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Existing to Expansion – BIM 360 Ops for the Fayetteville Public Library System

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Learning Objectives

- Discover ways that standard industry project practices (Submittals and Commissioning) can enhance populating BIM 360 Ops data
- Learn about the workflow of information required to successfully execute a BIM 360 Ops implementation
- Discover lessons learned from implementing the BIM 360 Ops CMMS system on the Fayetteville Public Library project
- Discover the importance of collaboration of the entire project team on BIM 360 Ops projects

Description

In 2016, the City of Fayetteville Arkansas began planning of a 70,000 square-foot expansion to their existing building. The facility, which will be completed Fall 2020, adds innovative, community-focused spaces where patrons can develop photography, experience virtual reality, and host large-scale meetings and events.

One challenge identified during the design process was how to effectively manage the equipment in both the new addition and existing once the project was completed. The facilities team decided to leverage BIM360 Ops as their computerized maintenance management system and engaged a consultant to streamline the data import process.

The purpose of this class is to explain the process and key considerations for successful integration of BIM 360 Ops for existing and new construction. Leveraging models created through the design process, the team worked collaboratively to establish the asset list and ensure streamlined import of data from the facility's existing documentation as well as the new addition design and construction process. The completed project brings the library's asset information in one place, enabling their staff to effectively operate and maintain the expanded building.

Speaker(s)

Grant Logan, PE is a registered Professional Engineer with more than 13 years of industry experience in electrical engineering. He has been with Bernhard TME since 2008 and has provided electrical engineering design and project management for more than 200 projects. Grant is the Director of Bernhard TME's Fayetteville, Arkansas office. His primary focus is on ensuring client satisfaction through quality design and excellent customer service. He is a graduate of the University of Wyoming with a Bachelor of Science in Electrical Engineering. Grant is active in the Illuminating Engineering Society (IES) and currently serves as the Vice President of the Fayetteville, Arkansas section of the IES.

Mark Mergenschroer is entering his 24th year in the industry and has recently moved into the role of Customer Success Engineer for the Autodesk BIM 360 Ops Software. He is focused on new and improved ways for a Facility Manager to maintain the operations of a building for its lifecycle. Mark has shared his MEP BIM knowledge at events such as Autodesk University, BIM Forum, BILT NA, AHSE, FIATECH, ASHRAE, Children's Hospital Association Forum and to numerous Revit User Groups. Mark attended Hillsdale Free Will Baptist College in Oklahoma City.

Introduction: Existing to Expansion – BIM 360 Ops for Fayetteville Public Library

In 2016, the City of Fayetteville Arkansas began planning of a 70,000 square-foot expansion to their existing library building. The facility is planned for completion in Fall 2020. The new facility will include an innovation center with audio/video recording studio, virtual reality room, photography studio, and simulation lab, an expanded youth services area, a 700-seat multipurpose center, additional meeting spaces, an outdoor courtyard with green spaces around the property, and other amenities.

Project Timeline

Bernhard TME was brought onto the project by the Commissioning Agent after the Fayetteville Public Library (FPL) expressed an interest in asset management. Bernhard TME and the Commissioning agent worked on a past similar project together. We decided that BIM 360 Ops would be the solution they needed for their computerized maintenance management system (CMMS). Bernhard TME worked with the design team to implement CMMS into the design model. We then worked with the FPL to identify assets to be tracked, then built an FM spec around their needs. The assets to be tracked aren't only MEP items, but also include AV, kitchen equipment, furniture, etc. The data collection progress began after that and will be followed by delivery of BIM 360 Ops and training before day one.

Goals/Challenges

One challenge identified during the design process was how to effectively manage the equipment in both the new addition and existing once the project was completed. The facilities team decided to leverage BIM 360 Ops as their CMMS and engaged a consultant to streamline the data import process.

With their current CMMS, data entry by facility personnel was time consuming. Not to mention, most facility personnel have other tasks during a building transition. O&M manuals that are provided during construction are often inaccurate and incomplete. These O&M manuals are often not available in time to have CMMS in place at building opening.

The goal was to find a seamless platform to incorporate Fayetteville Public Library's existing building's data with the new expansion's data.

The Solution: BIM 360 Ops

Fayetteville Public Library needed a better solution. The existing CMMS was often inaccurate and incomplete. Data had to be collected in various ways through Excel and SharePoint.

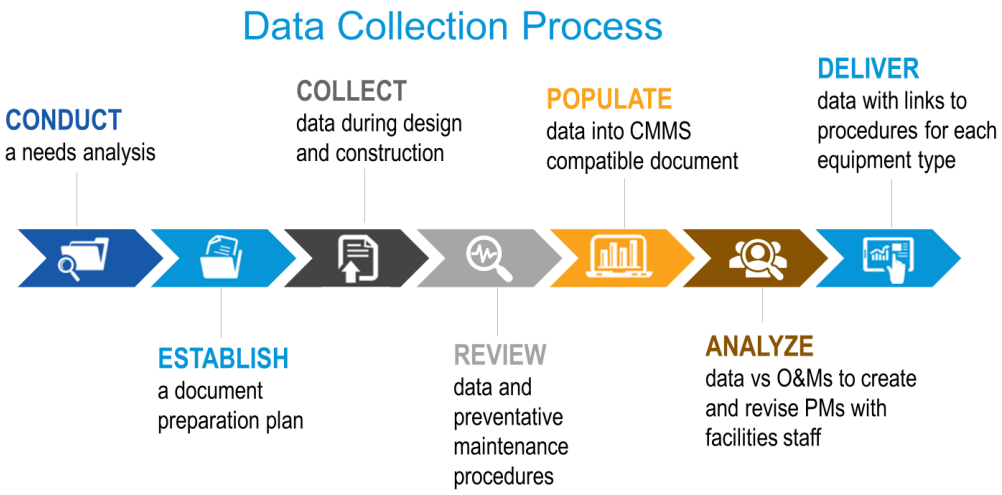
BIM 360 Ops

With BIM 360 Ops, you are able to extend the BIM lifecycle to operations phase. We wanted to be able to enable the Fayetteville Public Library to begin operations on Day 1. BIM 360 Ops is easily accessible and mobile, can schedule and track asset-based preventative maintenance, and can speed data entry.

Data Transition:

Data Collection Process

These are the necessary steps we are using in the data collection process for the Fayetteville Public Library expansion project. The steps are as follows: 1. Conduct, 2. Establish, 3. Collect, 4. Review, 5. Populate, 6. Analyze, and 7. Deliver.



Step 3: Collect

Retrieve data during Design & Construction from: BIM Equipment data, Commissioning data, preventative maintenance procedures, and O&M's from various sources.

For the Fayetteville Public Library, we collected existing asset data from FPL SharePoint database. For the new expansion, data is being collected by contractors and commissioning agents as part of the traditional commissioning process. By being integrated into the team early enough in the process, we can make sure that the BIM 360 Ops data integrated well with the commissioning data that is being collected.

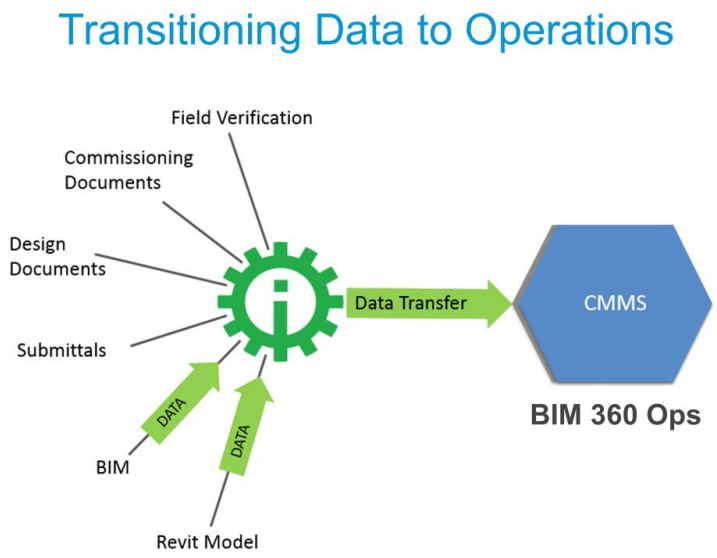
Step 5 & 6: Populate/Analyze

As assets are delivered to the site and installed, the contractors are collected the relevant make/model data that will populate BIM 360 Ops. The BIM 360 Ops template for the Fayetteville Public Library has been developed and has been shared with the

project team. Preventative maintenance data is delivered in Excel format as well as PDF. Excel formatting allows for easy integration into the BIM 360 Ops software.

Delivery of BIM 360 Ops

Finally, BIM 360 Ops will be delivered to FPL. Delivery will include all BIM Equipment data, commissioning data, PM procedures, O&M's manuals, Matterport Scan, 3-D Perspective, and Indoor Mapping.



BIM 360 Ops Features:

Ticket System

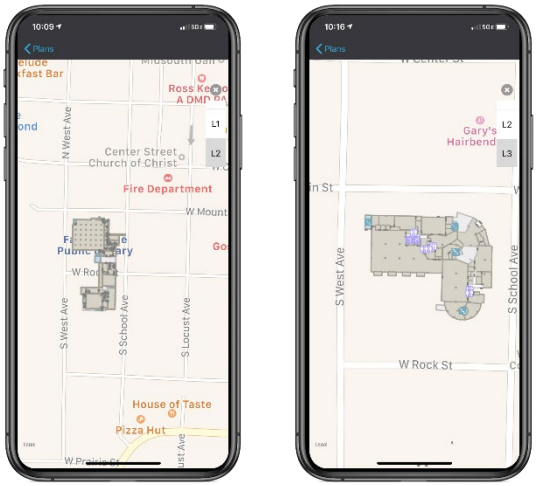
Tickets can be added by tenants and managers, or be pre-scheduled through the Ops system. Tickets contain: manuals and links, photos, checklists, assets and location, technician time tracking, communication with ticket creator, and more.

Assets

These include all installed finishes, fixtures, and equipment (selections and MEP). When uploaded to Ops through 3D Model, data automatically includes: asset location, manufacturer, model, documentation links, and mechanical/electrical data. This is beneficial because it enhances case management and ensures accuracy.

3D View + Wayfinding

Assets uploaded via Revit model or BIM 360 Field are shown within a 3D space in Ops. The 3D View is available on desktop, mobile and iOS app. It helps technicians, vendors, and managers under the context of the asset. Similarly, assets can be geolocated to allow for wayfinding via map view.



Checklists

With BIM 360 Ops, checklists are a feature that can help standardize procedures, ensure accuracy during investigation, and attach to a ticket. Technicians and managers can track percentage of checklist completion as well. Checklists are completely customizable.

Scheduled Tasks

Scheduled tasks are pre-created tickets meant for maintenance items. These include: preventative maintenance measures, maintenance inspections, site inspections, etc. The BIM 360 Ops will automatically create tickets at pre-scheduled intervals.

Reporting

Reporting is a built-in BIM 360 Ops feature that is based on live data. The filters allow for customized data visualization, and the reports are exportable to multiple formats.

Benefits for Fayetteville Public Library:

- FPL has new and existing assets in a new CMMS platform
- Able to generate work orders for assets for trouble calls as well as Preventative Maintenance tasks on a scheduled basis
- FPL building is geo-located in BIM 360 Ops for accurate indoor mapping
- Assets can be located in BIM 360 Ops accurately where they are in the building based on the modeled (and field verified) data