

**User name:** PT Wijaya Karya

**Project name:** Nusantara Presidential Complex, new capital city of Indonesia

**Location:** Nusantara, Indonesia

**Background:**

- Because Jakarta is suffering from flooding and overcrowding, Indonesia is building a new capital city, Nusantara, 1,000 miles away.
- Part of its development includes a new, IDR 10.5 trillion presidential palace.
- The palace features a 50-megawatt solar plant and a façade featuring a Garuda bird, the symbol of Indonesia, with a wingspan of 117 meters.

**Challenges:**

- Needed to determine how to model all elements of the complex, unique structure.
- Strict deadline from the Indonesian government to move the capital in a timely manner.
- Other design software could not meet the project's needs.

**Solution:**

- iTwin Capture was used to process nine hectares of aerial site data, creating a virtual replica of the project site.
- MicroStation and Bentley Open applications modeled all elements of the project design, creating a digital twin of the palace.
- Digital design helped detect and correct clashes in the design phase before they became costly problems during construction.

**Outcomes:**

- An open, digital twin platform helps infrastructure professionals collaborate and bring together engineering, enterprise, and operational data, in a geospatial context and at scale to improve infrastructure delivery and performance across the lifecycle.
- Lowered costs by USD 63 million and reduced the amount of rebar needed by 138.8 tons, while also accelerating design by 33 days.

**Quote:** "Bentley technology enabled massive benefit over constructability review and helped us accelerate construction by 6% per month to meet the deadline. It provided the tools to optimize energy by up to 40%, helping fulfil Nusantara's vision as an inclusive, green, and sustainable city for everyone." – *Octob Bhayu Hanggoro Putro, BIM Building Coordinator, PT Wijaya Karya*

**Image caption/courtesy 1:** PT Wijaya Karya used Bentley Open applications to model the complex design of the palace. *Image courtesy of PT Wijaya Karya.*

**Image caption/courtesy 2:** The digital twin of the project helped them detect and resolve clashes before construction. *Image courtesy of PT Wijaya Karya.*

**Image caption/courtesy 3:** iTwin Capture was used to process nine hectares of aerial site data, creating a virtual replica of the project site. *Image courtesy of PT Wijaya Karya.*

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