and most efficient manner."

About Hexagon

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Hexagon's Asset Lifecycle Intelligence division helps clients design, construct, and operate more profitable, safe, and sustainable industrial facilities. We empower customers to unlock data, accelerate industrial project modernization and digital maturity, increase productivity, and move the sustainability needle.

Our technologies help produce actionable insights that enable better decision-making and intelligence across the asset lifecycle of industrial projects, leading to improvements in safety, quality, efficiency, and productivity, which contribute to Economic and Environmental Sustainability.

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