



ProjectWise[®], Powered by iTwin[®]

Data-centric Collaboration for Roads and Bridges

Bentley has extended the digital capabilities of ProjectWise, now powered by iTwin, from engineering work-in-progress to full digital delivery for more efficient, collaborative, and sustainable road and bridge infrastructure design, construction, and operations.

Providing safe, convenient access by road is still one of the key drivers for development and economic growth in many areas. Often placed within challenging terrain or faced with design constraints, road operators and their supply chains are under pressure to complete these complex projects with tight timescales, the workforce shortage, and environmental considerations.

IMPROVE COLLABORATION

With many existing projects having been delivered using 2D drawings and paper-based reviews, when road and bridge operators and their supply chains come to update existing infrastructure, they struggle to find the right information or communicate effectively across their disparate teams.

INCREASE EFFICIENCIES

Organizations who have started their digital transformation benefit not only from improved efficiencies across projects, but also from greater insights across their programs, which feed back into organizational goals, such as reducing carbon emissions.

INTERDISCIPLINARY COLLABORATION



Beca is lead design consultant on the Takitimu North Link project for Waka Kotahi (New Zealand Transport Agency). They wanted to implement an integrated, model-based digital approach to address the site complexities and coordinate the large, multidiscipline project team. Through collaborative digital modeling and 3D visualization, they reduced modeling time by 15% and improved design efficiencies by 20%, as well as reduced the project's carbon footprint while achieving higher-quality deliverables compared to previous design methods. [View Project](#)

ACCELERATED DESIGN REVIEWS



To provide extra capacity, Texas Department of Transportation initiated a USD 1.45 billion project to construct a viaduct that will add three lanes in each direction to the I-35 Northeast Expansion (NEX) corridor. Ferrovial had to overcome the challenges of working in a tight space while integrating the complex bridge structure with existing utilities and infrastructure. They chose ProjectWise and the iTwin Platform to improve information exchange and develop a digital twin. They performed clash detection to eliminate 3,530 collisions, identified and resolved visibility issues, and provided the construction team with precise material information, saving significant time and costs. [View Project](#)

LEVERAGE INSIGHTS FROM YOUR DATA



National Highways piloted ProjectWise and iTwin to exchange and manage design data on the culturally and environmentally sensitive GBP 1.7 billion A303 (Stonehenge) project. The integrated digital solution provided a collaborative, web-accessible platform to bring together all their data and images from various silos and from across the supply chain into a single solution with automated design review workflows. This workflow halved the time that it took teams to access and search for data, promoting the re-use of data, resulting in a 50% more efficient data federation process and streamlined transmittals process by 70% while mitigating labor-intensive tasks. [View Project](#)

OUR ROADS AND BRIDGES USERS HAVE REALIZED THE FOLLOWING BENEFITS:

20%

IMPROVEMENT ON DESIGN EFFICIENCIES¹

15%

REDUCED MODELING TIME²

50%

MORE EFFICIENT DATA FEDERATION PROCESS³

¹ Takitimu North Link, by Waka Kotahi and RH/HEB JV, Beca Ltd.

² IH35 Nex Central Station, Ferrovial Construction and Alamo Nex Construction

³ Complex Infrastructure Programme, A303 ProjectWise iTwin Deployment, National Highways



HOW CAN PROJECTWISE, POWERED BY ITWIN, HELP YOU...



IMPROVE COLLABORATION?

- ◆ Create and synchronize data with multidiscipline teams during the design lifecycle to minimize project risk early on and resolve issues with collaborative interdisciplinary design reviews using our digital twin technology.
- ◆ Securely share large datasets, 3D models, and 2D deliverables with the entire project ecosystem, regardless of authoring applications, facilitating early supply chain involvement to ensure best practice and value.
- ◆ Collaborate with supply chain partners using clearly defined data access, roles, and tasks lists to maintain consistency across fluid teams.



ACCELERATE DESIGN REVIEWS?

- ◆ Work in a data-rich model and leverage visualization capabilities to communicate design intent and gain stakeholder buy-in.
- ◆ Use ProjectWise Components Center, a cloud-based library of digital objects, for regularly encountered assets, such as street lighting, before inserting it within a design model. It can then be shared in another application, such as OpenRoads™ Designer, to reduce the design time from days to hours.
- ◆ Bring real-world context to your projects by combining engineering and reality data in your models. Designs can be quickly optimized and validated with reviewers performing virtual interactive walkthroughs, driver simulations, querying model information, and analyzing embedded property data by simply using a web browser.



LEVERAGE INSIGHTS FROM YOUR DATA?

- ◆ Share knowledge and best practices across your portfolio, not just your project, elevating it to an enterprise-wide system for maximum efficiency.
- ◆ Enforce information standards, such as ISO 19650 BIM, right from the start, with automated workflows and processes, reducing the need for manual interventions and ensuring consistency of information.
- ◆ Easily find and analyze data with the right tools to interrogate and collaborate on it. Information-rich, geospatial models contain the latest information so you can quickly identify issues and resolve them, creating high-quality deliverables.
- ◆ Select quality assured components from the ProjectWise Components Center based on whole life costs, as well as incorporate their data into carbon dashboards to track net-zero goals, dramatically increasing the efficiency, safety, and quality of projects.



TO LEARN MORE ABOUT HOW OUR USERS HAVE REALIZED THE BENEFITS OF PROJECTWISE, SCAN THE QR CODE OR VISIT <https://qrco.de/beBfZD>

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Advancing Infrastructure

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