Natural Gas Industry Workflow with A360 & BIM 360 Glue

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Class Summary

Review a BIM Lifecycle from engineering through construction along with a Workflow utilizing A360 and BIM 360 Glue from a Natural Gas Industry perspective.

Key Learning Objectives

- A360 & BIM 360 Glue Workflow in the Natural Gas Industry
- Identify the correct resources to ensure success
- Lessons learned
BIM Lifecycle
BIM Lifecycle – FRONT END DESIGN

General Arrangement 2D design & drafting along with PFD’s, Civil 3D Cut & Fill Analysis and the beginning of Intelligent P&ID’s.
Finalizing P&ID's while creating equipment and piping models to complete Site model.
Finalizing the Orthographic drawings along with ISOS from the completed models.

Tools such as Navisworks to review 3D Site Models along with drawings.

Provide reports such as BOM’s list, Valve list and Line list that are generated from the model & P&ID’s.
BIM Lifecycle - CONSTRUCTION

During construction we have the latest drawings and models using A360 and BIM 360 GLUE.
BIM 360 Workflow
BIM 360 Key Resources

Systems
BIM 360 Administrator

Engineering
Design Engineer
Designer
Field Engineer

Construction
Project Manager

Eng / Constr Docs → BIM 360 Admin → 3D Models

BIM 360

Constr PM → Construction
Field Eng → Design Engineering

AUTODESK® BIM 360™
A360 Workflow

Engineering Construction Documents are uploaded by the BIM 360 Admin at key milestones (IFB, IFC, Revisions)

Construction Project Managers and Field Engineers utilize the latest Engineering Construction Documents in the field as a digital communication device.

Communications to Construction and Engineering resources via mobile devices allows for more efficient way of communicating changes, As-Builts and solutions.
A360 Lessons Learned

Eliminates the need for paper in the field. Over 634 pages is difficult to use in the field.

The Tablet allows drawings to be in one place and allows revisions to be shared from the designers in the office then downloaded onto the tablet instantaneously via the Autodesk A360 app.

The Tablet was put into a waterproof/shockproof case so it can be used in all weather conditions where paper can not.
A360 Lessons Learned

Easier P&ID Walk-downs, punch list creation and instant As-Builts.

P&IDs can be walked down with comments made on the Tablet. These can be uploaded to the engineering Autodesk A360 site for As-Building the station via an the Autodesk A360 app.

Punch lists for start-up can be created and sent to construction real time so work can be completed faster.
A360 Lessons Learned

Ability to provide instant feedback to Construction/Engineering/Vendor via Screenshots.

Screen shots of the drawings/model/picture can be taken and drawn on to provide direction to Construction within minutes.
BIM 360 Glue Workflow

3D Models are uploaded by the BIM 360 Admin at key milestones (IFB, IFC, Revisions)

Construction Project Managers and Field Engineers utilize the latest 3D Models in the field as a digital communication device.

Communications to Construction and Engineering resources via mobile devices allows for more efficient way of communicating clashes, changes, As-Builts and solutions.
BIM 360 Glue Lessons Learned

Allows checking of piping/Foundations/etc. via AutoCAD 3D model using the Autodesk BIM 360 Glue app:

- Lines can be “clicked on” to check diameter, grade, wall thickness, and other properties. Proposed changes are easily viewed on the tablet.
BIM 360 Glue Lessons Learned

Allows for measurements to be pulled in the field:

The model is loaded onto the tablet and via the Autodesk BIM 360 Glue app, dimensions from new/existing equipment can be obtained.

These measurements were tested to be accurate within an inch.
BIM 360 Glue Lessons Learned

The innovative use of a tablet was a enormous improvement in the the field reviews of several Facilities. It allowed efficient engineering reviews of the projects, lessons learned to be communicated easily, and helped to ensure the projects were completed correctly on time.