Innovations in 3D Surveying & Design Modeling

Engineering and Operations Committee
Item 6a
January 11, 2021


1928

Innovative Survey Technology

- Integrated multiple surveying technologies and innovative workflows
- Enhanced visualization and collaboration with project stakeholders
- Accurate, measurable, and relevant 3D data used for documenting existing conditions, design improvements and produce construction drawings

GNSS GPS Receiver

Robotic Total Station

3D Laser Scanner

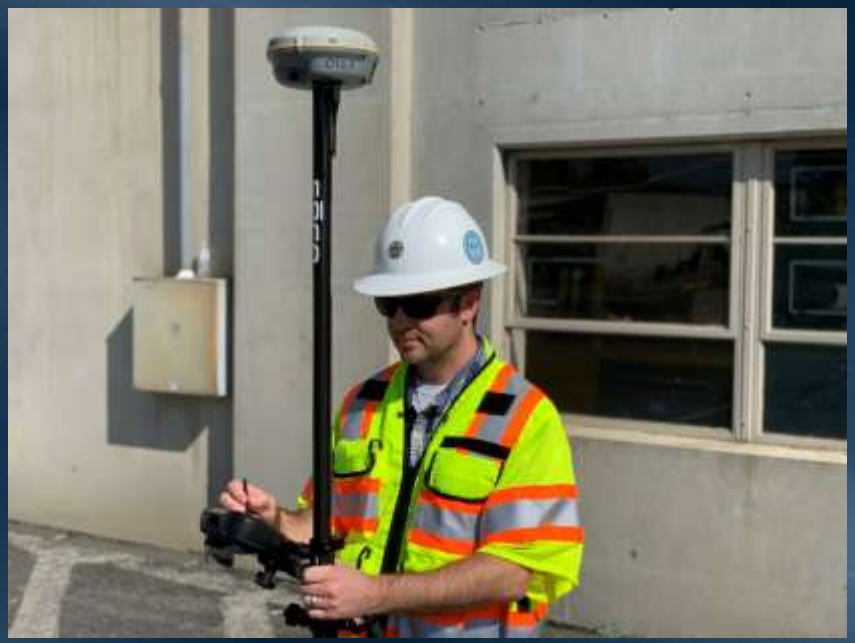
Handheld Metrology Scanner

Innovative Technology

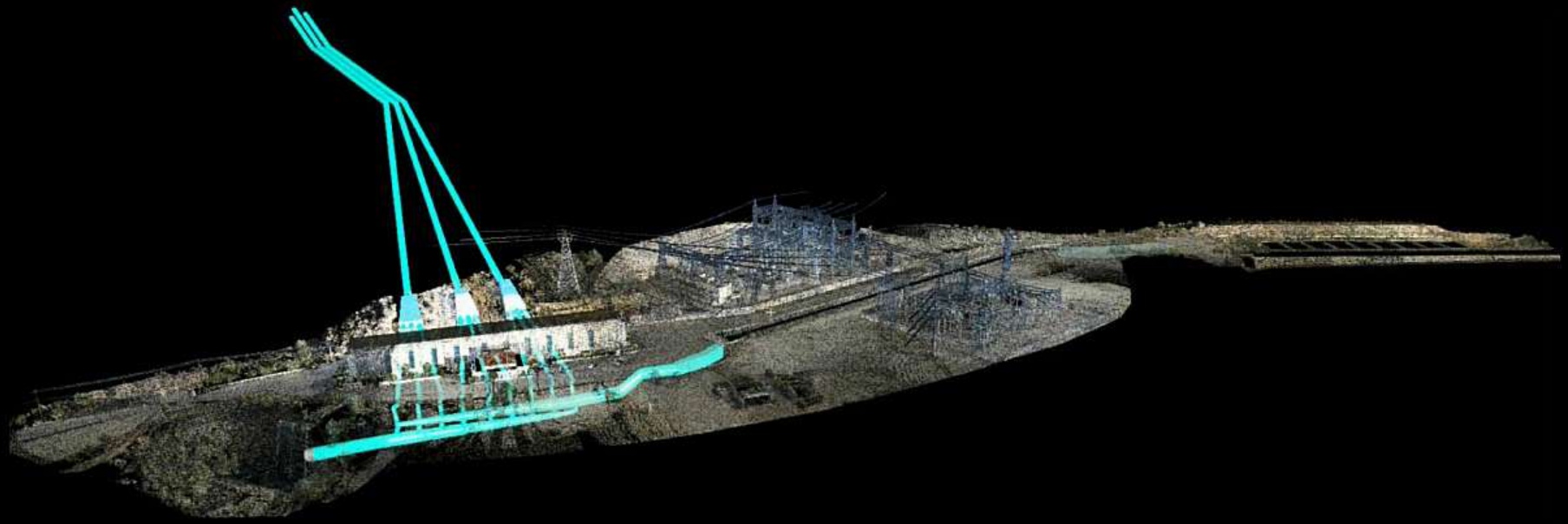
- Primary Project Control
- 3D Surveying
- 3D Point Cloud Editing
- Project Visualization
- Metrology Grade Scanner
- 3D Modeling
- Construction Drawings
- Animation

Primary Project Control

- Utilizing GPS and Robotic Total Station Technology
- Georeferenced Project



Colorado River Aqueduct
Hinds Pumping Plant

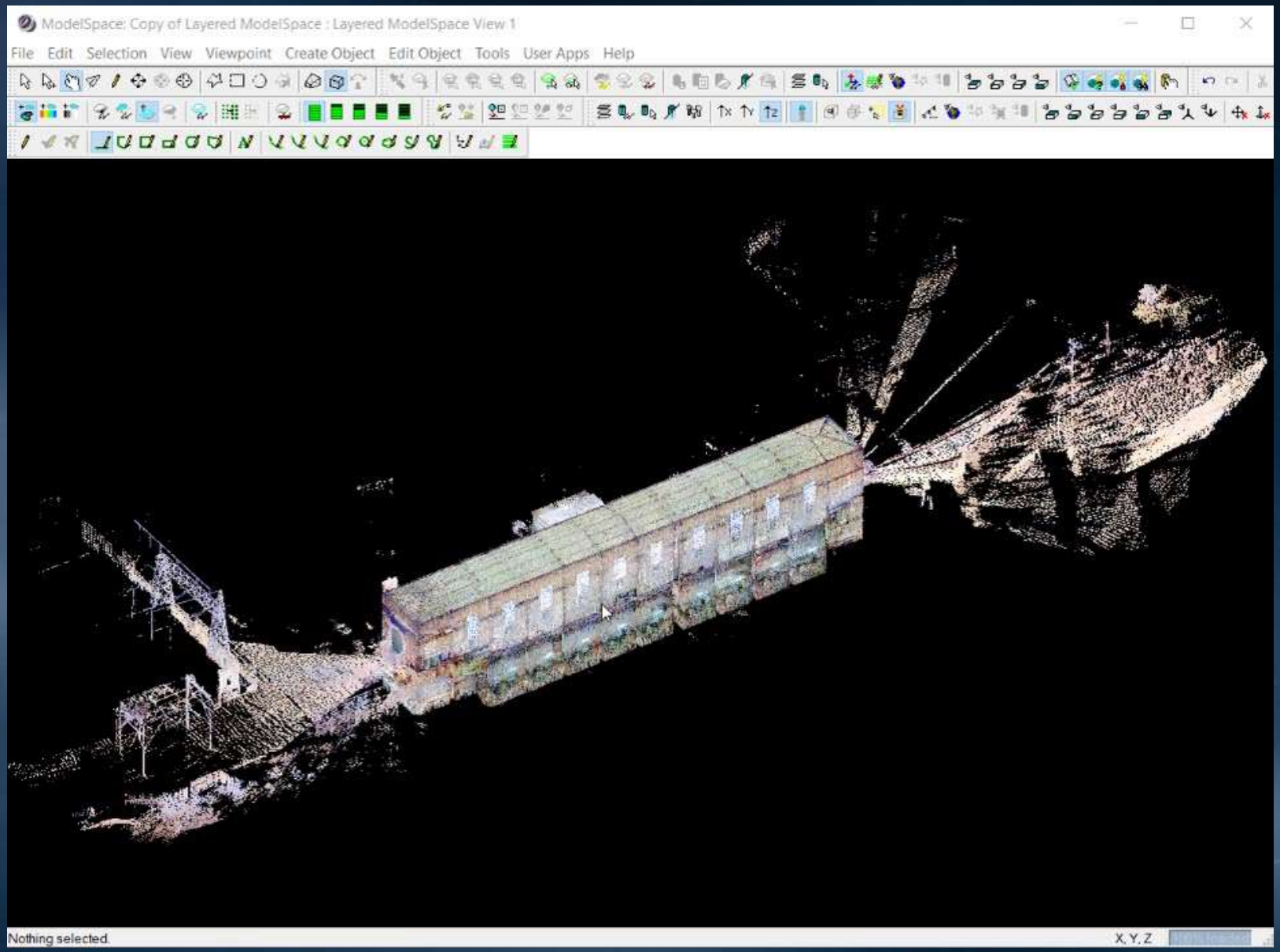


3D Survey

3D Survey Scans

- 3D scanner used to capture measurable imagery
- As-is documentation

3D Point Cloud Editing



Project Visualization

S:\PROJECTS\15\15227\TruViews\Presentation\Tr | mwd-edms | FullTruView | Site Map

Hinds Pumping Plant - Interior:

file:///S:/PROJECTS/15/15227/TruViews/Presentation/TruView%20Interior/43/TruView.xml

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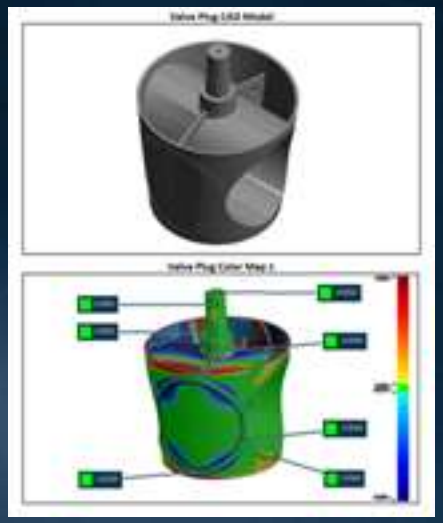
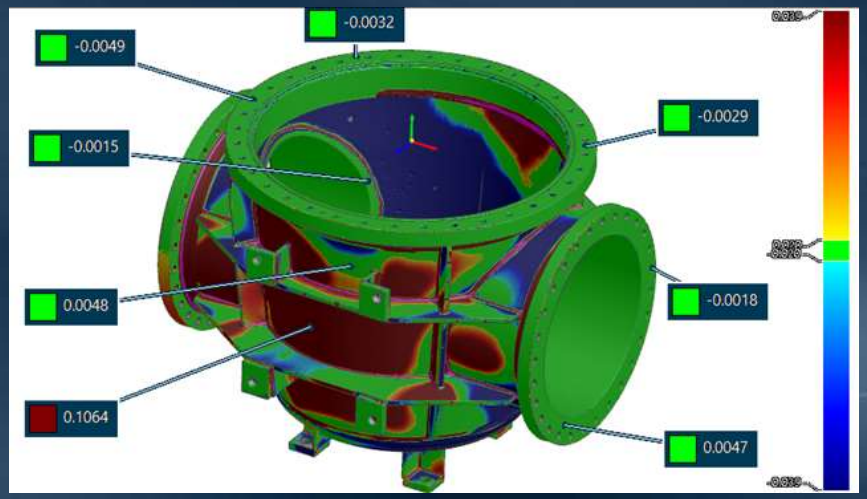
5/27/2016

Metrology Grade 3D Scanning

for Reverse Engineering of Conical Plug Valve



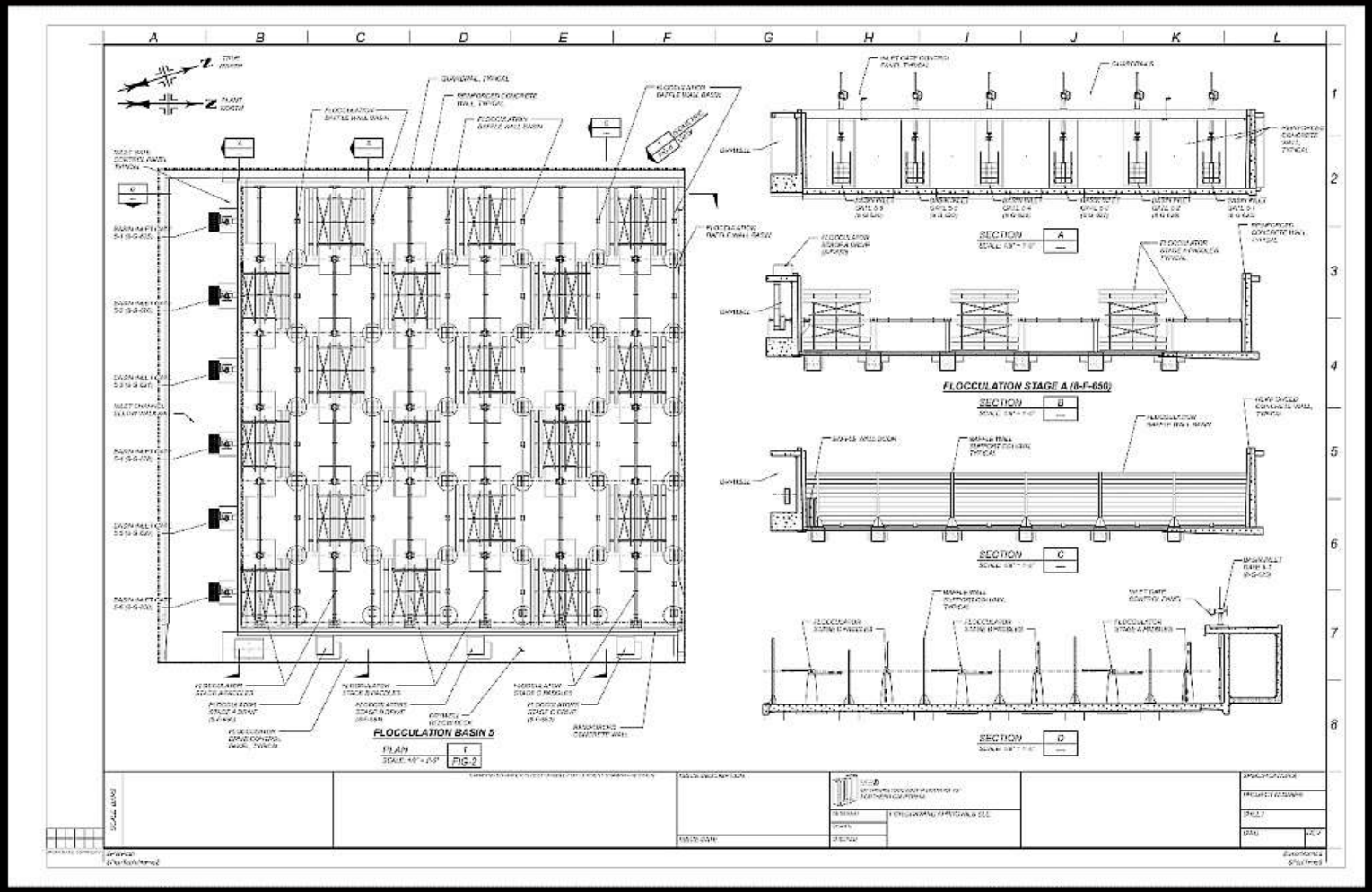


Metrology Grade 3D Scanner

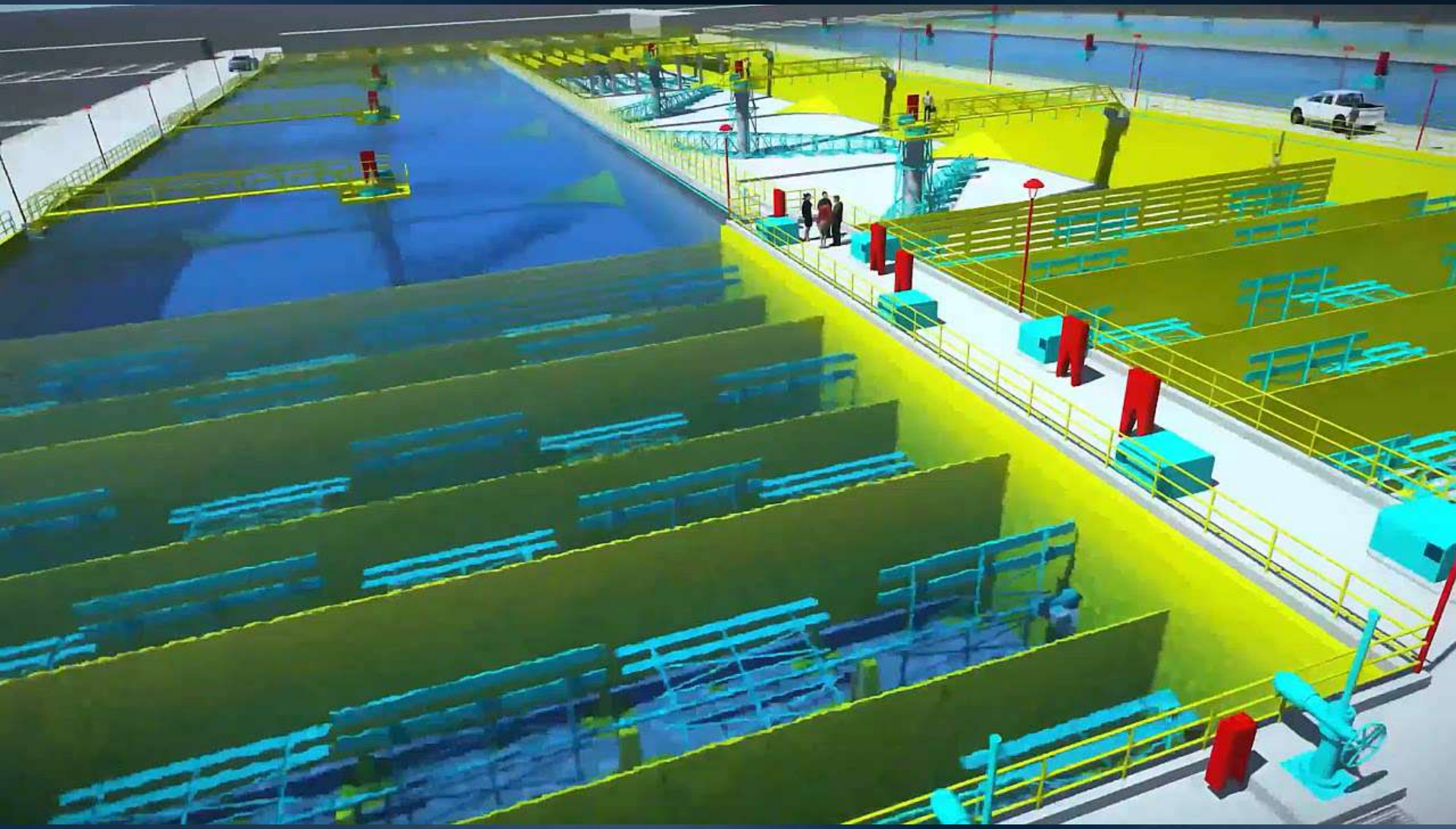
3D Design Modeling

Point Cloud to Model

Construction Drawings – Intelligent 3D



3D Animation

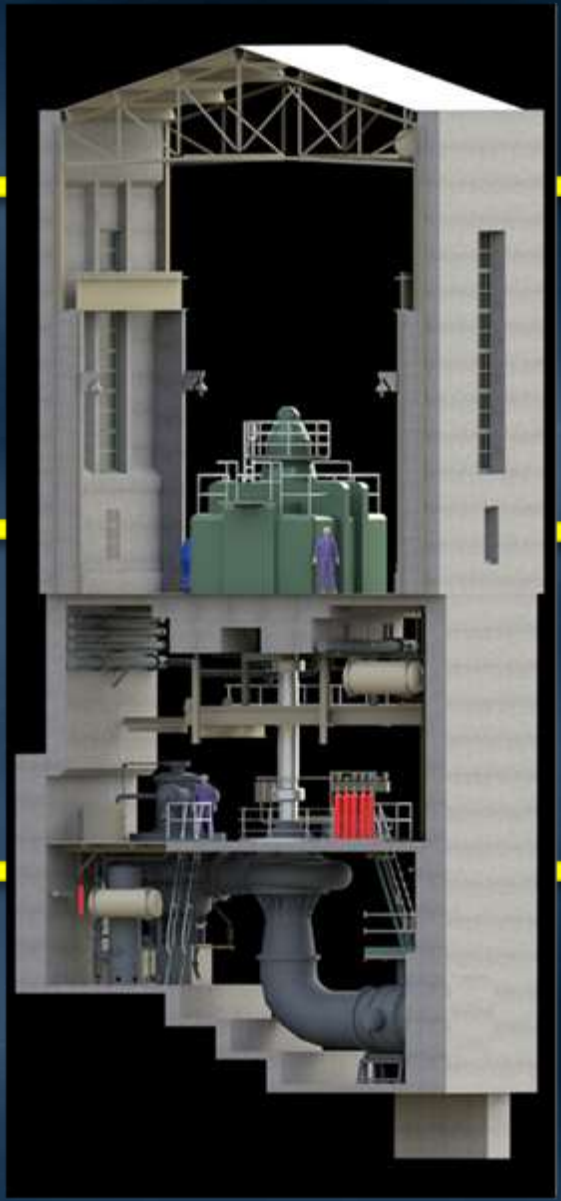


3D Surveying & Design Modeling

Comprehensive AS-IS Documentation

Project Visualization

Enhanced Collaboration



Improved Design Review

Improved Construction Drawings

Improved Construction Estimates


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928