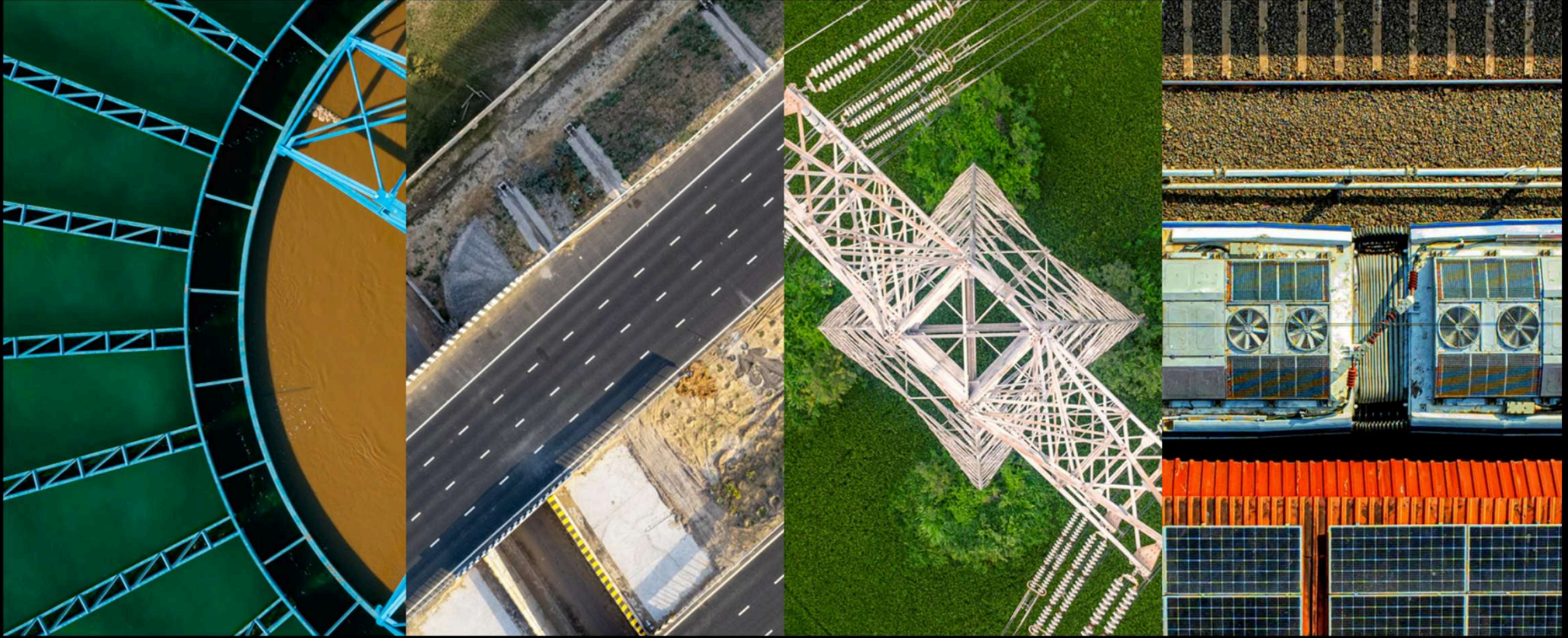


Connecting the Future: Driving Innovation in Infrastructure



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2025
Atlanta

Bentley®

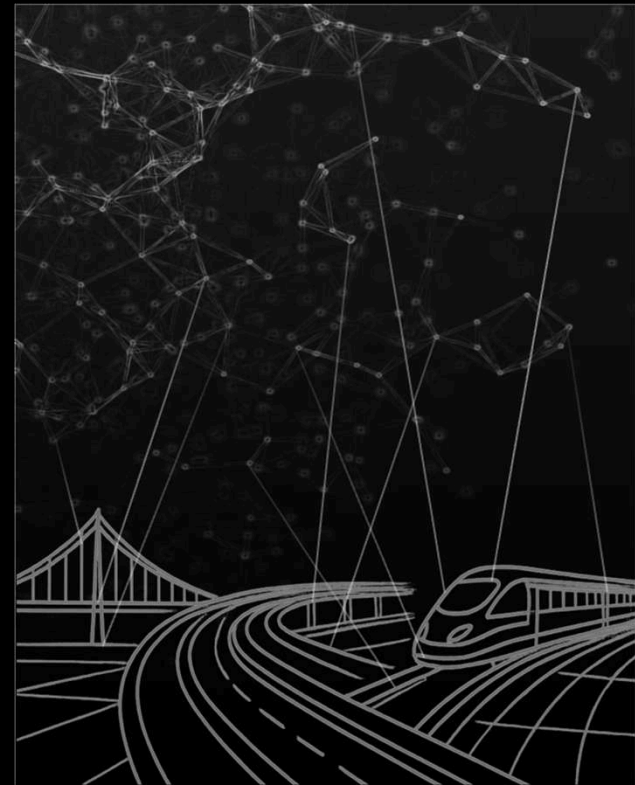
Andy Rahden

VP Solution Engineering and Services

Innovation Through Infrastructure Intelligence

Infrastructure leaders today face increasing pressure to deliver smarter, faster, and more resilient outcomes. This session will explore how Bentley's technology portfolio, including AI-driven outcomes, is helping organizations meet these demands.

See how innovation through intelligence is enabling real-world solutions that align with the evolving needs of infrastructure organizations.



Infrastructure Solutions

Aligned to your project lifecycle needs

	Transportation Solution Offerings	Energy Solution Offerings	Water Solution Offerings	Cities Solution Offerings
Planning	ProjectWise, OpenRoads, OpenSite+, iTwin & iTwin Capture, OpenPath, Cesium	ProjectWise, iTwin & iTwin Capture, PLS (Power Line Systems), OpenPlant, OpenUtilities, PlantSight, OpenSite+, SPIDA, Cesium	ProjectWise, OpenFlows, iTwin & iTwin Capture, OpenSite + MicroStation, Cesium	ProjectWise, MicroStation, SYNCHRO, Cesium, OpenCities, OpenSite+
Design & Engineering	ProjectWise, OpenRoads, MicroStation, OpenRail, OpenBridge, STAAD, SACS, RAM, AutoPIPE, SYNCHRO, OpenTunnel, Seequent, Cesium, Blyncsy, OpenSite+	ProjectWise, STAAD, SACS, OpenPlant, OpenUtilities, PLS (Power Line Systems), MicroStation, PLAXIS, AutoPIPE, Seequent, Cesium	ProjectWise, OpenFlows, PlantSight, PLAXIS, MicroStation, OpenSite+, Cesium	ProjectWise, MicroStation, OpenBuildings, Cesium, OpenCities, OpenSite+, SYNCHRO, STAAD, SACS, iTwin & iTwin Capture, OpenPath, Seequent, Cesium
Construction	ProjectWise, iTwin, OpenRoads, MicroStation, SYNCHRO, Cesium, Seequent	ProjectWise, iTwin Capture, iTwin Experience, MicroStation, PLS (Power Line Systems), SYNCHRO, Cesium, Seequent	ProjectWise, iTwin, MicroStation, SYNCHRO, Cesium, Seequent	ProjectWise, iTwin, MicroStation, SYNCHRO, Cesium, Seequent
Operate & Maintain	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight	iTwin IoT, OpenFlows WaterSight, AssetWise	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight

Infrastructure Solutions

Aligned to the Project Lifecycle

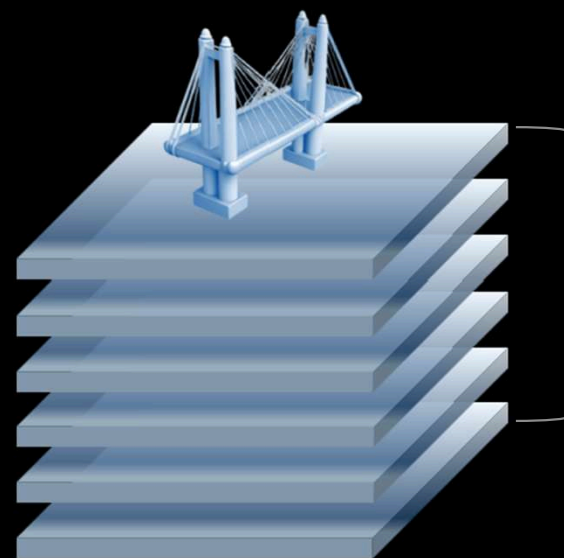
	Transportation Solution Offerings	Energy Solution Offerings	Water Solution Offerings	Cities Solution Offerings
Planning	ProjectWise, OpenRoads, OpenSite+, iTwin & iTwin Capture, OpenPath, Cesium	ProjectWise, iTwin & iTwin Capture, PLS (Power Line Systems), OpenPlant, OpenUtilities, PlantSight, OpenSite+, SPIDA, Cesium	ProjectWise, OpenFlows, iTwin & iTwin Capture, OpenSite + MicroStation, Cesium	ProjectWise, MicroStation, SYNCHRO, Cesium, OpenCities, OpenSite+
Design & Engineering	ProjectWise, OpenRoads, MicroStation, OpenRail, OpenBridge, STAAD, SACS, RAM, AutoPIPE, SYNCHRO, OpenTunnel, Seequent, Cesium, Blynscy, OpenSite+	ProjectWise, STAAD, SACS, OpenPlant, OpenUtilities, PLS (Power Line Systems), MicroStation, PLAXIS, AutoPIPE, Seequent, Cesium	ProjectWise, OpenFlows, PlantSight, PLAXIS, MicroStation, OpenSite+, Cesium	ProjectWise, MicroStation, OpenBuildings, Cesium, OpenCities, OpenSite+, SYNCHRO, STAAD, SACS, iTwin & iTwin Capture, OpenPath, Seequent, Cesium
Construction	ProjectWise, iTwin, OpenRoads, MicroStation, SYNCHRO, Cesium, Seequent	ProjectWise, iTwin Capture, iTwin Experience, MicroStation, PLS (Power Line Systems), SYNCHRO, Cesium, Seequent	ProjectWise, iTwin, MicroStation, SYNCHRO, Cesium, Seequent	ProjectWise, iTwin, MicroStation, SYNCHRO, Cesium, Seequent
Operate & Maintain	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight	iTwin IoT, OpenFlows WaterSight, AssetWise	iTwin & iTwin Capture, iTwin IoT, AssetWise, PlantSight



**How do we meet
these demands?**

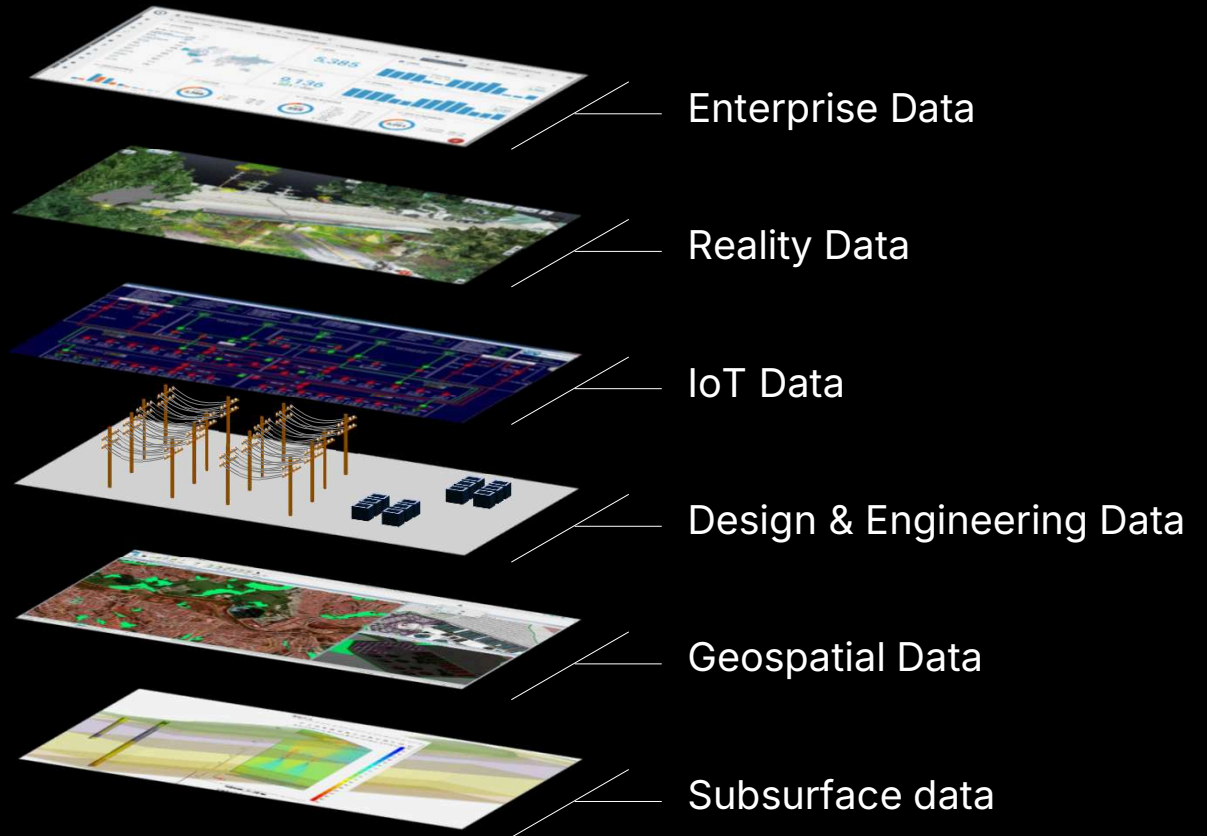
**How do we, not just
keep up, but lead?**







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2025
Atlanta



Open. Connected. Intelligent.



Open

Open means flexibility — integrated with our portfolio and with third-party systems. It's about giving you the freedom to work across tools, teams, and technologies without barriers.



Connected

Connected is about ensuring that your data, people, and workflows are seamlessly linked. So, the correct information is always available to the right people at the right time with the right context.

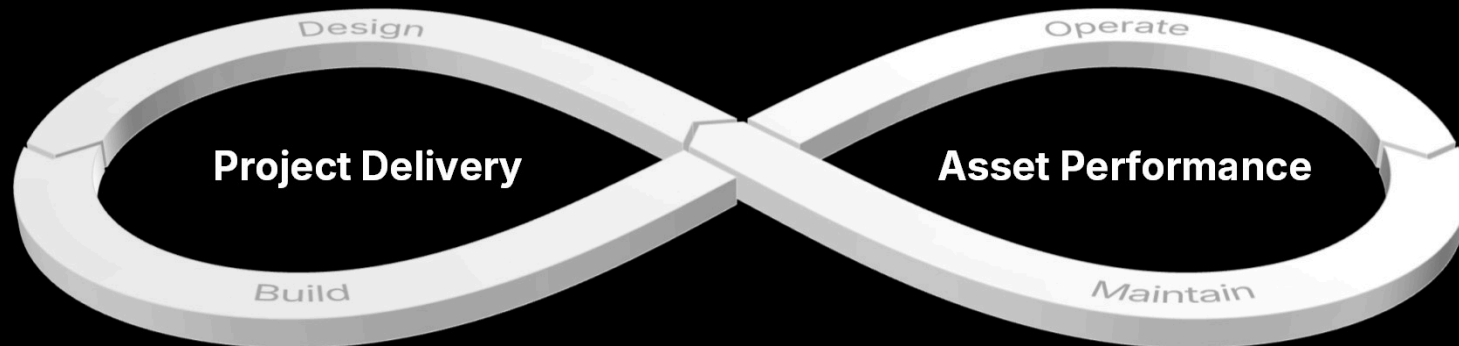


Intelligent

Intelligent means leveraging AI and automation to enhance decision-making, boost efficiency, and support your expertise, not to replace it. It's about using insights to drive better outcomes at every stage of the project lifecycle.

Design, Build, Operate & Maintain

Solutions for the Complete Infrastructure Lifecycle

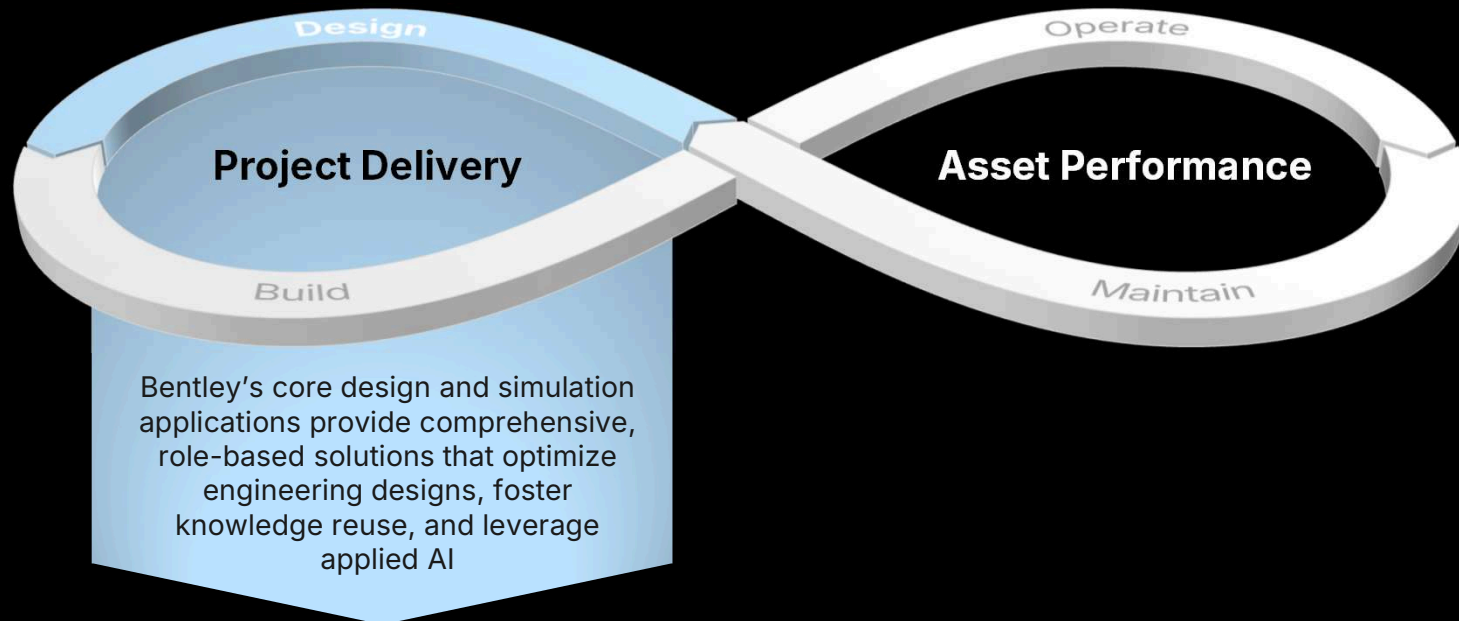


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Atlanta

Bentley®

Planning & Design | Open Applications

Design & Analysis Tools

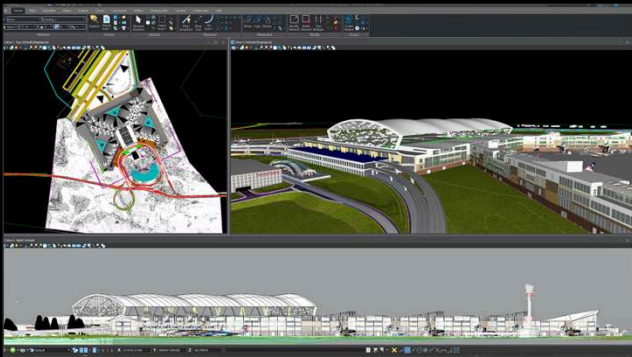


**OpenRoads, OpenSite+, OpenPlant,
OpenFlows WaterSight,
MicroStation, STAAD, SACS**
+ many other solutions

**Illuminate
2025**
Atlanta

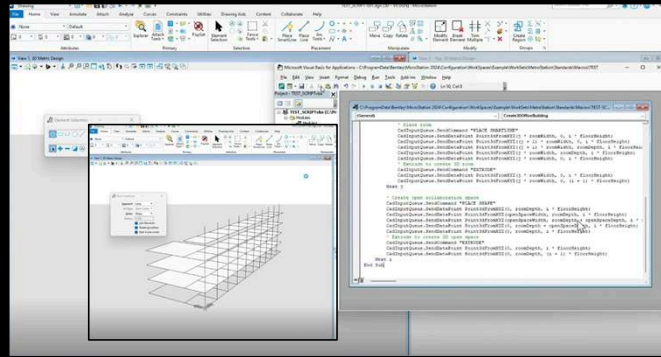
Bentley®

MicroStation | Capability & Advancements



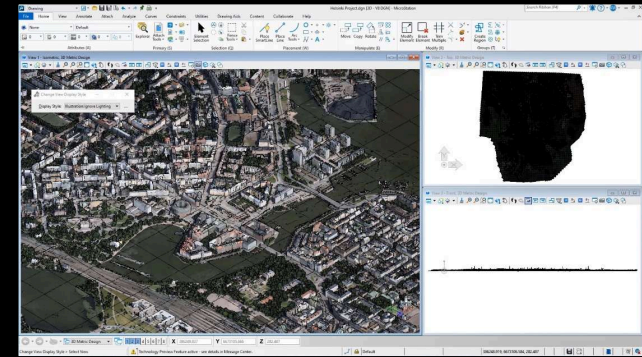
Integrated iTwin Technology

The technology enables you to model anything with geospatial context, seamlessly consolidate and report data, ensure file consistency, and reliably scale across even the largest projects — all within a single connected environment.



Python Integration for MicroStation

The advancement of Python integration in MicroStation significantly enhances what users can do by making the platform more flexible, automatable, and accessible for custom workflows, scripting, and data-driven design.

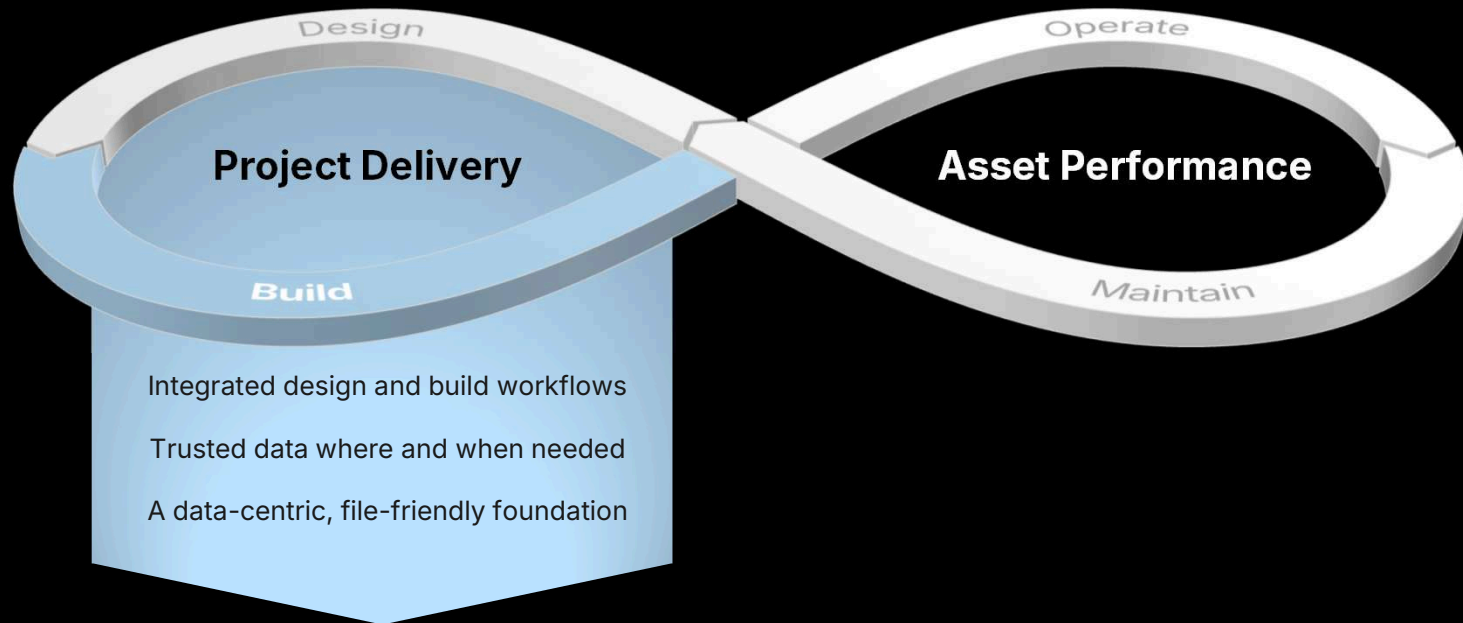


Improved GIS Integration

Improved GIS integration allows you to model infrastructure directly within its real-world context, connecting seamlessly to popular maps, raster data, and GIS services, and enabling geo-referencing to ensure accurate, location-based design.

Design. Build. Construct. | Bentley Infrastructure Cloud

Connecting people and data throughout the lifecycle

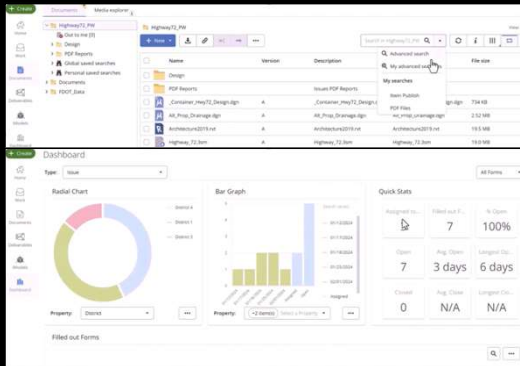


ProjectWise® and SYNCHRO™
Deliver projects faster, easier, better.

Illuminate
2025
Atlanta

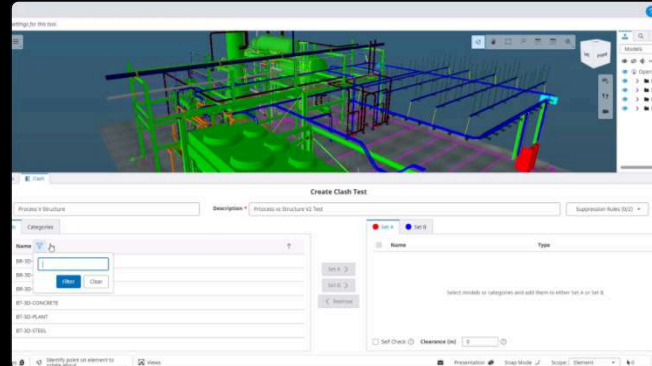
Bentley®

ProjectWise® | Bentley Infrastructure Cloud™



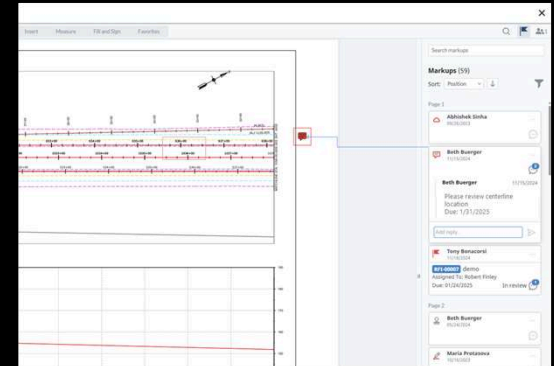
Project Collaboration

ProjectWise, version control ensures everyone is always working from the latest and approved design files, reducing errors and rework — while activity dashboards provide real-time insights into project progress, helping teams stay aligned, accountable, and informed.



Clash Detection

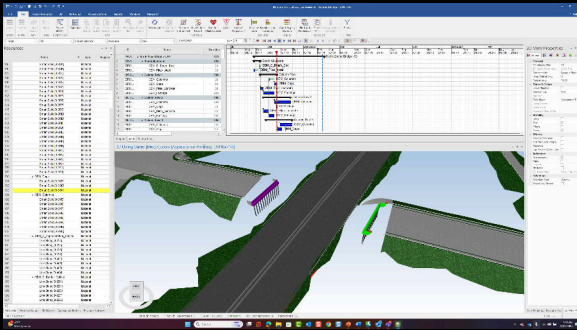
ProjectWise simplifies clash detection by enabling integrated clash setup directly from iModels, offering flexible clash definitions through named groups, and clustering clashes for faster identification and resolution. With fully integrated issue management and markup, teams can efficiently collaborate, resolve conflicts.



PDF Markups

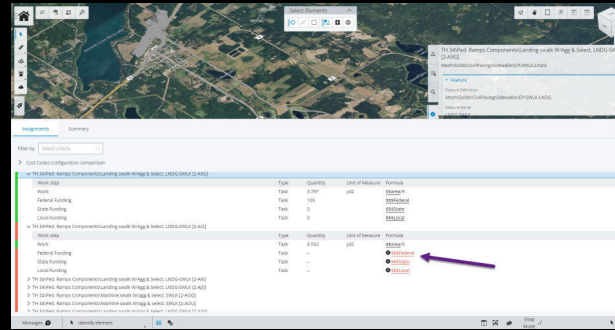
ProjectWise PDF Markups enable seamless issue tracking with built-in markup tools, ensuring closed-loop communication across teams—all included with ProjectWise and Infrastructure Cloud.

SYNCHRO™ | Bentley Infrastructure Cloud™



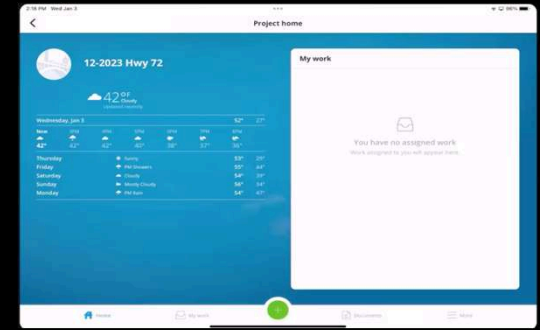
Visual Planning

SYNCHRO enables teams to visually plan, validate, and optimize construction logistics, sequencing, and scheduling—helping identify clashes, improve coordination, and digitally rehearse complex activities for safer, more efficient project delivery.



Coordinated Workflows

Coordinated workflows in SYNCHRO streamline construction planning by transforming design models for construction, automatically calculating quantities (QTO), comparing design changes, and creating defined work areas for precise execution.



Field Execution

Empowers teams with mobile-friendly tools for tablets and phones, enabling both online and offline access, geo-location, saved views, and structured forms and workflows—all while supporting round-trip issue resolution to keep projects moving efficiently from the field.

ProjectWise

infrastructurecloud.bentley.com/57ba03aa-11f2-48ce-aa77-9b9c36ab6f28/home

ProjectWise | Validate

CIV12345-001D
Coffs Harbour V0

DESIGN | BUILD

ProjectWise

1

RN

+ Create

Home

Work


Documents

Deliverables

iModels


Schedule

Dashboard




CIV12345-001D
Coffs Harbour V0

My recent activity




Design Review Issue #IS-00004
Roll design requires update
Apr 4, 2025

Viewed




Design Review Issue #IS-00003
Bridge clearance
Feb 28, 2025

Viewed




Site Inspection #INS-00001
Coffs Harbour - Section A - Week 1
Feb 28, 2025

Viewed



Inspection & Test Plan #ITP-00003
Roadway Issues
Feb 28, 2025


Viewed



Clash #CDR-00008
Bridge OHW
Feb 26, 2025

Modified


iModels




My work

My role


All



ID: INS-00001
Coffs Harbour - Section A - Week 1
Assigned to: Rhea Nielsen
Status: Open



ID: ITP-00001
Precast Wall
Assigned to: Rhea Nielsen
Status: In Review



ID: CS-00005
Synchro Modeler Split
Assigned to: Rhea Nielsen
Due: 26 Feb 2025 - 60 days Overdue - Status: Open

View all

Create

Construction Staging

Design Review Issue

Inspection & Test Plan

Site Inspection

Task

Summary

My work

Project

0

All open items

0

Open Clash

0

Open Task

0

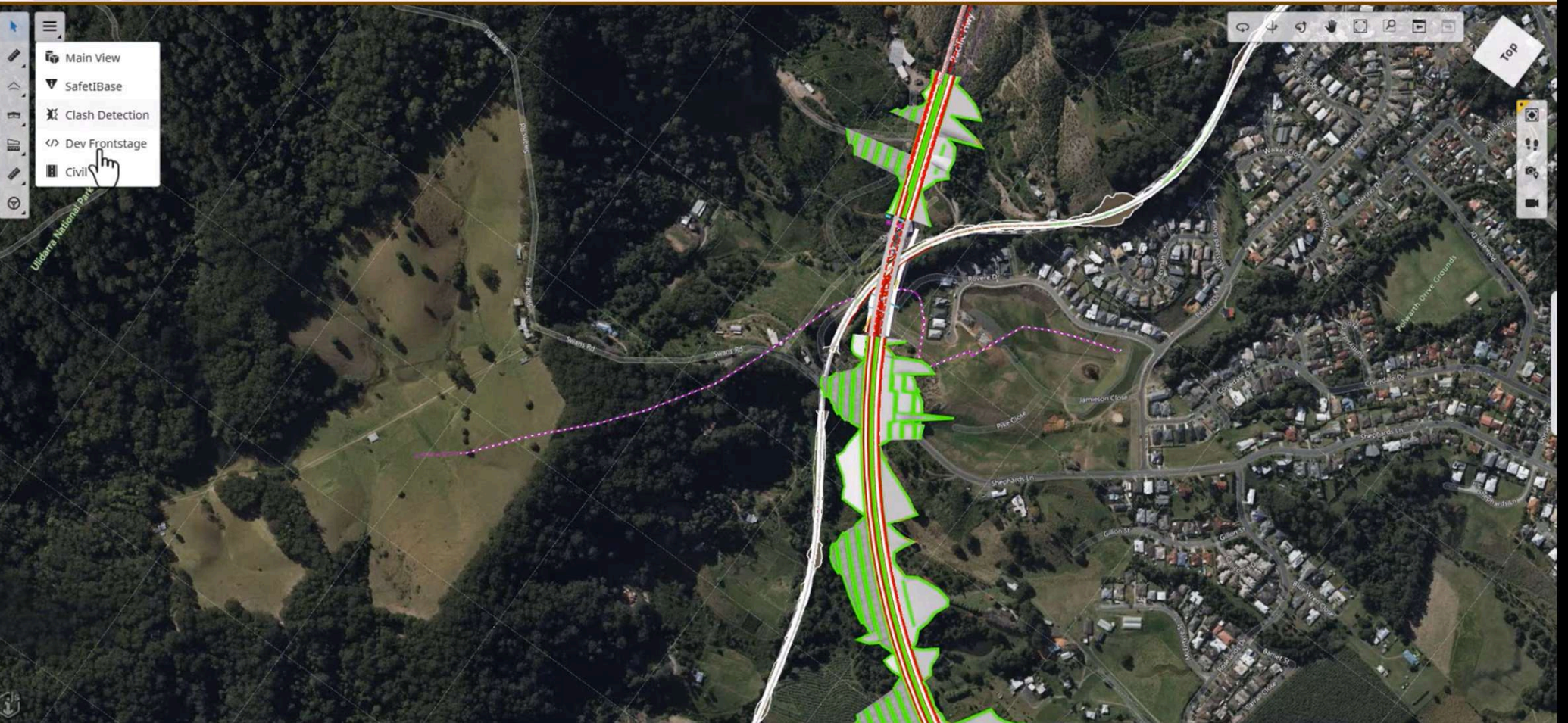
Open Submittals

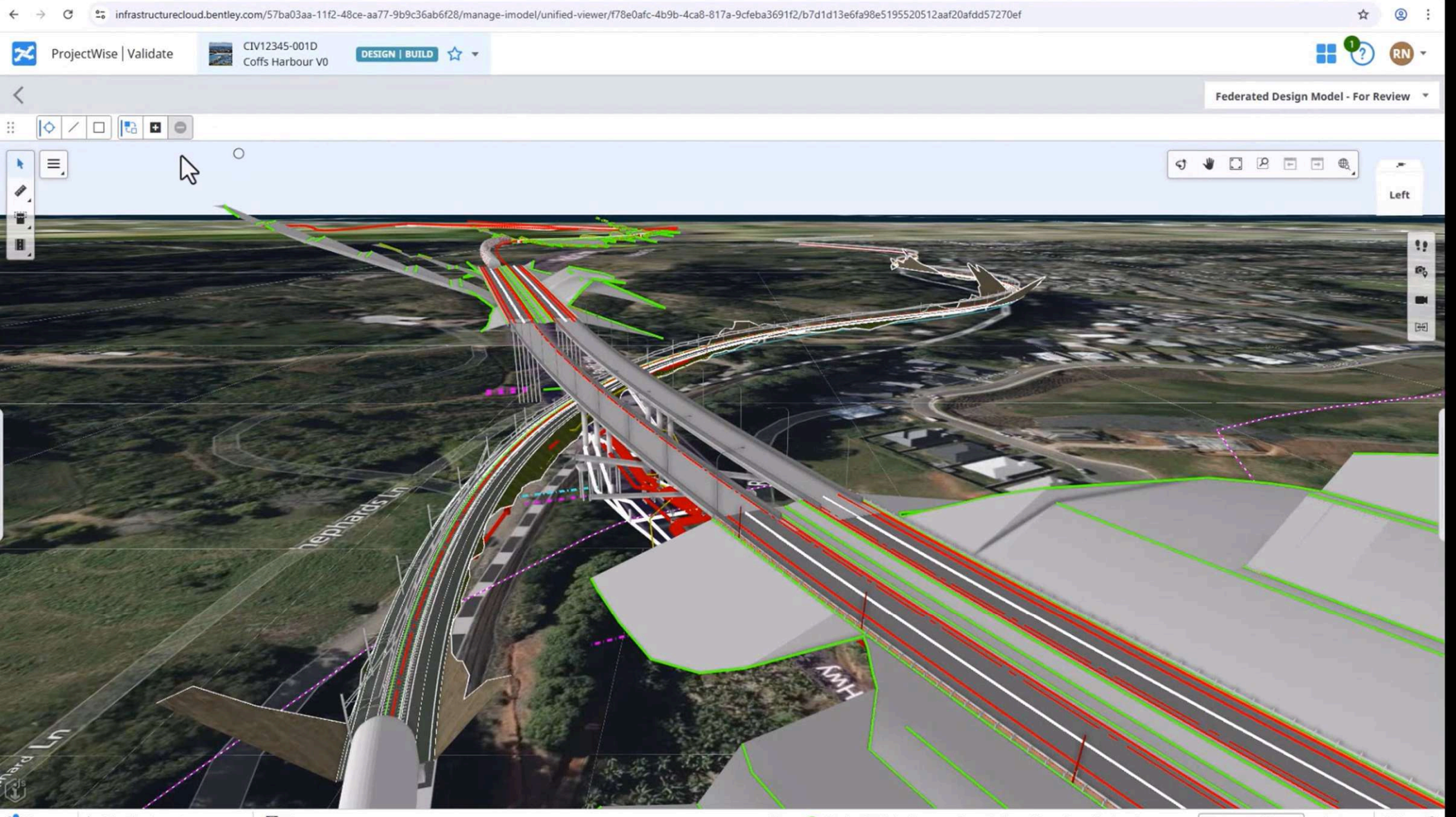
New: 0

Music track: Building Dreams by Aylen
Source: https://freetouse.com/music/
Royalty Free Music for Video [Safe]



- Main View
- SafetIBase
- Clash Detection
- Dev Frontstage
- Civil



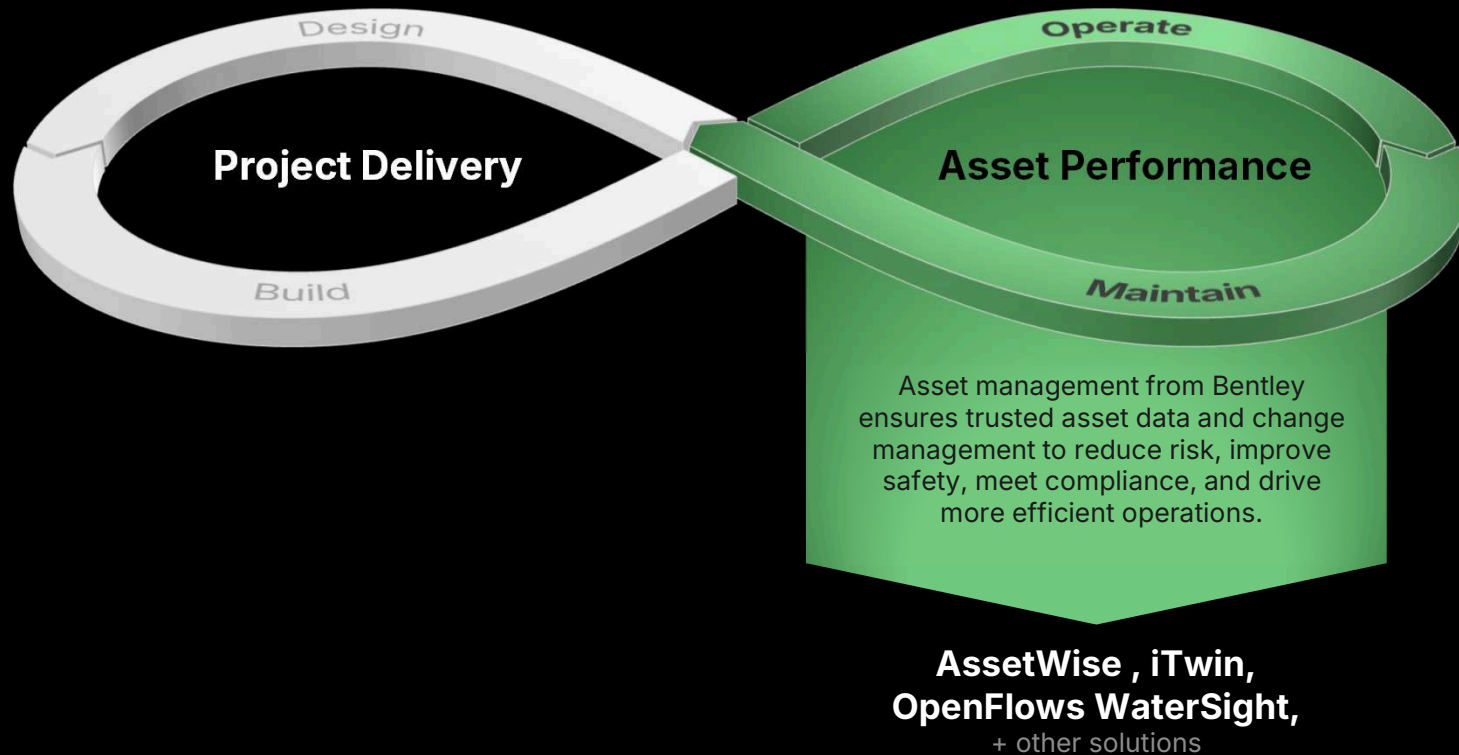




Loading projects...

Asset Management | Optimizing Asset Operations

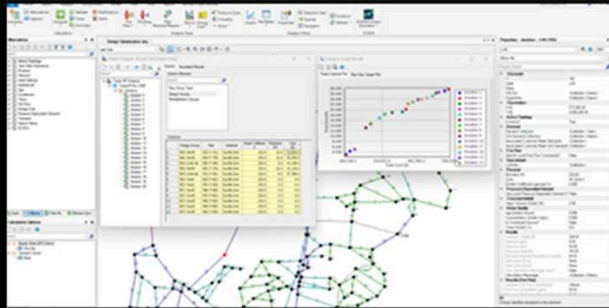
Connecting people and data throughout the lifecycle



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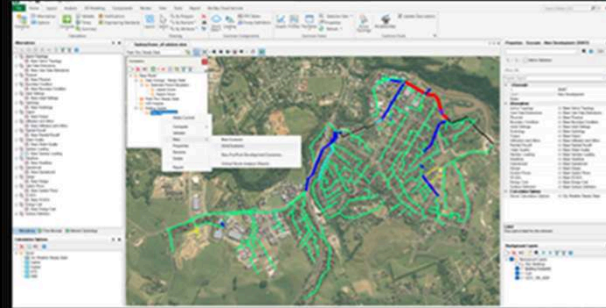
Bentley®

OpenFlows | Water, Sewer, & Storm Network Solutions



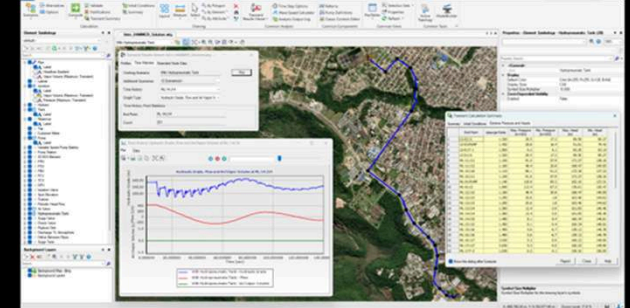
System Design & Performance

Quickly model, analyze, and optimize hydraulic systems — empowering teams to understand performance, predict issues, and solve network problems with confidence.



Improve Network Reliability

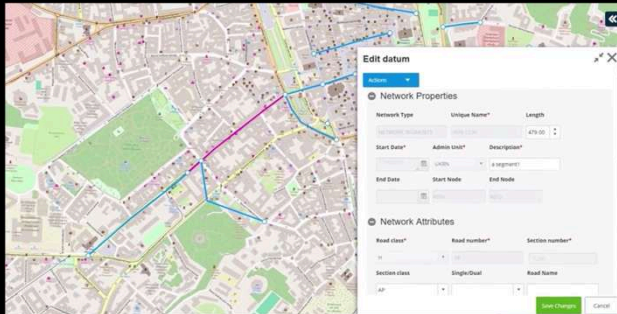
Improve water network reliability by identifying losses, resolving bottlenecks, and managing capacity to reduce risks like non-revenue water and stormwater flooding.



Mitigate Risk & Ensure Compliance

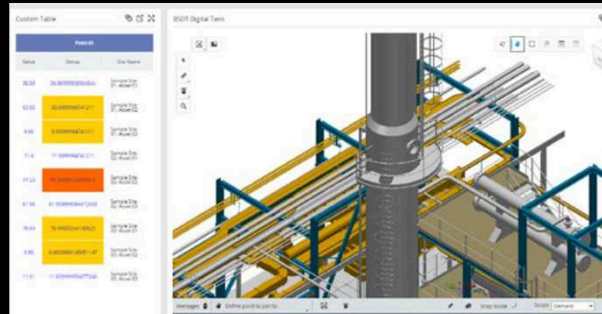
Reduce the risk of water system failures through transient mitigation, overflow remediation, and demand forecasting to ensure safe, reliable service.

AssetWise | Optimize Operational Assets



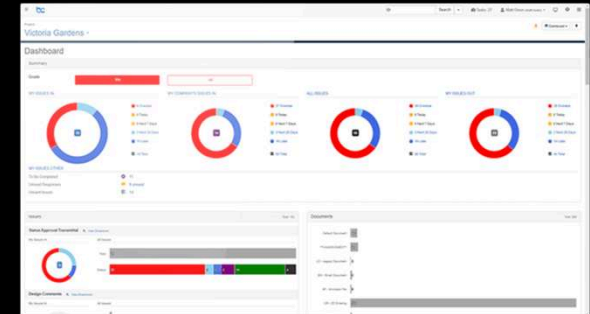
AssetWise ALIM

Comprehensive asset information management system that helps you reduce costs and improve security by enabling easy access to validated and trusted asset data across the infrastructure lifecycle. Combine document, data, and physical configuration management with a proven workflow engine.



AssetWise 4D Analytics

Provides real-time asset monitoring, and insights to help organizations optimize asset performance, reduce operational costs, and improve reliability. IoT data integration, and seamless connection to digital twins, it enables predictive maintenance, root cause analysis, and smart decision-making to enhance efficiency and avoid failures.



BCDE

A digital information common data environment enables flexible and powerful management of data, documents and spatial information in the cloud, for construction projects and built assets.

Bentley®

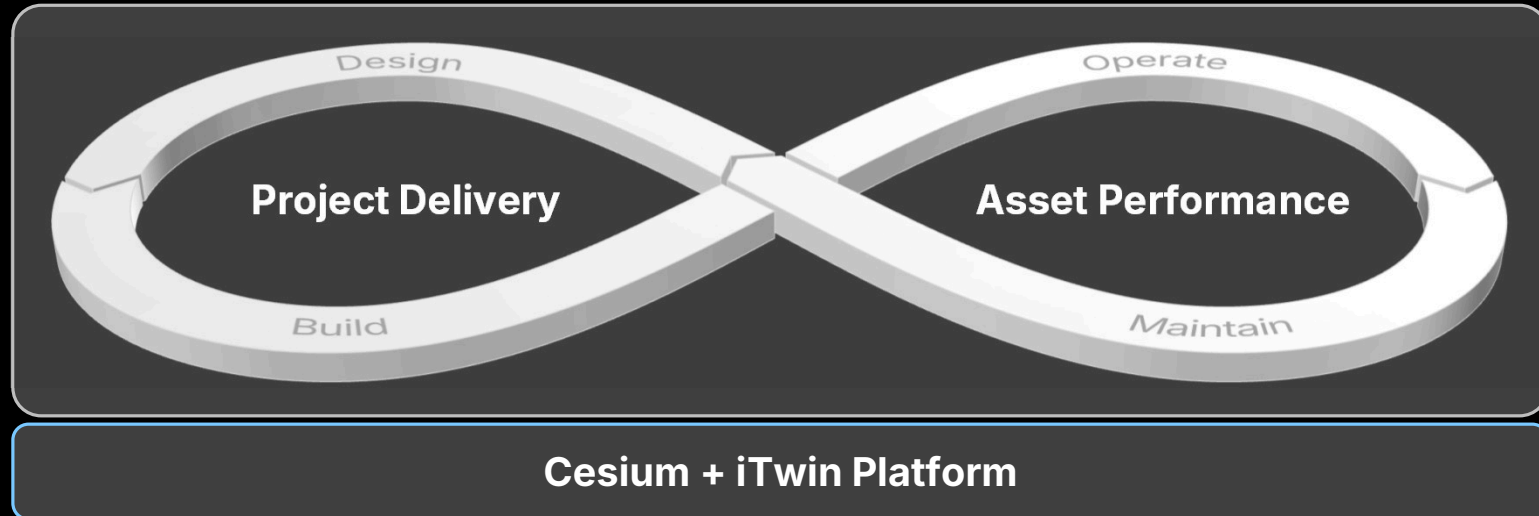


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Bentley®

Cesium | Bentley's Platform

High-performance 3D Geospatial Visualization



< Dashboard

Building-4D



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Bentley®

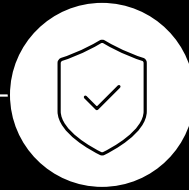
Dustin Parkman

VP Industry Solutions

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Artificial Intelligence

Bentley's core principles for data and generative AI



Control

You retain control of your design data, and you get to decide whether to use it to train AI models for your benefit.

Contribute

Where relevant, you can choose to contribute your design data to train those AI models that benefit everyone collectively.

Trust

We will be transparent about how we created an AI model and how we obtained the data used to train it.

ARTIFICIAL INTELLIGENCE

We help users increase productivity with AI solutions



Understand site and asset conditions

Leverage survey and mapping artifacts to assess field conditions more frequently.



Boost design productivity with AI

We are deploying a new generation of AI-powered engineering applications.



Unlock data from existing 2D drawings

Extract rich data models from existing 2D drawings.

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Bentley®

Understand site and asset conditions

With Bentley's AI-powered reality modeling and Asset Analytics applications, infrastructure professionals can:

- **Build** reality and asset models from survey, mapping, and crowd-sourced imagery.
- **Assess** the conditions of assets based on automated AI-based visual inspection.
- **Recommend** maintenance improvements based on compliance guidelines.



Bentley's Blynscy software analyzes crowd-sourced dash cam imagery for automated roadway management and asset inventory.





Google Earth
Data SIO, NOAA, U.S. Navy

Slide 34

DP1 Replace with newer better video that supports Google Street View
Dustin Parkman, 2025-04-22T19:31:10.578

Impactful AI application for bridge inspection

Automatic defect detection

Problem:

Asset inspection often requires on-site measurements which are costly, dangerous, and error prone.



Solution:

Multiple transformer detectors are trained to detect defects on 2D images that can be reprojected on reality mesh and inspected in 3D to yield measurements and determine asset condition.

Partner accounts:

COLLINS
ENGINEERS INC

m
DEPARTMENT OF
TRANSPORTATION

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Image courtesy of Collins Engineers, Inc.

Bentley



Impactful AI application for construction

Problem:

Photos and videos taken during the construction process are unorganized.



Solution:

The SYNCHRO Media Index extension provides a searchable preview grid while displaying geo-referenced location.

Partner accounts:

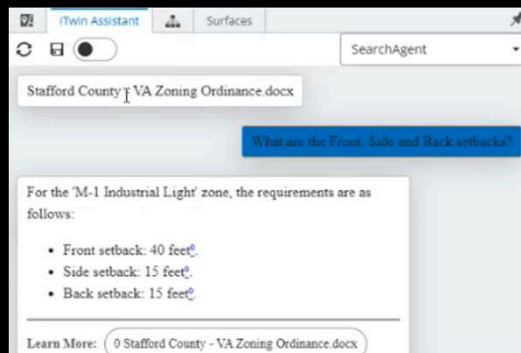


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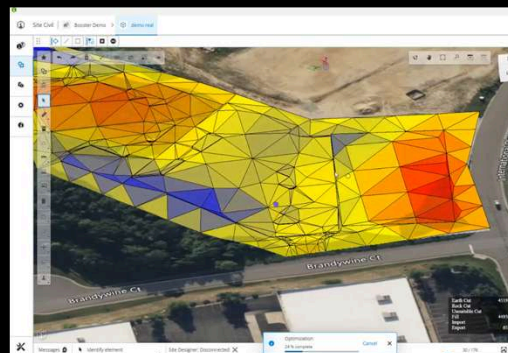
Bentley®

OpenSite + | Boost Design Productivity with AI



Copilot Design Assistant

Use natural language commands, while providing evidence-backed answers with full traceability — ultimately improving efficiency, reducing errors, and saving valuable time across the design process.



Earthwork Optimization

*Streamlines earthwork design with one-click optimization and efficient grading error detection — automatically identifying the most cost-effective grading options to **save time and reduce project costs.***



Automated Drawing Production

*Delivers automated drawing production with full annotation automation, adaptive styling to your organizational standards, and the flexibility to quickly adjust to project changes, **achieving up to 10X efficiency** while reducing plan production time.*


ProjectWise

https://infrastructurecloud.bentley.com/2fcd5fbf-df11-4662-885a-dd91da0a37b4/manage-imodel/unified-viewer/cc2016dd-df76-4179-a591-8196d2fa7ec7/f9e9bd4af60f87b3b881a302dd1672cfec5f0103

ITC_Terminal

Data Visualization

No data visualization entries have been created.



Reality Data

Model

Photo Navigation

- OpenStreetMap Buildings
- OC6io_37_000_20372501_20...
- OC6io_37_000_20372601_20...
- OC6io_37_000_20372602_20...
- OC6io_37_000_20372603_20...
- OC6io_37_000_20372604_20...
- OC6io_37_000_20372703_20...
- OC6io_37_000_20372704_20...
- OC6io_37_000_20373501_20...
- OC6io_37_000_20373502_20...
- OC6io_37_000_20373601_20...
- OC6io_37_000_20373603_20...
- OC6io_37_000_20373604_20...
- OC6io_37_000_20373701_20...
- OC6io_37_000_20373703_20...
- OC6io_37_000_20373704_20...
- OC6io_37_000_20374501_20...
- OC6io_37_000_20374601_20...
- OC6io_37_000_20374603_20...
- OC6io_37_000_20374701_20...
- OC6io_37_000_20374703_20...
- Nash Mesh

Messages

Identify element

Views

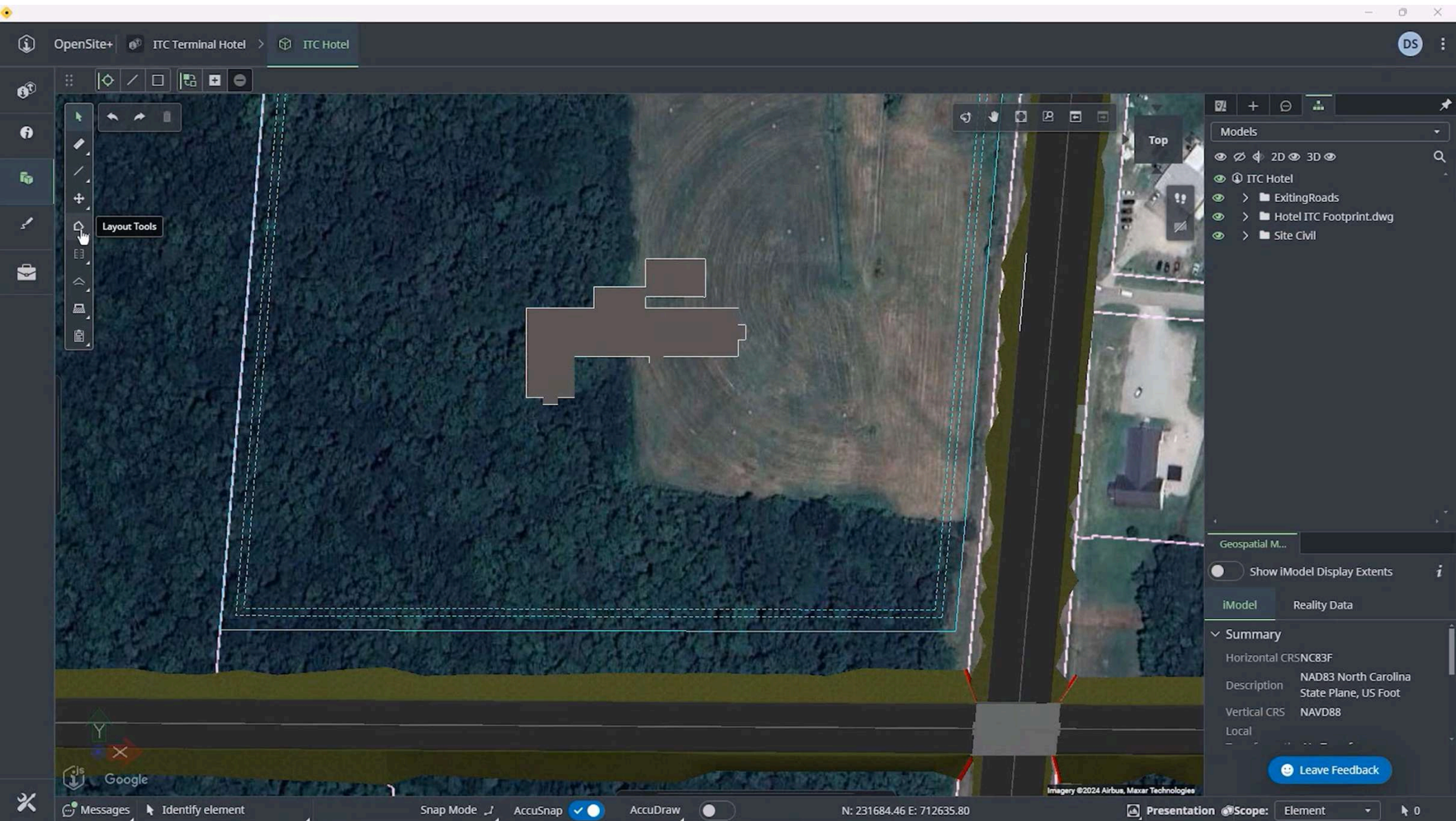
Presentation

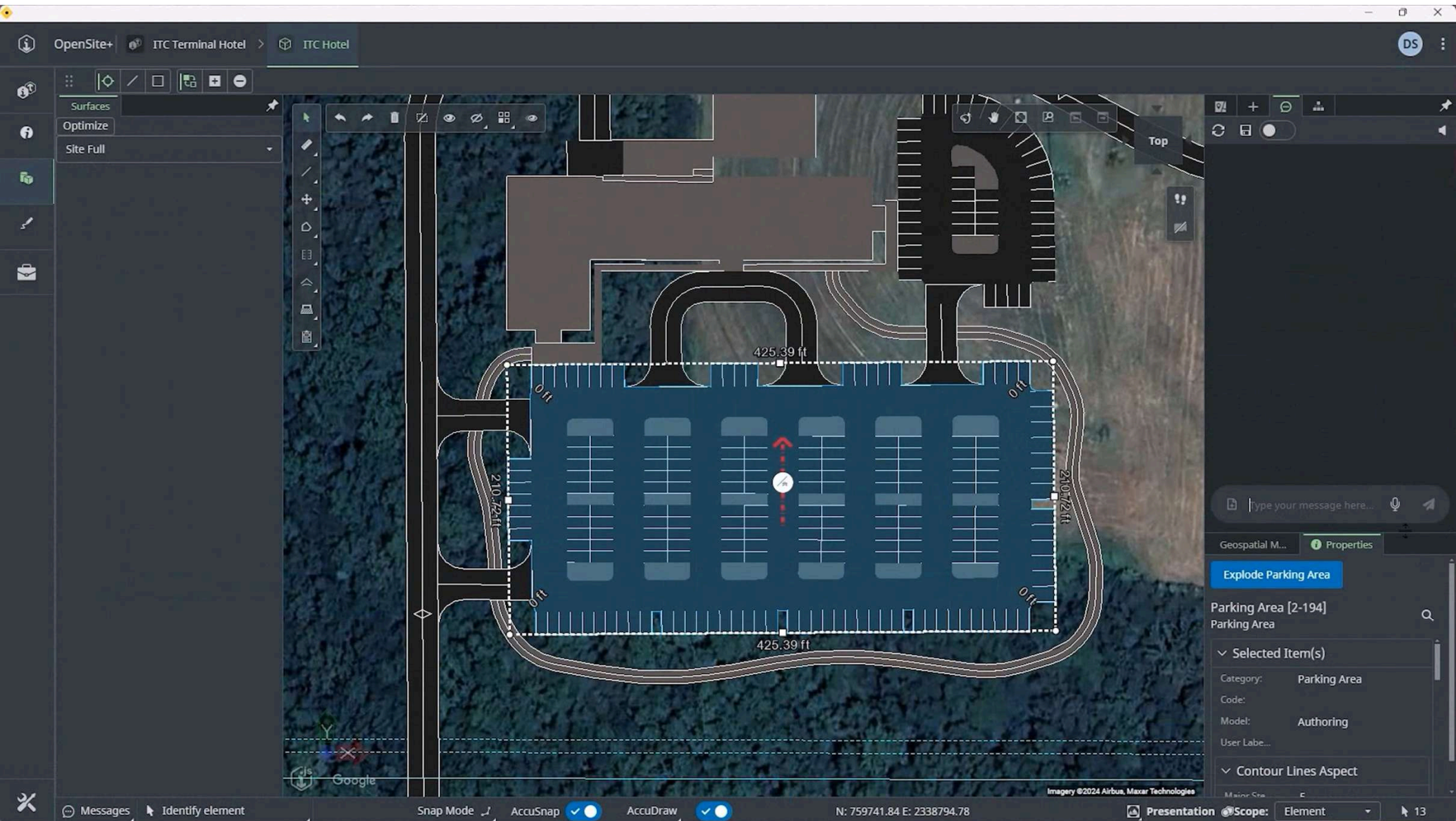
Snap Mode

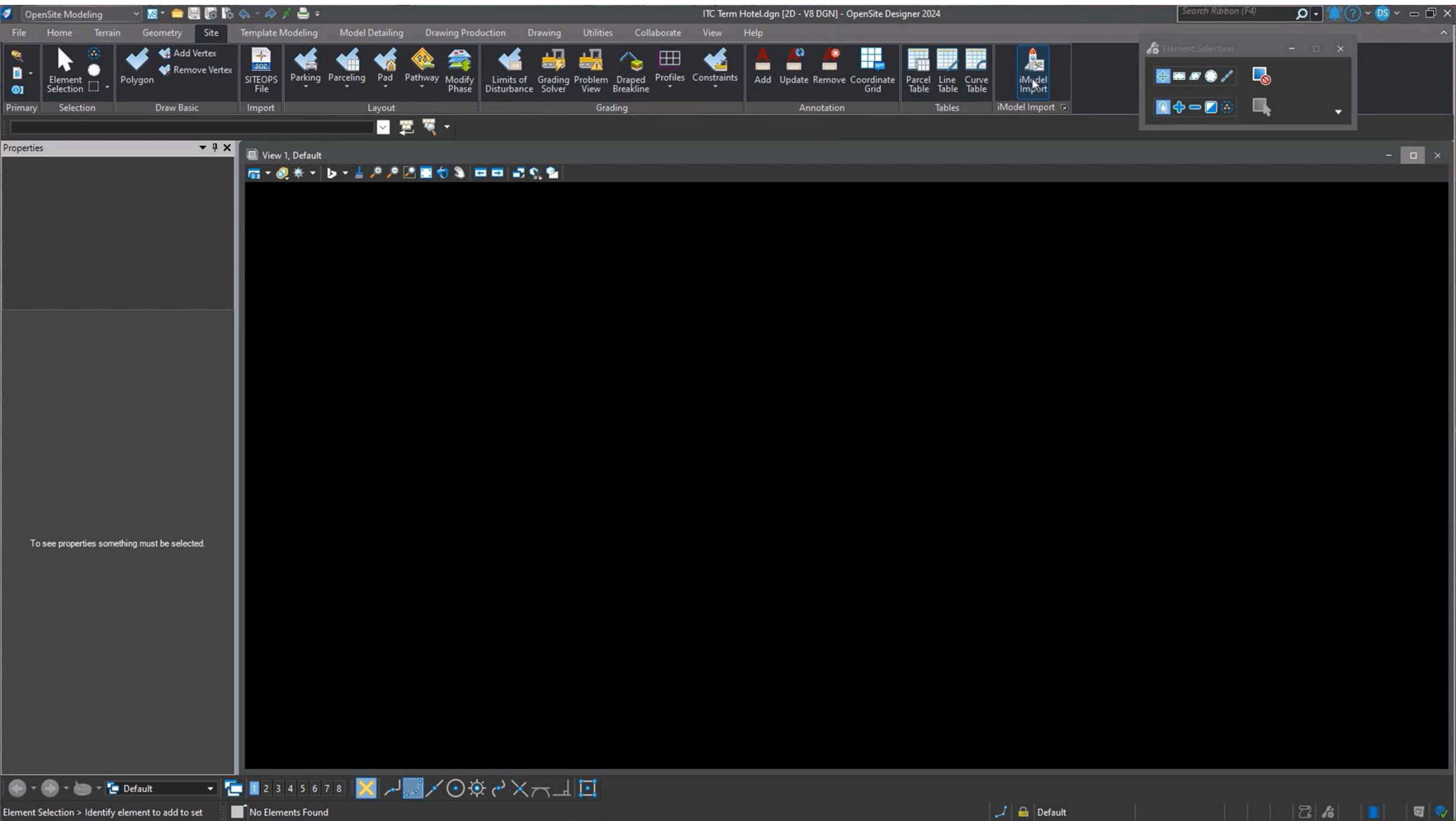
Scope: Top Assembly

0

Settings







Bridge - Master - Open First.dgn [3D - V8 DGN] - MicroStation

File Home View Annotate Attach Analyze Curves Constraints Utilities Drawing Aids Content Collaborate Help

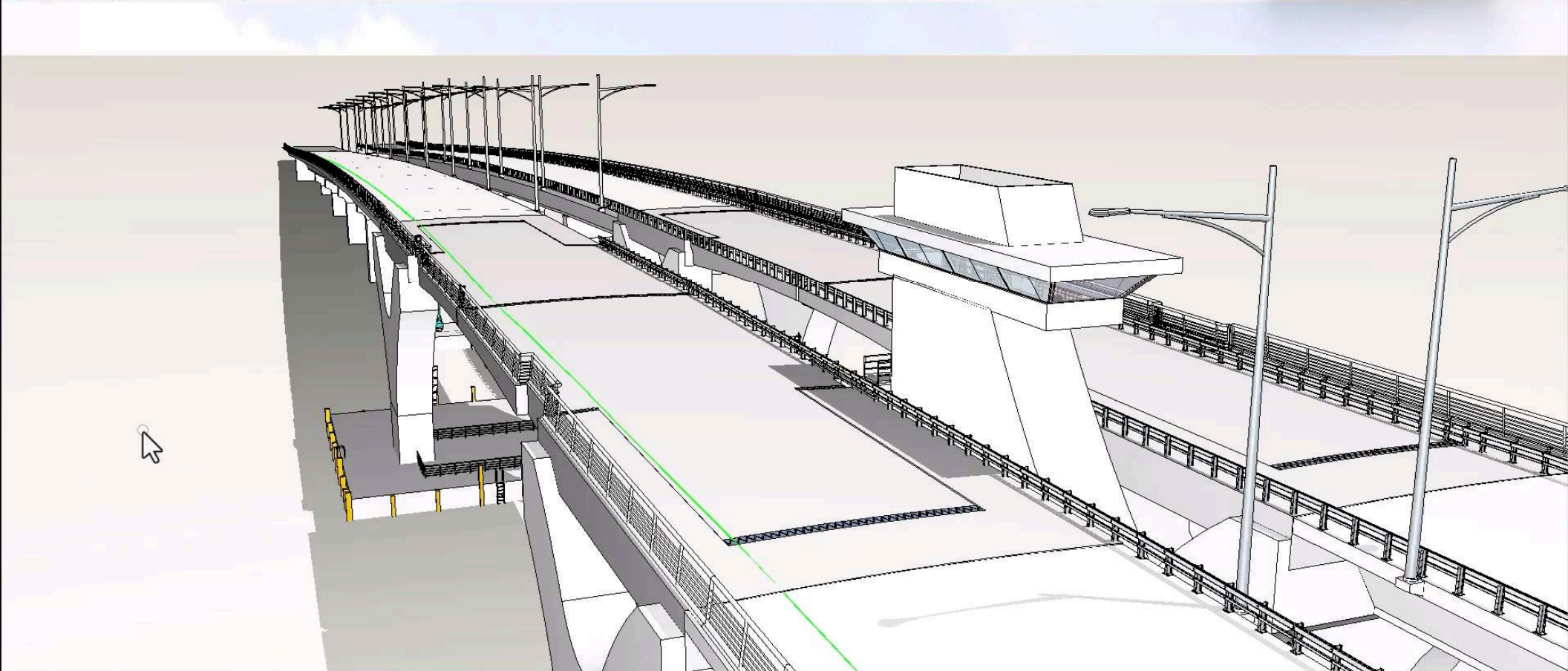
OLE Named Expressions Connect to Browser MDL Applications Close Tool Boxes Display Convert Capture Play Record Stop AddDeleteAlongPath VBA Manager Python Manager Commit Initialize Signatures Signature Cell Coordinate System

Meters Centimeters Full Size 1 = 1 Custom ACS Full Size 1 = 1

Utilities Image Macros Design History Security Geographic Drawing Scale

View 1, Bridge Assembly

Element Selection



Element Selection > Settings Saved

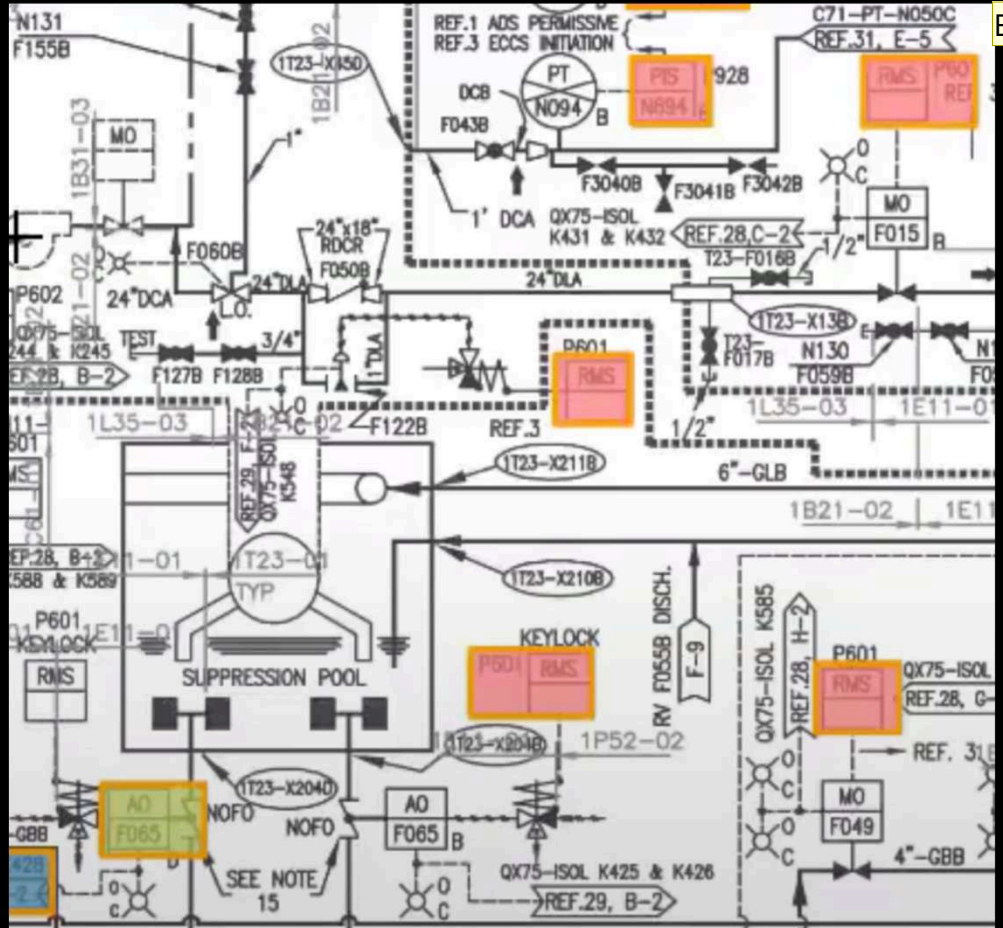
Python Editor - C:\Users\Stuart.Milne\Documents\AddDeleteA

X: 291704.26464 Y: 196508.23500 Z: -905.80754

Unlock data from existing 2D Drawings

With Bentley's AI-powered automation services, infrastructure professionals can:

- **Automate** data extraction from 2D construction and schematic drawings.
- **Infer** reliable and detailed data models with connectivity.
- **Provide** actionable insights from detailed data models.



Bentley's PlantSight turns legacy P&ID drawings into intelligent data models by inferring data and connectivity through annotations and symbology.

Slide 45

ES1 Who could provide a better quality image, please?
Egle Stoniene, 2025-05-07T07:33:21.149

ES1 0 Okay, this looks better than the alternatives so far.
Egle Stoniene, 2025-05-08T15:03:01.327

Impactful AI application for processing facilities

Intelligent P&ID import

Problem:

Plant owners have hundreds of P&IDs, often available on paper or as dumb CAD files/PDFs.



Solution:

Machine learning combines text, symbols, and line detection for classification, tag extraction, and connectivity recreation.

Partner accounts:

 ARCADIS

FLUOR

HATCH

Jacobs


Petrofac




TETRA TECH

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Atlanta

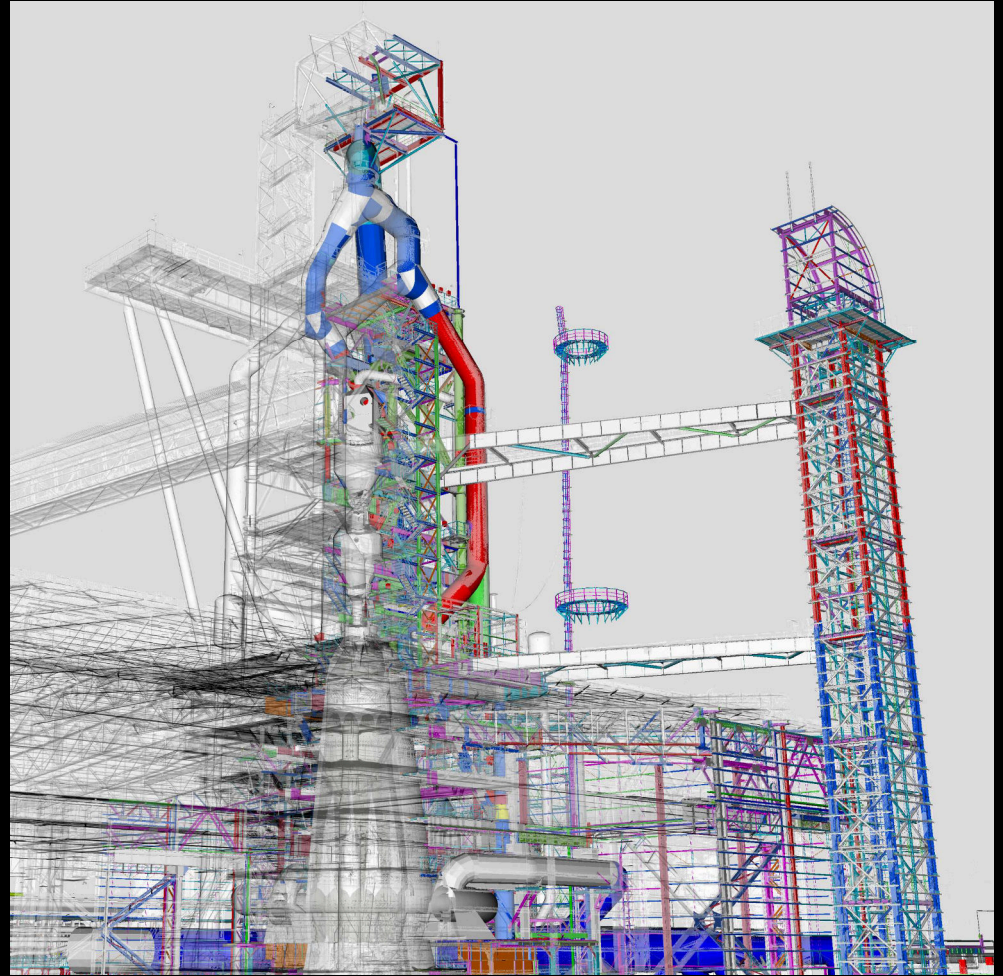


Image courtesy of Yunnan Yuxi Yukun Iron & Steel Group Co., Ltd.

Bentley

PlantSight

PlantSight DTShowcase

Brownfield DigitalTwin 2.0.

RocketMine-Intelligent PID

RocketMine-Intelligent PID

RocketMine_dt

Latest Changeset

1

Files

2

Analysis

3

Import

https://plantsight.bentley.com/389894f4-bb36-4901-9470-d030da9db354/intelligentImport/files/19fe6a88-4882-4669-a959-60da5329b7e6/files/

51

MJ

< RocketMine

List of documents

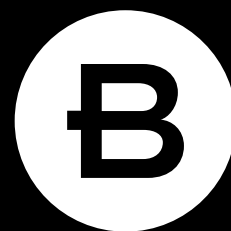
+ New

Run Analysis

Search...

Name	Type	File Size	Modified
ML003689274_0_V2.pdf	Pdf	3.00 MB	9 Dec 2022, 09:16

Analysis >



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