

User name: Beijing Shougang International Engineering Technology Co., Ltd., Wanhua Chemical (Penglai) Co., Ltd.

Project name: 300,000 tonnes/day seawater desalination project of Wanhua Chemical (Penglai) Co., Ltd.

Location: Yantai, Shandong, China

Background:

- The seawater desalination project of Wanhua Chemical aimed to support an environmentally friendly, low-carbon chemical park and alleviate freshwater resource constraints.
- The project would provide Penglai with 90 million tons per year of freshwater resources.

Challenges:

- Difficult geological conditions, as project is located on the seashore.
- Complex desalination processing, equipment, data integration and exchange challenges.
- Sought to pilot BIM workflows to deliver the plant.

Solution:

- Bentley ProjectWise, OpenPlant, and OpenFlows established a collaborative BIM environment, modeled the plant and equipment, and simulated and analyzed water hammer and pipeline stress to ensure the safety and reliability of the system.
- 3D models provided the foundation for intelligent digital seawater desalination operations.

Outcomes:

- Streamlined workflows to improve design efficiency by 70%, shortened the design cycle by over 50%, identified and resolved 247 design conflicts, and saved 10% of materials to reduce engineering waste and shorten the construction period.

Quote: "In the face of these challenges, the project design team of Beijing Shougang International Engineering Technology Co., Ltd. finally completed the BIM design of the whole plant in 4 months, which realized a new breakthrough in BIM design of the domestic string-level process seawater desalination plants." – Huali Liu, General Manager, Water Business Department, Beijing Shougang International Engineering Technology Co., Ltd.

Image caption/courtesy 1: The seawater desalination project aims to provide Penglai with 90 million tons per year of freshwater resources. *Image courtesy of Beijing Shougang International Engineering Technology Co., Ltd., Wanhua Chemical (Penglai) Co., Ltd.*

Image caption/courtesy 2: Leveraging ProjectWise, OpenPlant, and OpenFlows, they established a collaborative BIM environment, modeled the plant and equipment, and simulated and analyzed water hammer and pipeline stress to ensure the safety and reliability of the system. *Image courtesy of Beijing Shougang International Engineering Technology Co., Ltd., Wanhua Chemical (Penglai) Co., Ltd.*

Image caption/courtesy 3: Bentley's integrated digital solution streamlined workflows to improve design efficiency by 70% and shorten the design cycle by more than 50%. *Image courtesy of Beijing Shougang International Engineering Technology Co., Ltd., Wanhua Chemical (Penglai) Co., Ltd.*

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