BIM IMPLEMENTATION WITH FORMWORK

MEVA Formwork Systems, Inc.

North America

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Summary:
• Use of BIM at MEVA.
• Advantages of BIM for a formwork supplier.
• Lessons learned so far.
• BIM model expectations.
• Brief project overview.
• Future development of BIM at MEVA.
USE OF BIM AT MEVA FORMWORK SYSTEMS, INC.

Adopted in 2013

Product Groups already modelled and in use with BIM:
• CRANESET FORMWORK FOR WALLS AND COLUMNS
• HANDSET FORMWORK FOR WALLS AND COLUMNS
• SINGLE FACED FORMWORK
• CLIMBING FORMWORK

Currently 25% of our engineering staff are using BIM to create formwork layouts.

More of our staff have been trained and are in the process of transitioning to the use of BIM.
ADVANTAGES OF USING BIM FOR MEVA

1. Accuracy of automated quantity takeoffs
   • Saves time in engineering
   • Reduces influence of human error when compared to manual method of creating takeoff
   • Saves cost by eliminating additional shipments or additions that create more overhead in our operations department

2. Visualization in the 3D environment
   • Helps us easily identify problematic areas of a layout that require more attention to detail
   • Understanding of how our equipment pieces together is much more easily communicated to our customers, through use of isometric views on paper plans and through sharing of .IFC files.

These combined advantages = cost effective solutions.
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LESSONS LEARNED DURING DEVELOPMENT

Simple formwork structures take longer to detail in BIM when compared to CAD.

Addition of layout automation tools is critical to improving speed on simple structures.

Automated layout tools have limited use on complex structures, difficult to program for all possible scenarios.

Time gains are more evident on complex structures.

Keeping components simple speeds up the layout process.
LESSONS LEARNED DURING DEVELOPMENT

Keeping components simple speeds up the layout process.
BIM MODEL EXPECTATIONS; A FORMWORK SUPPLIER’S PERSPECTIVE

Who is responsible for the accuracy of the BIM model?

Models that do not match the Architectural and Structural drawings.

Contractors choose to start BIM models from scratch, sometimes assume the worst and create from scratch so they can be sure of accuracy.

Some customers realize this is an issue and do not expect suppliers to verify models.
PROJECT OVERVIEW – 1345 S Wabash Ave., Chicago

BIM used on project for:
- Architectural walls
- Shearwalls
- Elevator and Stair Core
- Crash Walls

BIM meant better:
- Understanding of how material would cycle from one area to another
- Highlighting of potential conflicts between equipment and existing or already poured structures
- Understanding of potential cranage issues and planning thereof
- Takeoff accuracy

Great challenge for MEVA BIM.

‘On-the-fly’ component development not ideal, however…

Drove us to better development of our components in BIM.
FUTURE DEVELOPMENT OF BIM AT MEVA

Add more software licenses and train remainder of engineering staff in use of BIM.

Add User Defined Attributes to components when extracted to IFC

Develop more ways to streamline the detailing process in BIM.
• Grouping more components together
• Add more automated detailing tools

Wider adoption globally within MEVA.

BIM mandates in several countries...
• Dubai, UAE = Municipality mandated BIM in 2014 on large and specialized projects
• Singapore = mandatory for all public housing projects
• UK = 2016 on all central government infrastructure projects
THANK YOU

MEVA FORMWORK SYSTEMS, INC.

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