

**User name:** WISDRI Engineering And Research Incorporation Limited

**Project name:** Digital innovative applications throughout the process of iron and steel EPC projects

**Location:** Yuxi, Yunnan, China

**Background:**

- This CNY 7 billion project includes the construction of four blast furnaces and four converters, overing eight square kilometers.
- The development is in the Yunnan province of China, with three nature reserves within 70 kilometers with thick forest coverage.

**Challenges:**

- Needed to avoid impacting nearby nature reserves during construction / operations.
- Scale of construction set a record in China, with 250,000 tons of steel structures and 800,000 cubic meters of concrete.
- Construction difficulties, with structures reaching 100 meters high and numerous units being built simultaneously.

**Solution:**

- ProjectWise ensured project elements were synchronized for remote collaboration.
- Bentley Open applications created a digital twin, realizing integrated design, refined construction, and green operations.
- SYNCHRO was used for plan construction sequences and monitor progress, continually updating the digital twin.

**Outcomes:**

- The solution reduced annual carbon emissions by 346,500 tons and resolved 157 design issues, saving CNY 28.6 million in design costs.
- Monitoring construction progress shortened the construction period by 76 days, saving an additional CNY 40 million in costs.

**Quote:** "With Bentley, we reduced carbon dioxide emissions by 346,500 tons/year, saving 28.6 million yuan in design costs, 40 million yuan in construction costs, and 31.5 million yuan in procurement costs, with nearly 140 million yuan saved annually in operation and maintenance costs. We minimized construction and maintenance personnel work intensity, protected the diverse ecology and cultural environment, and injected lasting momentum into sustainable human development." – *Chu Xuezheng, Senior Engineer, WISDRI.*

**Image caption/courtesy 1:** All stakeholders collaborated remotely using ProjectWise's connected data environment. *Image courtesy of WISDRI.*

**Image caption/courtesy 2:** The digital twin realized integrated design, refined construction, and greener operations. *Image courtesy of WISDRI.*

**Image caption/courtesy 3:** SYNCHRO helped them plan construction sequences and monitor progress, continually updating the digital twin. *Image courtesy of WISDRI.*

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