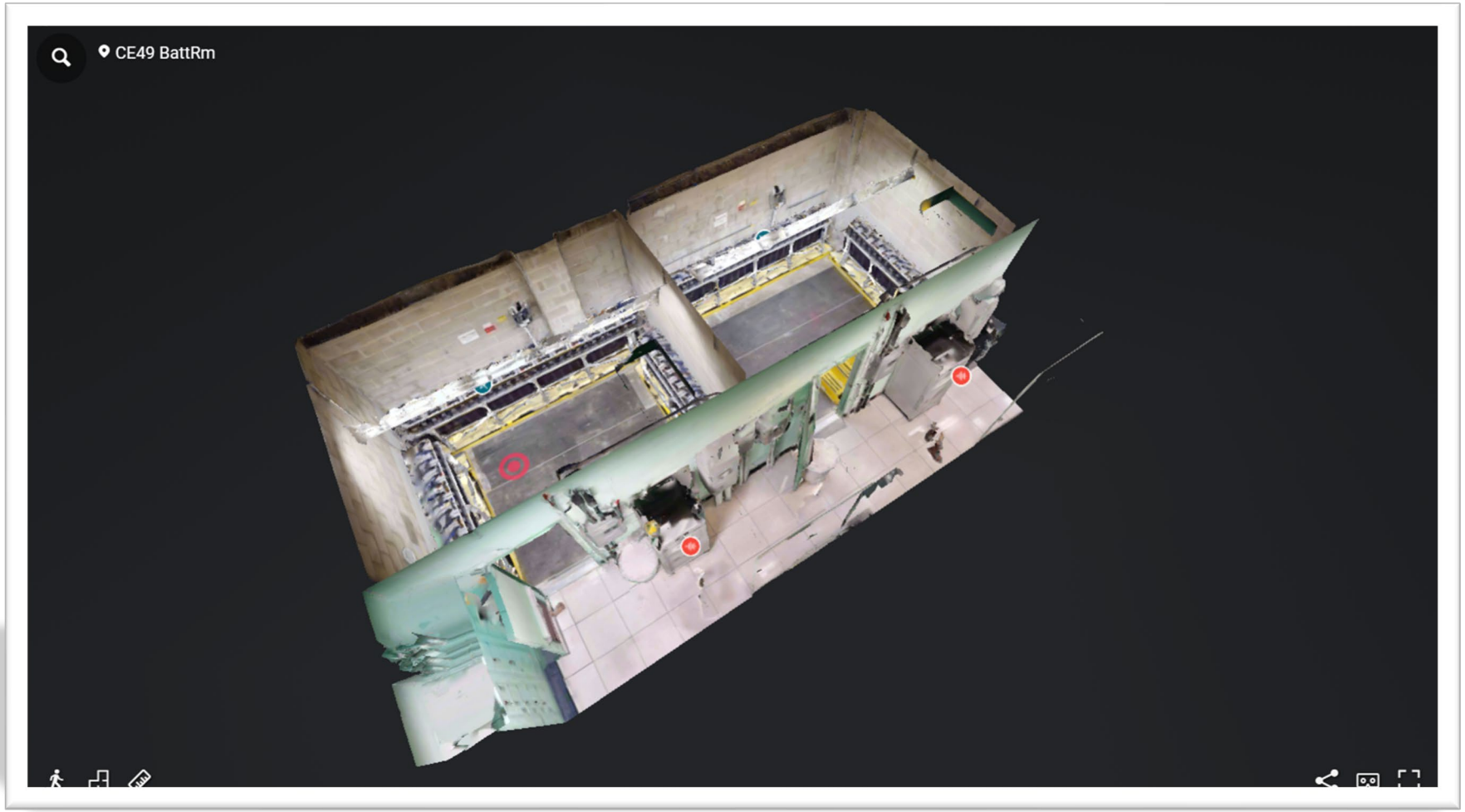
Creating a Digital Twin at Con Edison



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Presenters

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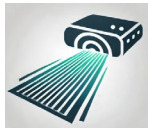
Definitions

Digital Twin – visual (virtual) representation of a physical space or asset

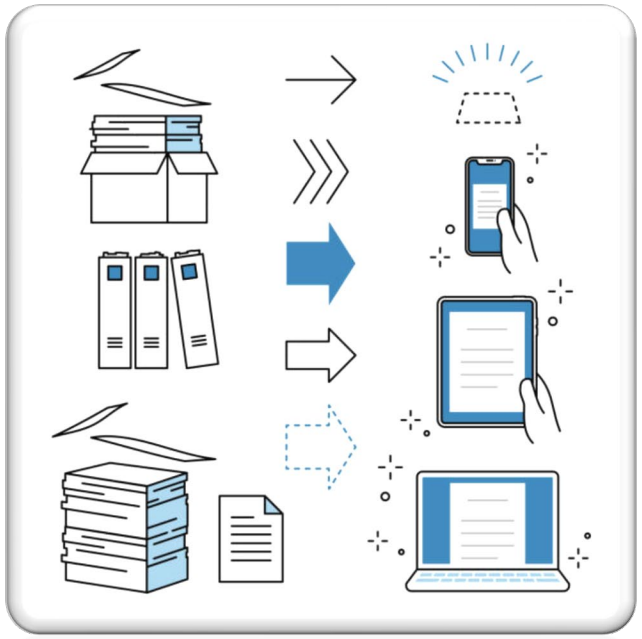


Scan – camera capture of physical space to render into a model

Model – final version of a scanned virtual space

Space – the physical location of where the scan takes place

Digital Transformation



A behavioral change management process of going from an analog base to a digital base of operations

Connecting The Unconnected

Digital Twins and Their Importance

Virtual space review can aid in:

- Work Planning
- Safety Task Analysis
- Contractor Reviews
- Training

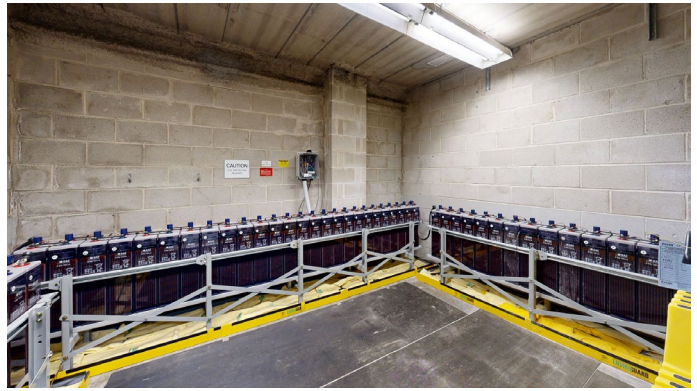
See assets in real world scenarios

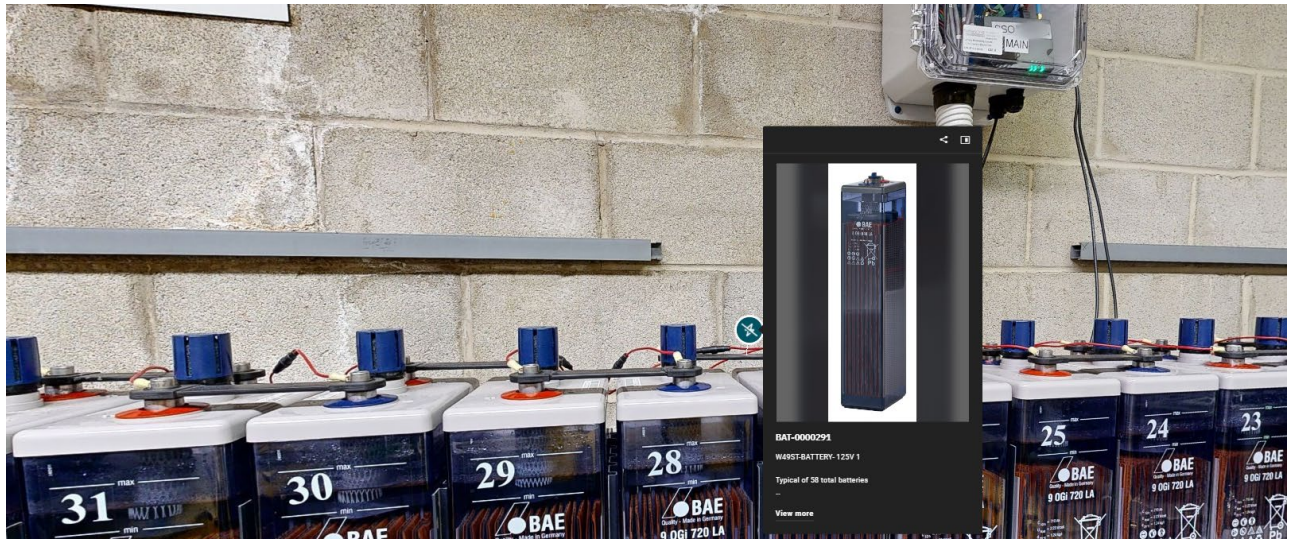
View asset information directly within the scan

Matterport – 3D Scanning

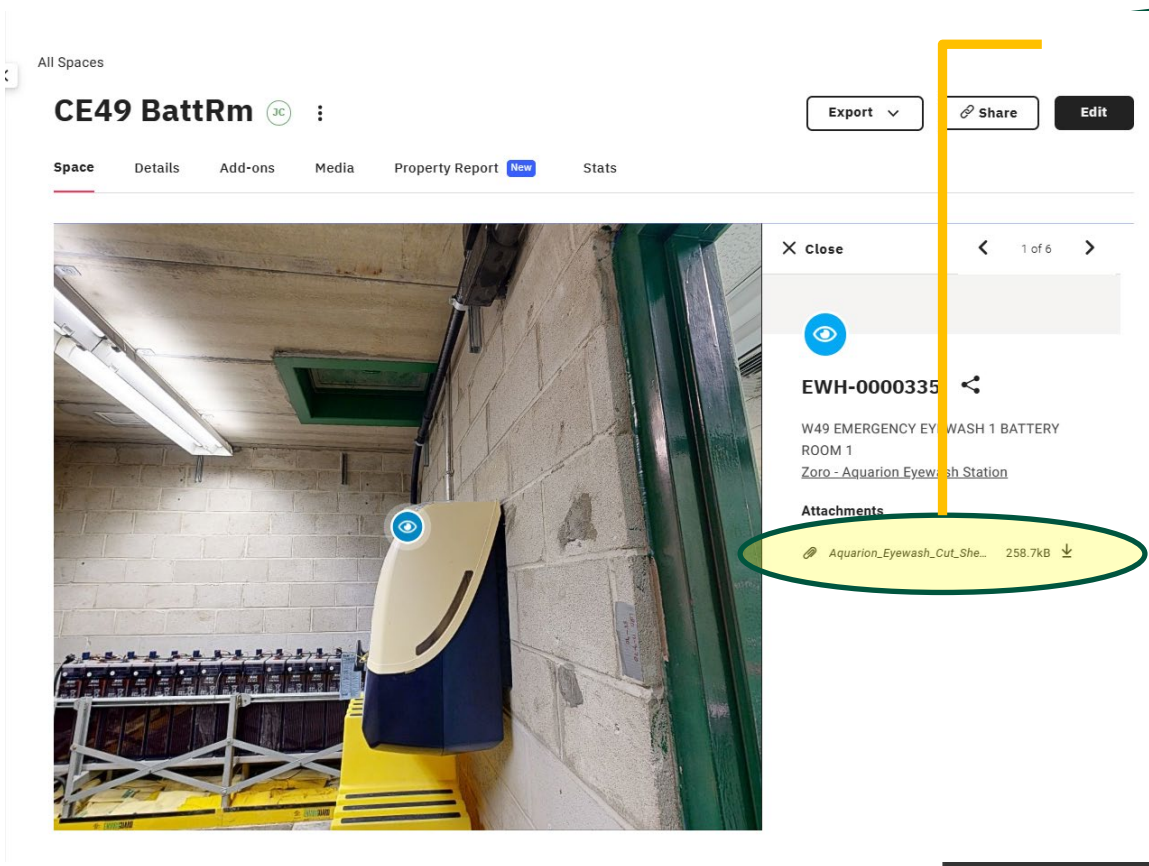
POC Problem Statement Challenges

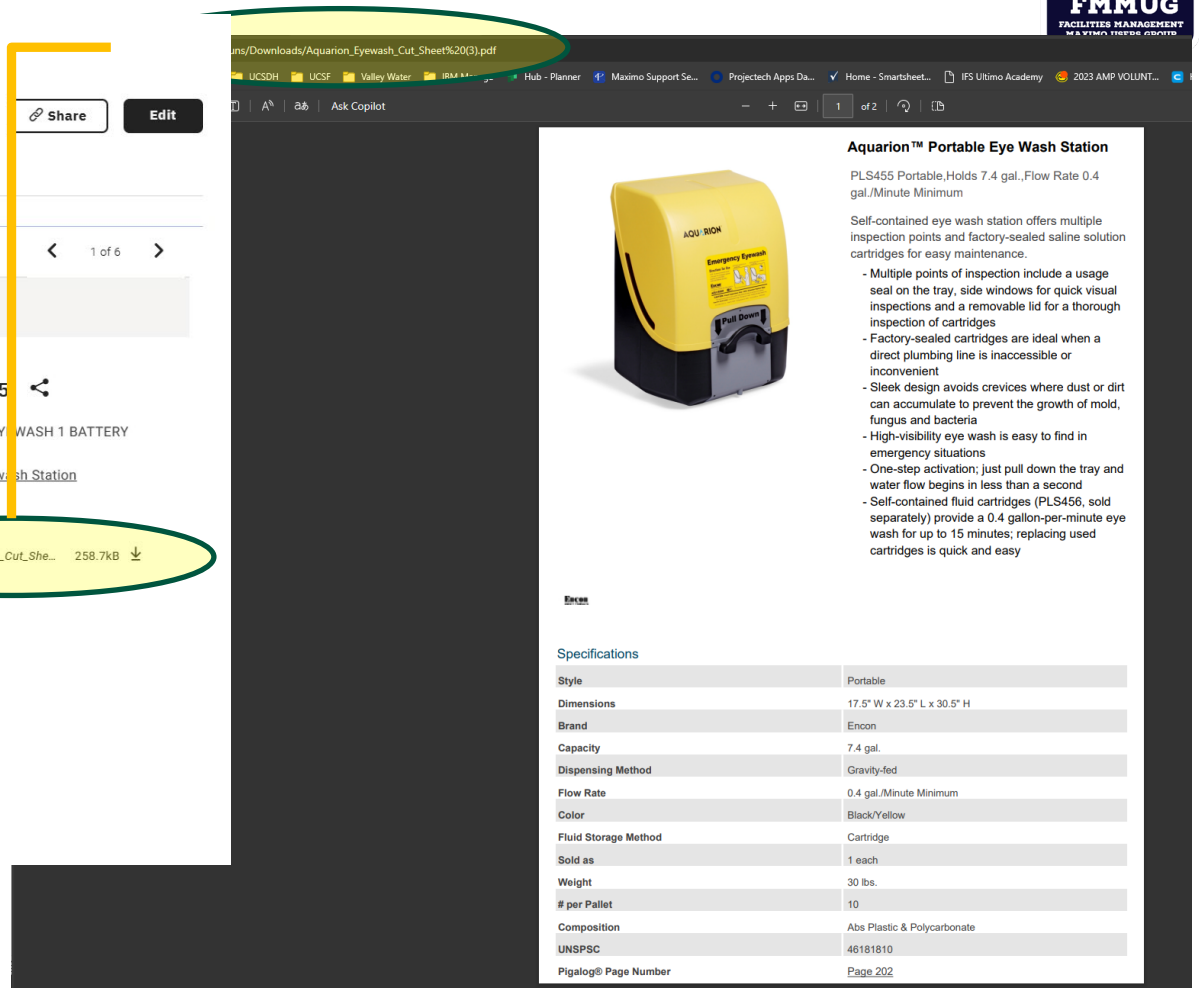
- Maximo Integration for Digital Twins
- Identify hazards associated to jobs in pre-onsite job briefing discussions.
- Initial scoping of PM/CM jobs followed by Field Presence
- Risk assessment (Safety/Equipment Reliability/Environment)
- Heightened Situational Awareness
- Drawing Management
- Visual Aid for Engineering Reviews



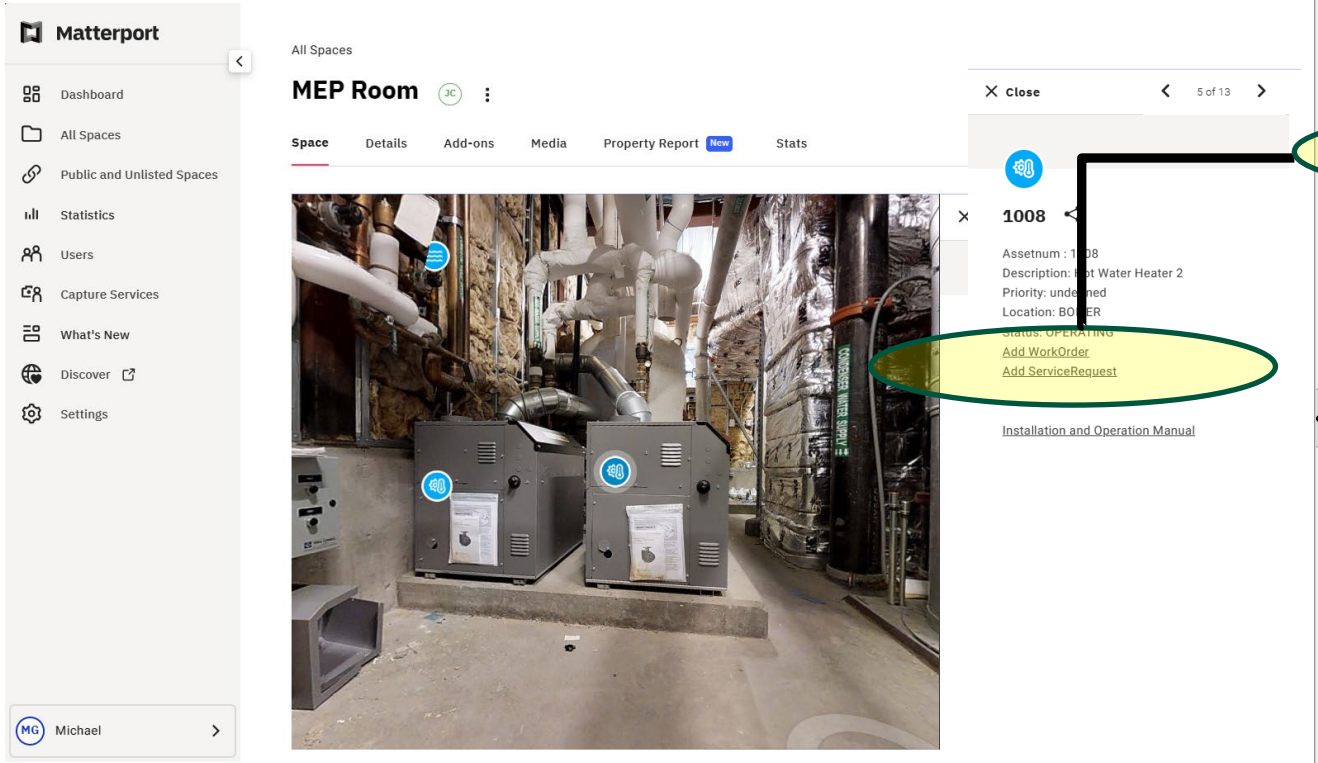


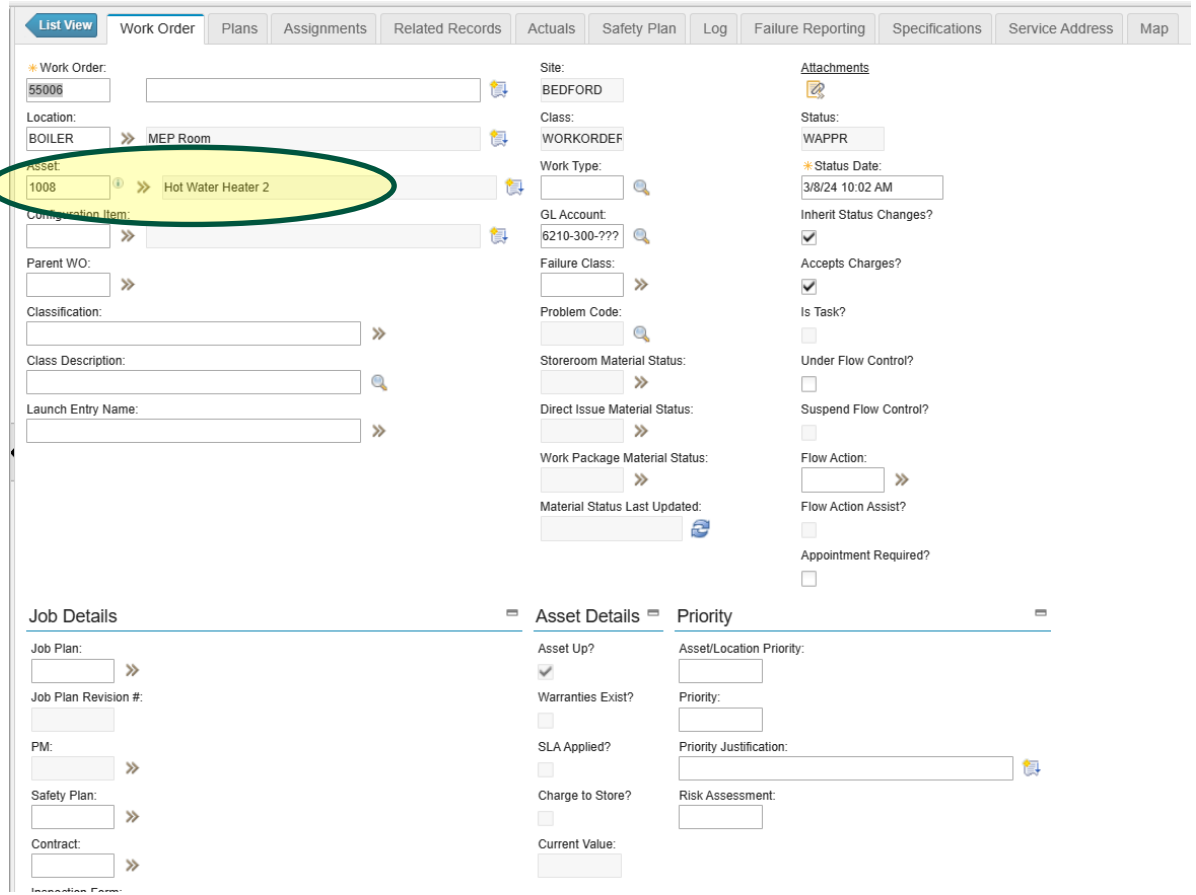
Digital Twin Tools





Digital Twins and Maximo





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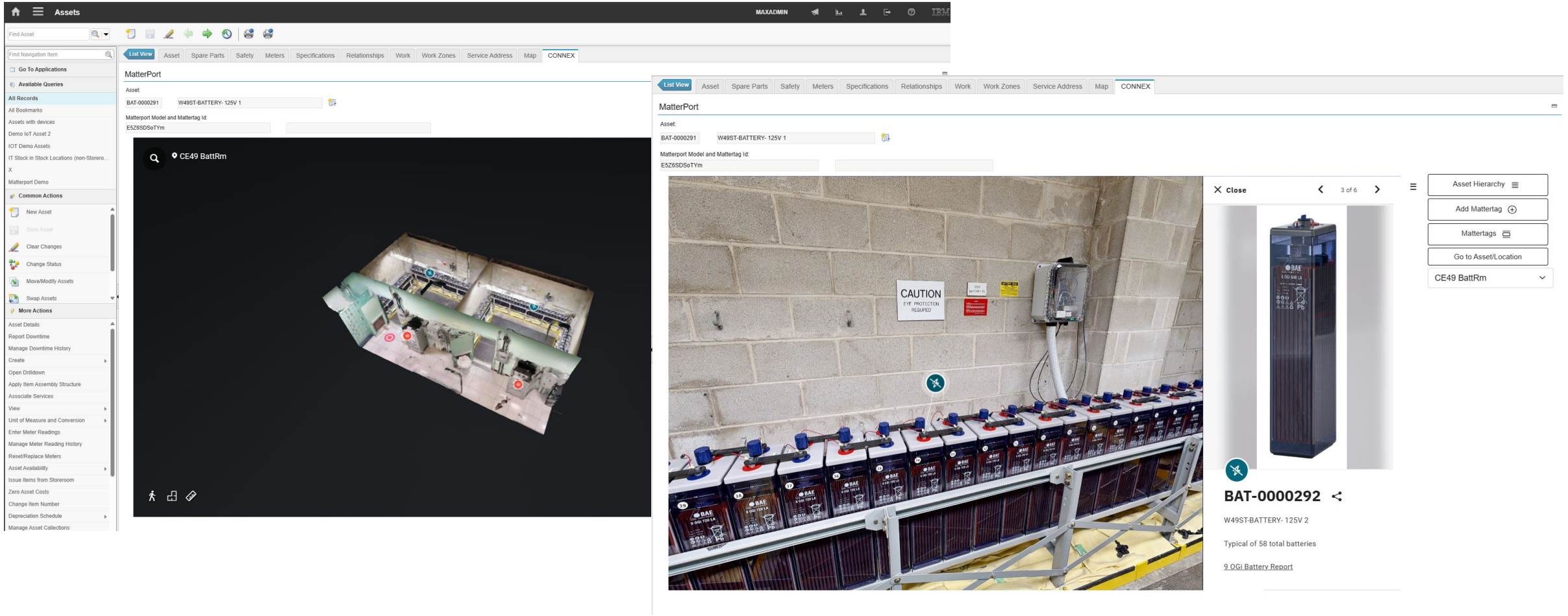
Digital Twins and Maximo



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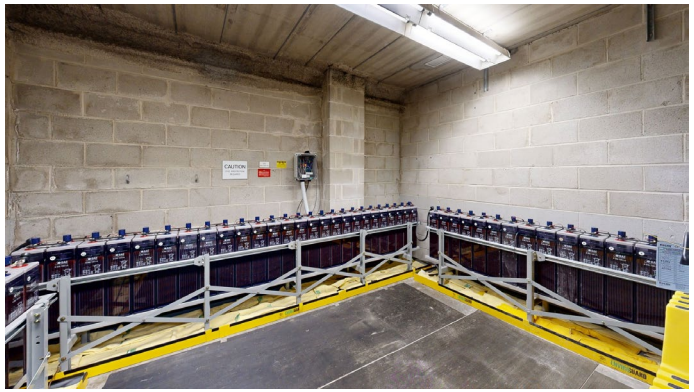
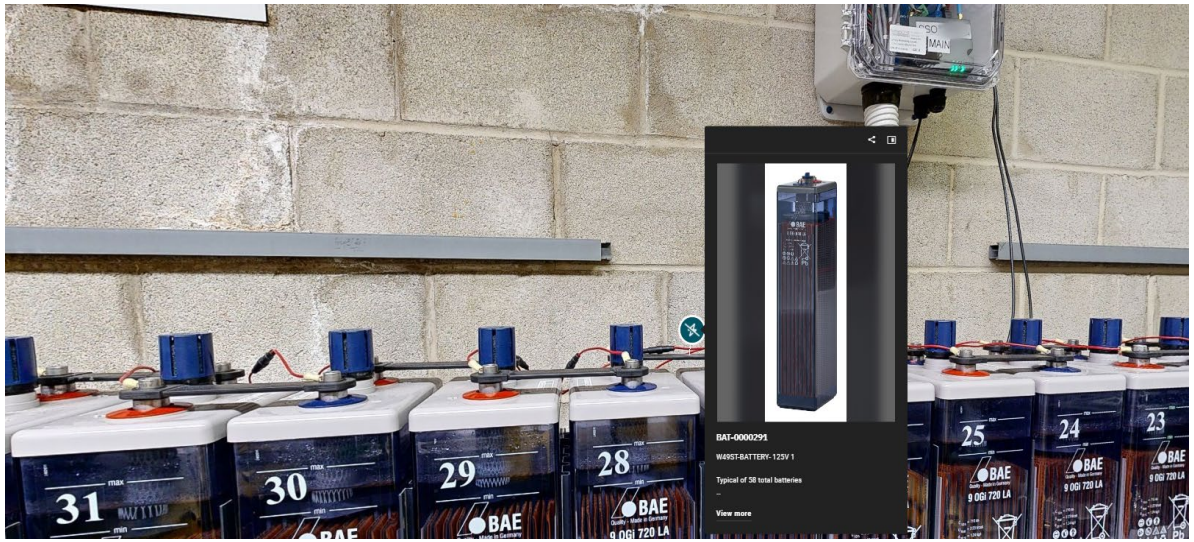
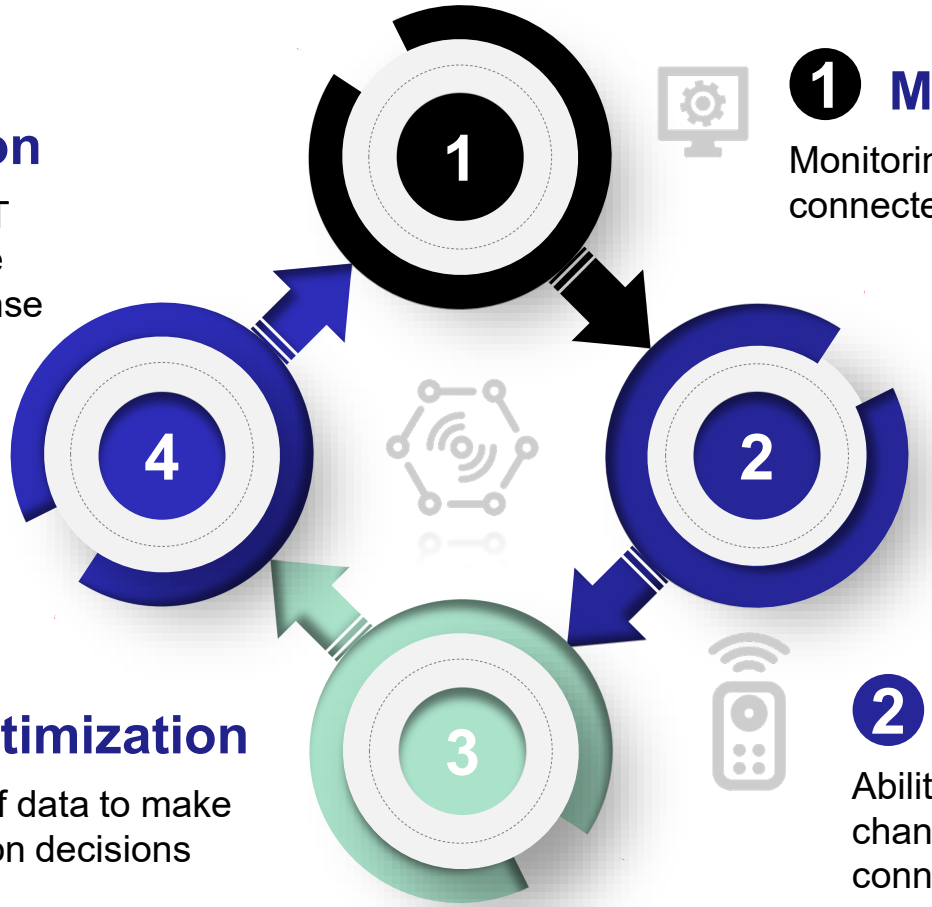
Matterport – 3D Scanning



POC Problem Statement Solutions

- Maximo Integration for Digital Twins
- Increased visibility over work bundling opportunities
- Train new personnel on substations (Virtual Tours)
- Identify hazards associated to jobs in pre-onsite job briefing discussions.
- Utilize wearables to see asset tags and Aveva Pi real-time data
- Initial scoping of PM/CM jobs followed by Field Presence
- Operational Excellence in Operating Orders
- Risk assessment (Safety/Equipment Reliability/Environment)
- Heightened Situational Awareness
- Historical Reference
- New station design efforts referencing with existing as-builts
- 3D CAD and BIM extraction for Design Engineering





1 Monitoring

Monitoring the connected device

2 Control

Ability to make changes/updates to the connected device remotely

3 Optimization

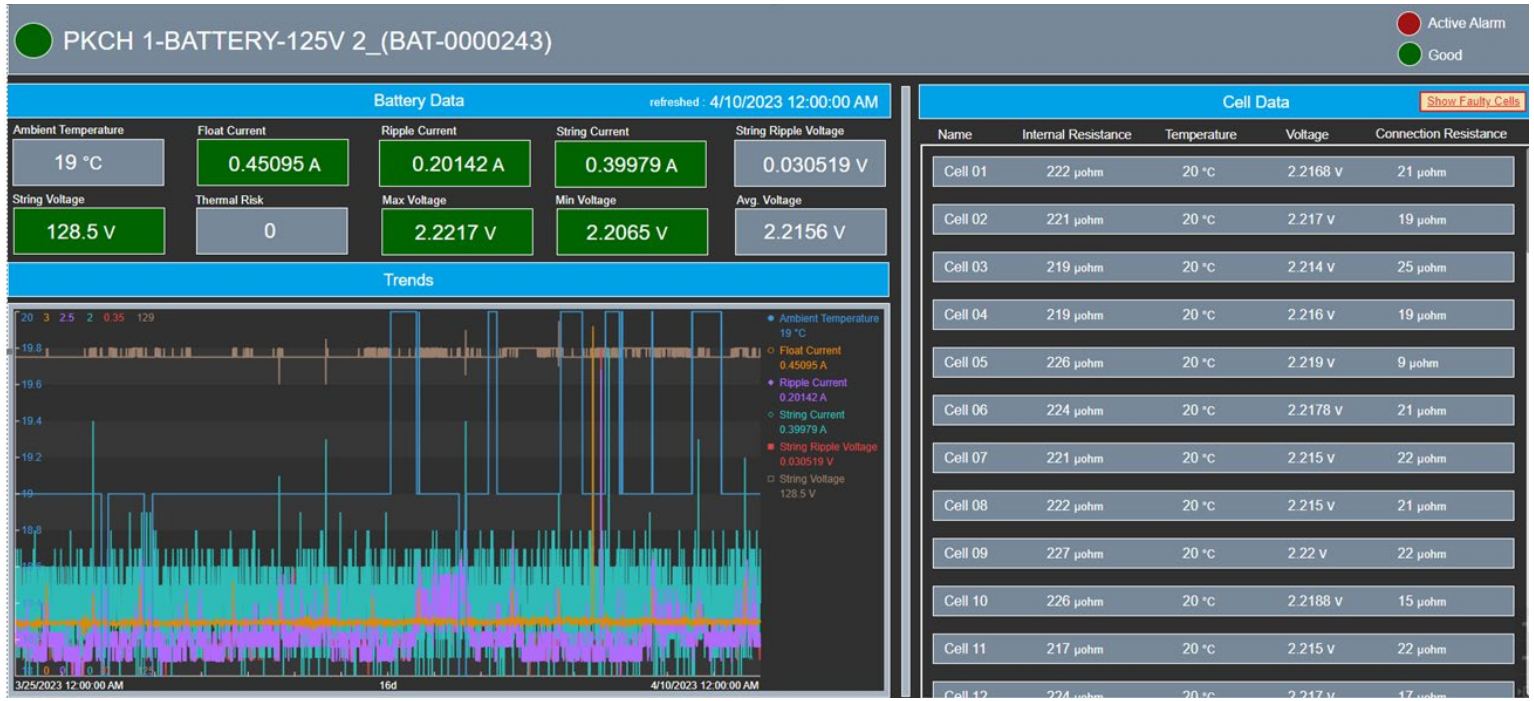
Analysis of data to make optimization decisions

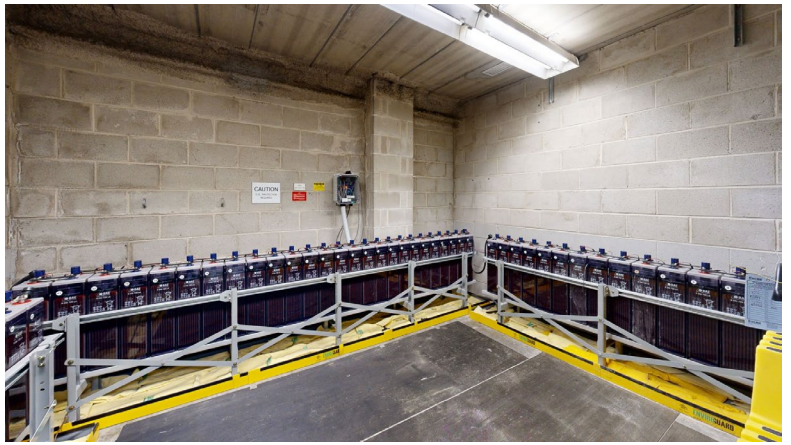
4 Automation

Establishment of ITTT protocols to automate optimization & response

IoT Cycle - Alignment of Components

Bridging Aveva Pi





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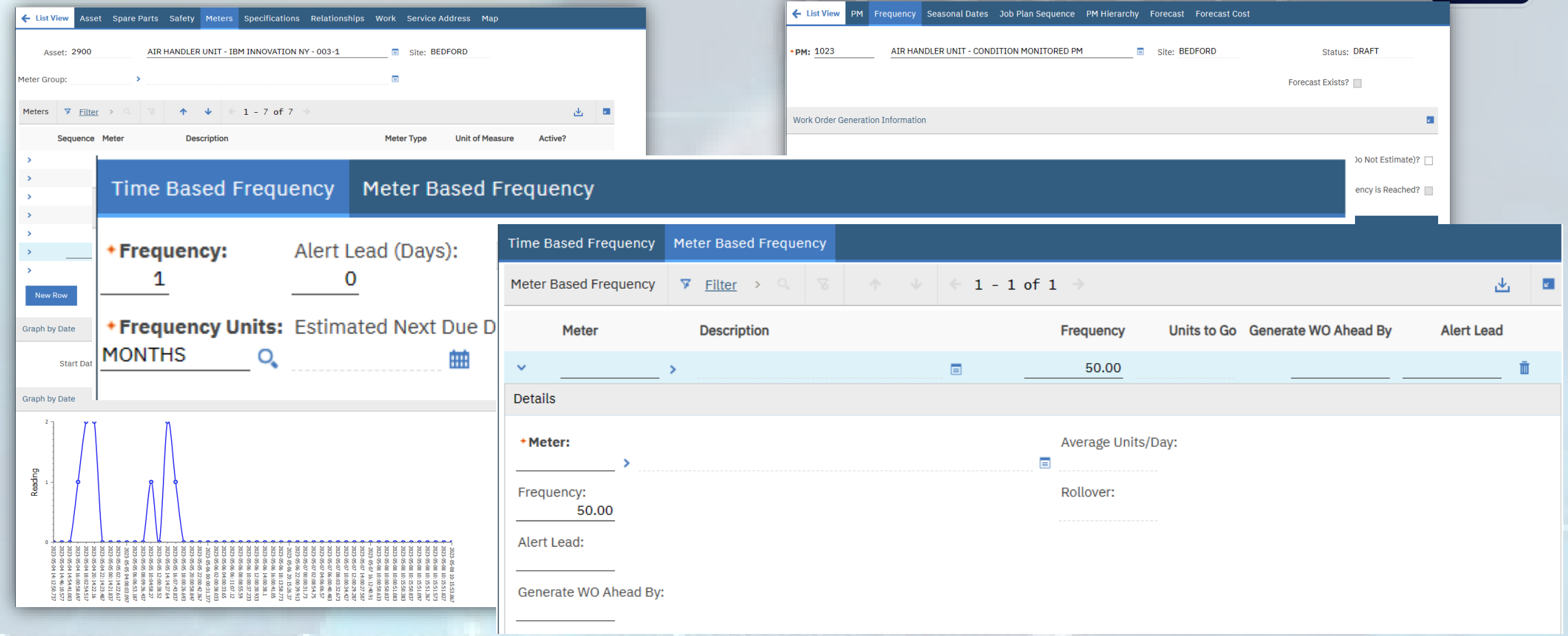
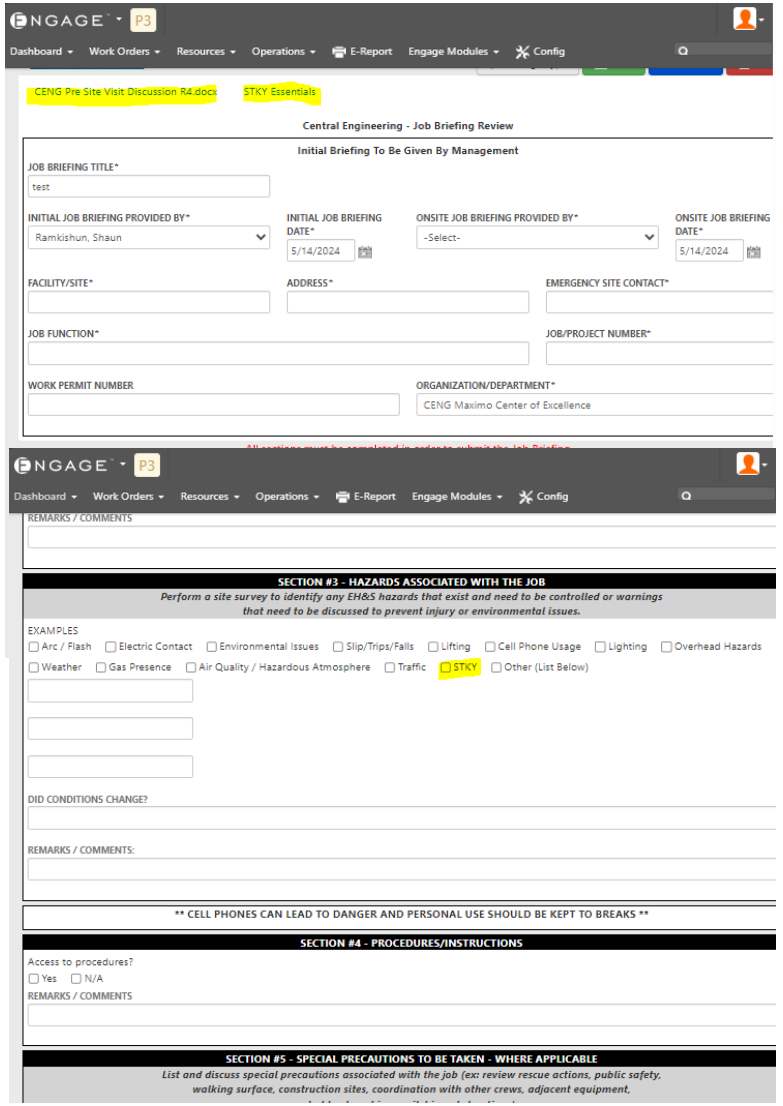
Applying IoT Readings in Meters for PM Generation



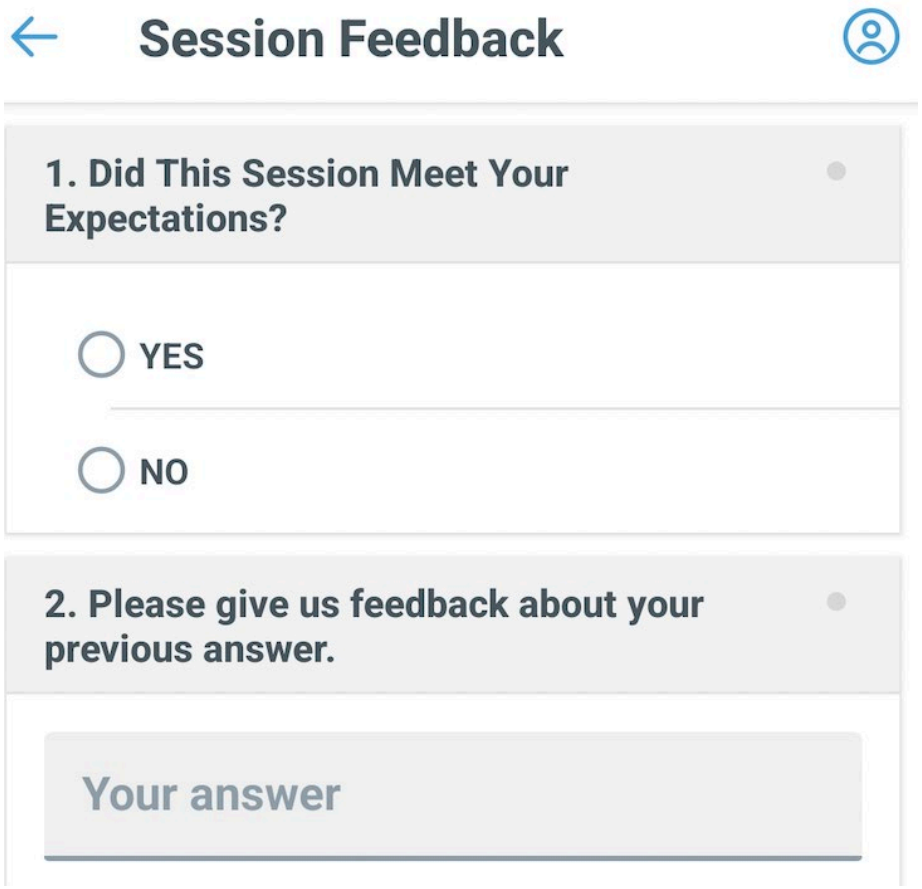
Safety Benefits of 3D Scans



Purpose Benefit Check

- ☑ Received explanation of background and capabilities of Digital Twin and Maximo in the utilities space
- ☑ Received examples of use cases to leverage IoT and Digital Twin, including use within Maximo
- ☑ Gained understanding of how digital transformation can aid in asset management, safety, and sustainability
- ☑ Gained understanding of how to be better positioned to provide mandatory regulatory compliance and sustainability reporting

Please answer these two questions in Guidebook about the session you just attended.



Also, be sure to complete the overall conference evaluation in Guidebook.

Questions

THANK YOU!

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