

An aerial photograph showing a two-lane asphalt road that curves through a dense, lush green forest. The road is dark grey with white lane markings. A single white car is visible on the road in the lower half of the image. The surrounding forest is thick with various shades of green, suggesting a healthy, mature woodland.

# Integrated Workflows: Enhancing Efficiency in Highway Projects

Rohith M  
Solution Architect

**Bentley**<sup>®</sup>

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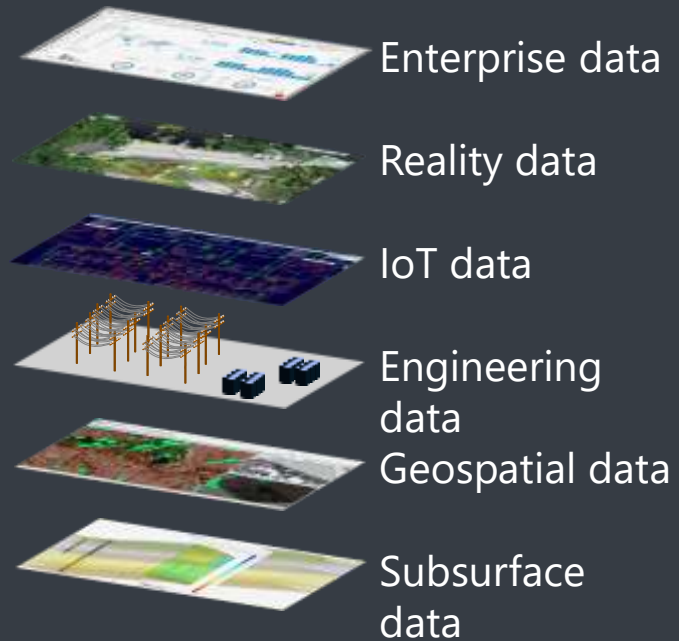


# Technology Strategy

## Increase Productivity with BIM workflows



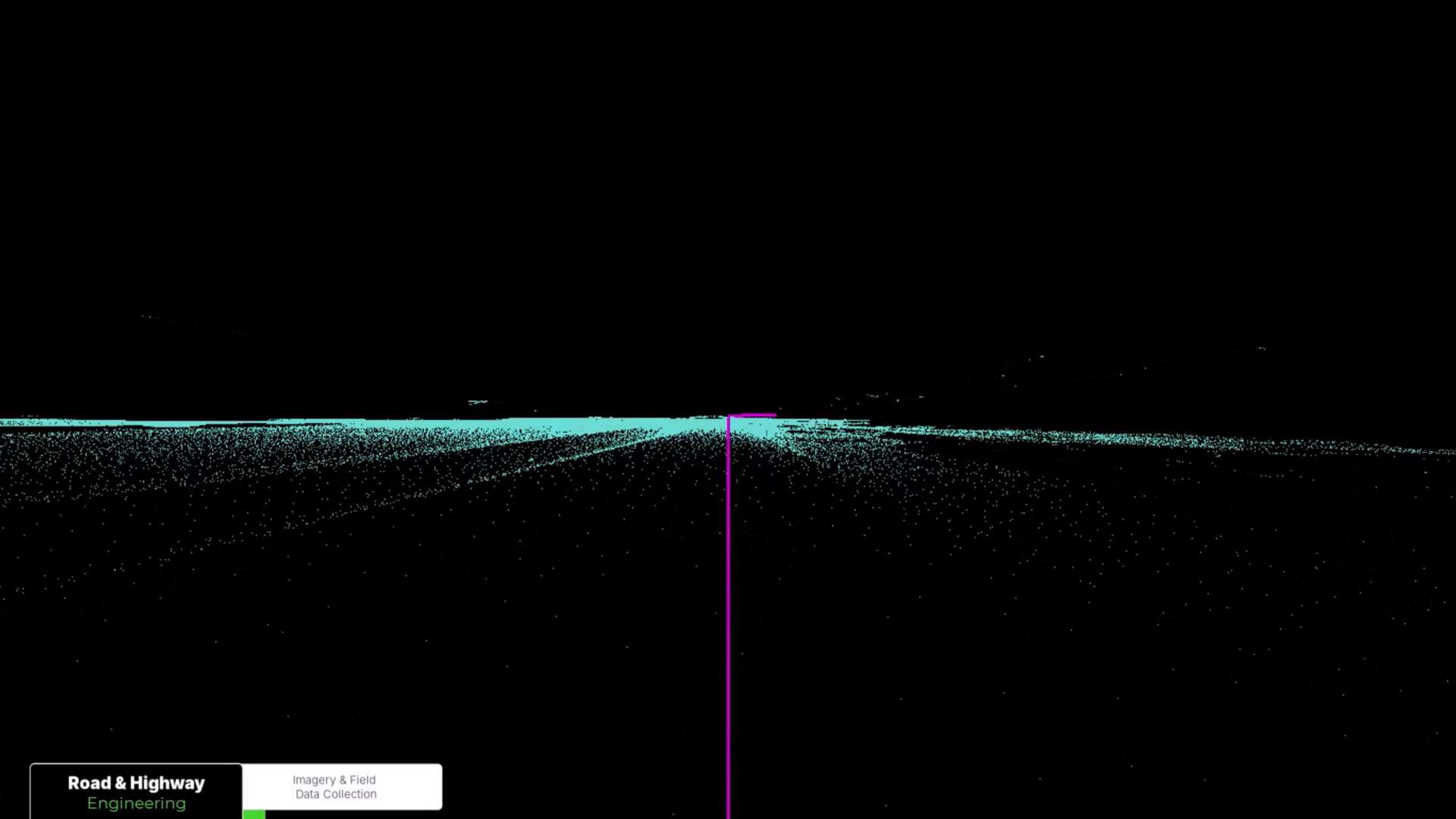
## Unlock value of data with Infrastructure Digital Twins



## Boost Productivity With AI



# Increase Productivity with BIM workflows



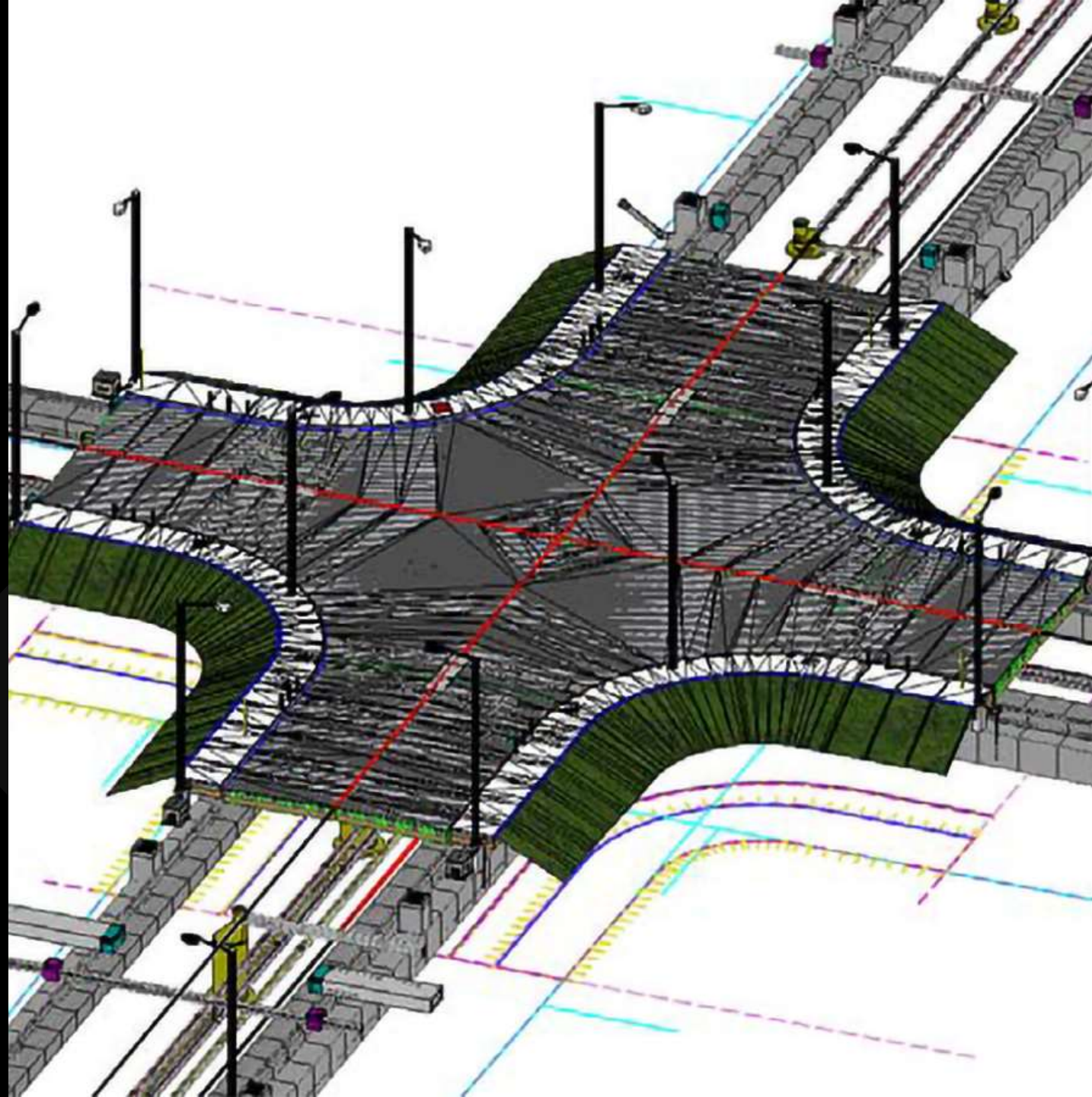
# Larsen & Toubro Helps Develop Dholera as India's First Smart Greenfield City

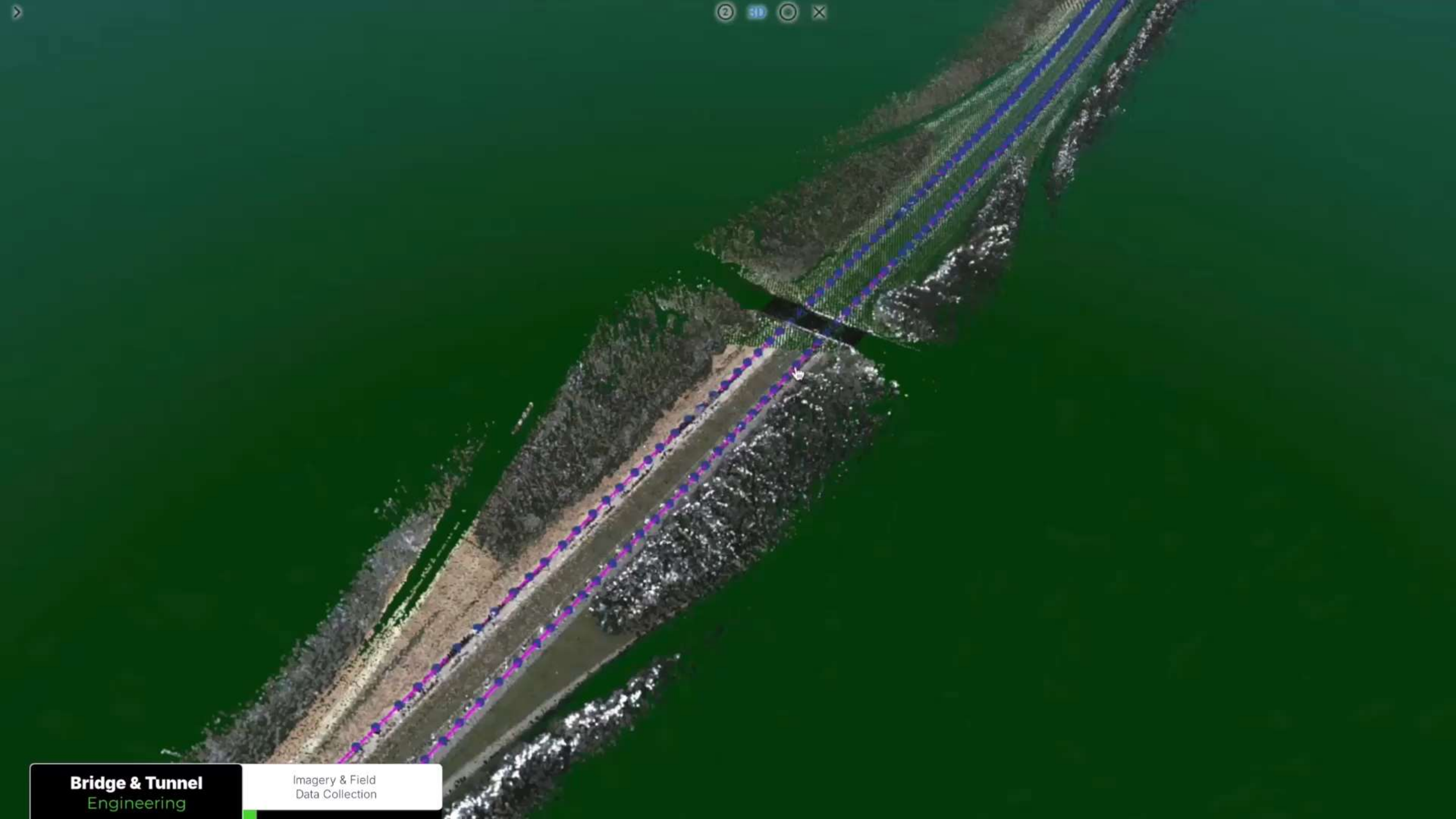
## Larsen & Toubro

Ahmedabad, Gujarat, India

### ROI:

- Using OpenRoads subsurface utility design analysis workflow automated previous manual modeling processes, reducing work hours from **4,000 to 3,000**
- Larsen & Toubro improved productivity by **25%**, accelerating the project schedule by **10%**





# Montrose Interchange

SMEC

Mbombela, South Africa

Estimated at **2,500 hours**  
of work saved

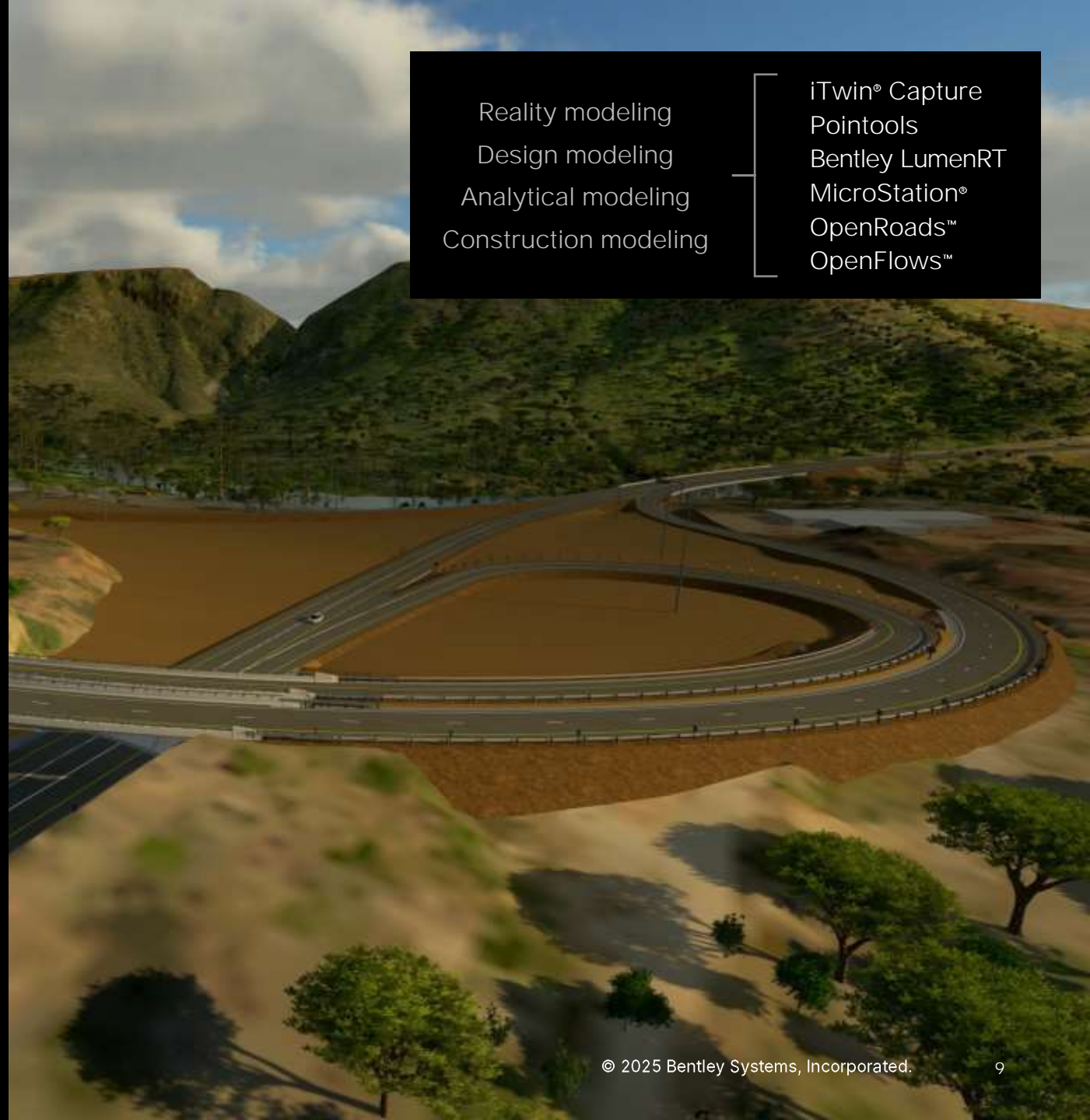
Savings in design  
and detailing work: **ZAR 2.5 million**

Modeling time  
reduction: **1,500 hours**

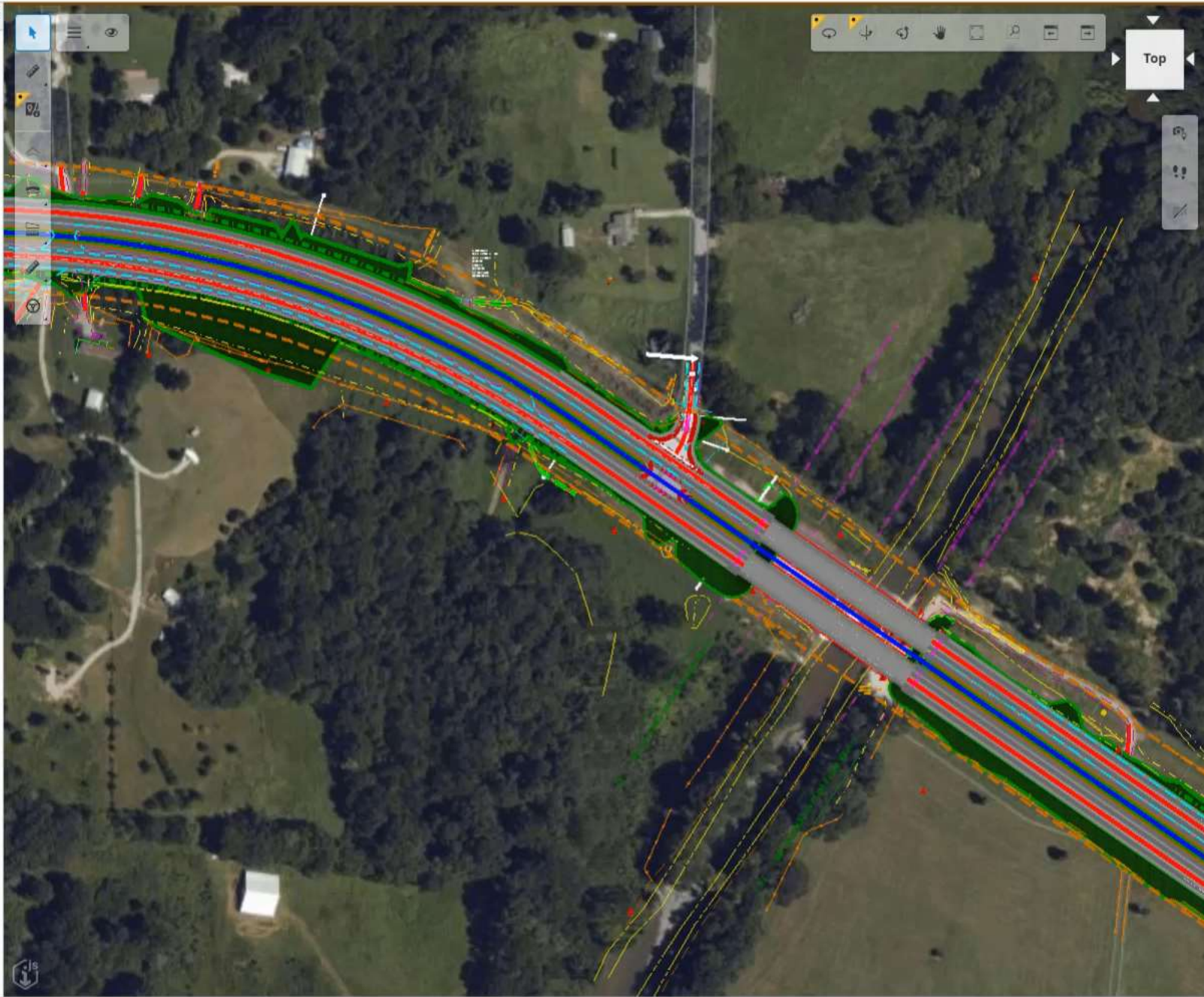
- Cost savings
- Work hours saved
- Productivity gains
- Reduction in material costs
- Improvement in quality (of deliverables)
- Schedule acceleration
- Improved workflows/ process
- Reduction in downtime/failures
- Reduction in travel/onsite visits/in-person team meetings
- Community benefit (economic)

Reality modeling  
Design modeling  
Analytical modeling  
Construction modeling

iTwin® Capture  
Pointools  
Bentley LumenRT  
MicroStation®  
OpenRoads™  
OpenFlows™



# Unlock value of data with Digital Twins



Index Map

- Index of Sheets
  - SHT #1 TITLE SHEET
  - General Sheets
    - SHT #2 Abbreviations Sheet
    - SHT #3 Plans Legend Sheet
  - Plan & Profiles
    - SHT #4 Plan 1 [Sheet]
    - SHT #5 Plan 2 [Sheet]
    - SHT #6 Plan 3 [Sheet]
  - Cross Sections
  - Roll Plans
  - Cross Sections

No data visualization entries have been created.

# I-70 Floyd Hill to Veterans Memorial Tunnels Project

**AtkinsRéalis**

Colorado, USA

Estimated at **51,680hrs** of work saved

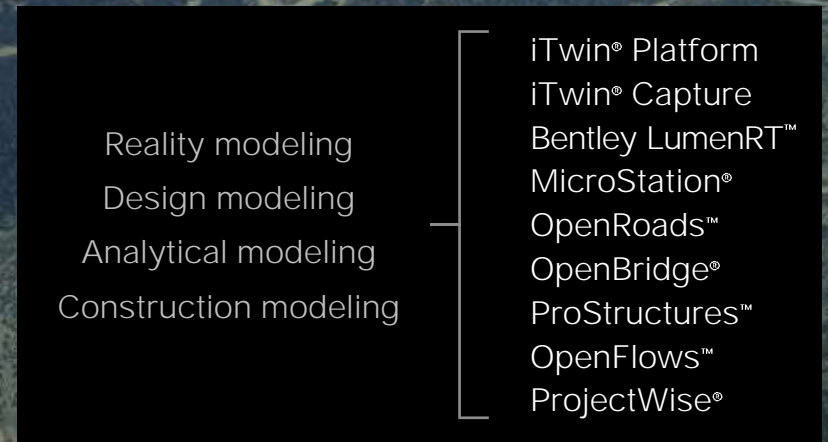
Rebar design time reduction: **75%**

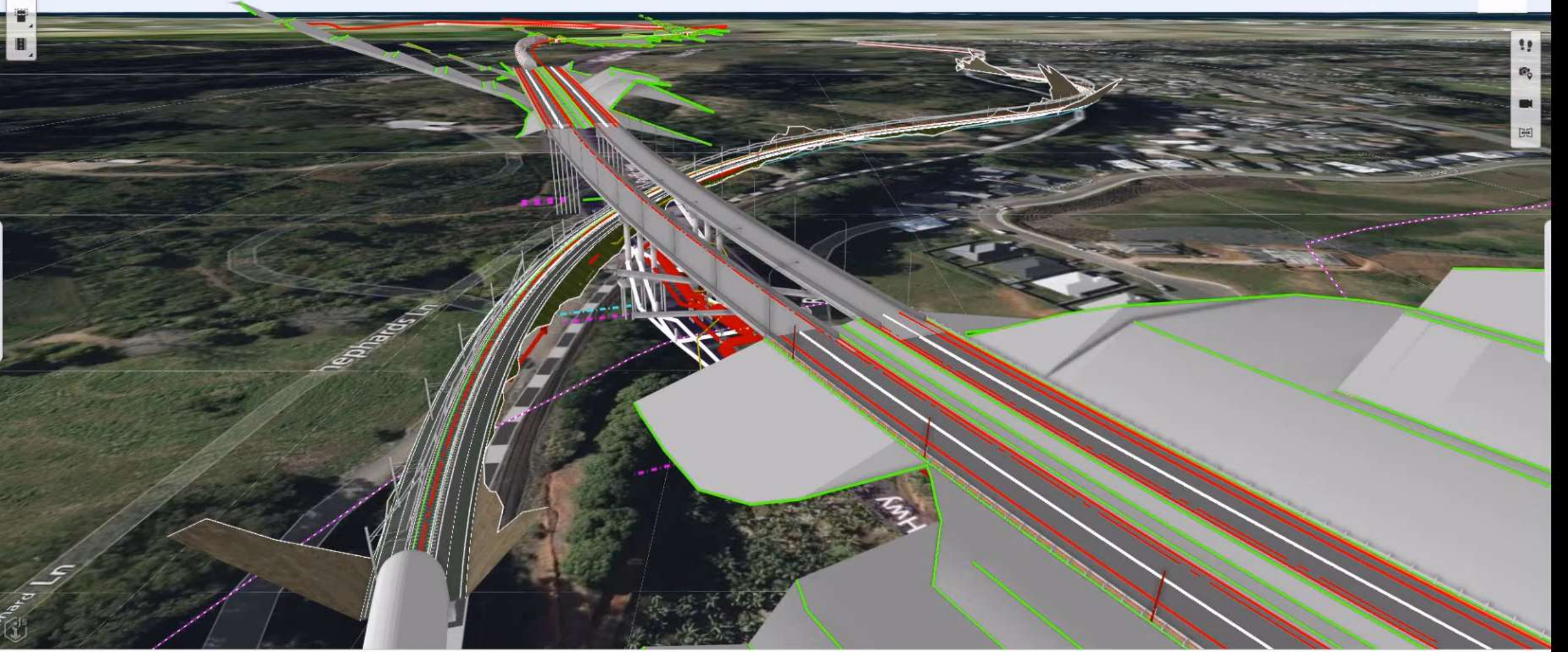
**9,000hrs** saved in generating and managing sheets

Reduction in visualization creation time: **97%**

Reduction in time for team onboarding: **90%**

- Cost savings
- Improvement in quality (of deliverables)
- Schedule acceleration
- Improved workflows/process
- Reduction in the environmental footprint of the project
- Reduction in travel/onsite visits/in-person team meetings





# Boost Productivity With AI

Window Area does not have tool settings.



Top

- Import Files
- Add Map Layers
- Import Terrain From External Sources

+

Geospatial M...

Show iModel Display Extents

iModel Reality Data

Summary

Horizontal CRS: NAD83 North Carolina State Plane, US Foot

Vertical CRS: NAVD88

Local Transformation: No Transform

Leave Feedback

File Home View Drawing Drawing Aids Help

None Seawall and Dock

Attributes 96 0 0 0

Explorer Attach Tools PopSet

Primary Coordinate System Google 2D Google 3D

Feature Services New Delete Edit Query Features Clear Tools

Raster Services New ArcGIS™ Attach ArcGIS™ Feature Info New WMS Attach WMS New WMTS Attach WMTS

Selection Element Selection Fence Tools

Item Types Attach Item Import/Export Detach Item Picklist

View 1, Bridge Assembly

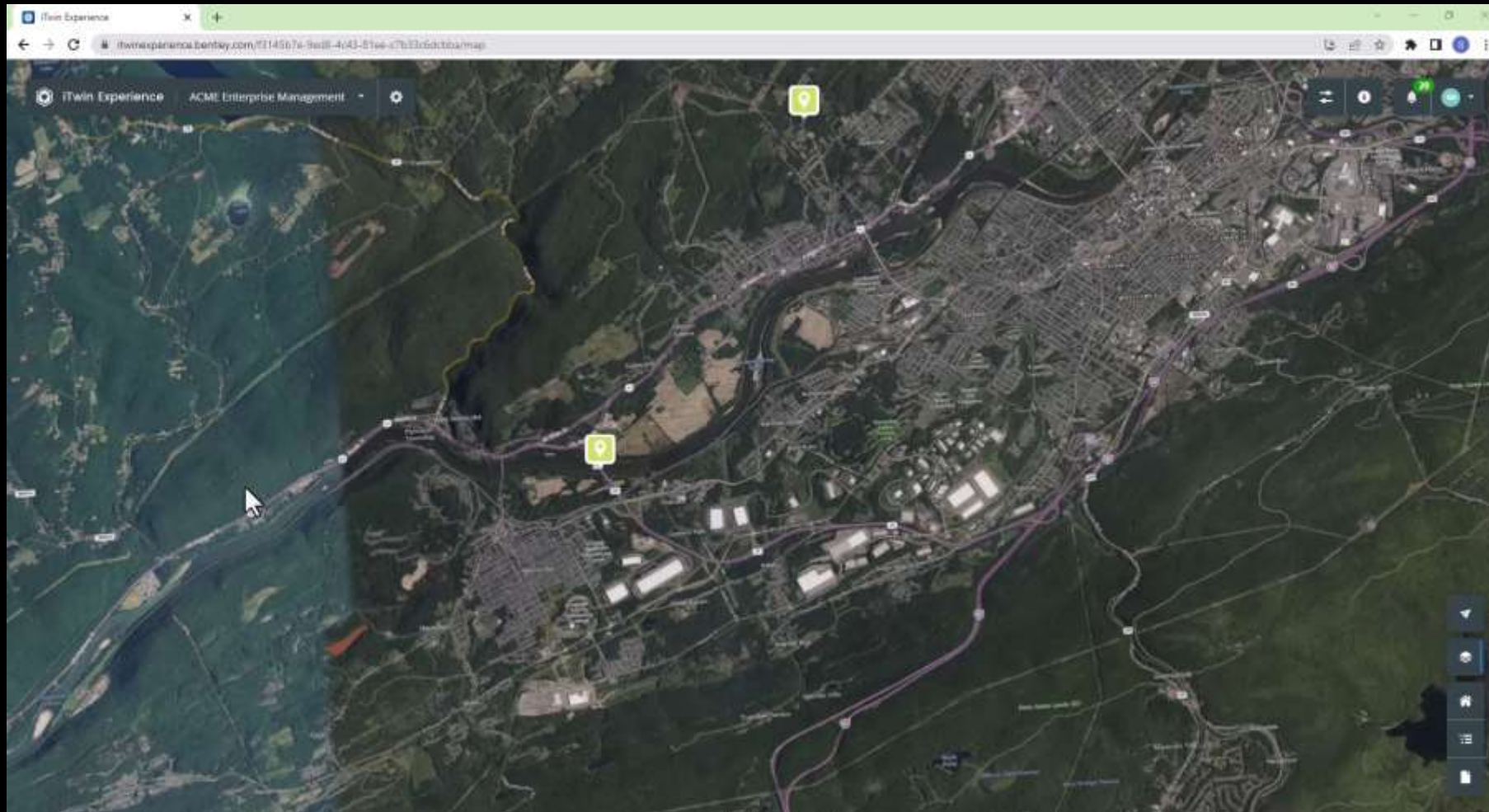


Element Selection

References (10 of 10 unique, 1 displayed)

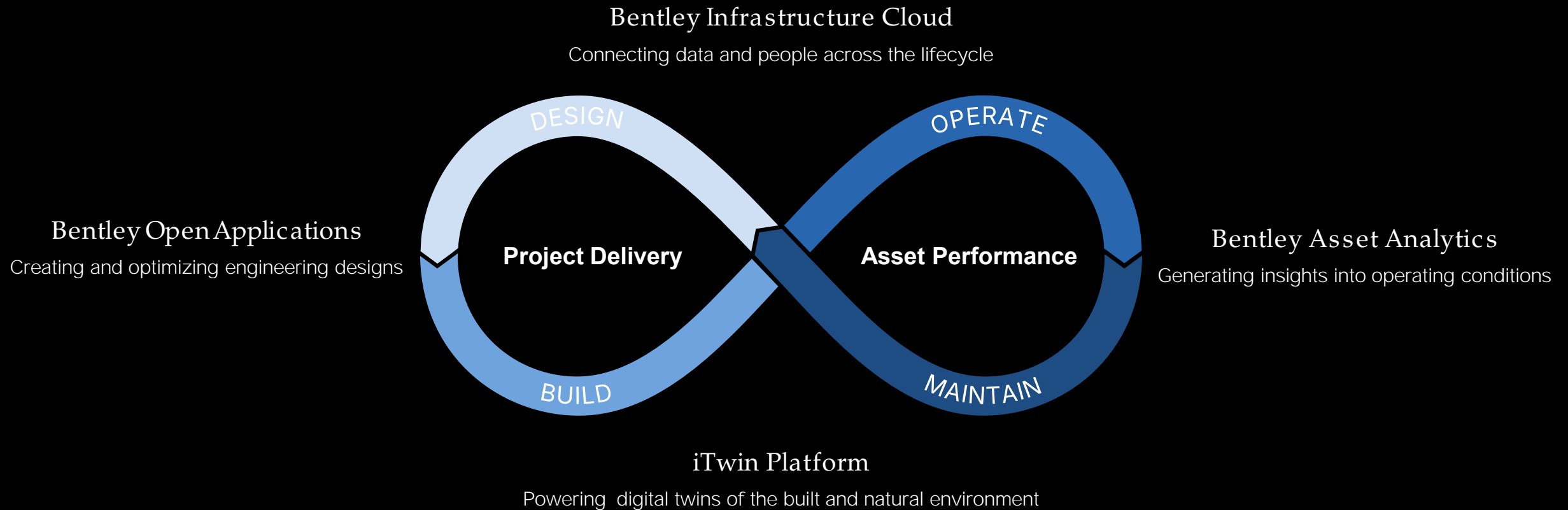
Default 1 2 3 4 5 6 7 8 X 288274.628 Y 195996.360 Z 157.772

# Imagine being able to monitor a **Highway throughout its life**



- Initial Site Capture
- Creation of a Project Digital Twin
- Showing progress through construction
- Initial as-built model
- Model showing value into operations
- Started with one step

# Outcomes across the asset lifecycle



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