

User name: Department of Public Works and Highways (DPWH)

Project name: Digital twin implementation for NLEX-SLEX Connector Road project

Location: Caloocan to Manila, Metro Manila, Philippines

Background:

- Manila is one of the most densely populated metro areas in the world.
- The city suffers from significant road congestion, with commuters losing nearly five days of their lives sitting in traffic each year, and average rush hour speeds at 19 kilometers per hour.
- To improve the situation, the Department of Public Works and Highways (DPWH) is developing an eight-kilometer, all-elevated, high-speed road connecting major road networks in the north and south.

Challenges:

- Had to develop roads in a dense urban center.
- Needed to overcome right-of-way issues and the limited space for construction equipment.

Solution:

- DPWH chose Bentley solutions to develop a mixed reality digital twin of the project.
- Using iTwin Capture, they incorporated conditions in the field, then used OpenBridge and OpenRoads to create 3D models.
- With Bentley LumenRT and SYNCHRO, they visualized the construction process.

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 productivity by 15%, boosted equipment logistics by 40%, reduced travel time by one hour, and saved 315 million kilograms of carbon emissions per year.

Quote: "The DPWH's desire to realize the vision of providing a comfortable life for Filipinos through safe, reliable and resilient infrastructure are expected to be realized with the promising benefits of Bentley software solutions, especially SYNCHRO, in the digitalization of project workflows. Despite the challenges during the pandemic, the NLEX-SLEX Connector Road Project are continuously being completed, to reach its goal of significantly reducing travel time and reducing staggering losses due to traffic congestion." – *David C. Galang, Project Manager, Department of Public Works and Highways (DPWH)*

Image caption/courtesy 1: DPWH is developing an eight-kilometer, all-elevated, high-speed road in Manila, connecting major road networks in the north and south. *Image courtesy of Department of Public Works and Highways (DPWH).*

Image caption/courtesy 2: DPWH chose Bentley solutions to develop a mixed reality digital twin of the project. *Image courtesy of Department of Public Works and Highways (DPWH).*

Image caption/courtesy 3: The new road improves transportation of goods and reduces travel time by one hour, saving 315 million kilograms of carbon emissions per year. *Image courtesy of Department of Public Works and Highways (DPWH).*

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