

User name: Hyundai Engineering

Project name: New physical modeling method for plant steel structures using STAAD API

Location: Seoul, South Korea

Background:

- To help engineers avoid repetitive tasks and foster more efficient design of plant steel structures, Hyundai Engineering initiated a project to automate structural design processes.
- They wanted to develop a new physical modeling method with added analytics.

Challenges:

- Numerous design variables could present potential for mismatched, unreliable assessments.
- Needed comprehensive structural modeling and analysis technology to optimally consider constructability enhancements.

Solution:

- Hyundai selected STAAD to apply design automation techniques to a plant steel structure.
- Bentley's application enhanced structural design efficiency, reliability, and quality, as well as optimized design while considering constructability.
- The new design automation program adjusts the design variables in real time as the steel structure is modified, facilitating creative and efficient structural design, reducing material steel volumes, and lowering the carbon footprint of structural frameworks.

Outcomes:

- Bentley's technology and automation design techniques helped improve infrastructure delivery and performance.
- Reduced structural analysis time by 70% and design errors by 50%, as well as expected to save approximately KRW 330 million.

Quote: "Steel structure design automation programs can lead to dramatic productivity improvements by freeing engineers from simple repetitive tasks." – *Hyunil Baek, Civil Engineer, Hyundai Engineering*

Image caption/courtesy 1: Hyundai Engineering wanted to develop a new physical modeling method and generate an open, analytical digital twin. *Image courtesy of Hyundai Engineering.*

Image caption/courtesy 2: STAAD enhanced structural design efficiency, reliability, and quality, as well as optimized design while considering constructability. *Image courtesy of Hyundai Engineering.*

Image caption/courtesy 3: The digital solution reduced structural analysis time by 70% and design errors by 50%, expected to save approximately KRW 330 million. *Image courtesy of Hyundai Engineering.*

For more information, please contact Bentley PR at PR@news.bentley.com.