KEEPING THE FAITH: THE VALUE OF BIM IN CONSTRUCTION

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#BIMForumED @DPRConstruction @nathancwood
• Part I: “Traditional” BIM Approach
  • The Fallacy of Conventional Wisdom
• Part II: Shifting the Paradigm
  • BIM is Just a Tool
• Part III: Taking a Leap of Faith
  • A Collaborative VDC Success Story
• Part IV: Fighting the Good Fight
  • Challenges with Adoption & Buy-in
THE "TRADITIONAL" BIM PROCESS

COMBINE DESIGN ELEMENTS IN BIM
IDENTIFY & RESOLVE CLASHES
FLATTEN TO 2D

BUILD FROM 2D
COMMON PITFALLS TO TRADITIONAL BIM

• Continued Rework Due to
  • Poor Installation Sequence
  • Not Installing Per the Model
  • BIM Scopes Not Modeled
• No Significant Productivity Increase
  • Doesn’t Cause a Behavior Change
• BIM Doesn’t Update in Construction
  • Can’t use the model if we don’t trust it
IT’S TIME FOR A....

Paradigm shift

BIM.....IT’S JUST A TOOL!

1. BIM is just another **Tool**
2. This **Tool** is only as good as the **People** using it
3. The **People** are only as good as the **Process** allows them to be
ARE WE ALL BUILDERS?
VIRTUAL
Everyone Has a Role in BIM

<table>
<thead>
<tr>
<th>MODEL AUTHORS</th>
<th>PROCESS MANAGERS</th>
<th>INFORMATION USERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Validation</td>
<td>Coordination</td>
<td>Model Navigation</td>
</tr>
<tr>
<td>Virtual Mock-Ups</td>
<td>Scheduling / 4D</td>
<td>Constructability Review</td>
</tr>
<tr>
<td>Proposals</td>
<td>Model Classification</td>
<td>Comments / Approvals</td>
</tr>
<tr>
<td>Construction Models</td>
<td>Site Logistics</td>
<td>Status Updates</td>
</tr>
<tr>
<td>Model Management</td>
<td>Model-Based Estimates</td>
<td>Field Layout</td>
</tr>
<tr>
<td>As-Built Validation</td>
<td>RFI’s / Submittals / Change Orders</td>
<td></td>
</tr>
</tbody>
</table>
TRUST IN THE MODEL CAN’T BE BLIND....

INVESTIGATE & ASK TOUGH QUESTIONS!
WHERE DID MY DRAWINGS COME FROM?
Does this.....

Equal this?

BIMFORUM
WHICH MODEL WAS USED DURING CLASH DETECTION?
WHAT ISSUES CAN YOU “SEE” IN THE SCHEDULE?
High Risk Activity Planning

Courtesy of Fernando Castillo Cohen
LEAP OF FAITH: A VDC SUCCESS STORY

Transbay Fire Protection, Inc.

DPR Construction
Self-Perform Drywall

REDWOOD ELECTRIC GROUP
Morrow Meadows

J.W. McCLENAHAN COMPANY
PLUMBING & HEATING CONTRACTORS

BMC

SUPERIOR AIR HANDLING®

ACCO Engineered Systems

BIMFORUM
MODEL WHAT YOU BUILD....

....BUILD WHAT YOU MODEL
COLLABORATION & CO-LOCATION
MEP INSERT POINTS
DIRECT FROM BIM

4X PRODUCTIVITY INCREASE
GREATER CONFIDENCE
Drywall Spool Sheets Direct from Coordinated BIM
BUILDING FROM FIELD KNOWLEDGE

- 8 Full Time Modelers
- 5+ Projects
- 16,000 + Spool Sheets
- Competitive on Hard Bid Jobs
UHH OHHH......
FIELD CLASH!
<table>
<thead>
<tr>
<th>Scope</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>98%</td>
</tr>
<tr>
<td>Plumbing</td>
<td>98%</td>
</tr>
<tr>
<td>Electrical</td>
<td>71%</td>
</tr>
<tr>
<td>Framing</td>
<td>79%</td>
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</tbody>
</table>

Project: Sutter Eden Health Medical Center, Castro Valley, CA
## Rework Reduction by Scope

<table>
<thead>
<tr>
<th>Scope</th>
<th>Baseline</th>
<th>Actual</th>
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<tbody>
<tr>
<td>Mechanical</td>
<td>10%</td>
<td>&lt;0.5%</td>
</tr>
<tr>
<td>Plumbing</td>
<td>10%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Electrical</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Framing</td>
<td>5%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Project: Sutter Eden Health Medical Center, Castro Valley, CA
<table>
<thead>
<tr>
<th>Scope</th>
<th>Baseline</th>
<th>Planned</th>
<th>Final</th>
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</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>100%</td>
<td>105%</td>
<td>120%</td>
</tr>
<tr>
<td>Plumbing</td>
<td>100%</td>
<td>100%</td>
<td>106%</td>
</tr>
<tr>
<td>Electrical</td>
<td>100%</td>
<td>114%</td>
<td>104%</td>
</tr>
<tr>
<td>Framing</td>
<td>100%</td>
<td>122%</td>
<td>128%</td>
</tr>
</tbody>
</table>

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ADDRESSING INDUSTRY CHALLENGES TO BIM ADOPTION

http://www.mortgagestrategy.co.uk/pictures/620xAny/P/web/w/y/f/rock_480.jpg
Addressing (mis)Perceptions

Source: http://www.videouniversity.com/the-wonderful-change-order-form/

Source: http://www.shutterstock.com
What is the Incentive for Project Success?

Source: http://www.prywatyzacjaia.pl/images/szkolenia/praktyczne%20podejście/3.jpg
EDUCATING SALES & MANAGING EXPECTATIONS

“You sold them what?!?! We can’t do that!!”
CHALLENGING TYPICAL DISCLAIMERS
CONSISTENT ENFORCEMENT OF INDUSTRY STANDARDS

AIA® Document G201™

Project Digital Data Protocol Form

www.cpcoalition.com
View the Guidelines. Take the Survey.
THANK YOU!

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