Lean Up Your Construction Coordination Process with Forge, BIM 360, and PlanGrid

Matt Vanture and Tyler Davis

Whiting-Turner
About the speaker

Matthew Vanture

An experienced VDC Manager with a demonstrated history of working in the construction industry. He has a strong operations focus and passion for moving what is learned by the 3D pre-construction process to the field. Vanture is a regular guest lecturer at the University of Florida and Georgia Institute of Technology [Georgia Tech] for BIM and VDC as well as a National Science Foundation advisory board member. He graduated with a Bachelor of Science focused in Construction Management from University of Florida.
About the speaker

Tyler Davis

Graduate of California State University, Fresno with a Bachelor of Science in Construction Management, building his career at Whiting-Turner in California.

Laser focused on continuous growth in construction management, construction technology and BIM/VDC.
"If you want the same result, do the same thing. If you want something different, do something different."

These words from the speaker’s leadership hit home when first heard as a young virtual design and construction (VDC) engineer after grinding through the first coordination project. After hitting roadblocks with communicating issues in the coordination process, losing information in too many repositories, wasting time running back and forth to the trailer, and not having the data to learn what to do different, the speaker and team have created smarter workflows and processes to better plan, do, check, and perform their efforts.
Learning Objectives

1. Discover where forge can be used to communicate clashes to the project team more effectively
2. Learn how to differentiate where BIM 360 Field starts as an issue resolution log (IRL) instead of just a field log
3. Learn how to create simple process maps for checking installed work
4. Learn how to establish your own data points for future action on projects
Outline

PLAN
Process Maps

DO
Navisworks/Clash Organization, Issue Resolution Log

CHECK
Check as Installed

ACT
Data
“Coordination”
Issue Identification

MODEL COORDINATION

ISSUE RESOLUTION

Model A

Model B

Model C

BIM 360 Glue

BIM 360 Shared Views

Navisworks

Search Sets

Clash Rules

Viewpoints

Issue Resolution Log

BIM 360 Field

Reports

Production Metrics
Team Viewer

Backend
Issue Tracking

Check
Issue Resolution Process

DEFINITION OF PROCESS

MODEL BASED COORDINATION

Design Coordination
• Design Optimization
• System Coordination
• Constructability Review
• Clash Detection

Trade Coordination
• Detailed Design Coordination
• Prefabrication Analysis
• Detailed Shop Drawing Development
• Release For Fabrication / Installation

ISSUE RESOLUTION PROCESS

Focused Approach To Problem Solving
• Accountability
• Metrics
• Project Predictability
• Centralized Database Of Decision Tracking
• Prioritize Issues With Cost/Schedule Impact
• Visibility / Real-time Access To Issues
Metrics

Issue summary

Companies with Most Unresolved Issues

- Comp D: 18
- Comp E: 7
- Comp B: 6
- Comp C: 3
- Comp A: 4

Average Time to Close Issues

- Company A: 63 days
- Company B: 47 days
- Company C: 37 days
- Company D: 29 days
- Company E: 28 days

Root Cause

- Change in Plans - Trade Partners: 4%
- Site/Facility Constraints: 6%
- Lack of Information - Trade Partners: 12%
- Lack of Information - EDA: 10%
- BM Coordination: 62%
Projected Implementation Outcomes

- Accessibility of Information
- Streamlined Resolution
- Transparency & Analytics
- Agile Communication
Use Cases

BIG ROOM (GROUP INPUT)

DIVISIONS OF WORK (INDIVIDUAL INPUT)

CONSTRUCTION OPERATIONS (INDIVIDUAL INPUT)
Progress Tracking

Rough-In
Duct Status

- **INSTALLED**:
  - 9/27/2019: 726
  - 10/4/2019: 1308
  - 10/11/2019: 597
  - 10/18/2019: 14785
  - 10/23/2019: 15606

- **ON-SITE**:
  - 9/27/2019: 986
  - 10/4/2019: 567
  - 10/11/2019: 1217
  - 10/18/2019: 580
  - 10/23/2019: 667

- **FABRICATING**:
  - 9/27/2019: 2745
  - 10/4/2019: 13278
  - 10/11/2019: 2885
  - 10/18/2019: 690
  - 10/23/2019: 13,115

***Note:***
- Dates from 9/27/2019 to 10/23/2019 are listed.
Issue Resolution Reports

- Issue Status by Company
- Issue Type
- Issues by Zone and Company
Change in Plan: 66%
Site/Facility Constraints: 14%
Lack of Information - Trade Partners: 10%
Lack of Information - ED&E: 5%
BIM Coordination: 4%
Planning

Who, When and How Many

Launch ClashGrouper
Launch Field Uploader

ExportNWC
ExportNWC