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Agile Handover

Asset Digitization: A Conversation with Mark McKinley

2019 Building Automation FM Forum

Thursday, 26 September 2019



Francis Rabuck, CWNA, RFID+ Chief Strategy Officer, Agile Handover



- Francis (Fran) Rabuck is a technology evangelist, explorer and trail blazer. He discovers trends, connects people, beta-tests things – and then builds early prototypes of a mashup of ideas. He shares his findings in the classroom, workshops, presentations, articles and keynotes at a variety of international conferences. Additionally, he helps launch startups, leads teams to create new products and develops visionary strategies for organizations.
- He supports work and advancement in the STEM area to improve and encourage the younger generation to consider careers in technology. Join him at CES2020 at the amazing presentation of winners at The Young Innovators to Watch Competition.

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Mark McKinley - Facilities Engineering Manager, HHMI Janelia Research Campus



- Manage engineering and coordinate information systems
 - building information modeling (BIM) implementation
 - electronic document management
 - computerized maintenance management (CMMS)
 - building automation and controls (BAS)
- Over 35 years experience of design, construction, and facilities management
 - Mechanical, Electrical, Plumbing
- History:
 - High Performance Building Team Leader for AECOM
 - Commissioning Project Manager for Sebesta Blomberg

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Janelia Research Campus



A state of the art medical research campus dedicated to developing game-changing advances to move science forward.



The campus is housed on 281 acres in Ashburn, Virginia, which is composed of around 1 million sq. ft. of living, office, and state-of-the-art research lab space.

The Facility Management Team is responsible for managing mission critical systems.



Asset Digitization

Asset Digitization is a ***strategy*** that involves standards, systems, tools, asset knowledge, and a well trained workforce with the right expertise. It is more than a bar code or RFID label.

It goes beyond scan, store and cataloging information on assets. It includes work processes and analytics to measure and continuously monitor data in real time. It involves synchronization of multiple, incompatible system silos.

In the Industry 4.0 world it is a necessity before you can begin work with IoT, Building Automation, Artificial Intelligence and Predictive Maintenance in your Facility.

The bottom line - Asset Digitization is the first step to transform the Facility Management break-fix image of today to a real contributor to an organization's bottom line.



Facility Management Focus

CAFM

Computer-Aided
Facility Management

IWMS

Integrated Workplace
Management System

CMMS

Computerized
Maintenance
Management System

**Document
Management**



BAS

Building Automation

Standards

CAD, Autodesk
360/Revit, COBie, IFC

EAM

Enterprise Asset
Management

YOUR Systems

Sharepoint and others



Facilities O&M Information System Utilization

- Building Information Models for Facility Management
 - Understanding systems' configuration and geometry
 - Locating equipment, wayfinding, and evacuation planning
 - Conveying safety information to field teams
- Electronic Document Management
 - Field access to current equipment documentation
 - Standard operating procedures and safety requirements
- Computerized Maintenance Management (CMMS)
 - Technical equipment information and maintenance procedures
 - Preventative maintenance, warranty verification, service history



Capture and Standardize

1. Determine data structure
2. YOUR format
3. Capture data
4. Utilize data
5. File re-naming
6. File re-organization

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Research Campus BIM Standards

Table of Contents

- 1 Facility Standards
 - 1.1 Janelia Introduction
 - 1.2 Building Systems
 - 1.2.1 Systems List

[1 Facility Standards > 1.2 Building Systems > 1.2.1 Systems List](#)

The system list consists major building systems identified by the Facilities Group. More systems...

Name	Value	Map	Values Used Before
Sub Title		<input type="checkbox"/>	FLOOR 1 FLOOR 2 FLOOR 3

Type	Name	Title	SubTitle	Date
As Built Section	SV_801_As Built Sect...	TELECOMMUNICATIONS PROFILES	69 of 77	03-29-21
As Built Section	SV_801_As Built Sect...	TELECOMMUNICATIONS PROFILES	70 of 77	03-29-21
As Built Section	SV_801_As Built Sect...	TELECOMMUNICATIONS PROFILES	71 of 77	03-29-21
As Built Section	SV_911_As Built Sect...	SANITARY SEWER PROFILES	56 of 77	03-29-21
As Built Section	SV_911_As Built Sect...	SANITARY SEWER PROFILES	55 of 77	03-29-21
As Built Plan	SV_921_As Built Plan...	SITE PLAN - STORMWATER MANAGEMENT P...	10 of 77	03-29-21
As Built Sched Equipment	SV_921_As Built Sched...	STORM SEWER COMPUTATIONS	48 of 77	03-29-21
As Built Section	SV_921_As Built Sect...	LOOP ROAD - STORM SEWER PROFILES	19 of 36	03-29-21
As Built Section	SV_921_As Built Sect...	RIVERROCK PARKWAY - STORM SEWER PROF...	18(1) of 25	03-29-21

Context Menu for 'LB_AHU-13_Acceptance Test Factory...':

- AssetType: Air handling unit
- Component: AHU-13
- System: S31 Building Return Air System
- Type: Acceptance Test Factory
- DrawingSet: Enter value here
- Floor: 1ST
- Area: Enter value here
- Discipline: Mechanical

	BIM Model
	Structural
	Structural
	Structural
	Structural
	Structural
	Architectural
	Architectural
	Architectural
	Architectural

Key driver: data consistency and/or mapping across systems



Locate

- How do you locate the object
 - Different people think differently and use different tools
 - Locate by: System, Location, Project, Memory
 - Locate with: BIM FM, CMMS
- People
 - Space planning to contact people impacted by change
 - Contact information
- Assets on the move
 - Future Development



Current Locate Methods for Different Roles

Technology Integration – Corrigo CMMS

The screenshot displays the Corrigo CMMS interface for a specific asset, 'LB-Boiler 1'. It features a sidebar with navigation options, a main content area with a 3D model of the boiler, and a detailed information panel on the right. The information panel includes fields for 'Model CB', '15-100 HP Boilers', and '15 - 100 HP Steam and Hot Water Dryback Integral Burner'. Below the model, there is a 'CONTENTS' table listing various technical details like 'FEATURES AND BENEFITS', 'PRODUCT OFFERS', and 'DIMENSIONS AND RATINGS'. A blue arrow points from the 'B-1' asset ID in the sidebar to the main content area.

Technology Integration BIM for FM

The screenshot shows a BIM for FM interface with a 3D model of a building structure. A red box highlights a specific component, and a red arrow points from this box to a detailed view of the component on the right. The detailed view shows a 'HOLD SYSTEM' with various components and a 'DIMENSIONS & LEGEND' table. The interface includes a sidebar with navigation options and a main content area with a 3D model.

Technology Integration – Siemens BAS

The screenshot displays the Siemens BAS interface for a specific asset, 'EF-2 Exhaust Fan | Twin City Fan & Blower | Model: TCX'. It features a sidebar with navigation options, a main content area with a 3D model of the fan and blower system, and a detailed information panel on the right. The information panel includes fields for 'Model: TCX', 'Twin City Fan & Blower', and 'TSL and QSL Inline Centrifugal and Mixed Flow Fans'. Below the model, there is a 'CONTENTS' table listing various technical details like 'Introduction', 'Shipping and Receiving', and 'Handling'. A blue arrow points from the 'EF-2' asset ID in the sidebar to the main content area.

Technology Integration – Document Management

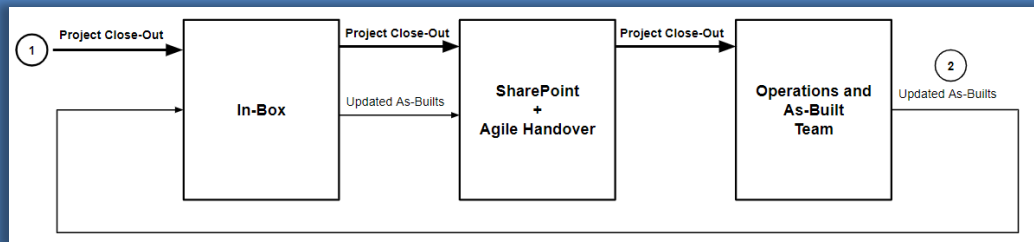
The screenshot shows a Document Management interface with a list of documents. A red box highlights a specific document, and a red arrow points from this box to a detailed view of the document on the right. The detailed view shows a document titled 'Legal Repository - PMSUCED - Sa... Plans - NA' with various metadata fields like 'Type', 'System', and 'Description'. The interface includes a sidebar with navigation options and a main content area with a list of documents.



Distribute

- Determine Single Source of Truth
 - Provenance to get to the source
 - Populate application systems
- Move data or link the data with connections
 - Eliminate multiple systems data entry
- Data consistency and standard enforcement
 - AHU vs A.H.U vs Air handler vs Air Handling Unit
- Dual Nature of Project Handover
 - Project Integration and As-Built Updates

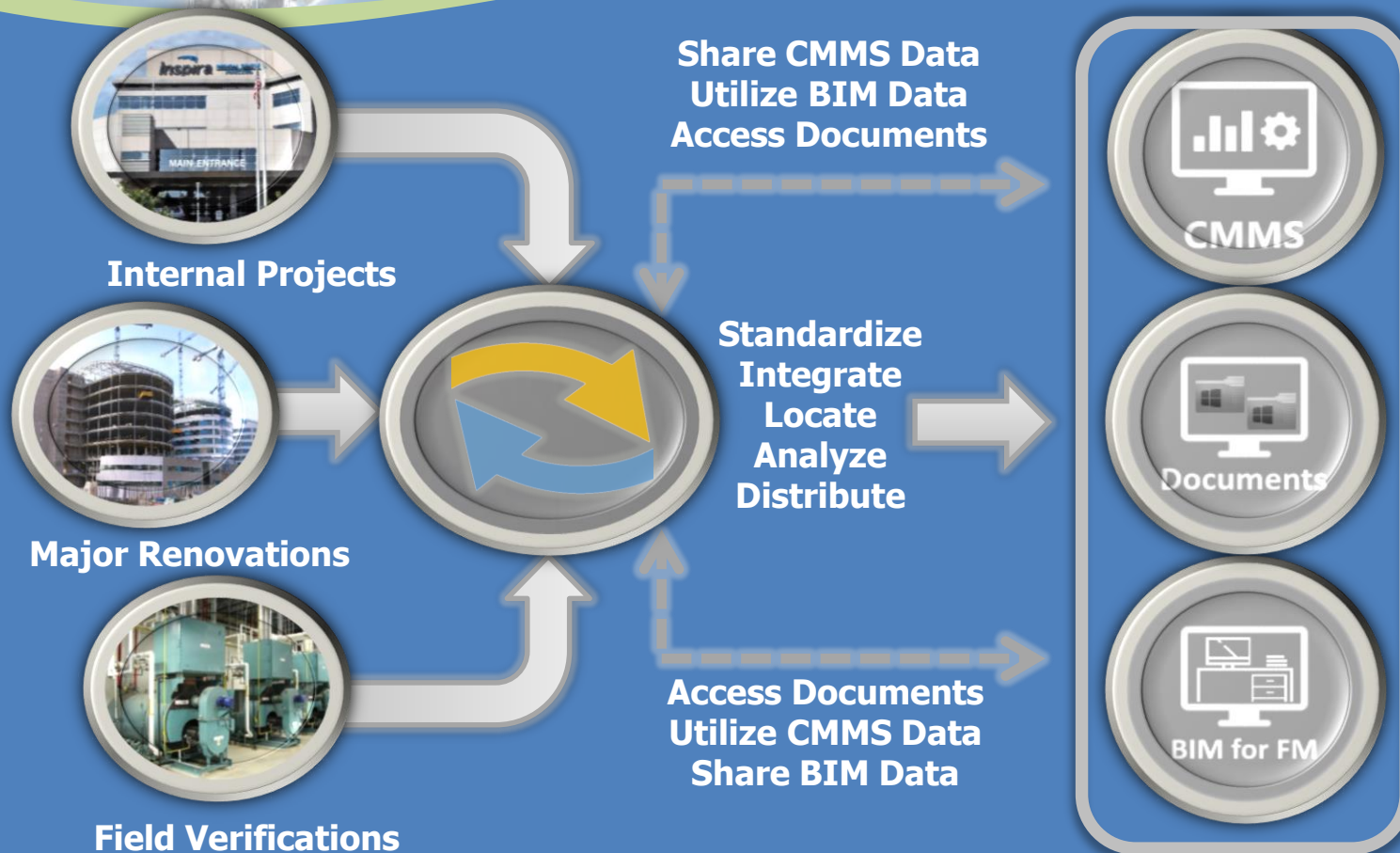
Source Properties	Owner's Spec	Relationships
OperationsNames		
Field Tag		
B-3		
BIM FM		
B3		
CMMS		
LB-Boiler 3		
Group		
Component		
Facility		
Landscape Building		
Space		
Record: 1W.470 Docs: Boiler Room BIM: 1W.470 CMMS: 1W.470		





Integrate

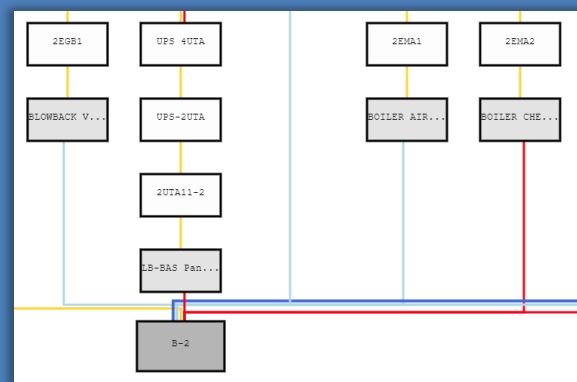
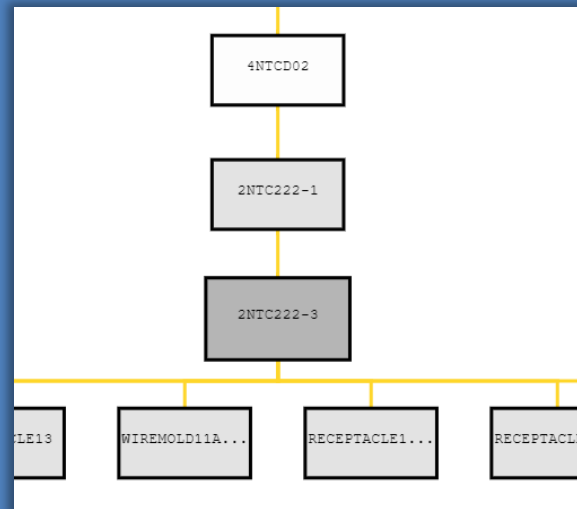
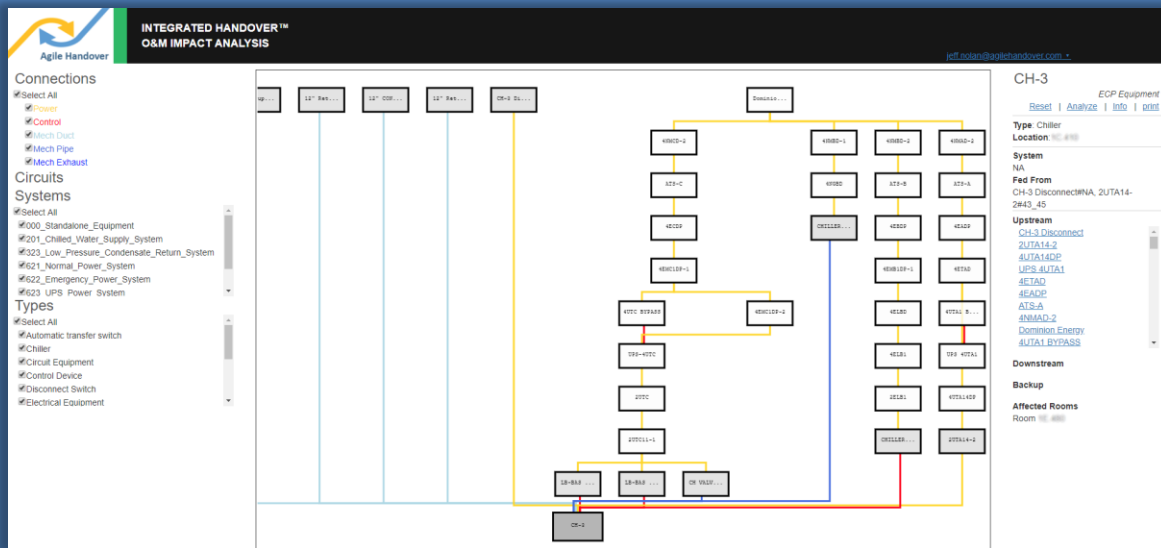
Facility O&M Systems





...and finally ANALYZE

- Impact Analysis – determine effects of change
- Utilize data from all systems





ROI/Improvements

Reduced Time

12 man hours saved per day

Handover of not just data, but institutional knowledge

“Instead of flipping through mechanical prints or digging through windows folders, using Agile Handover I can click the building name and see them all; organized by floor, room, and revision! This is going to be a huge timesaver” – Mechanical Engineer

“Being able to quickly access the required documents from BIM saves significant time as I don’t have to leave my system and try and track down the documents I need.” – BIM Systems Owner

“I used to have to wait until the morning to track down the project management team to find the documents I needed, now I have a direct link from the Siemens Building Automation System.” – Night Shift Operations Engineer



Future Direction?

Vendors merge silos into a single “Suite” of products
Adding a module – doesn’t solve the problem

Organizations opt for Best of Breed

Change management – coordination of systems

User adaptation – resistant at first, but millennials will save us

Industry 4.0 will accelerate and force changes

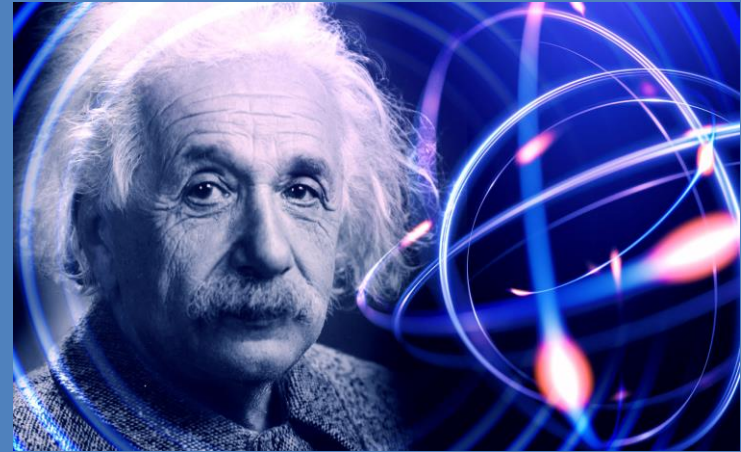


Facility Managers have a Choice

Maytag Repairman



Einstein Genius



Choose Wisely



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