

User name: China First Metallurgical Group Co., Ltd.

Project name: Application of intelligent construction technology in the construction of comprehensive improvement project for the outlet reach of Fuhuan River

Location: Wuhan, Hubei, China

Background:

- This water conservancy initiative sought to improve flood control capacity and the ecological environment of Changjiang New Town in Wuhan.
- China First Metallurgical Group was tasked with the design and construction of phases 2 and 3 of this project.

Challenges:

- Complex terrain and strict environmental requirements, compounded by coordinating voluminous data and multiple stakeholders.
- Other software lacked the features and interoperability required to meet modeling accuracy and workflow efficiencies.
- Needed a comprehensive data capture and modeling solution that supported collaboration, design, and construction.

Solution:

- iTwin Capture created a refined 3D terrain model from aerial images and analyzed excavation and construction works.
- The digital twin application delivered accurate modeling results and facilitated real-time information sharing.

Outcomes:

- The open digital twin helped the team collaborate and bring together data in a geospatial context and at scale, improving infrastructure delivery and performance.
- Improved design precision by 30%, shortened the design cycle by 15 days, and saved 25 days and CNY 550,000 during construction.

Quote: "By using Bentley software/service, we have optimized the design and greatly improved the construction efficiency, laying a solid foundation for the sustainable development of the project." – *Mei Jun, Director of the BIM Center, China First Metallurgical Group Co., Ltd.*

Image caption/courtesy 1: China First Metallurgical Group selected iTwin Capture to create a refined 3D terrain model from aerial images. *Image courtesy of China First Metallurgical Group Co., Ltd.*

Image caption/courtesy 2: The design cycle was shortened by 15 days, and the design efficiency was improved by 20%. *Image courtesy of China First Metallurgical Group Co., Ltd.*

Image caption/courtesy 3: By reducing the number of design changes, the design cost was reduced by CNY 500,000. *Image courtesy of China First Metallurgical Group Co., Ltd.*

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