Unlocking Building Operations with Data Across the Construction Lifecycle

Josh Progar

Manager, Global Technical Solutions – Construction at Autodesk

Melody Cirillo

Director of Projects at Caesars Entertainment Corp.

Sarah Weston

Senior Project Manager at Silver Ventures

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Learning Objectives

EVALUATE

How to evaluate lifecycle technology across the design, construction, and operations phases.

COLLABORATE

Why you should advocate for early involvement from facilities operations.

TRANSFER

How to use digital as-builts to transfer data for workflows in facilities operations.

TURNOVER

How to secure a complete turnover package for your owners and your clients

Agenda

First 30 minutes

- Unlocking Building Operations Data Throughout the Construction Lifecycle (Josh)
- Leveraging technology during construction to collect facilities data (Melody)
- Developing a Great Project Closeout (Sarah)

Last 30 minutes

- Fireside Chat

- Q&A from the audience

About the speaker

Josh Progar

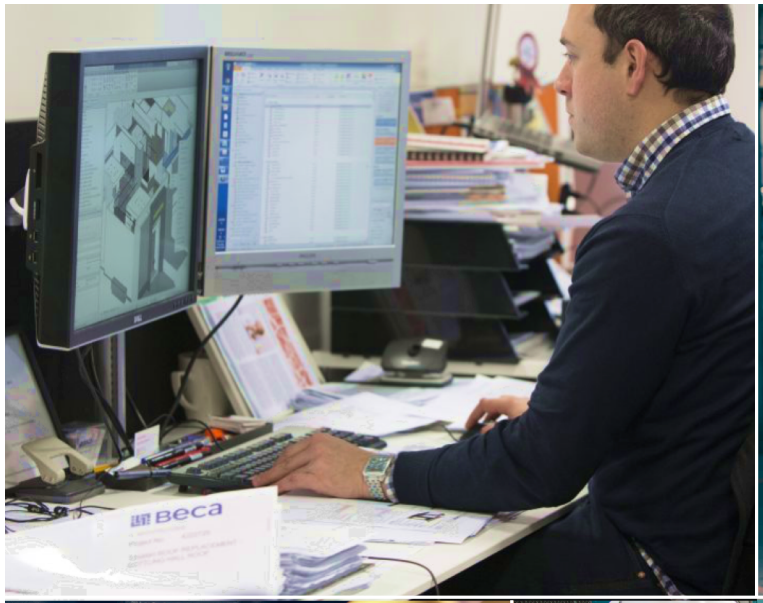
Manager, Global Technical Solutions – Construction

Autodesk Construction Solutions

- Former VDC and BIM Geek
- Pretend Architect
- 'Book smart' Engineer
- Phanatic about technology changing construction

Lifecycle **DATA**

Why does it matter?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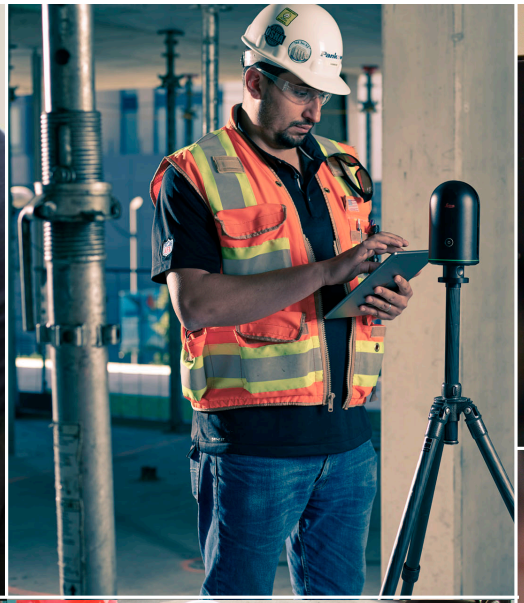
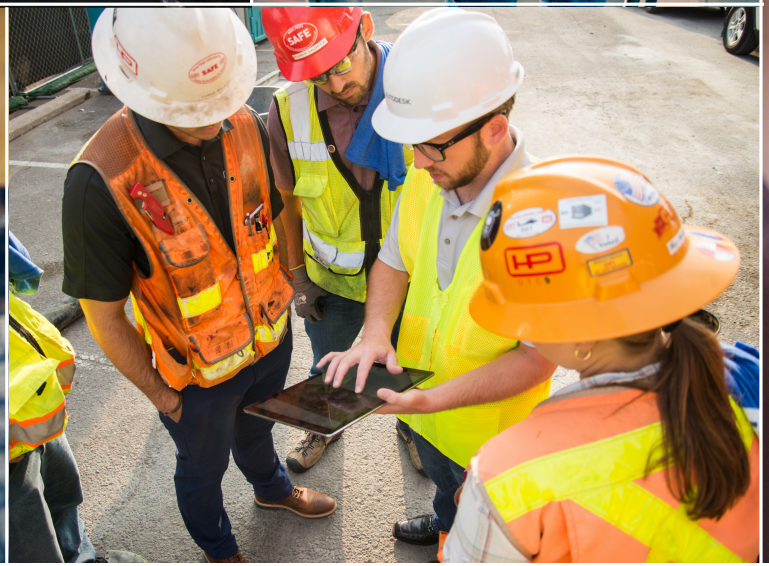




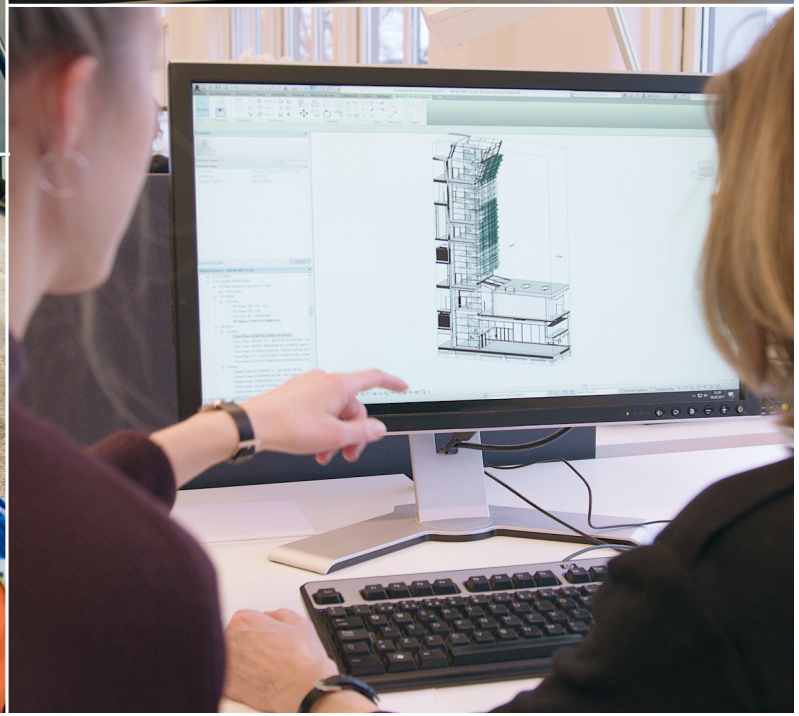
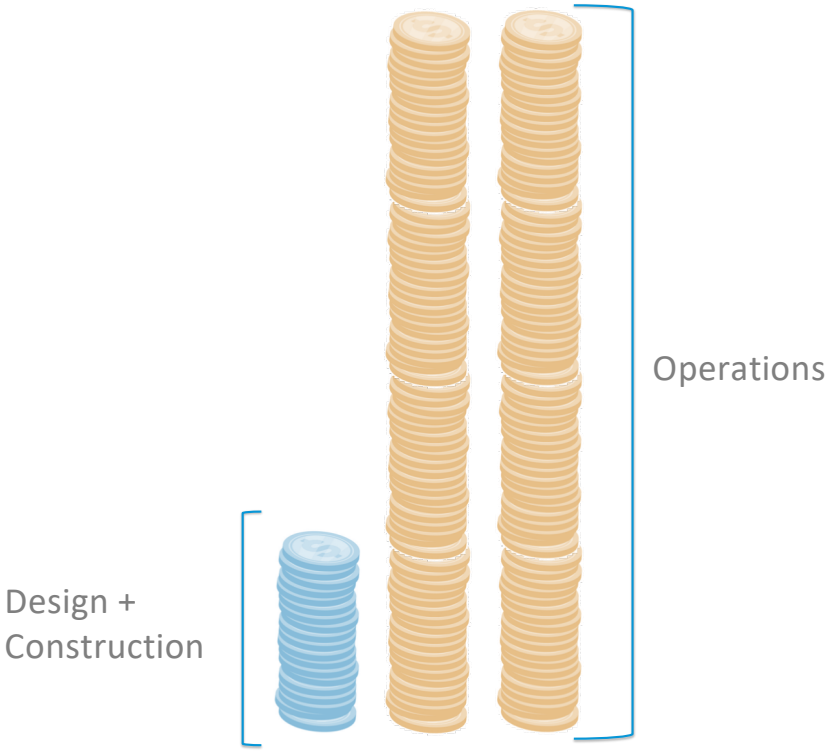


Photo courtesy of BNIM

40+

Average Building Lifecycle



90%

Lifecycle Costs in Operations

30%

Project Data is Lost

Photo courtesy of Shutterstock

$16B

Cost of Poor Data

Photo courtesy of TBS Construction

Challenges with Lifecycle Data

SYSTEMS AREN'T INTEGRATED, COMPATIBLE, AND OFTEN SILOED

Evaluate technology that is 'open' with a documented API and a rich partner ecosystem to allow data to flow between teams, phase of the project, and systems to minimize multiple entry and human error.

SOME IS IN 3D, SOME IS IN 2D

Technology is moving towards 3D based workflows quickly but there is still great information that will never reside in a model. Evaluate technology that brings these two types of data together.

DATA IS STATIC

Consider how to capture dynamic data which can be reused, reoriented, and recycled for multiple workflows and meet the needs of multiple stakeholders.

COLLECT + SHARE DATA

CONNECT STAKEHOLDERS

TRANSITION TO OWNER

Evaluating Solutions

DOES IT MEET THE NEEDS OF INDIVIDUAL WORKFLOWS?

Start with the basics. Does this technology allow projects to be efficient, remove barriers to collaboration, and mitigate risk of error which leads to budget and schedule overruns?

DOES IT CONNECT DESIGN, CONSTRUCTION, AND OPERATIONS?

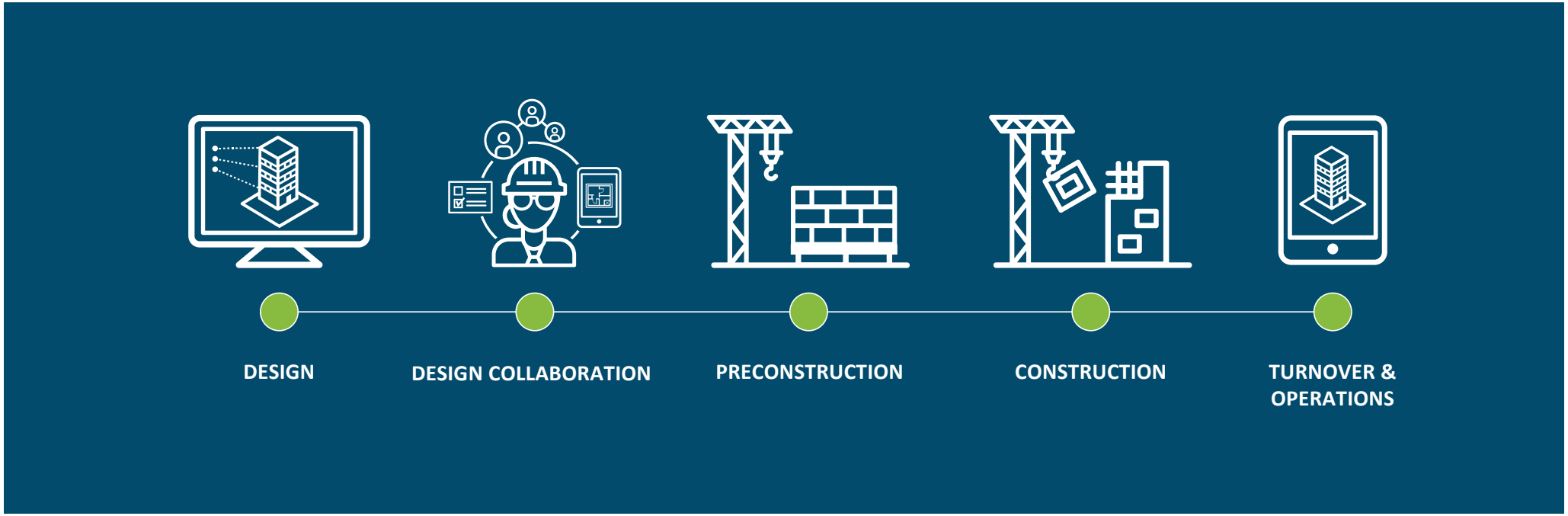
How do I minimize siloed data? Consider working as a consultant with other key stakeholders, including the owner, to define what data should flow from design to construction to operations.

DOES IT HELP ME WIN MORE WORK?

How does technology help my firm's local reputation, ability to complete projects with desirable results, and lead to predictable, repeatable outcomes leading to increased margins.

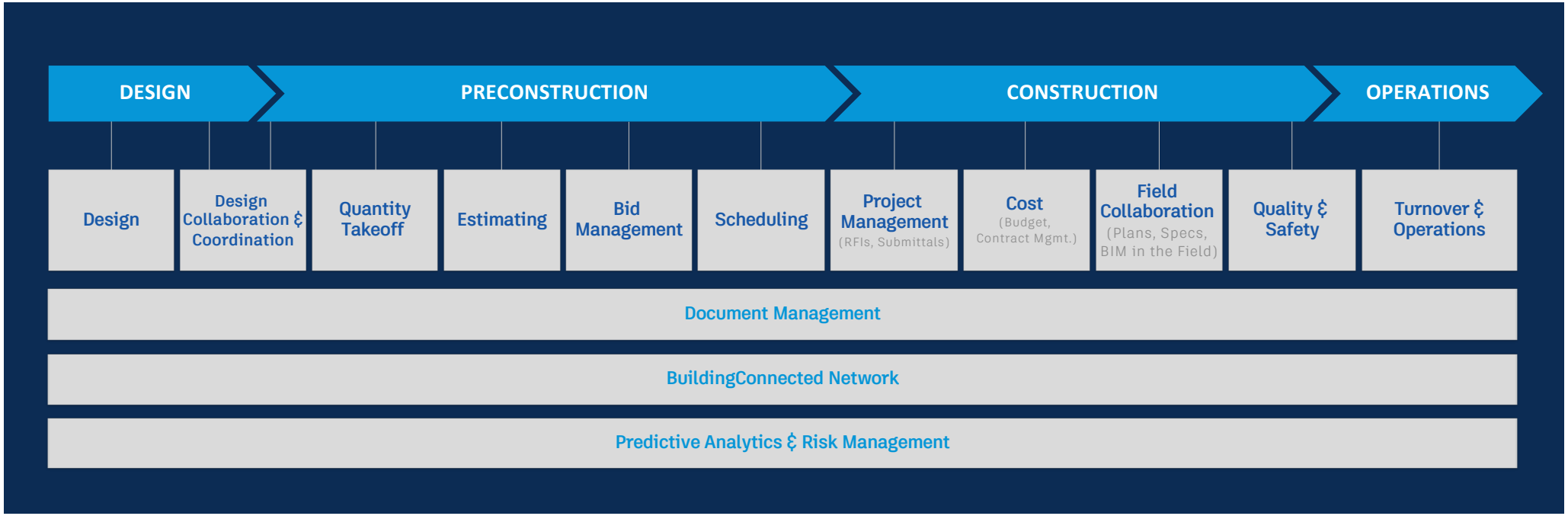
Autodesk Construction Solutions

Deliver a comprehensive, integrated platform that seamlessly connects the office, the trailer and the field.

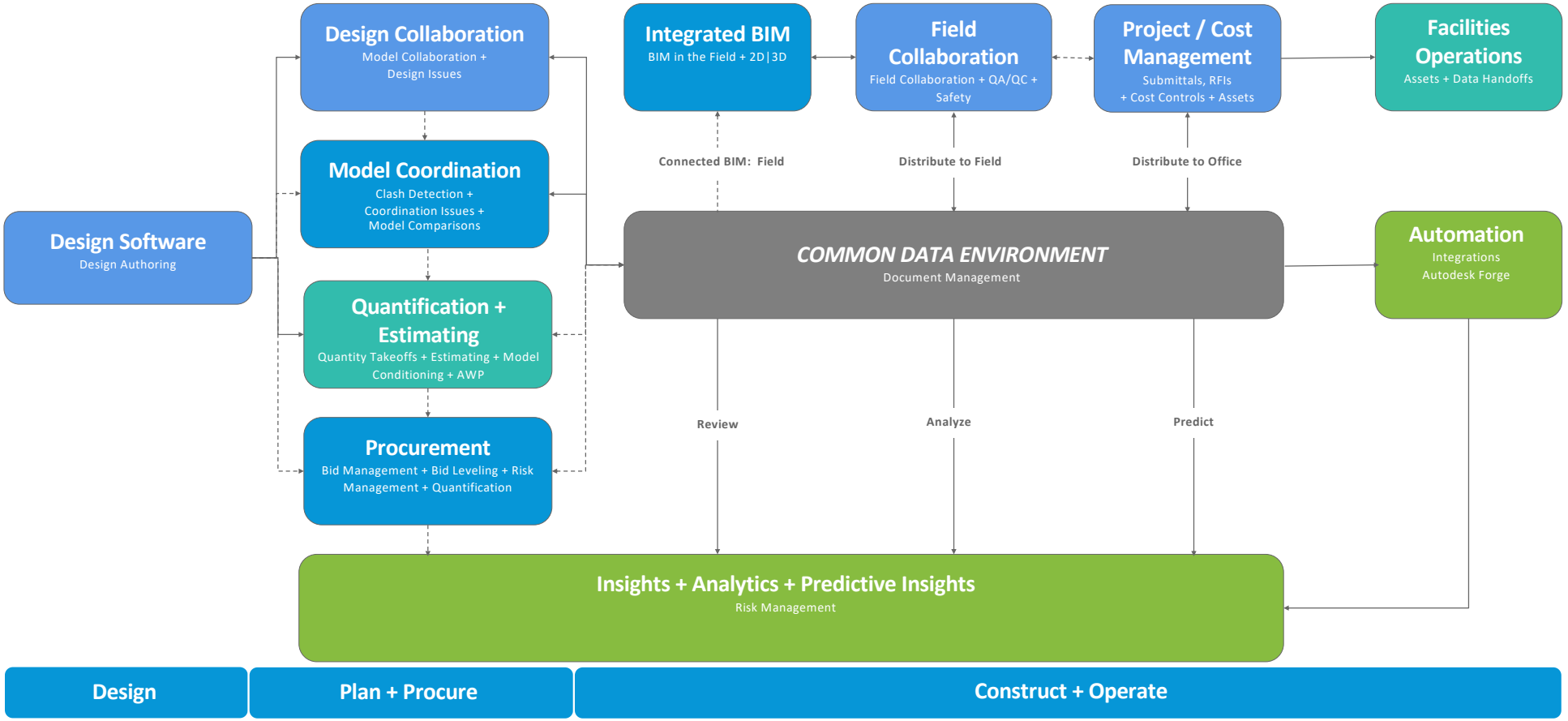


Autodesk Construction Portfolio

assemble BUILDINGCONNECTED BIM 360 PlanGrid



Autodesk Construction Cloud



Perfecting Data Handoffs

BIM 360

Assets

MANAGEMENT

- Collect **Asset** data in BIM 360 Field

BIM 360

Cx

COMMISSIONING

- Create **Commissioning** Checklists in BIM 360 and PlanGrid

PlanGrid

Mobile

'LIVING AS-BUILTS'

- Gather as-built information **from the field**

BIM 360

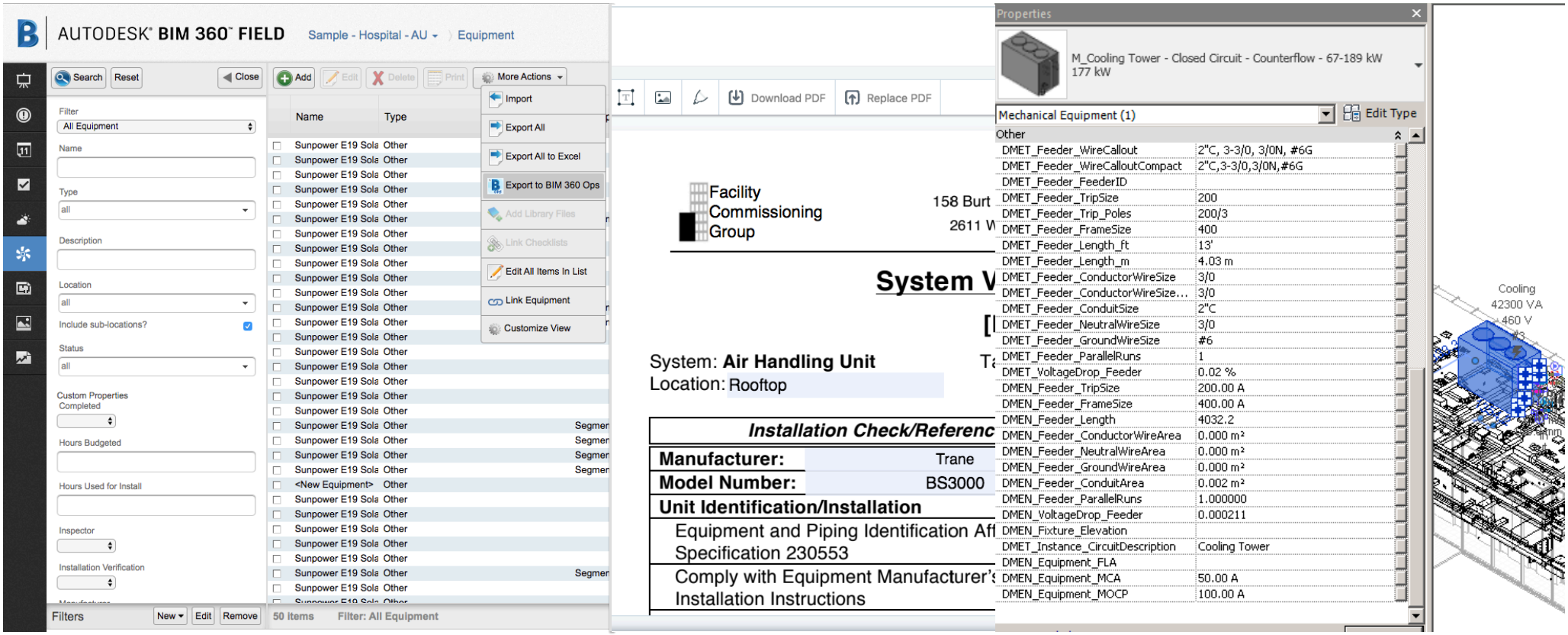
CMMS

OPERATIONS

- Import **models, assets, and closeout** data into BIM 360 Ops

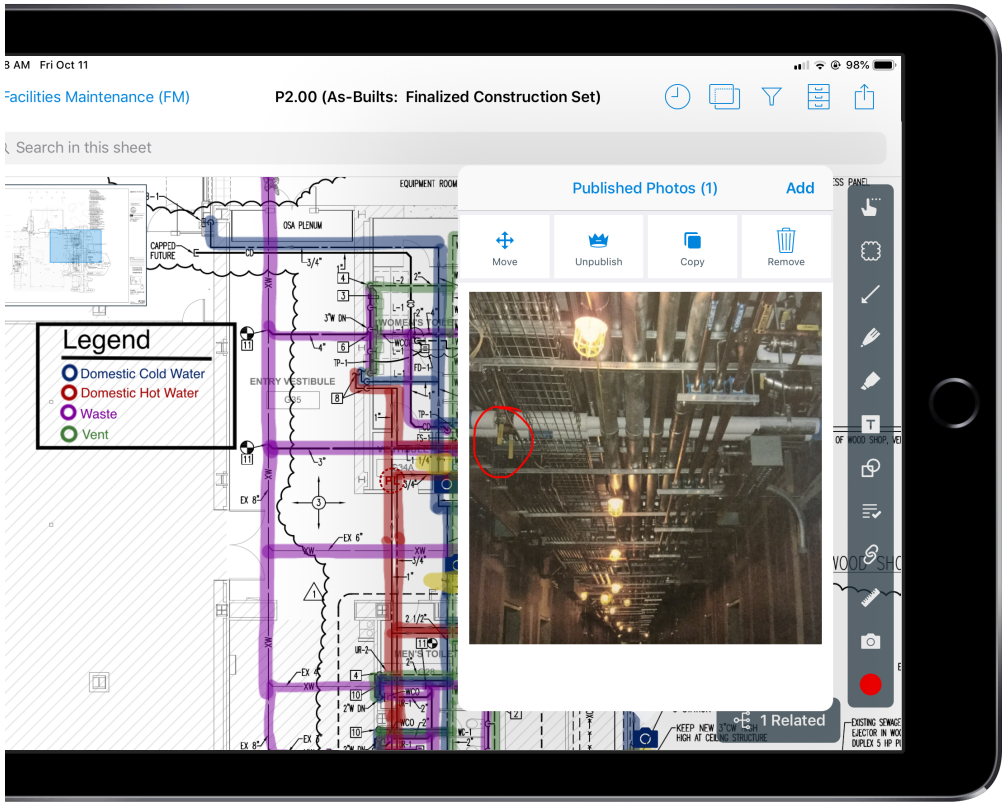
Equipment Data

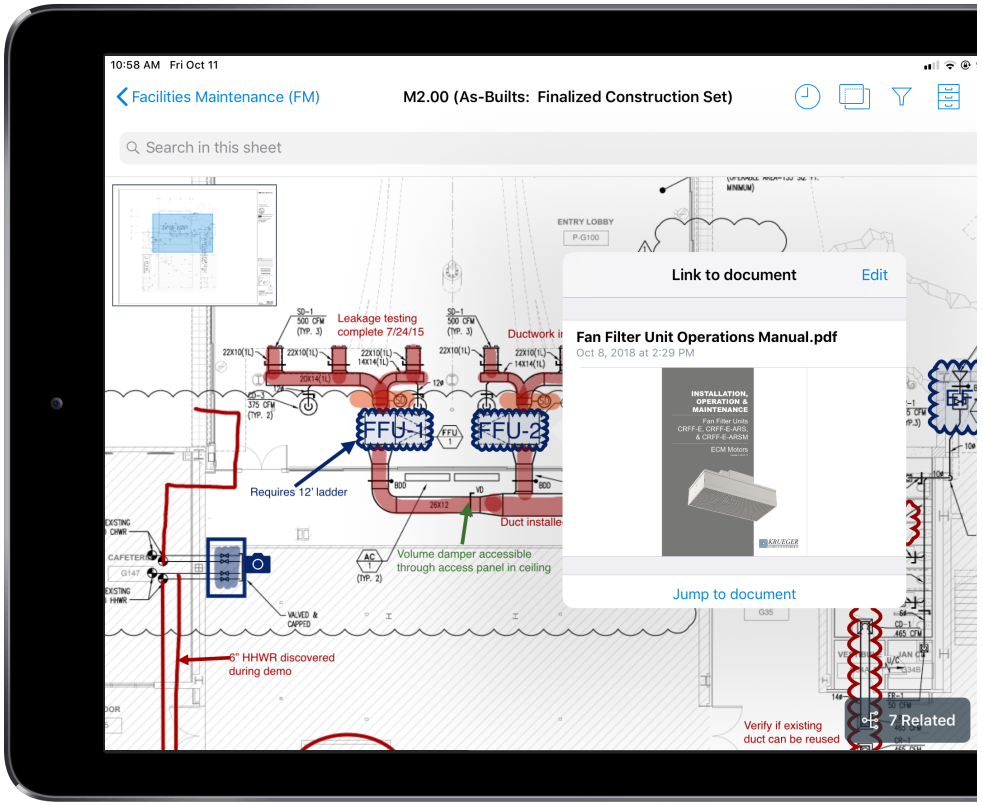
Assets + Commissioning Data



Living As-Builts

Mobile Access to Documentation





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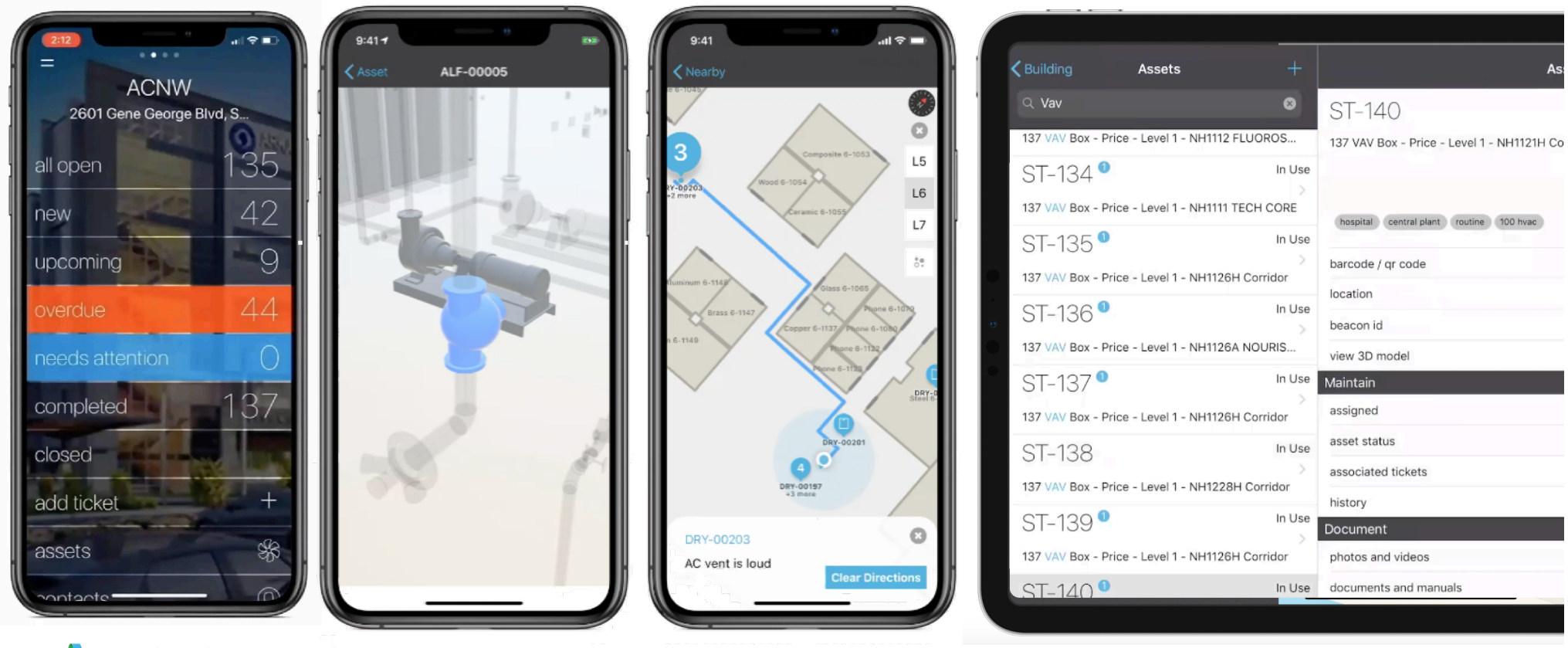
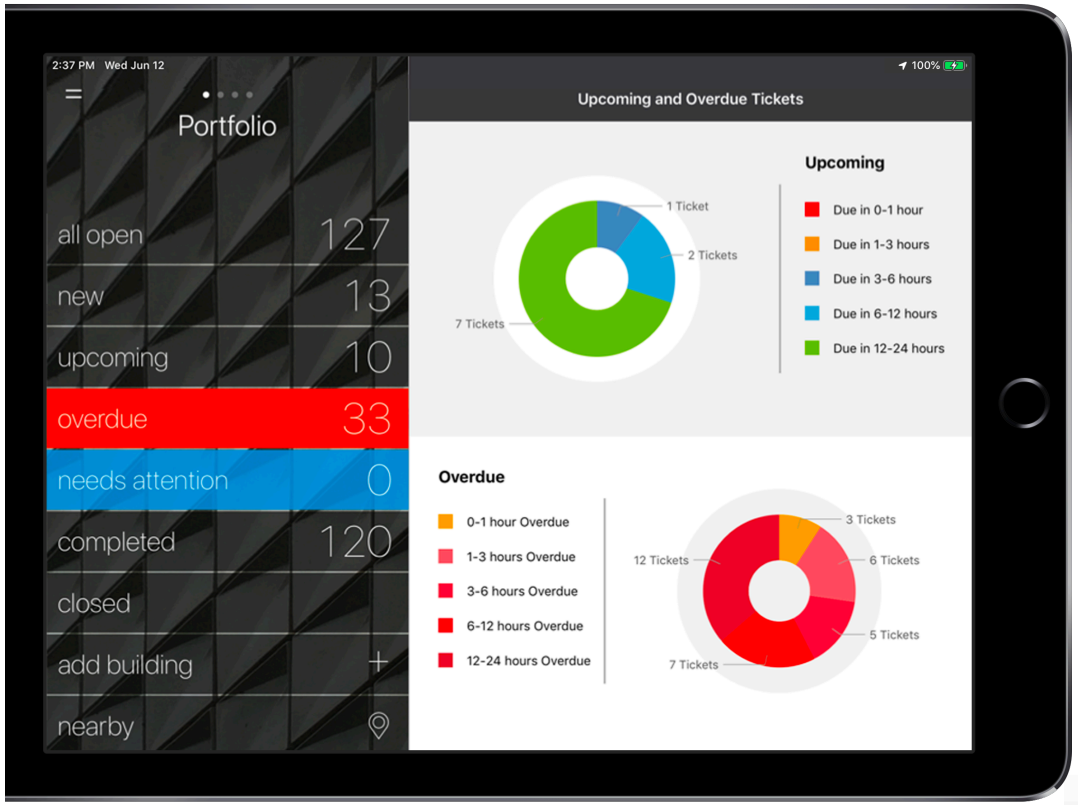
Operations

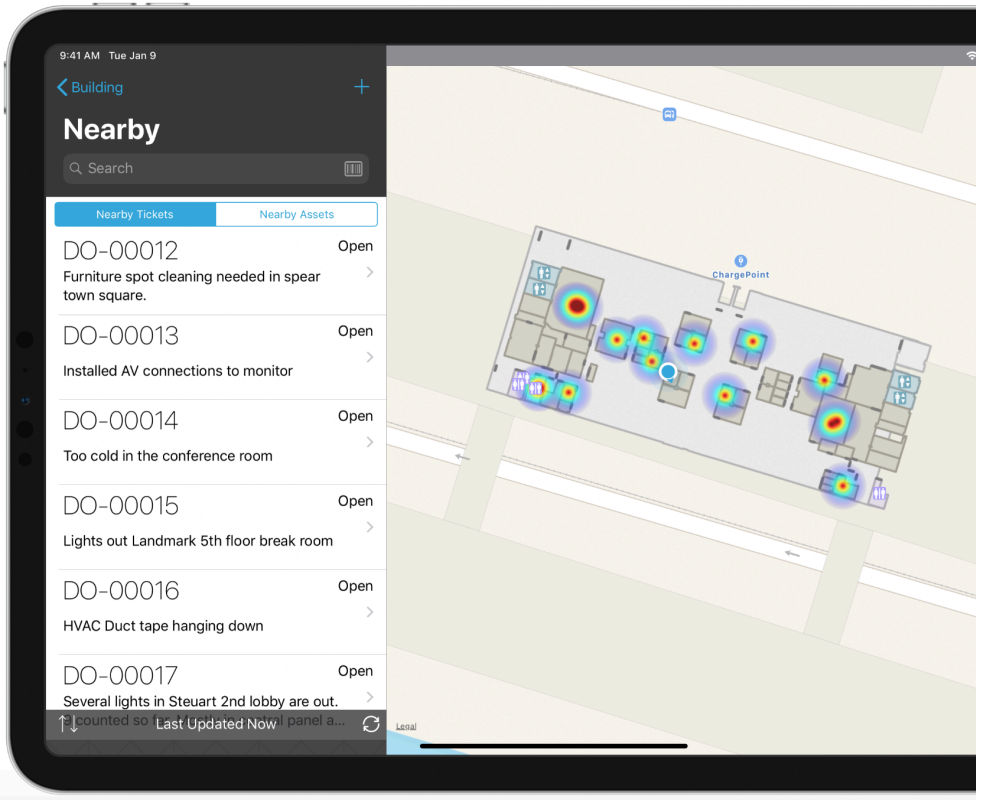
Computerized Maintenance Management System



Operations

Unlock new insights for your Owners!





Leveraging Technology

During Construction

Melody Cirillo
Director of Projects
Caesars Entertainment Corporation

About the speaker

Melody Cirillo, Director of Projects

Melody Cirillo is the Director of Projects for Caesars Entertainment where she leads construction management for new construction and tenant improvement transformations. With over 20 years in the industry. Melody has taken part of projects from Mixed Use developments such as CityCenter in Las Vegas, new construction such as the Neiman Marcus in Fort Worth, Texas, design builds and Interior renovations. Most recently renovated Colosseum at Caesars Palace, and new build for ESPN at the Linq, scheduled to turnover 2020. Melody is also actively enjoys mentoring up and coming individuals in the industry.

Photo courtesy of Las Vegas Review

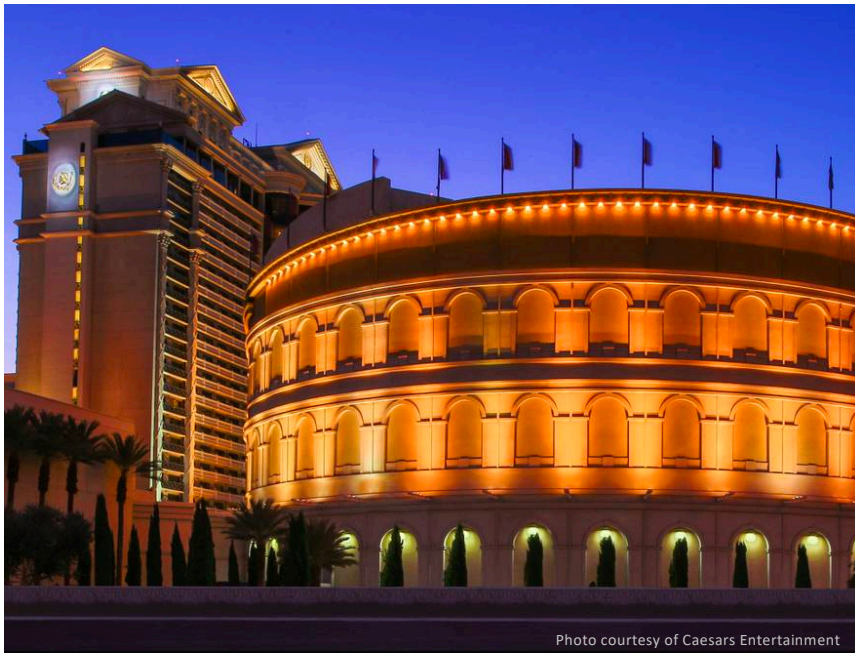
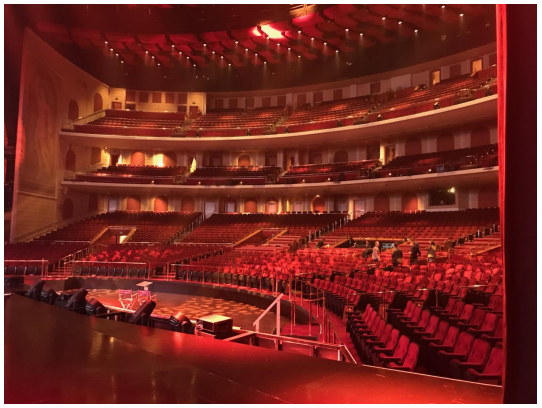


Photo courtesy of Caesars Entertainment

THE COLOSSEUM
CAESARS PALACE • LAS VEGAS

Photo courtesy of Las Vegas Review



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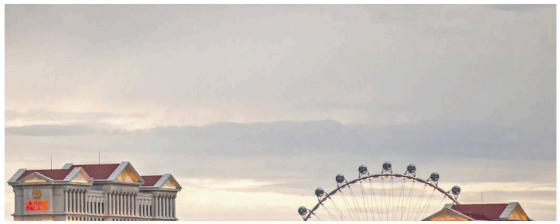
Home >> Business >> Casinos & Gaming

ESPN studio coming to The Linq Hotel on Las Vegas Strip



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Inheriting Poor Data in Existing Buildings

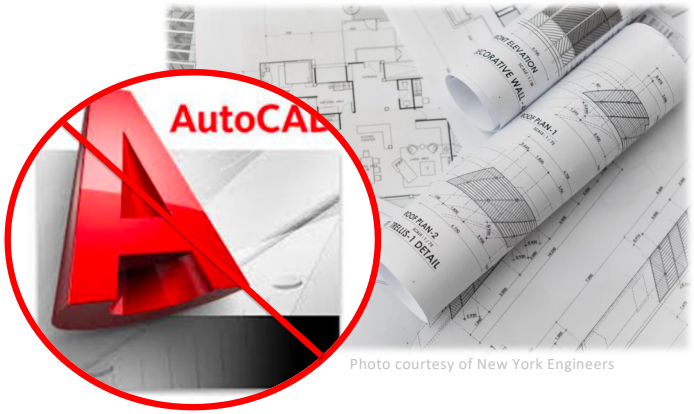


Photo courtesy of New York Engineers

Photo credit: Doster Construction

Lack of Reliable Existing As-Builts

- Paper or Acetate Drawings
- Not in CAD
- Unreliable Information

Undocumented Work

- Facilities projects not documented
- Engineering related questions
- Word of mouth changes

Collecting Existing Building Conditions

IF YOU FIND DOCUMENTATION

- Any documentation > no documentation
- Process to field verify is expensive!
  - Request to review drawings off-site
  - Field Verification
  - Laser Scanning
  - Convert to a digital file
  - Reconstruct in CAD
  - Markup and Repeat Process

IF THERE ARE NO DOCUMENTS

- Time consuming and **expensive**
- Field measure everything!
  - Doors, windows, structural elements, MEP
- Create a new existing conditions model and/or drawings

New Technology, New Opportunities

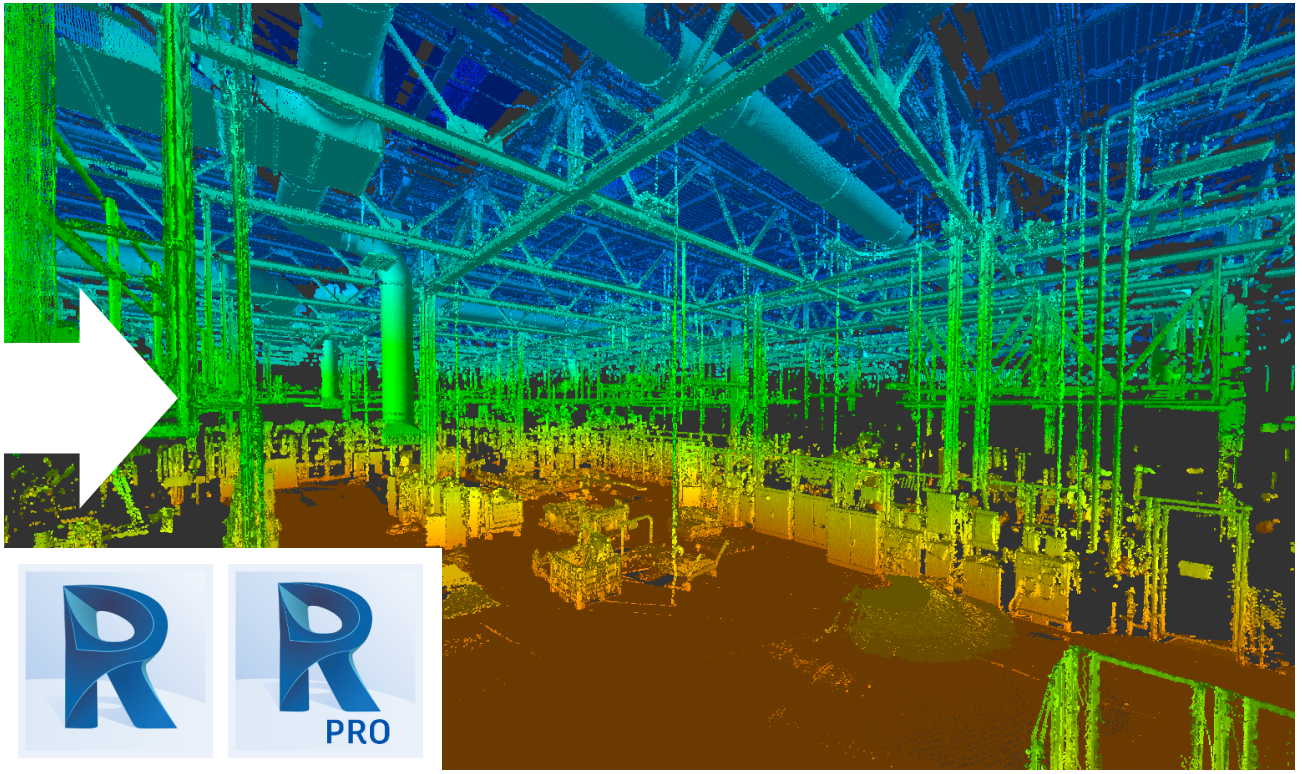


Photo credit: Doster Construction

Newer Technology is coming faster

1985:
Drafting Tables and Slide Bars

1989:
AutoCAD

1994:
Electronic Meetings

1998:
Architectural Desktop Classes

2003:
DocuSign

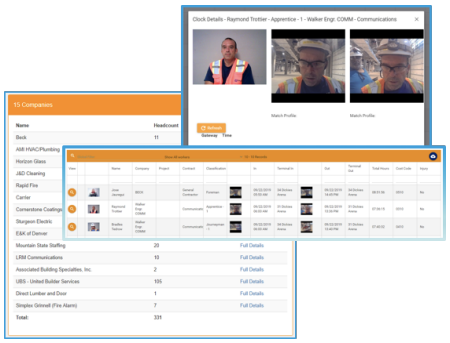
2012:
Mobile Productivity (PlanGrid)

2000:
3D Scanning

2006:
Cloud Storage

2017:
Real-Time Site Views (SiteTraxx)

"What used to take weeks, now takes hours."



Project Turnover

Developing a Great Project Closeout

Sarah Weston
Sr. Project Manager
Silver Ventures

About the speaker

Sarah Weston, Senior Project Manager

Sarah Weston is Senior Project Manager for Silver Ventures where she leads design and construction management of the redevelopment and transformation of the historic Pearl Brewery in San Antonio, Texas into an exemplary, mixed use neighborhood that is a catalyst for redevelopment of the surrounding area. 16 years of industry work has led Sarah to manage everything from design, construction and turnover of multi-million dollar mixed-use, multi-family and historic renovation projects to locating individual fountain lighting to finding just the right spot for port-a-potties on a job site. Sarah is also an avid shutterbug of project artwork that magically appears once a sheetrock canvas goes up.

Pearl

Factors at Odds with Great Project Turnover

THE SPARKLE IS GONE

Project teams have worked on projects for years and enthusiasm fades. Team members often look ahead to their next project leading to poor close out documentation.

THE PEOPLE ARE GONE

Subcontractors are long gone and general contractors typically reduce staff allocations to hit target margins so close out often suffers.

THE MONEY IS GONE

Project budgets are nearly 100% spent and billing slows down at the end of the project leaving less leverage for owners to require thorough close out documentation from their contractors.

A Case for Developing Great Project Close Out

Great project close out is **essential** to a **successful**, highly **functional**, **sustainable** built environment… but it's tough to achieve.

BEFORE

AFTER

Facilities and Maintenance Dynamic

WORKLOAD: Facilities has over 6,000 work orders per year – we ask a lot of this team!

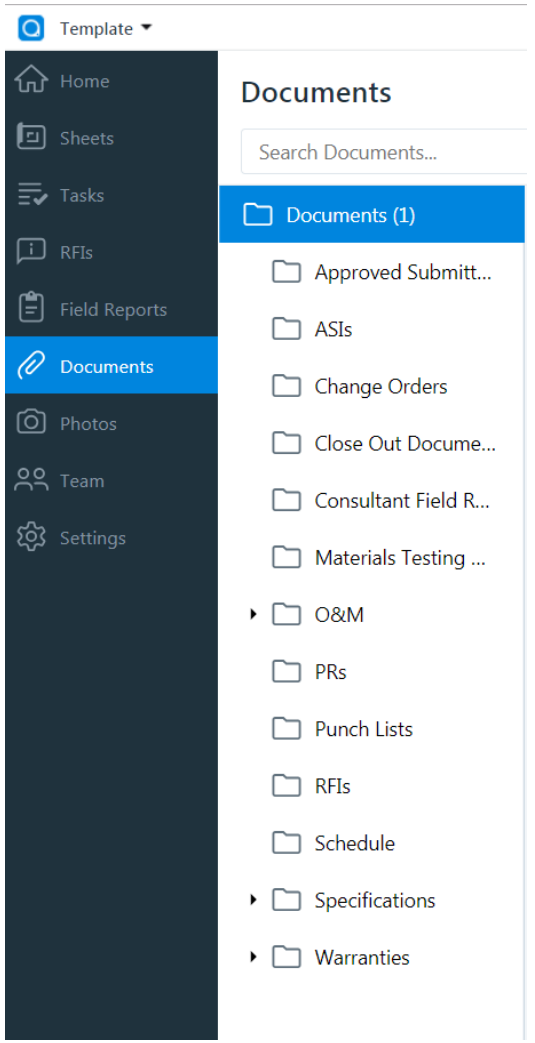
RESOURCES: Staffing resources are difficult to properly staff and maintain with **lots of employee turnover** historically

TRAINING: Training sometimes lacks in this phase of the building lifecycle

INFORMAL PROCESSES: Word of mouth is often used to share systems, components, and equipment locations.

Close Out Documentation Strategy

- **OWNERS SHOULD DICTATE REQUIREMENTS**
  - Require all close out documentation is digitized
- **DETERMINE WHAT DATA IS MEANINGFUL FOR OPERATIONS**
  - What documentation should be on the cloud?
- **DEFINE STAKEHOLDER RESPONSIBILITIES EARLY**
  - Some tasks are better suited for different stakeholders
- **HANDOVER DOCUMENTATION DIGITALLY**
  - Provide facilities with 'Admin' access for full transparency



Fireside Chat

with Melody Cirillo and Sarah Weston

Question:

How important is it for Owners to dictate what technology is used on their projects?

Photo credit goes here

Question:

What risk do Owners face with poor data turnover at the end of the project?

Photo credit goes here

Question:

Where does 3D data and workflows fit into your operational strategy?

Photo credit goes here

Question:

Do we need to create a industry standard for data turnover in construction?

Photo credit goes here

Question:

What are the benefits of early involvement for facilities operations teams?

Photo credit goes here

Question:

What successes has your organization observed with lifecycle data platforms and/or processes?

Photo credit goes here

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