

# Walk-in Slide: AU 2014 Social Media Feed

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# Fundamentals of Quality and Consistency in Company-Wide BIM 360 Field Implementation

Presented by: Wendell Barnes, Meghan Hogan, and Michael Digman  
**Gilbane Building Company**



AUTODESK UNIVERSITY 2014

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# Class summary

This class is designed to show users how to implement BIM 360 Field software on any size project or within any size company, quickly and effectively. We can demonstrate how within just a few months we went from zero to more than 100 projects online companywide using BIM 360 Field software, including one of the world's largest ongoing commercial construction projects. We will examine some of the procedures and practices we used that enabled us to streamline our implementation and provide consistency and quality across our projects and our company.

# Key Learning Objectives

By using BIM 360 Field vs. conventional construction punchlist processes you will be able to:

- Understand effective practices for quickly implementing BIM 360 Field software on any size project
- Learn how to create a streamlined project management approach to quality consistency across a company
- Unify a project team and assist to provide a solution that creates a team mindset
- Learn how to enable users to maximize time onsite, cutting down on data entry in the trailer

# Having a Current Set of Drawings in the Field



# Consolidating Multiple Deficiency Lists

A	B	C	D
2 The following data were generated randomly for de			
3 First name	Second name	Project name	Project Manager
4 Jeffrey	Marvel	Next Shower	Patrick Benson
5 Sandra	Krachtus	Modern Sunsh	Karen Mathew
6 Marcelo	Chapple	Modern Sunsh	Karen Mathew
7 Scott	Miller	Abandoned La	Scott Williams



A	B	C	D
1 The following data were generated randomly for d			
2 First name	Second name	Project name	Project Manager
3 Brian	Chapps	Modern Sunsl	Karen Mathew
4 Patrick	Webb	Abandoned L	Scott Williams
5 Napoleon	Runyan	Next Shower	Patrick Benson
6 Sam	Meyerco	Modern Sunsl	Karen Mathew



A	B	C	D	E
1 The following data were generated randomly for de				
2 First name	Second name	Project name	Project Manager	
3 Mary	Tretyakov	Road Empty	Scott Williams	
4 Evan	Porto	Modern Sunsl	Karen Mathew	
5 Meagan	Hartell	Road Empty	Scott Williams	
6 Jessamyn	Ilbert	Next Shower	Patrick Benson	

Jeffrey	Marvel	Next Shower	Patrick Benson
Sandra	Krachtus	Modern Sunshi	Karen Mathew
Marcelo	Chapple	Modern Sunshi	Karen Mathew
Scott	Miller	Abandoned Las	Scott Williams
Brian	Chapps	Modern Sunshi	Karen Mathew
Patrick	Webb	Abandoned Las	Scott Williams
Napoleon	Runyan	Next Shower	Patrick Benson
Sam	Meyerco	Modern Sunshi	Karen Mathew
Mary	Tretyakov	Road Empty	Scott Williams
Evan	Porto	Modern Sunshi	Karen Mathew
Meagan	Hartell	Road Empty	Scott Williams
Jessamyn	Ilbert	Next Shower	Patrick Benson

# Report Distribution



# Immediate Benefits by Implementing BIM 360 Field

- Plans in the field
- Ease of use for all users / skill levels
- Photographs linked to items
- iPad efficiencies

**Results**: Saves Time & Manpower, Increases Client Satisfaction, Reduces Fee Erosion and Enables Faster Project Closeout

A detailed 3D rendering of a city skyline, likely Houston, featuring numerous skyscrapers of various heights and architectural styles. In the foreground, a bridge spans a wide river, with a highway running across it. The riverbank is landscaped with green lawns and trees. The sky is clear and blue.

# ExxonMobil Campus Project

# ExxonMobil Campus Project Overview

- Campus Project Consisting of 23 Structures Including Buildings and Garages
- 5,000+ Workers from 250+ Subcontractors / Vendors at the project's peak
- 18 Projects using BIM 360 Field software
  - 1<sup>st</sup> phase completed before company rollout of BIM 360 Field

# Initial BIM 360 Field Rollout

- Process was centralized internally
- Library had a full set of construction drawings to link to building locations
- Set up building locations by room and created issue templates
- Issue templates were based off of contractual scopes of work

# Initial Location Format

AUTODESK® BIM 360™ FIELD Project Delta - SW2 > Issues > ROOM 3A.304 >

294 Mike Digman

0 items

SW2 - Level 3\_E

+

Add Templates Copy Pins

List Filters All Issues

0 items

+

appears on report

New Issue

Add New Issue Cancel

Details

Issue type: Punch List

\* Issue ID: <New>

\* Description:

Company:

\* Priority: Medium

Status: Open

Due date: 04 Sep 2014

Location: INTERIOR>LEVEL 03>"A" BAR>ROOM 3A.304

Location detail:

Author Reference Number:

Bid Package:

Item Classification:

Specification:

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YouTube Facebook Twitter

# Initial Location Format

AUTODESK® BIM 360™ FIELD Project Delta - SW2 Issues All Locations

Change Location Show All Set Location Cancel

TOP LEVEL > INTERIOR > LEVEL 03 > "A" BAR

Location Path	Type	Status	Author
INTERIOR>LEVEL 06	Punch List	Closed	mburkholder@gilbaneco.com
INTERIOR>LEVEL 05	Punch List	Closed	jegrinn@gilbaneco.com
INTERIOR>LEVEL 04	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 03	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 02	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 01	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>CORE + ATRIUM + ELEV.	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>MECH.TOWER + STAIR	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.284	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.285	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.286	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.287	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.288	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.291	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.292	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.293	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.294	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.295	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.296	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.297	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.298	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.301	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOM 3A.302	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LOWER LEVEL>"A" BAR	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 01>CORE + Work to Com	Punch List	Closed	mburkholder@gilbaneco.com
INTERIOR>LEVEL 01>CORE + Work to Com	Punch List	Closed	mburkholder@gilbaneco.com
INTERIOR>LEVEL 01>MECH.1	Punch List	Closed	ogarcia@gilbaneco.com
INTERIOR>LEVEL 06>MECH.1	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 02>"B" BAR	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 05>CORE + Punch List	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>LEVEL 02>MECH.1	Punch List	Closed	jegrinn@gilbaneco.com
INTERIOR>PENTHOUSE>COF	Punch List	Closed	mburkholder@gilbaneco.com
EXTERIOR>West Elevation	Punch List	Open	adunn@gilbaneco.com
INTERIOR>CONNECTORS	Punch List	Closed	adunn@gilbaneco.com
EXTERIOR>NORTH ELEVATIC	Punch List	Open	bdenman@gilbaneco.com
	Punch List	Closed	cbulmer@harveybuilders.com
INTERIOR>PENTHOUSE>COF	Punch List	Closed	mburkholder@gilbaneco.com
INTERIOR>LEVEL 02	Punch List	Closed	mburkholder@gilbaneco.com
INTERIOR>LEVEL 02>CORE + Punch List	Punch List	Closed	dmartin1@gilbaneco.com
INTERIOR>ROOF>MECH.TOV	Punch List	Closed	jegrinn@gilbaneco.com
INTERIOR>PENTHOUSE>COF Work to Com	Punch List	Closed	mburkholder@gilbaneco.com

Search Issues Add Edit Void

Filter All Issues

ID

Description

Company

Location

Include sub-locations?

Date created

From To

Status

Type

Custom Properties

Author Reference Number

Bid Package

Item Classification

Filters New Edit Remove

50 items Filter: All Issues

Show: 50 Previous 1 Next

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294 Mike Digman

# Initial Issue Templates

**AUTODESK® BIM 360™ FIELD** Project Delta - SW2 ▾ Wendell Barnes ▾ ?

Home | Setup > Issues

Account

Info

Business Units

Projects

Companies

Users

Project

Info

Locations

Issues

Checklists

Equipment

Tasks

My Profile

Types Standard Properties Custom Properties Root Causes Templates

Groups    

Templates     

	Description	Company	Spec reference	Type
<input checked="" type="checkbox"/>	DW001 - Drywall surface at ceiling not smooth or damaged, repair	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW002 - Wall corner bead: mudding needs further work. If dented, repair	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW003 - Drywall surface not smooth or damaged, repair	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW004 - Wall finish not smooth, repair	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW005 - Wall tape joint visible needs further work	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW006 - Grout uneven joint, remove and replace, float wall.	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW007 - Patch and repair hole in soffit.	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW008 - Install edge bead, tape and float all cut gypsum board walls in mechanical ro	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW009 - Repair / replace studs	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW010 - Install sealant at all gypsum board to concrete transitions	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW011 - Typical at all light coves – correct poor gypsum board finish at the corners, r	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW012 - Typical at light coves – line of gypsum board to be crisp and straight with no	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW013 - Typical at all coves – light fixture is not to be visible from any location within	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW014 - Typical at all floors – Service elevator vestibule needs to have all damaged	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW015 - Typical at all mechanical rooms – all gypsum board cuts are to be straight ar	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW016 - Typical all mechanical room and electrical room doors – paint touch at door f	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW017 - Final clean all electrical room, mechanical room floors, walls	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW018 -Electrical rooms –Typical, all cut outs in gypsum board walls for electrical co	Marek Bros - Drywall	Division 09 Finishes	Pr
<input type="checkbox"/>	DW019 - Paint columns, full height, all four sides.	Marek Bros - Drywall	Division 09 Finishes	Pr

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# Current BIM 360 Field Process

- Architect, Owner, and Contractor collaboration
- More effective use of architectural floor plans & reflective ceiling plans for “pinning” of deficiencies
- Use of column lines instead of room numbers for locations
- Removed use of Issue Templates

# Current Location Format

AUTODESK® BIM 360™ FIELD Project Delta - SW3 > Issues > AREA @ A-BAR [GL E-F] Mike Digman 297

SW3\_-Level\_3.pj

28 items  appears on report

New Issue  Add New Issue  Cancel

Details

Issue type: Punch List

\* Issue ID: <New>

\* Description:

Company:

\* Priority: Medium

Status: Open

Due date: 04 Sep 2014

Location: INTERIOR>LEVEL 03>"A" BAR>AREA @ A-BAR [GL E-F]

Author Reference Number:

Bid Package:

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# Current Location Format

# Jobsite Condition - Curtainwall



# Confusion Between Interior & Exterior Items

AUTODESK® BIM 360™ FIELD Project Delta - SW2 > Issues > AREA @ A-BAR [GL 07-08] Saved at 09:09:06 GMT-0500 (Central Daylight Time)

1 of 21 checked

Edit Issue MB-00137

Details

Issue type: Punch List

\* Issue ID: MB-00137

\* Description: Repair Stone at base of curtain wall panel

Company: Oldcastle Building Envelope - Curtainwall

\* Priority: Medium

Status: Closed

Due date: 27 Dec 2013

Location: INTERIOR>LEVEL 03>"A" BAR>AREA @ A-BAR [GL 07-08]

Location detail: Second grille west of column G-7

Author Reference Number:

Bid Package:

Item Classification:

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[Gibane](#)

# Initial Exterior Plans

AUTODESK® BIM 360™ FIELD Project Delta - NW3 Issues East Elevation 104 items 1 217 Mike Digman

**New Issue**  Add New Issue  Cancel

Details

Issue type: Punch List

\* Issue ID: <New>

\* Description:

Root cause:

Company:

\* Priority: Medium

Status: Open

Due date: 21 Aug 2014

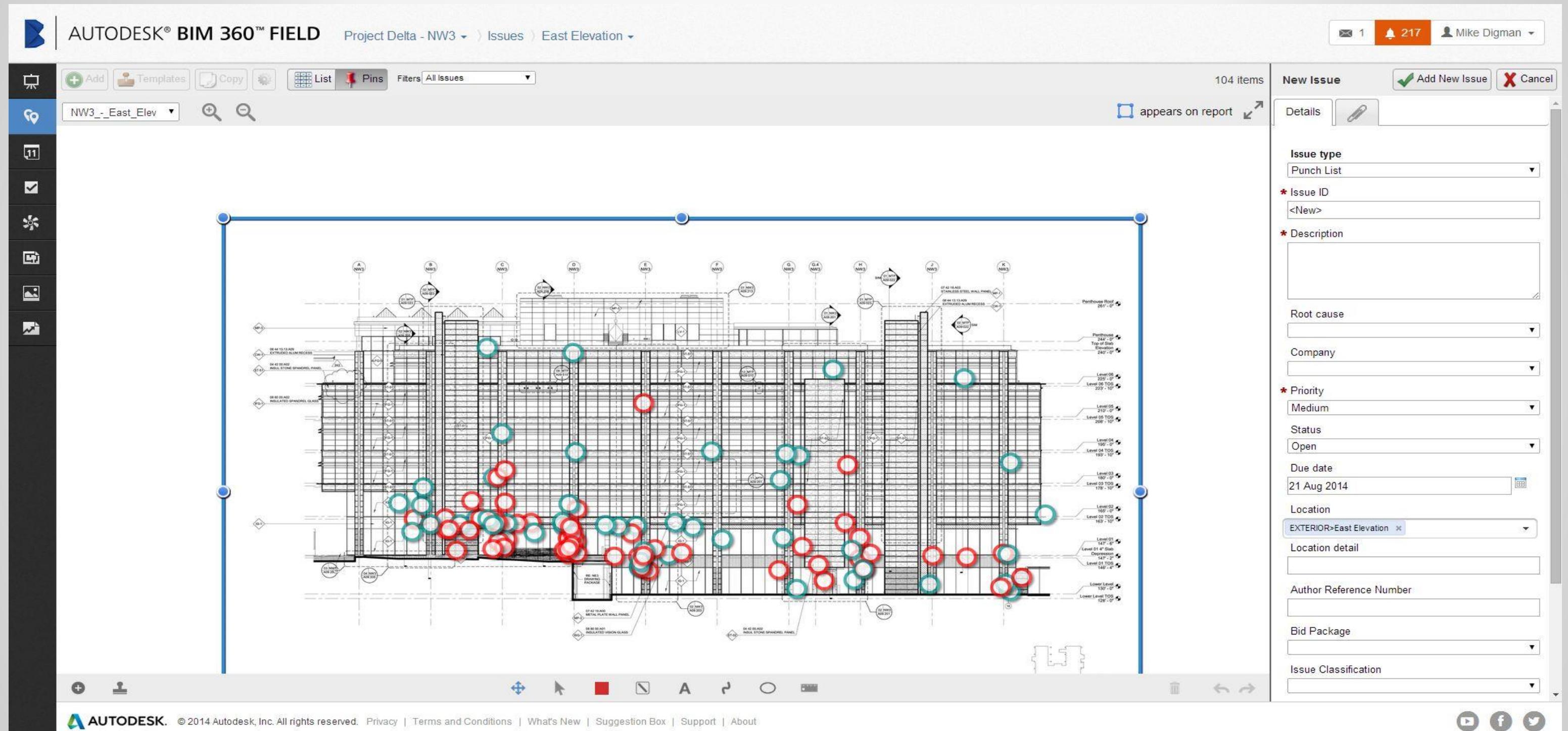
Location: EXTERIOR>East Elevation

Location detail:

Author Reference Number:

Bid Package:

Issue Classification:



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# Current Exterior Plans

AUTODESK® BIM 360™ FIELD Project Delta - SW2 > Issues > AREA @ EXTERIOR [GL 06-07]

1 235 Mike Digman

8 items

New Issue  Add New Issue  Cancel

Details

Issue type Punch List

\* Issue ID <New>

\* Description

Company

\* Priority Medium

Status Open

Due date 21 Aug 2014

Location EXTERIOR>NORTH ELEVATION (NORTH BAR)>AREA @ EXTERIOR [GL 06-07]

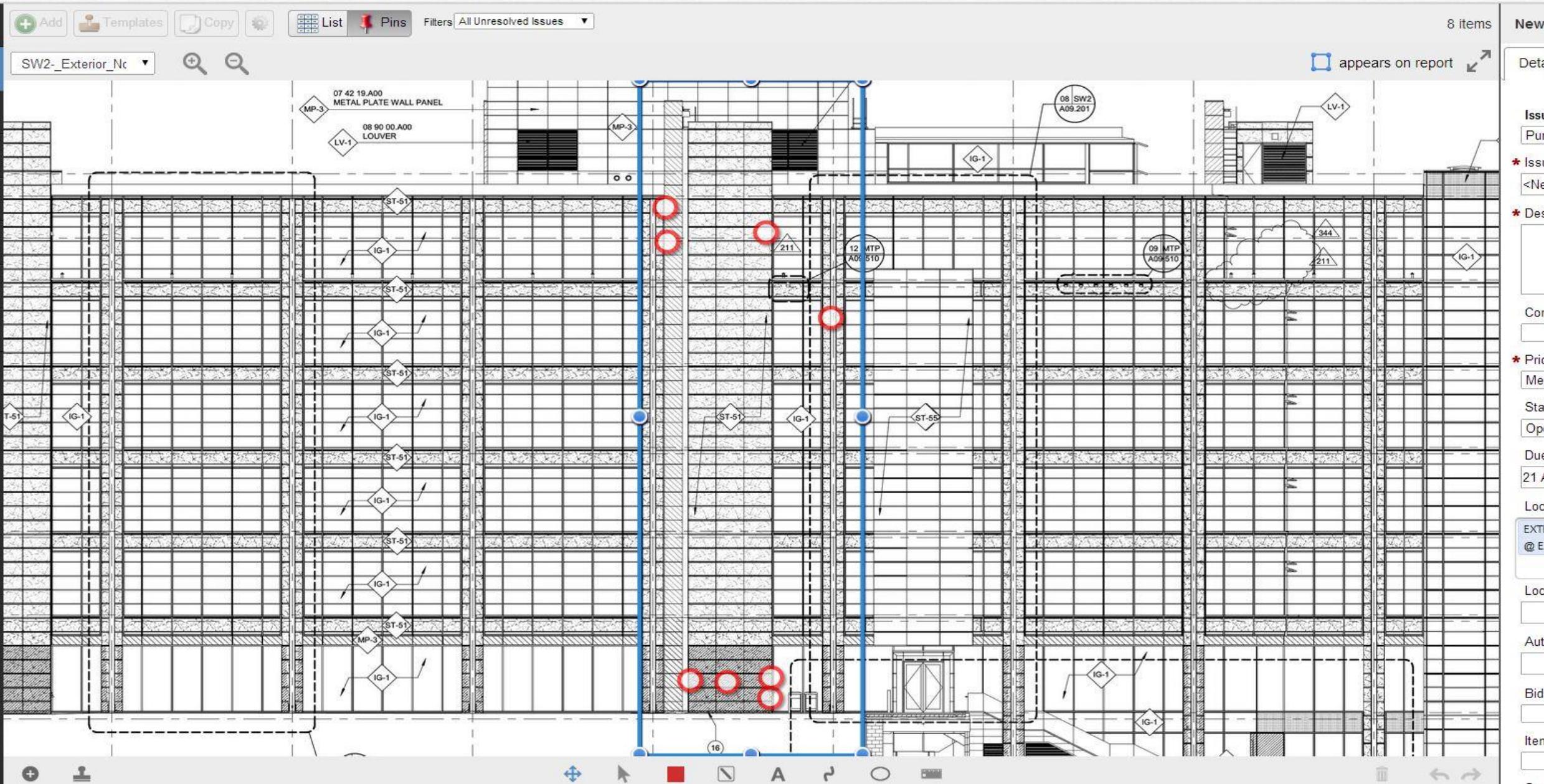
Location detail

Author Reference Number

Bid Package

Item Classification

Specification



The screenshot shows a detailed architectural drawing of a building's exterior wall section. The drawing includes various components such as 'METAL PLATE WALL PANEL', 'LOUVER', and 'IG-1' (Inspection Gaps). A blue line, representing an inspection route, is drawn through the wall, with several red circles highlighting specific points of interest along this route. The drawing is overlaid with a grid and shows different levels and sections of the building's exterior. The top right corner of the interface shows a 'New Issue' dialog box, indicating that 8 items have been found. The bottom of the interface features a toolbar with various icons for navigation and editing.

# Additional Project Specific Lessons Learned

- Accurate descriptions / photos & correct trade contractor assignments
- History Tab helps track items with multiple trades
- Consistent champion approach

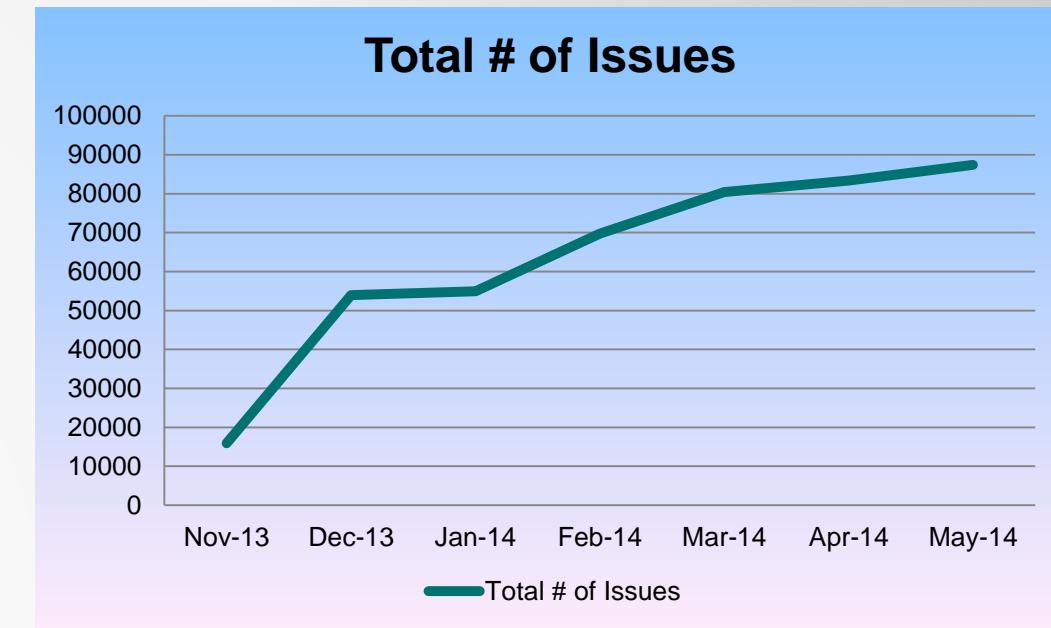
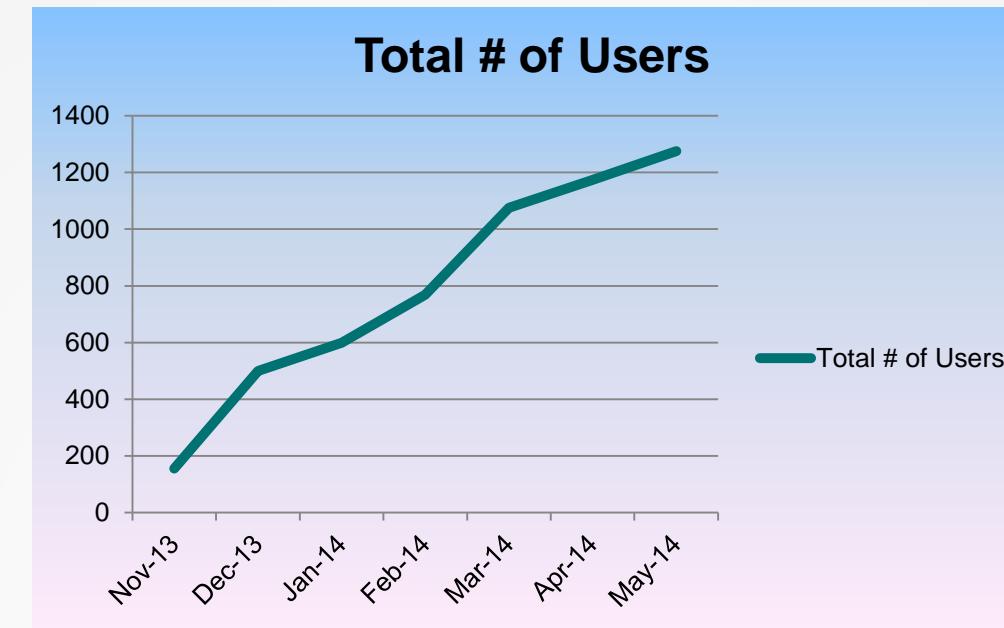
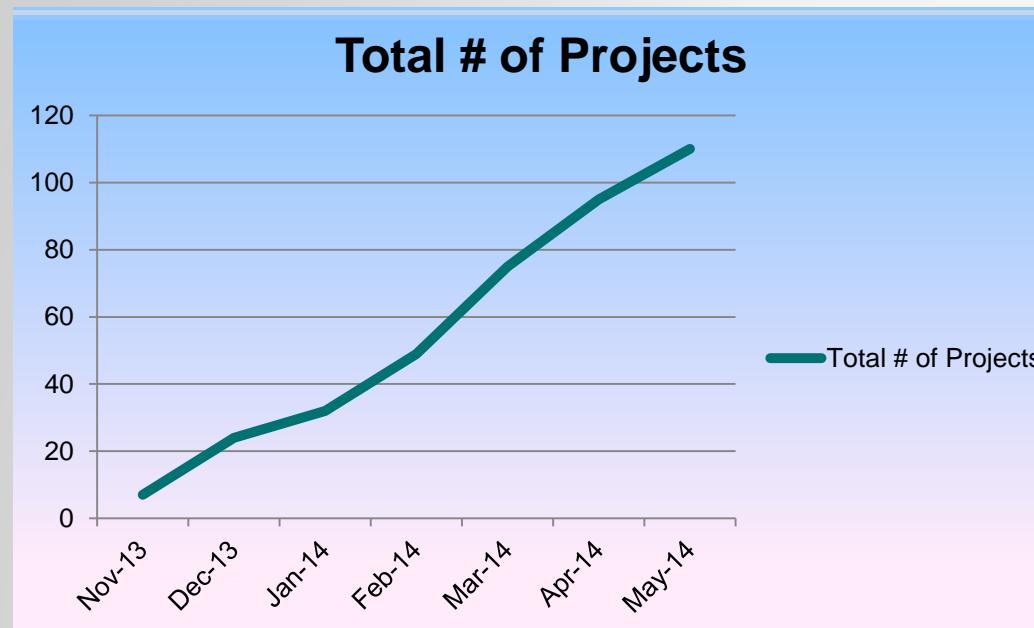
A panoramic aerial photograph of a city skyline, likely Houston, Texas. The foreground shows a bridge spanning a river, with a highway and greenery in the immediate vicinity. The background features a dense cluster of skyscrapers and buildings under a clear blue sky.

# Company-wide Implementation

# Why is Quality Tracking Important?

- U.S. Insurance Industry pays more than \$5 Billion annually to settle construction defect claims
  - This is approximately .5% of the value of the U.S construction market
- Nearly 6.5 Million people work at approximately 252,000 construction sites and it is estimated that 24,800 injuries occur per year due to falls from stairs and ladders
- Total cost of work related injuries in 2011 was \$188.9 Billion.
  - \$86.8 billion was from productivity losses
  - \$52.3 billion was from medical costs
  - \$34.2 billion was administrative expenses

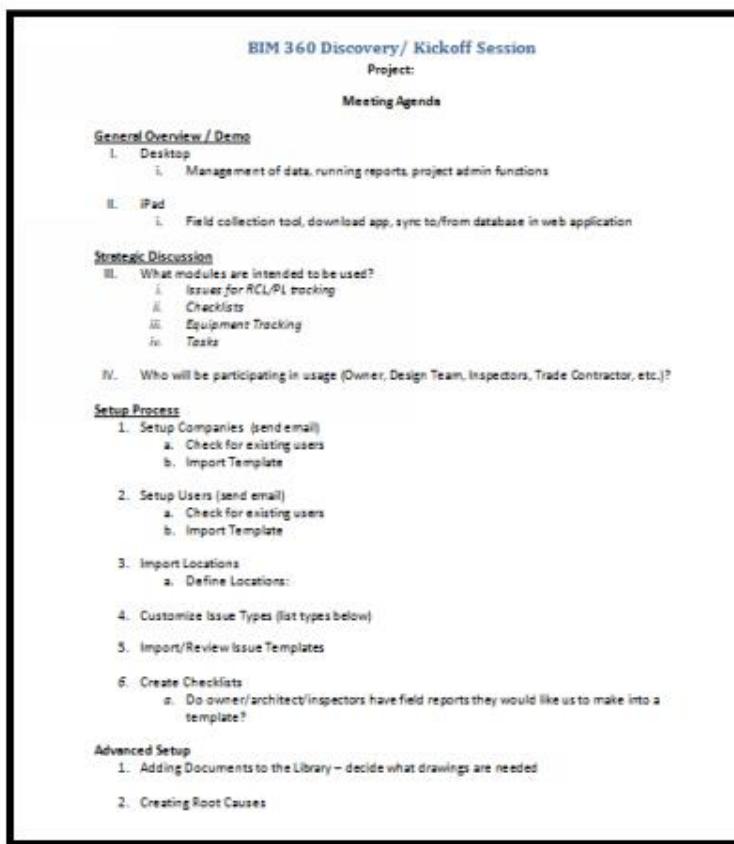
# Company-wide Metrics



- Project sizes ranged from \$100K – \$3 Billion

# How Did We Roll Out So Quickly?

- Business Consultants were trained in less than a week
- Standardized 1 project to use as our template project
- Rolled it out immediately on jobs that needed it
- Created a Kick-Off Agenda to follow on all jobs



**Issue Type Preview**

**Root cause categories**

**Issue Properties**

**Checklists**

# How Did We Get So Many Jobs on Board?

## ■ Advertise/Promote

- Upper Management
- Monthly Quality Meetings
- Peer Groups
- Presentations to Clients
- Company Wide Webinars and Intranet

## ■ Champion Concept

## ■ Created Job Aids

**BIM 360 Field: Getting Started**

**BIM 360 Field** is the tool you'll use to manage quality on the jobsite. Using your iPad, you'll rapidly generate corrective items – called **Issues** in BIM 360 – for the primary quality processes:

- QIC and quality assurance inspections
- The Rolling Completion List (RCL)
- The Punch List
- MEP equipment/systems installation

**STEP 1: Get the App...**

From your iPad:

- Open the App Store
- Search BIM 360 Field
- Install the app

**STEP 2: Log In...**

1. Open the application. To log in, tap the face icon [user icon] on the bottom right.
2. You'll need to enter your Autodesk ID and password and click Sign In. (When your Business Consultant sets you up with BIM 360 access, you will receive an email with your username and password.)
3. It will automatically load you into a project; tap [user icon] to see what project you're in. If you need to change the project, click the bar and select from the available projects listed.

**STEP 3: Sync...**

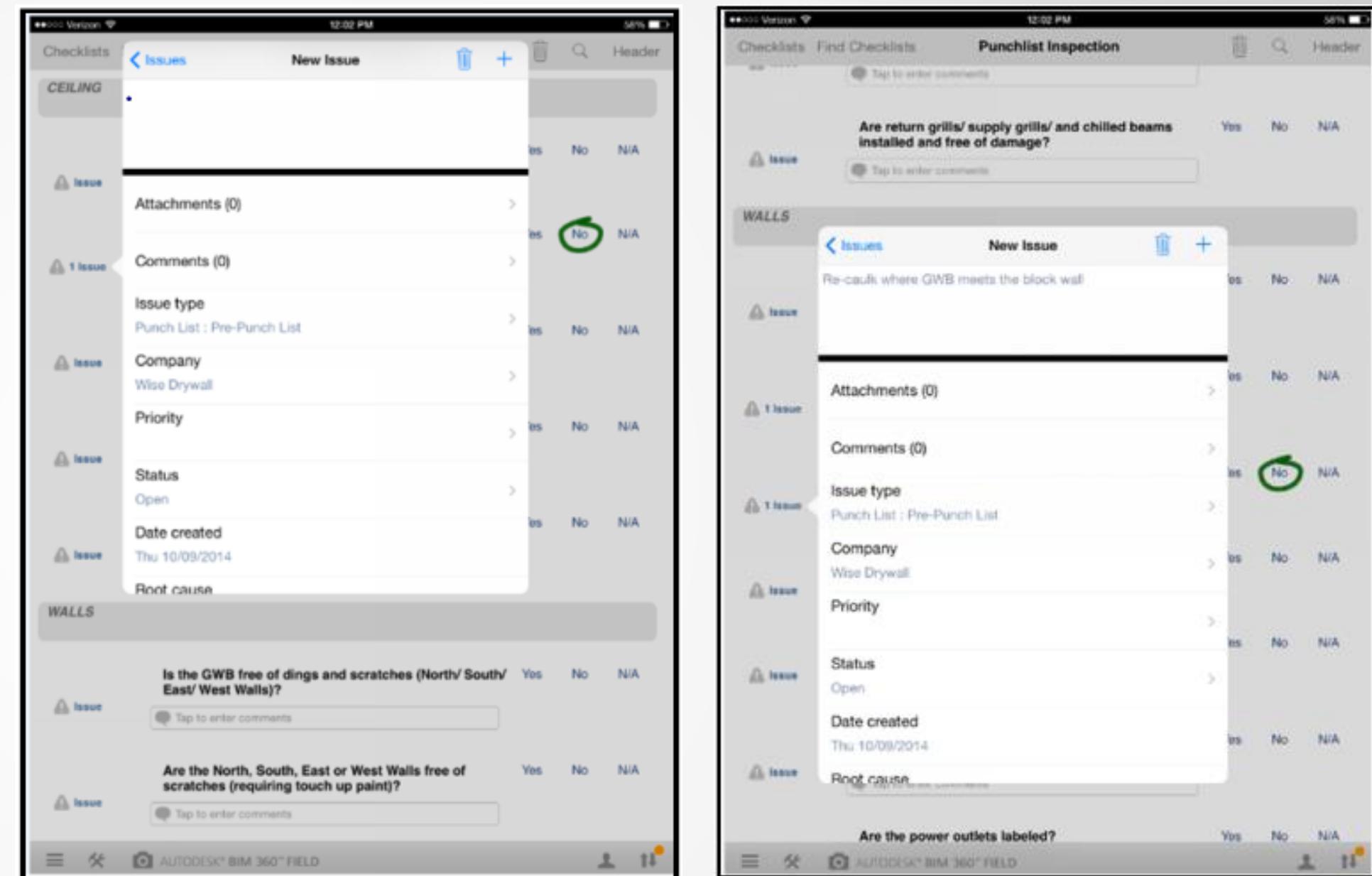
1. Tap the sync icon [sync icon] to get started.
2. The application tells you what it will sync:
  - Uploads are items you've created on your iPad but haven't uploaded to the project
  - Downloads are new items available
3. If you're happy with what will sync, tap the Sync button [Sync button].
4. To change the Sync settings (to speed up the syncing process), click the upload or download area. There, you can customize what syncs for library, issues, checklists, equipment and tasks. You can also choose whether or not to download attachments (photos, sketches, etc.). When you're done, tap Sync [Sync button].
5. The status of the Sync will appear until it's complete. Wait to make sure the sync completes.
6. Sync every day - first thing in the morning and/or last thing in the afternoon.

**Sync speed is based on what is syncing.**

- Only sync all Library folders the first time you sync.
- You can create custom filter settings for each module to pinpoint what is synced; ask your Business Consultant to show you how.

# Lessons Learned

- Punchlist Checklists:
  - Customize issue description
  - Assign trades ahead of time
- Voice Recognition
- Kick-off Meeting Agenda
- Emailing Issues from phone



# RECAP



# Overall Lessons Learned / Best Practices

- Locations & Templates – start small
- Multiple drawings per location (Floor Plan & RCP)
- Power of the History Tab
- Use of Punchlist checklists
- Speak to create items in iPad
- Jobsite Champions

## Benefits to Gilbane!

- Allows our teams to be more hands-on in the field
- Eliminate Administrative functions (less company turnover)
- Team Consistency
- Improved closeout time
- Can focus more on the client
- Builds team relationship – Including Architect & Owner
- Makes teams more efficient – SAVES TIME & MONEY!
- WHAT'S NEXT FOR US?

# Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2014 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time





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