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Digital Twins for Bridge Inspections

2023 ACEC-IA + Iowa DOT + FHWA
Iowa Transportation Conference

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DIGITAL TWIN CONCEPT

Digital Representation of a Physical Asset

- 3D Point Cloud or Mesh
- Geospatially Correct
- Measure
- Annotate
- Share

Digital Twins provide a way to collaborate and communicate.

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Digital Twin Inputs


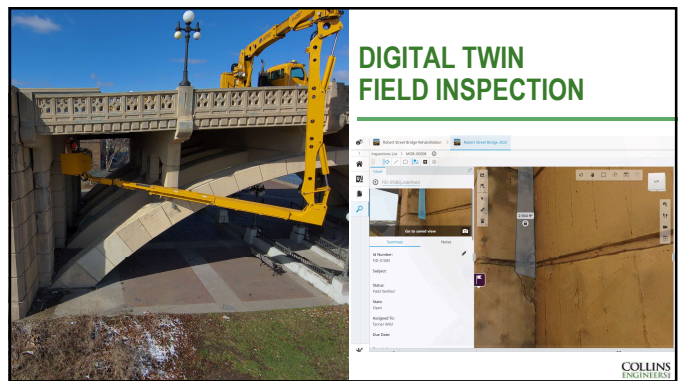
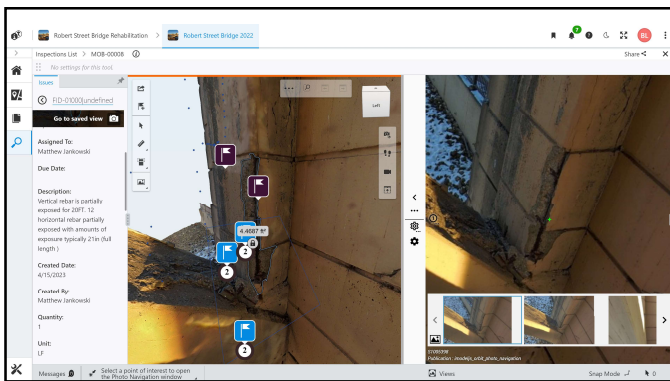
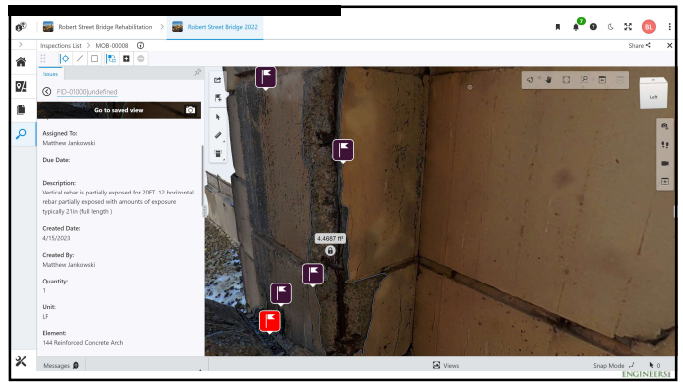
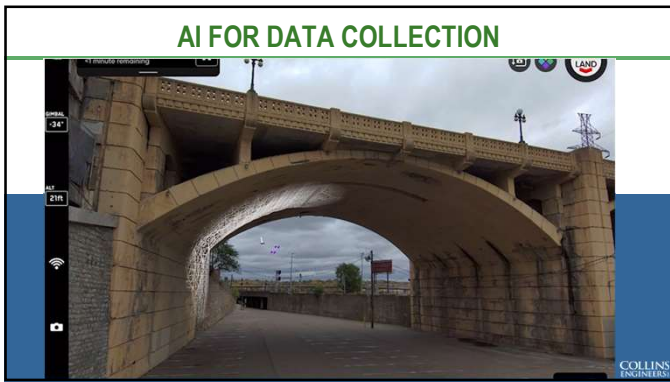
- Images from Drone or Camera
- Ground Control
- QR Codes
- Asset Inventory Information
- Asset Inspection Information

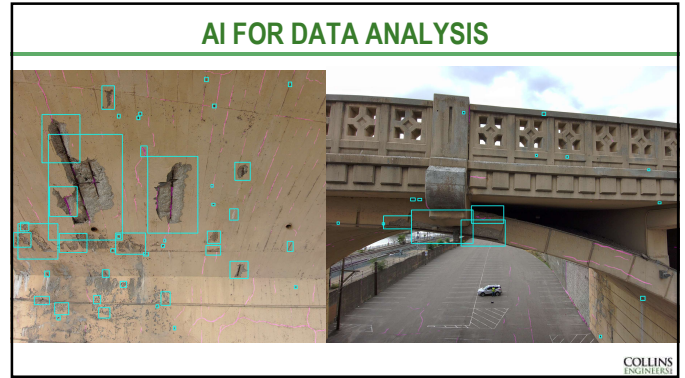
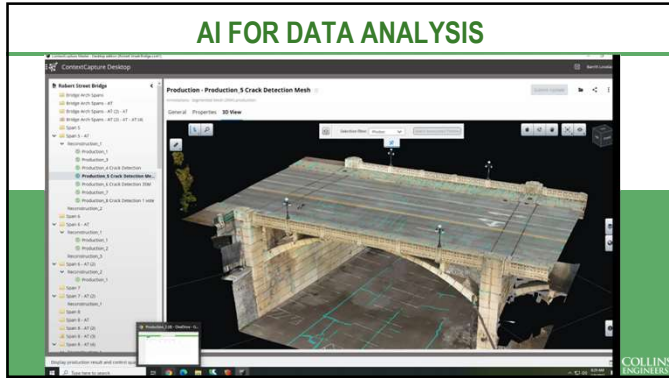
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Robert Street Bridge Management Digital Twin Workflow

1. UAS Field Data Capture
2. Digital Twin Creation
3. Office Pre-Inspection
4. Field Inspection
5. Rehabilitation Design and Plans
6. Construction



Digital Twin Benefits

- Improved Data Quality
- Reduced Risk for Designers
- Reduced Risk for Contractors
- Better Collaboration/Inclusion
- Safety Improvements
- Data Increase
- 100,000x More Data

INDUSTRY IMPLICATIONS

- Poised for a monumental shift in project workflows
- Data is king
- Engineer/Inspector qualifications changing
- Embrace robotics, AI and machine learning
- Be willing to abandon traditional methods
- AI and automation will change work categories
- Use AI to address staffing shortages

THANK YOU

— ANY QUESTIONS? —

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