



Road and Bridge Construction Planning Solution **Benefits**

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Benefits of More Efficient Construction Planning

With governments spending more on road and bridge projects globally, the heavy civil industry is moving toward utilizing more 3D/4D digital workflows and collaborative project delivery processes to meet increasing infrastructure demands. Here are four ways that our road and bridge construction planning solution provides transportation owner-operators with the ability to increase collaboration between design and construction teams, delivering more sustainable projects faster—and safely.





Coordinate Design and Construction Using 3D Models

Make the transition from design-focused to construction-focused project management. Utilize 3D/4D workflows and cloud technology to facilitate collaboration, coordination, and problem solving between teams, as well as achieve better project outcomes. Your data will be up to date and accessible from a range of devices based on roles and permissions via a secure, single source of project truth.

Coordinating design and construction teams using 3D models enables you to:

- ◆ Communicate design intent, increase design quality, and reduce conflicts.
- ◆ Streamline and expedite design and construction review processes by 30% or more.
- ◆ Capture additional data, providing a more comprehensive overview of the project.
- ◆ Improve visibility between stakeholders, reducing change orders by 15% or more.

Build Your Heavy Civil Projects Virtually First Using 4D Models

Utilize 4D models to understand what you are building before you build it. By adding construction equipment and paths to schedule activities, you can visualize conflicts and resolve them before construction begins, as well as easily understand the maintenance of traffic plans within time and spatial contexts. In addition, teams can perform what-if analysis to reduce risks and delays by reviewing time-lapsed construction sequences.

By simulating construction projects with 3D/4D models before construction begins, you can:

- ◆ Validate and optimize project plans and schedules.
- ◆ Anticipate construction impacts on the environment, traffic flows, and the local economy.
- ◆ See issues before they occur, minimizing mistakes during construction, reducing risk, and limiting exposure to workspace and logistic clashes.
- ◆ Improve safety planning and ensure compliance with safety regulations to reduce accidents and injuries on the jobsite.





Develop Accurate Schedules Using Constructible Components

4D workflows allow you to break horizontal projects into constructible components with auto-calculated quantities. Then, you can use these components to build a construction schedule that reflects, for example, how many people are needed and when they are needed, all while keeping the original design intent. Breaking the project down into phases and steps allows you to minimize disruption to the community.

By slicing and dicing road and bridge elements into constructible components, you can:

- ◆ Build plans that more accurately represent how a project will be built.
- ◆ Optimize project plans, schedules, and resources.
- ◆ Generate accurate quantity takeoffs to deliver projects on time and within budget.
- ◆ Increase project transparency to keep the public informed and meet regulations.

View and Capture Data Automatically and Electronically in the Field

Extend the value of the 4D model into field workflows for status checks, work planning, review, and inspections. With connected mobile applications and workflows, a project team can review, validate, and communicate in one complete digital and interactive visual environment that includes documents, forms, and models. This streamlined review process significantly improves project delivery efficiencies, including quality, accelerated schedules, and reduced risk, costs, and rework.

By capturing data automatically and electronically in the field, your teams can:

- ◆ Expedite operations in the field, including inspections, time tracking, and resource allocation.
- ◆ Accelerate construction time by 20% or more.
- ◆ Work on the right tasks at the right time.



Getting Started

Our road and bridge construction planning solution will meet you where you are and enable you to better coordinate your design delivery and construction planning workflows to deliver more projects faster and safely. From the office to the field, the result is less disruption to the public and increased visibility, predictability, and productivity on your projects.

- ◆ 3D/4D construction-focused planning and collaboration
- ◆ 4D construction modeling, visualization, and simulation
- ◆ Cost projection and automated quantity takeoffs
- ◆ Electronic data capture from the field

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