



Gilbane 150

Gilbane Rising Contractors Program

Session Seven

Leveraging Technology:
Driving Value in the
Construction Process

5/17/2022

Ground Rules & Expectations for this Zoom Session



This one-hour session **will be recorded**.



Ask questions in the chat or verbally in breakout sessions.



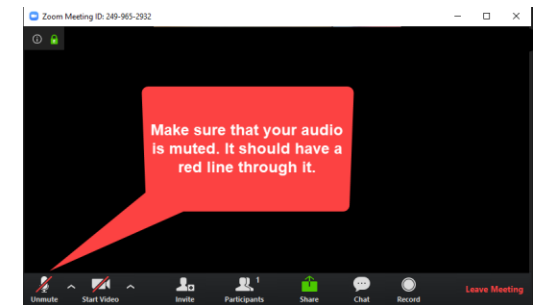
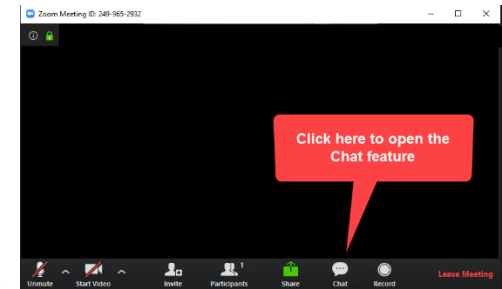
Please take note of what you enjoyed about this session or what you think can be improved. There will be a survey at the end.



You can **expand/contract** the viewing windows by sliding the handle between panels.



Please **stay on mute** during initial presentation.



Welcome!

Just a couple of housekeeping items before we get started.

Your Zoom Name:

Please “rename” yourself using the following convention:

Your State_Your Name_Your Company

For example: NY_John Rooney_Gilbane

Click the participants tab, then “more” next to your name. Click Rename.

Regions:

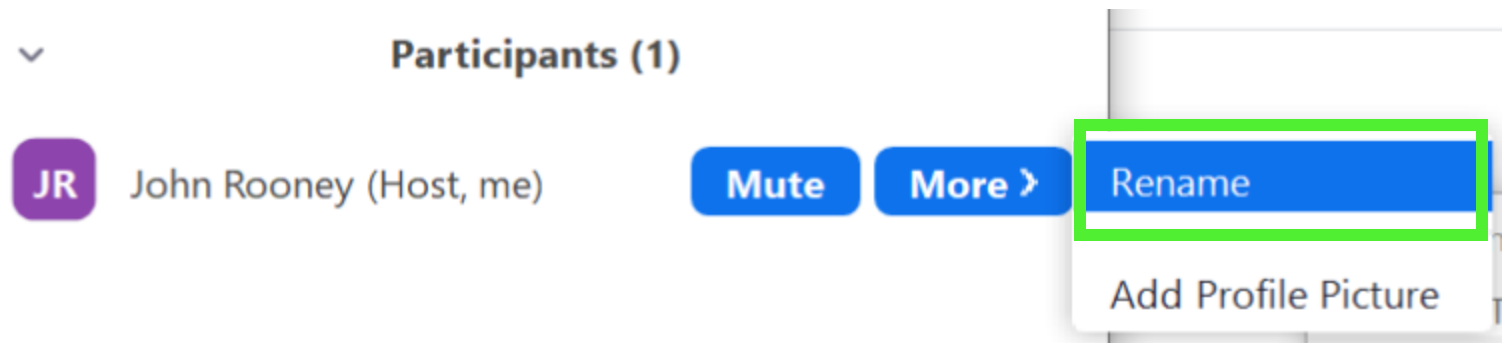
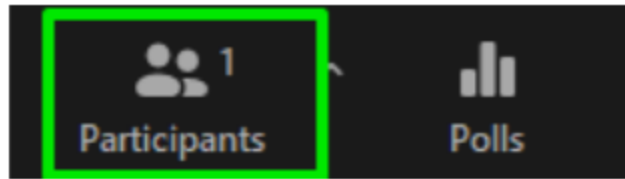
NY (New York)

MARO (Mid-Atlantic/DC)

SE (Southeast/Florida)

OH (Cleveland/Columbus)

MW (Chicago and Milwaukee)





Gilbane Cares

Because we're all one family.



Introductions



Chad Knutson
Director, VDC
CKnutson@GilbaneCo.com
414-287-2650



Rawle Sawh
Director, VDC
RSawh@GilbaneCo.com
212-312-1627

Primer

- > Why there is value to Rising Contractors to learn about technologies?
- > How prevalent are these technologies in the market?
- > How can contractors differentiate between “nice to have” technologies and “value adds”?

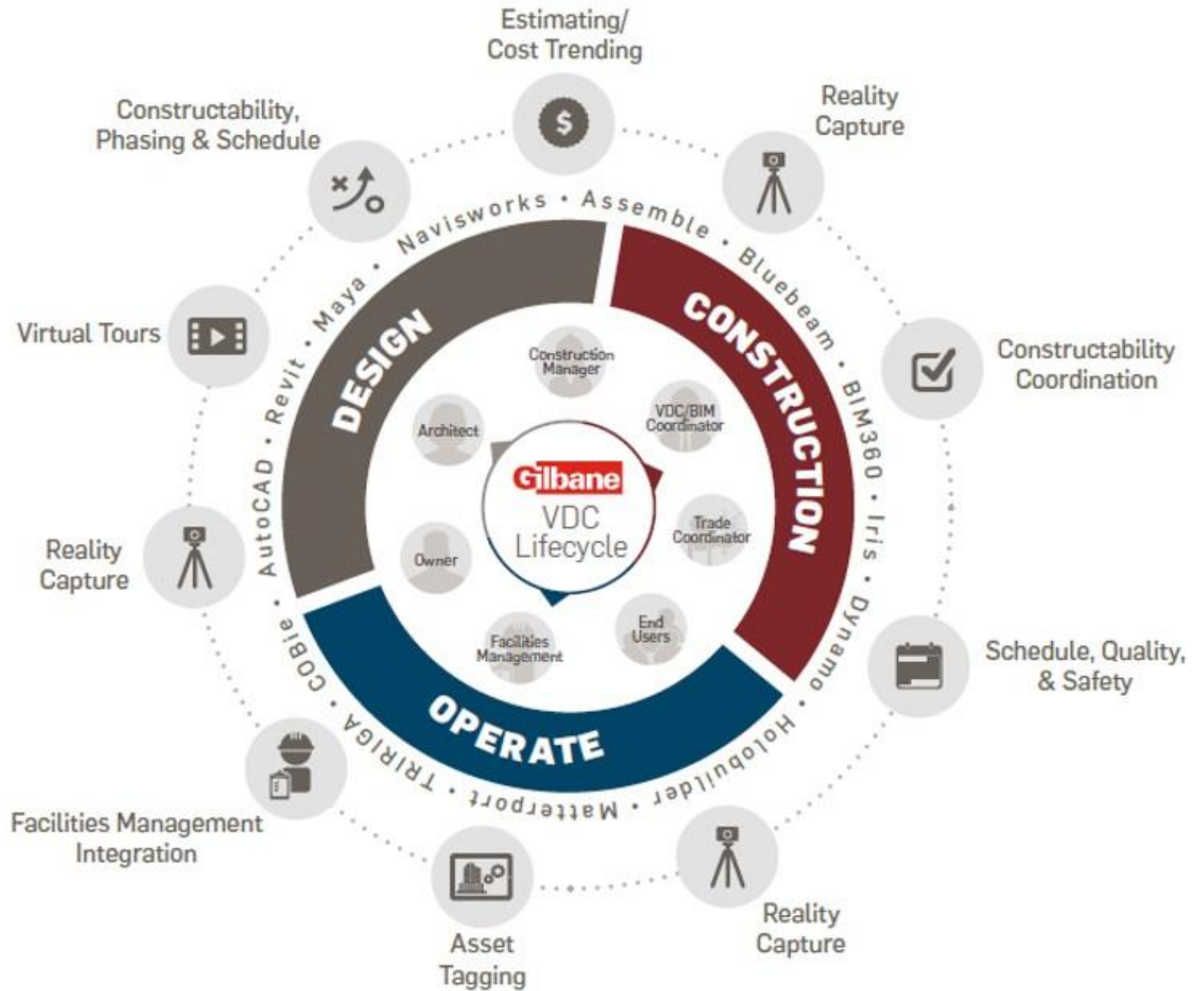
Overview of Topics

- > Evolution of the Project Process - Industry Overview
- > Gilbane’s VDC Approach
- > Overview of Terms, Platforms, and Tools
- > Case Studies
- > Next Steps Recommendations

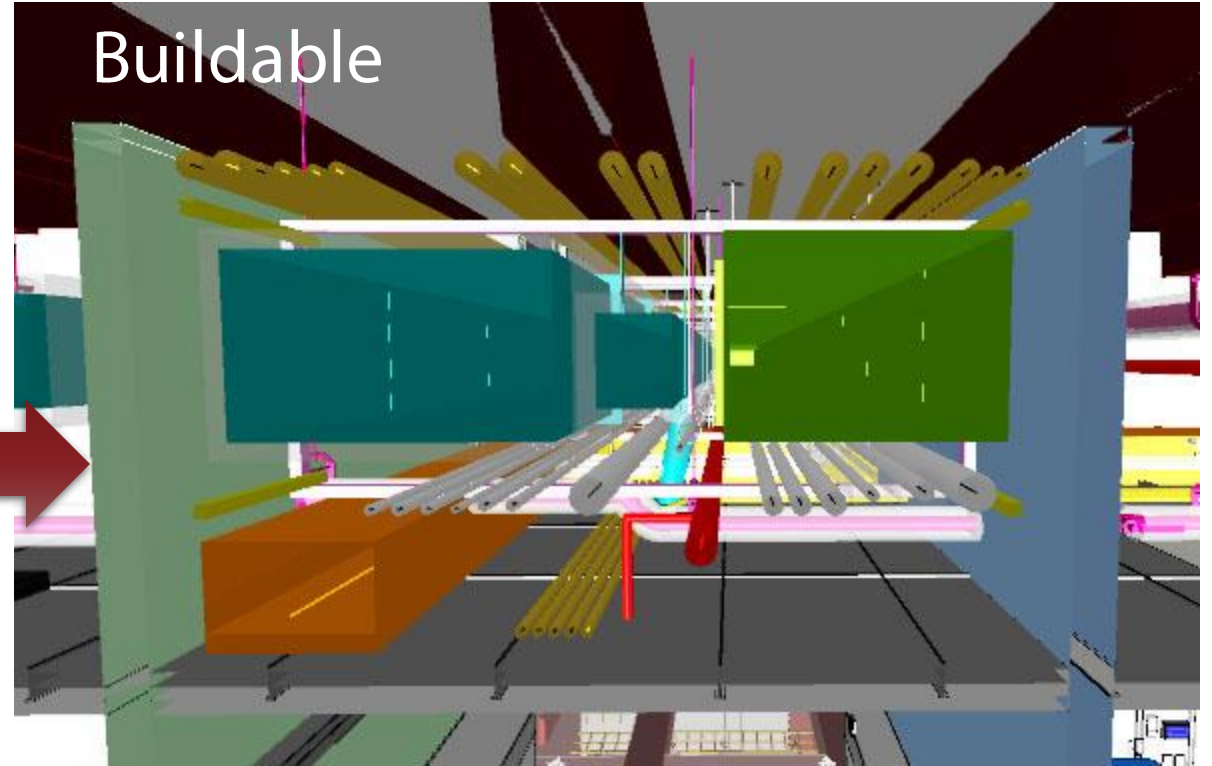
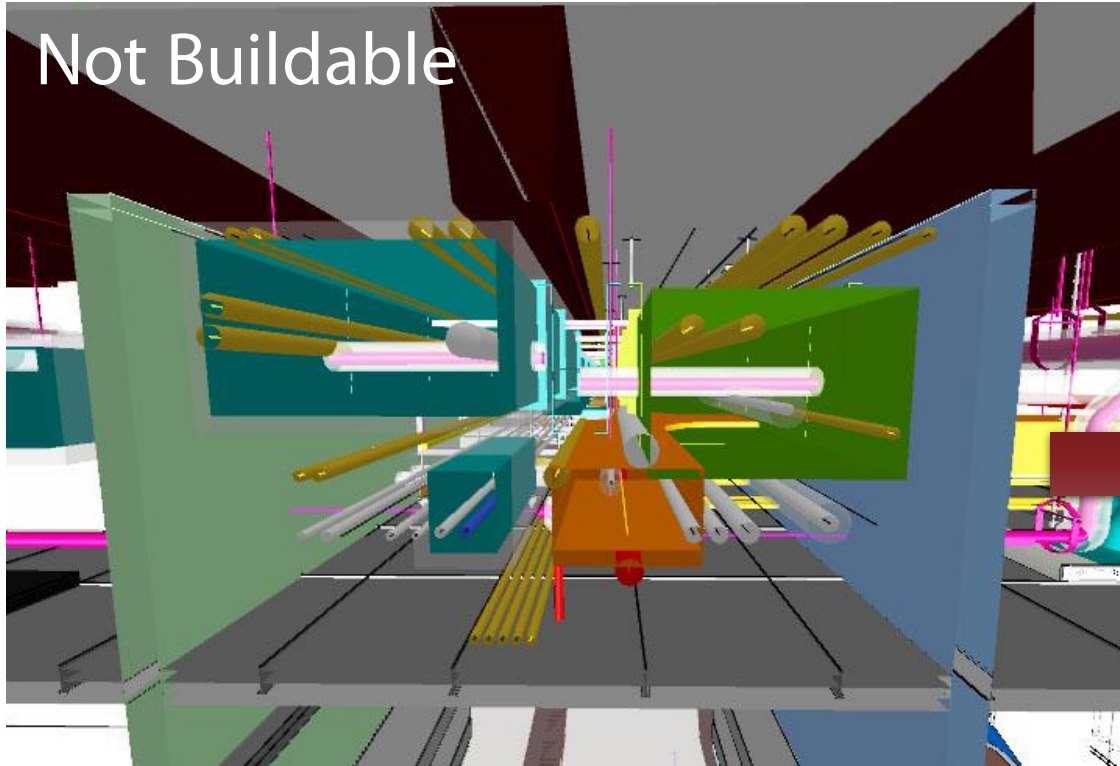
Evolution of the Project Process

Data Lifecycle

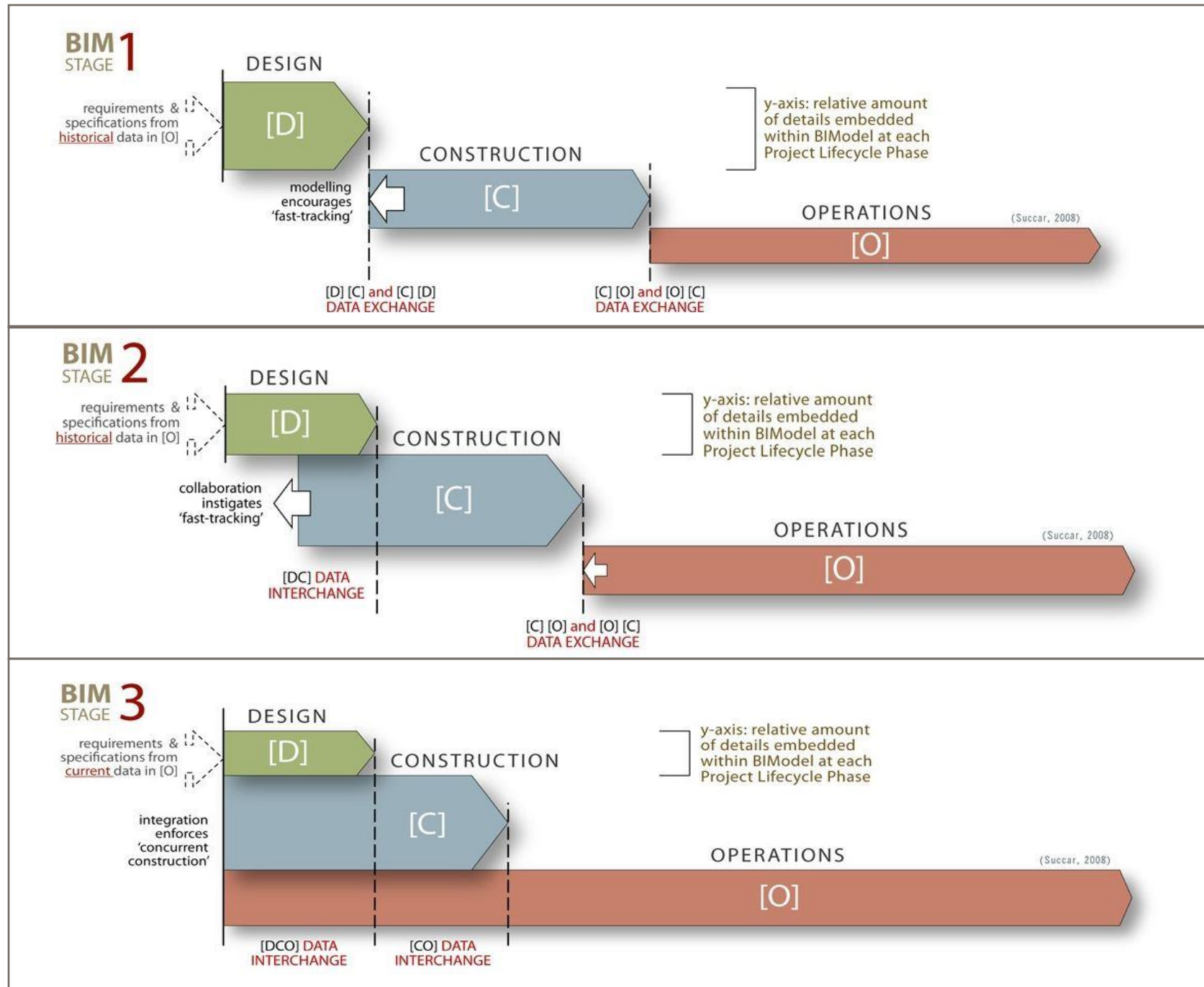
What do we mean when we say "data?"



Design Models vs. Construction Models

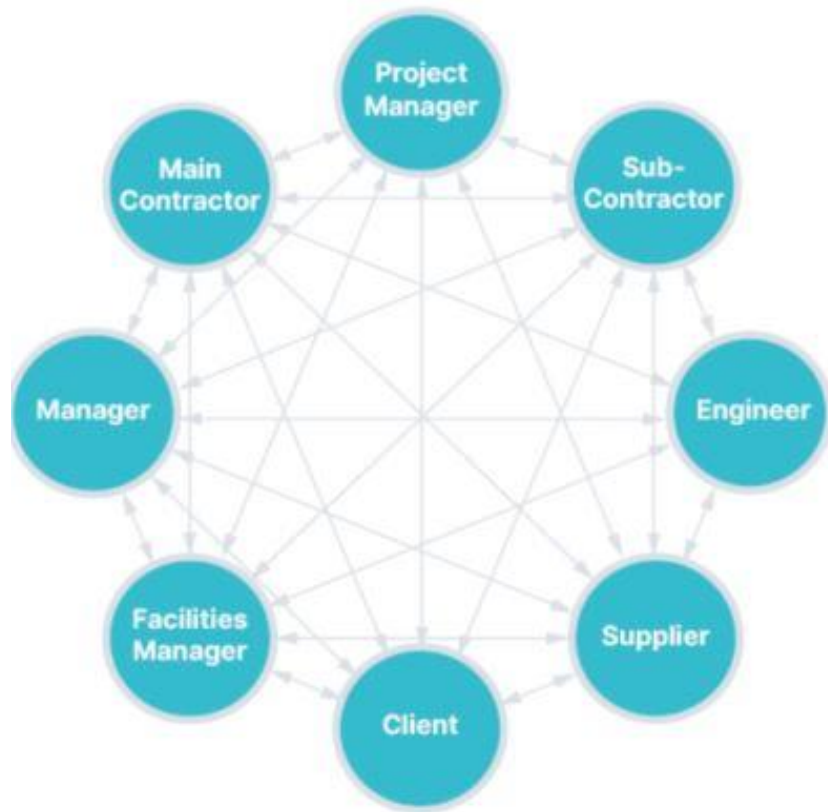


Evolution of Project Data Generation



Common Data Environment

TRADITIONAL INFORMATION SHARING

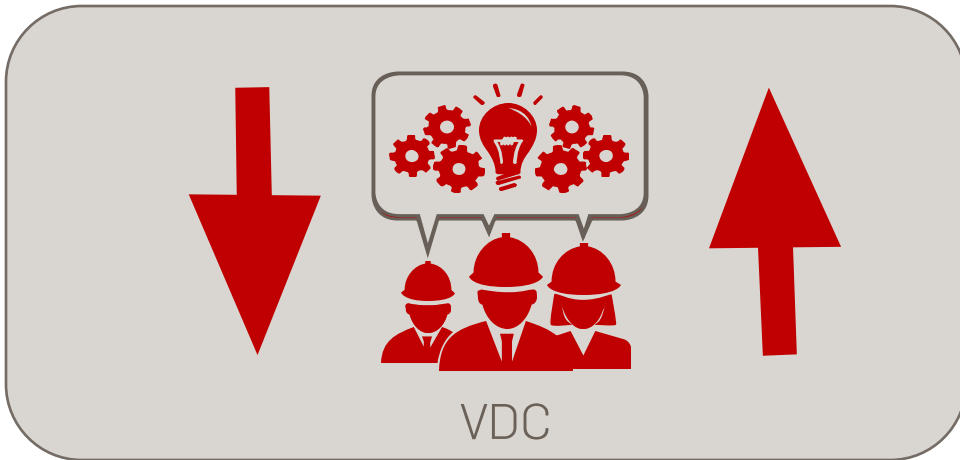


COMMON DATA ENVIRONMENT (CDE)



Industry Snapshot of Technology and Models

Industry-Wide Internal Company Pressure



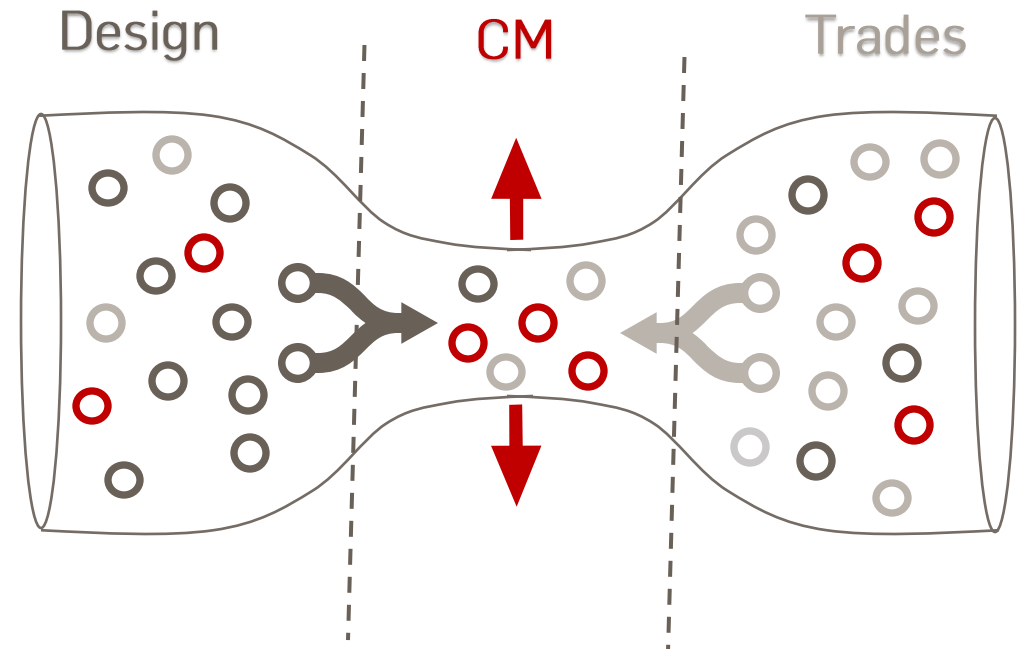
Downward

VDC Staff
R&D Budget
Project Budgets

Upward

ROI
Marketing Material
Project Needs

Communication Via Models

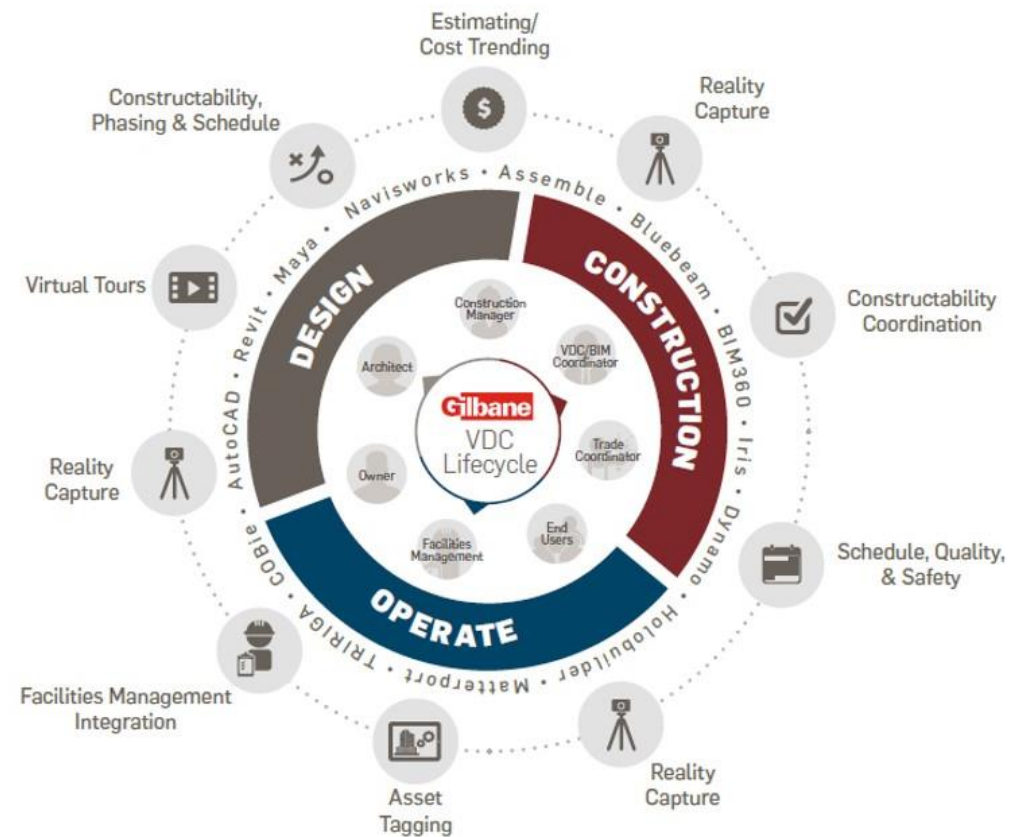


Intro to Gilbane VDC

Gilbane – VDC Overview

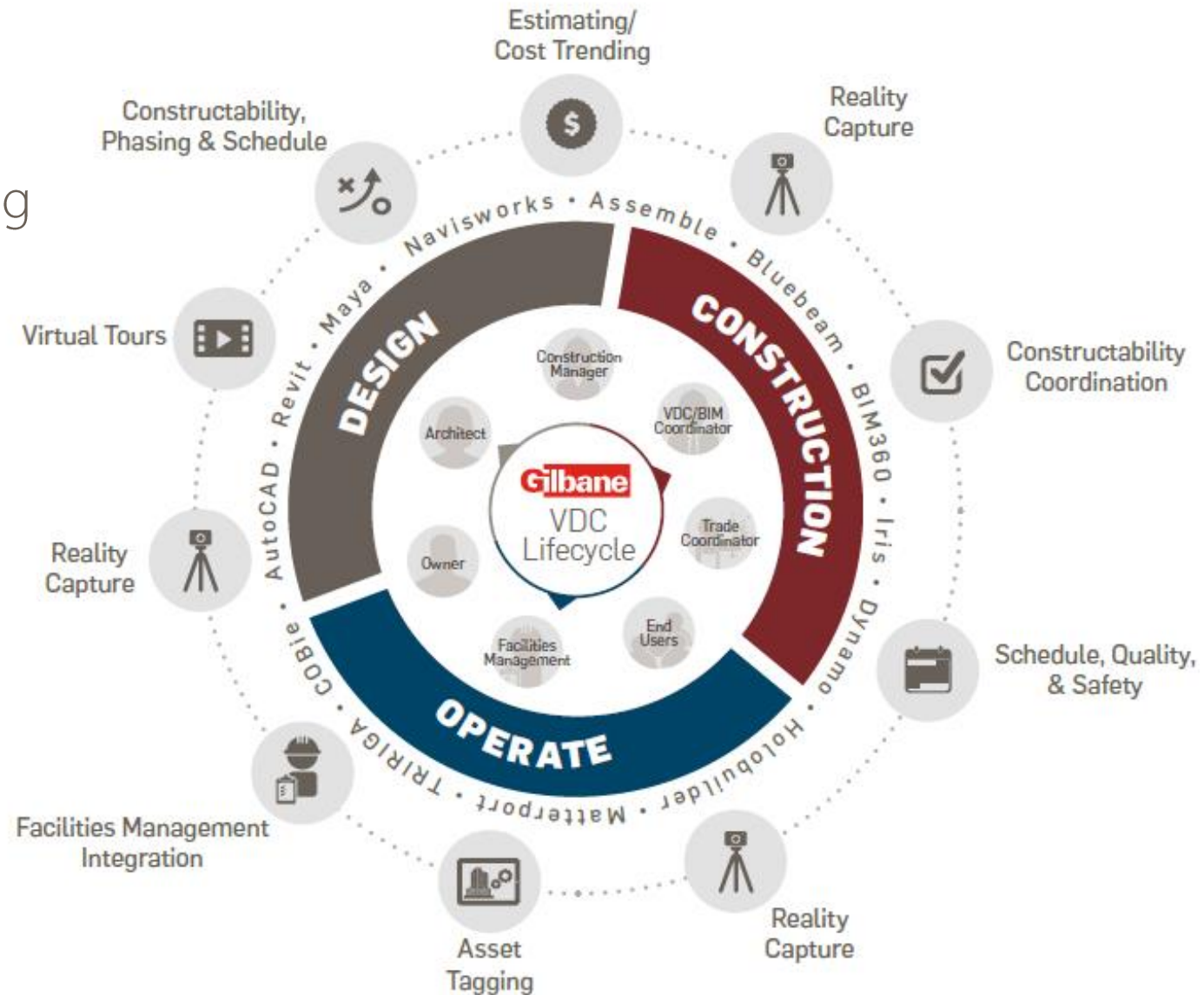
- ✓ VDC = Virtual Design and Construction
- ✓ Divisional Based Technology Groups – Support BD, PreCon, & Ops through a project
- ✓ Focus on BIM, data, and technology tools
- ✓ Bridge to communicate with design, trades, & owners

- ⊘ Just MEP coordination
- ⊘ Fancy technology just for marketing
- ⊘ Siloed group outside the project team



VDC – Total Project Value

- ✓ Communication in Design
- ✓ Add Speed and Efficiency to Estimating
- ✓ Capture Site Data
 - ✓ Communication
 - ✓ Risk Mitigation
- ✓ Coordination
 - ✓ Site / Structure
 - ✓ Envelope
 - ✓ All Systems
- ✓ Owner focused Deliverables



Software and Tools

BIM Literacy: Where can you start?



AutoCAD – Authoring Tool – 2D Modeling Software & Drawing Creator



Revit – Authoring Tool – 3D Modeling Software & Drawing Creator



BIM360 – File Hosting Tool – Cloud Based File Sharing Platform for Streamlining Team Access



Navisworks – Viewer Tool – Coord. manager used for Clash Detection & Compressed File Viewing



Assemble – Estimating Tool – Cloud Based Plug-in extracts data for quantification



Procure – Construction Management Tool – Submittals, RFIs, Drawings, Site Photos, Model Viewer



Trimble – Field Layout Tool – Devices that use GPS & Lasers to translate BIM to Field



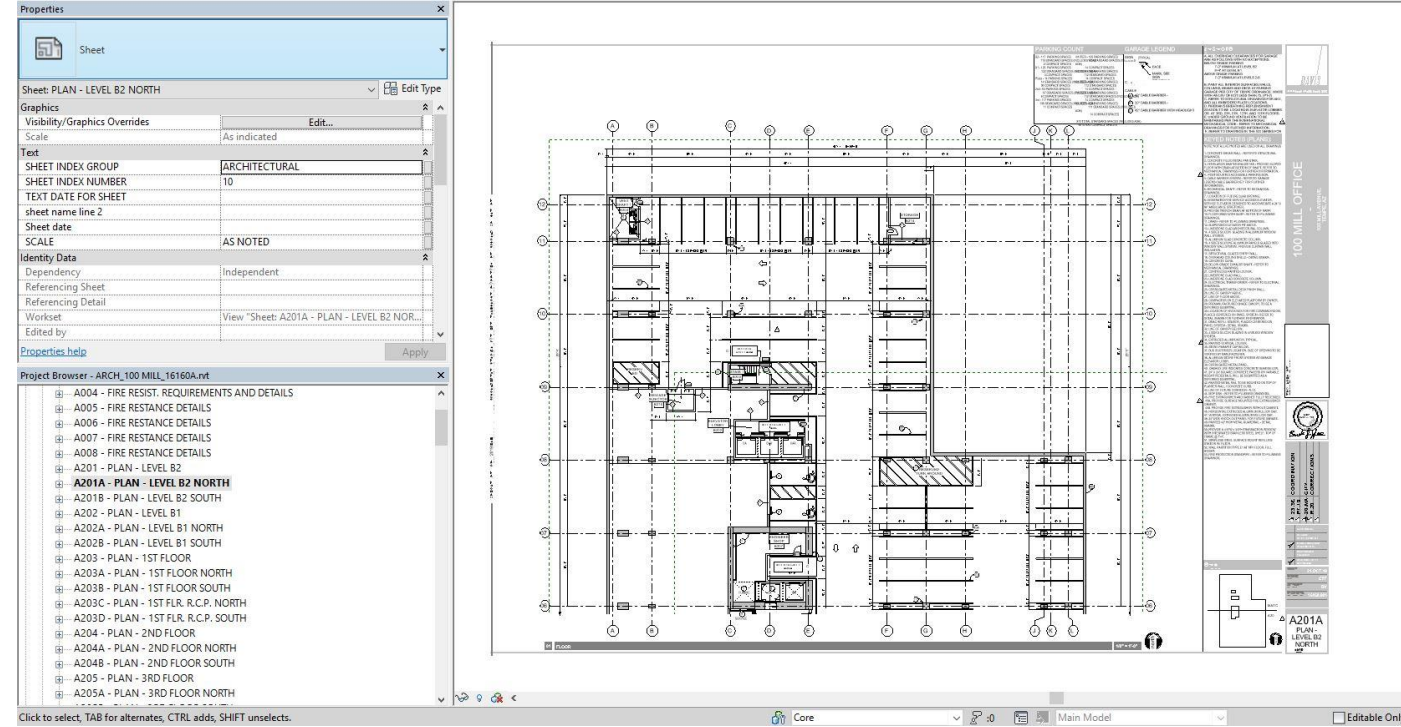
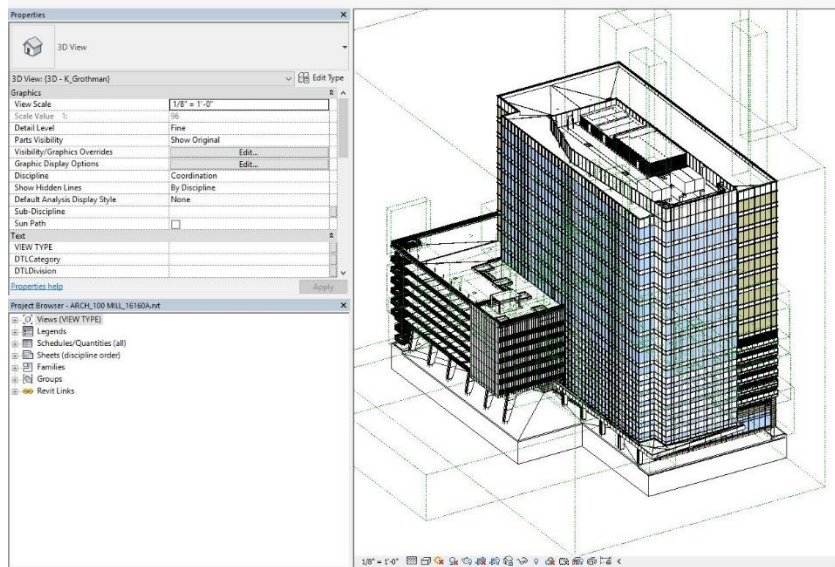
Recap – Reality Capture Tool – Bring better as-built information into BIM



HoloBuilder/StructionSite/OpenSpace – Photo Documentation Tools – Better Organization Options

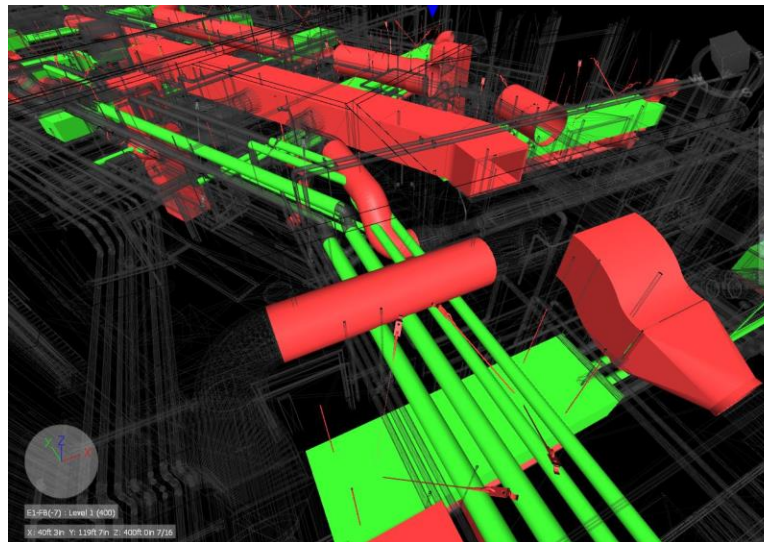
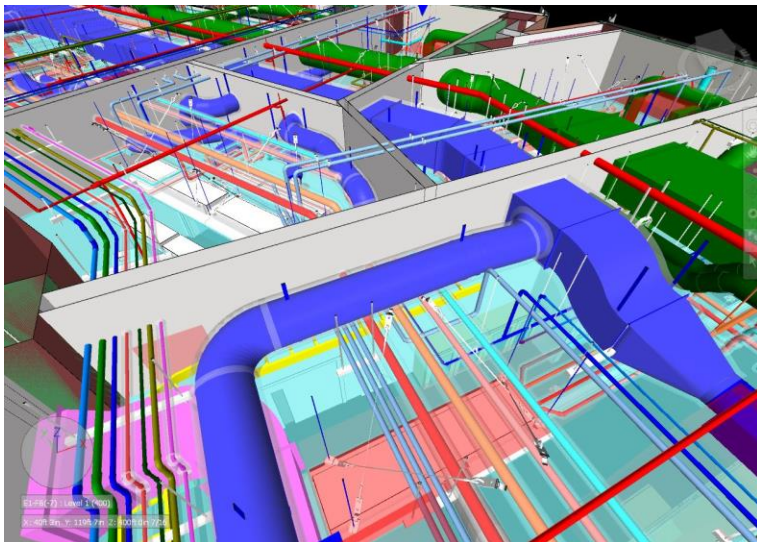
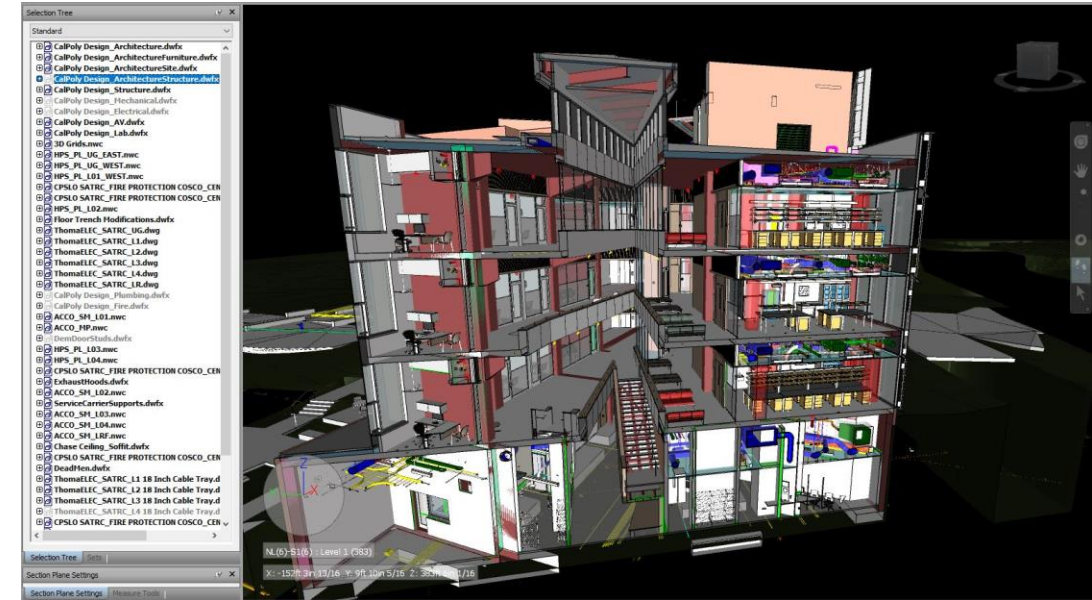
Autodesk Revit

- Primary modeling platform for architects and engineers (should be for the trades too)
- It's where drawings come from
- Integrates moderately well with other BIM file types



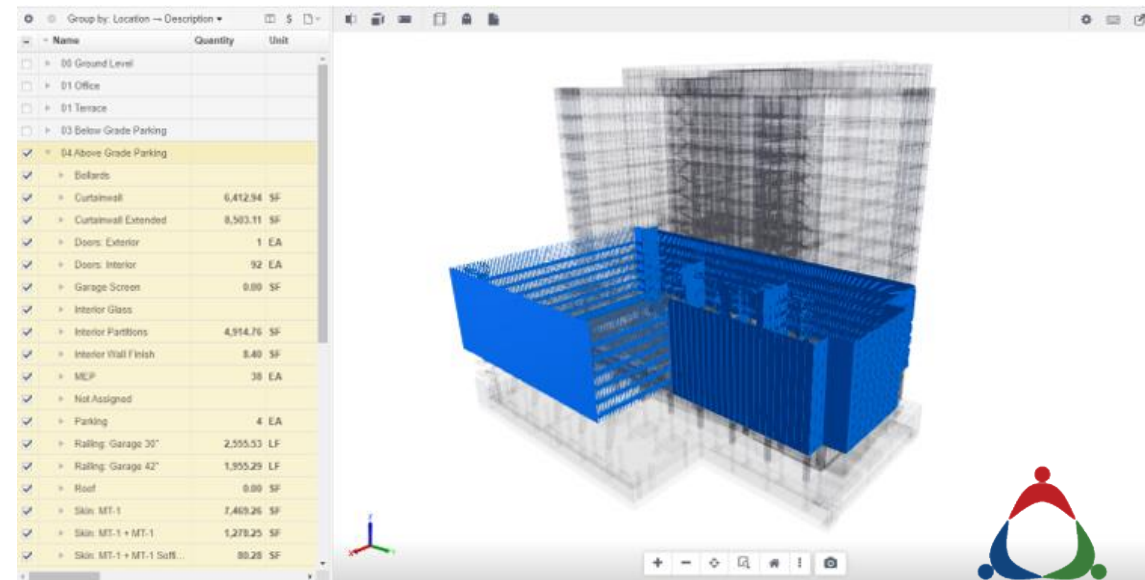
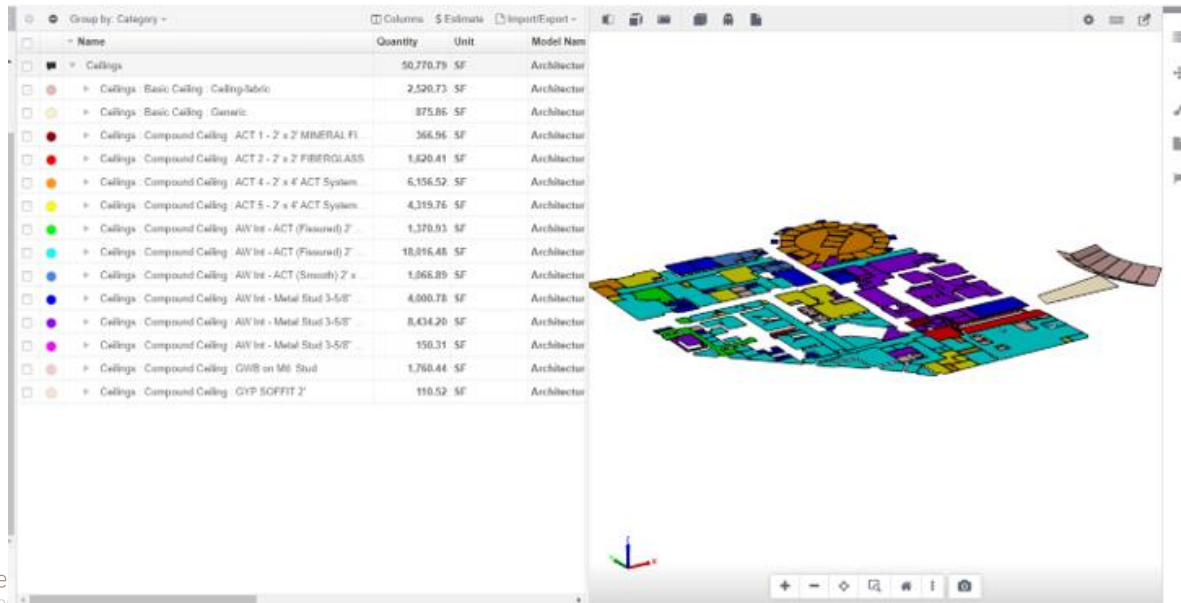
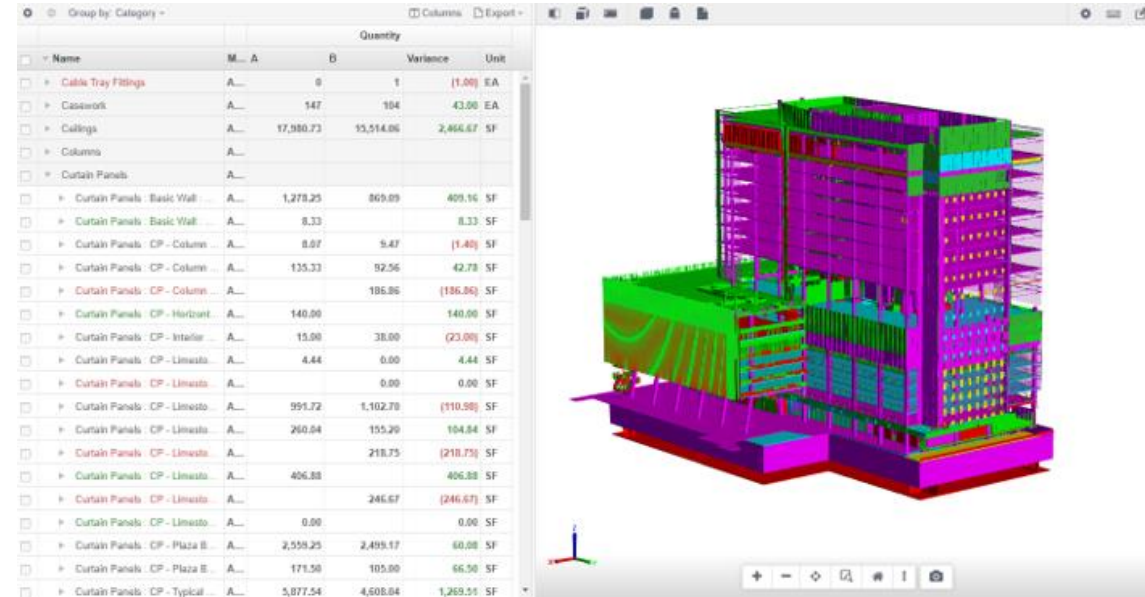
Autodesk Navisworks

- Main clash detection software used by Gilbane
 - Super powerful tool, literally too much to list
- Compatible with a huge number of file types
- Integrates directly with Procore (which is nice)



Autodesk Assemble

- Cloud-based Model Quantity Take Off Tool
- Works best with Revit models, but can handle a few other file types
- Awesome way to visually identify items and scopes
- Typically set up by estimators (VDC can help if needed)



Autodesk BIM360

- Cloud Based model collaboration platform
- Used predominately during design phases of projects
- Can be used to host trade models during Design|Build or Design Assist

The screenshot displays the Autodesk BIM 360 interface for the Gilbane Building Company's GA Tech Campus Center - Phase 2 project. The top navigation bar includes the Autodesk BIM 360 logo and the project name. The main interface is split into two primary sections: Design Collaboration and Document Management.

Design Collaboration: This section shows a 3D model of a building structure. On the left, a 'Content Browser' sidebar lists various Revit files, including 'Boggs_Central.rvt (1)', 'Bunger_Henry_Central.rvt (1)', 'Clough_Reduced.rvt (1)', 'Ferst_Central.rvt (1)', 'Garage_Central.rvt (1)', 'Groseclose Bldg B56- Reduced.rvt (1)', 'IMPORTED SURVEY.rvt (1)', 'Instructional Center', 'ISyE Annex B57-Rev', 'MEP_GT CC Expans', '{3D}', 'Stamps Health Ser', and '3D'. Above the 3D view, statistics show 13 Sets, 0 Sheets, and 13 3D views. A 'Project Model' icon is also visible.

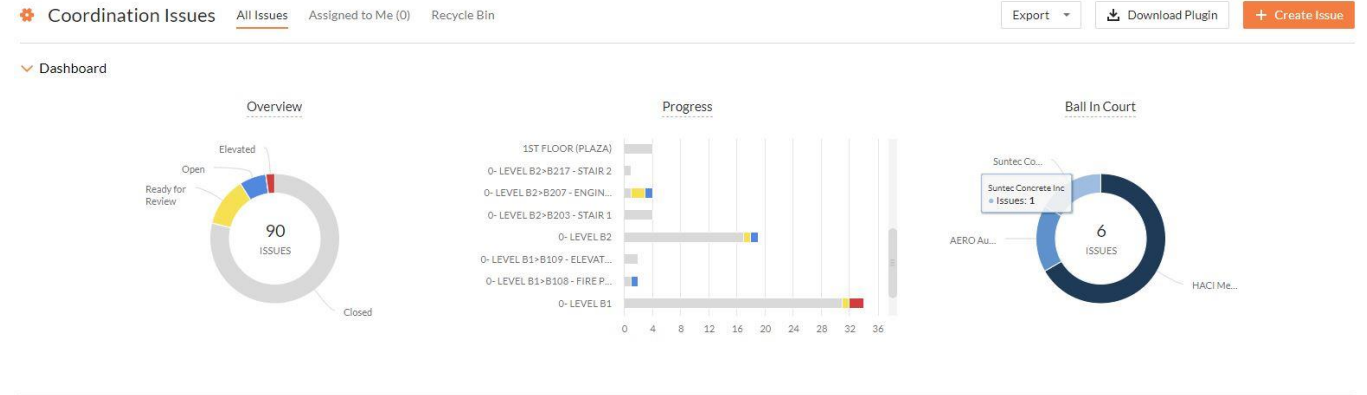
Document Management: This section is titled 'Document Management' and includes tabs for 'FOLDERS', 'REVIEWS', 'TRANSMITTALS', and 'ISSUES'. It features an 'Upload files' button and a search bar. Below these, a table lists documents with columns for Name, Title, Set, Version, and Updated by. The table shows three folders: 'Clash Markups', 'Coordination', and 'Design', all updated by 'Joe Perkins'.

Name	Title	Set	Version	Updated by
Clash Markups	--	--	--	Joe Perkins
Coordination	--	--	--	Joe Perkins
Design	--	--	--	Joe Perkins



Procore

- Core project controls platform (now Gilbane's standard platform)
- Home to documents, specifications, submittals, and much more
- Integration with VDC/BIM through coordination issues and model module
- Seamless communication between 3D coordination team and other team members

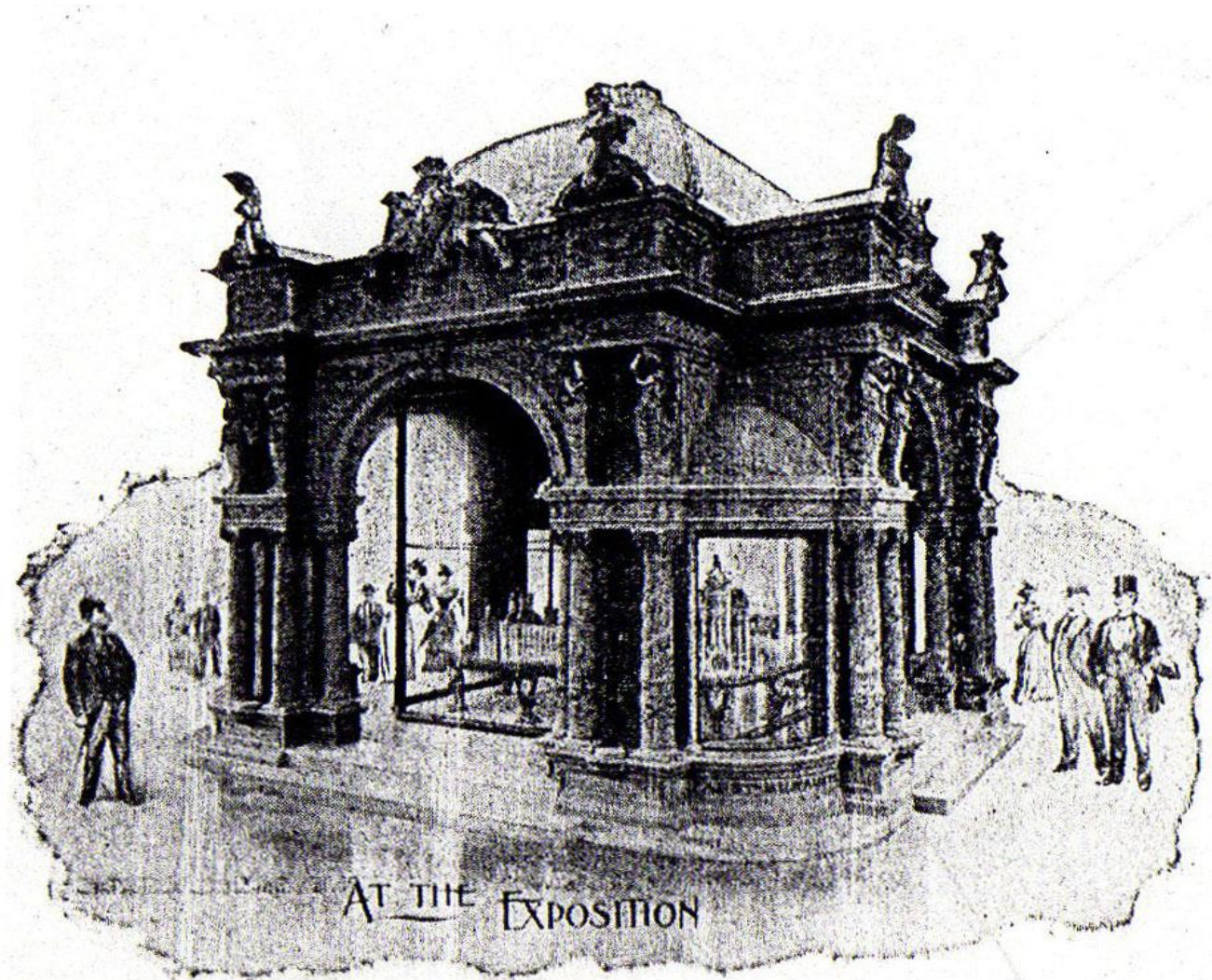


What is Reality Capture?

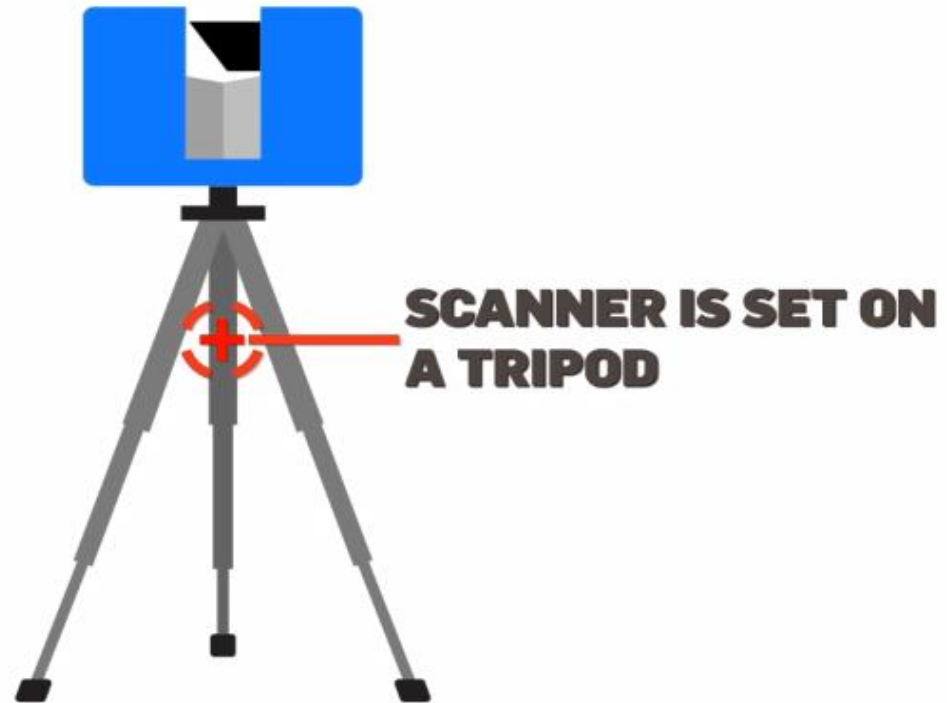


 **PHOTO OF AN EXISTING SPACE**

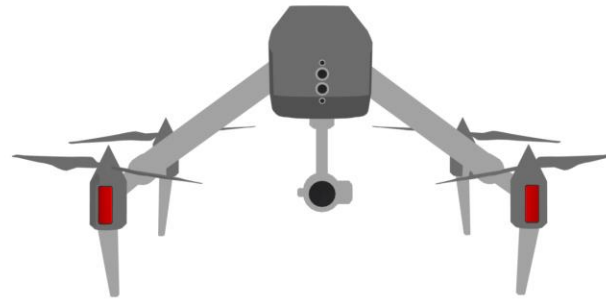
Data Collection



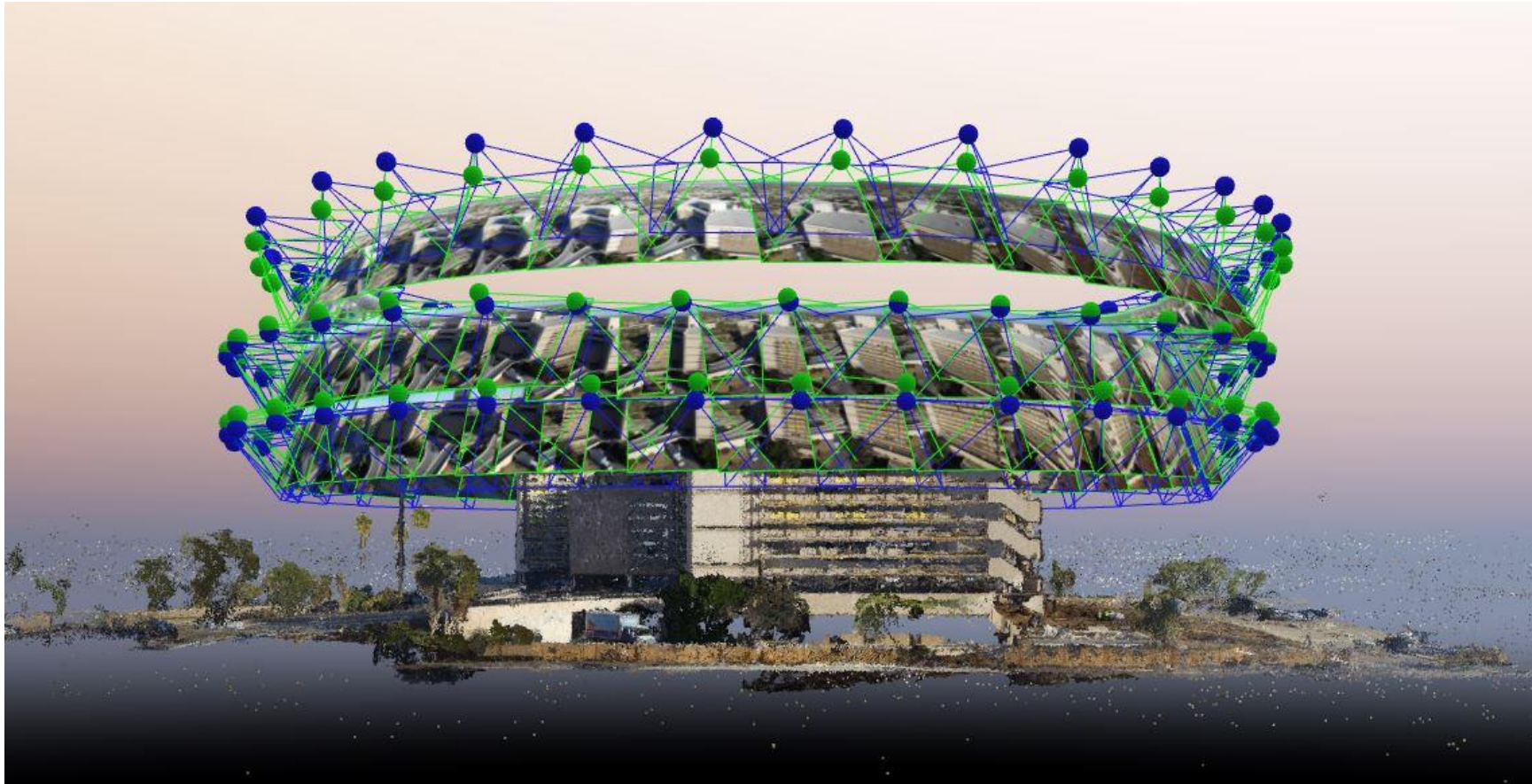
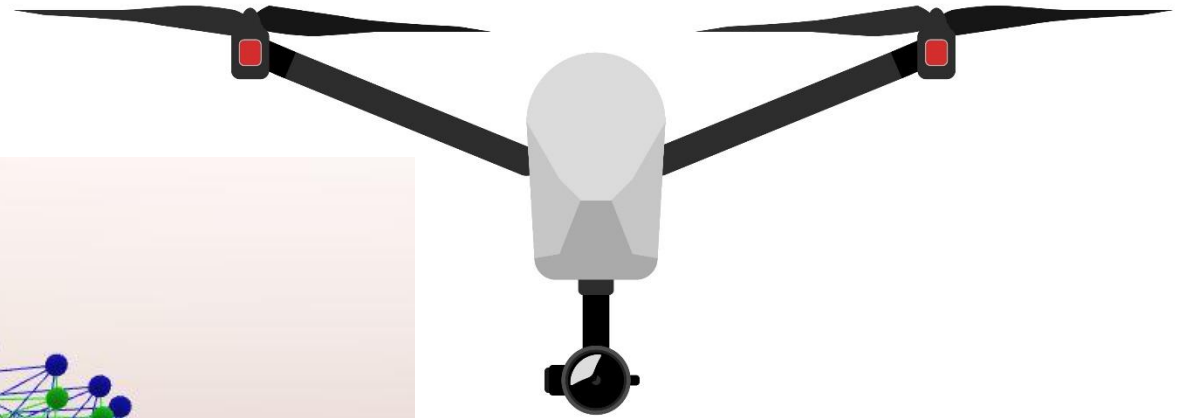
Data Collection



Drones



Drones



360 Photo – Platform



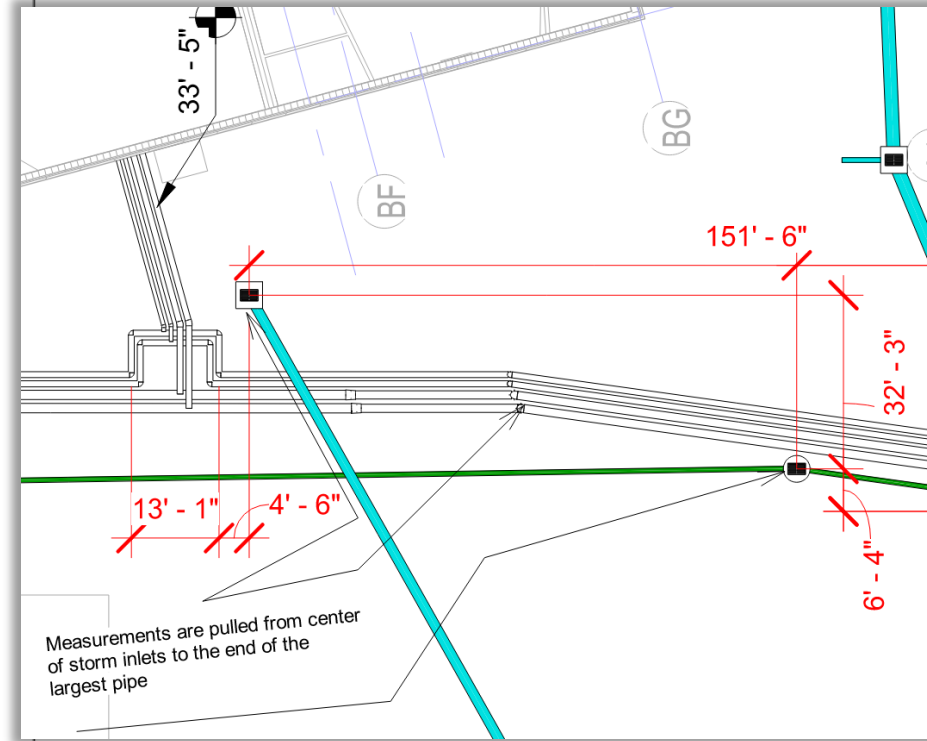
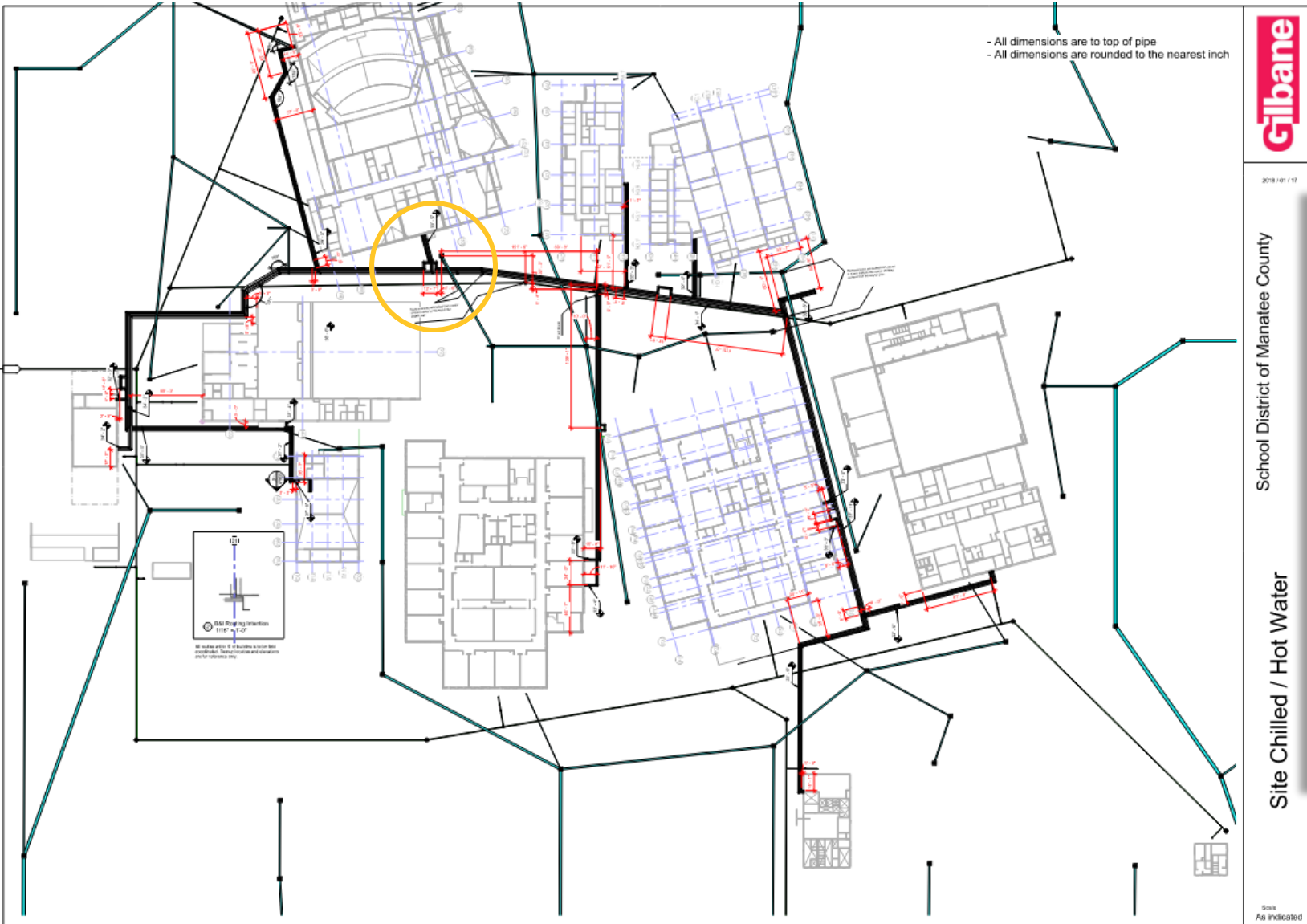
Value in the Project Process

Site Utility Coordination | Proactive Approach

- Gilbane supplemented modeling as needed
- Trade provided iterative sketches & collaborated in problem-solving process

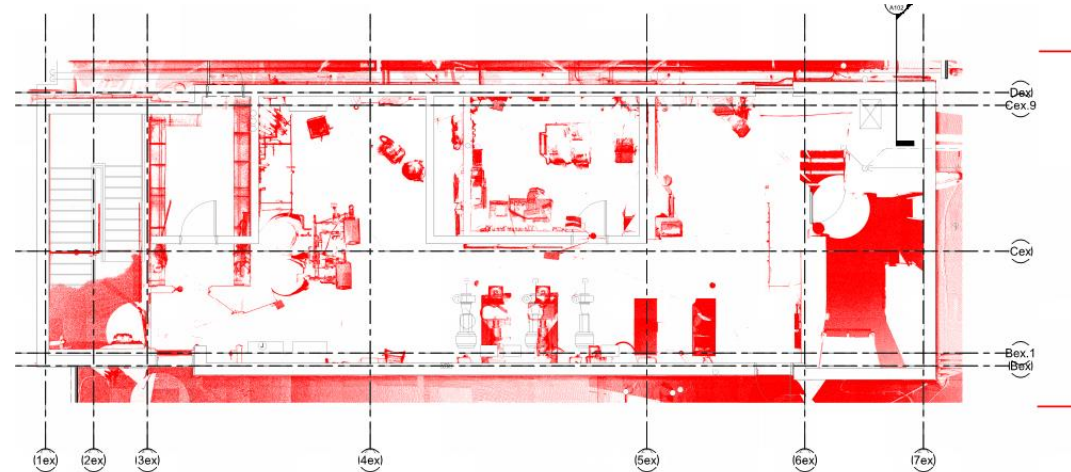
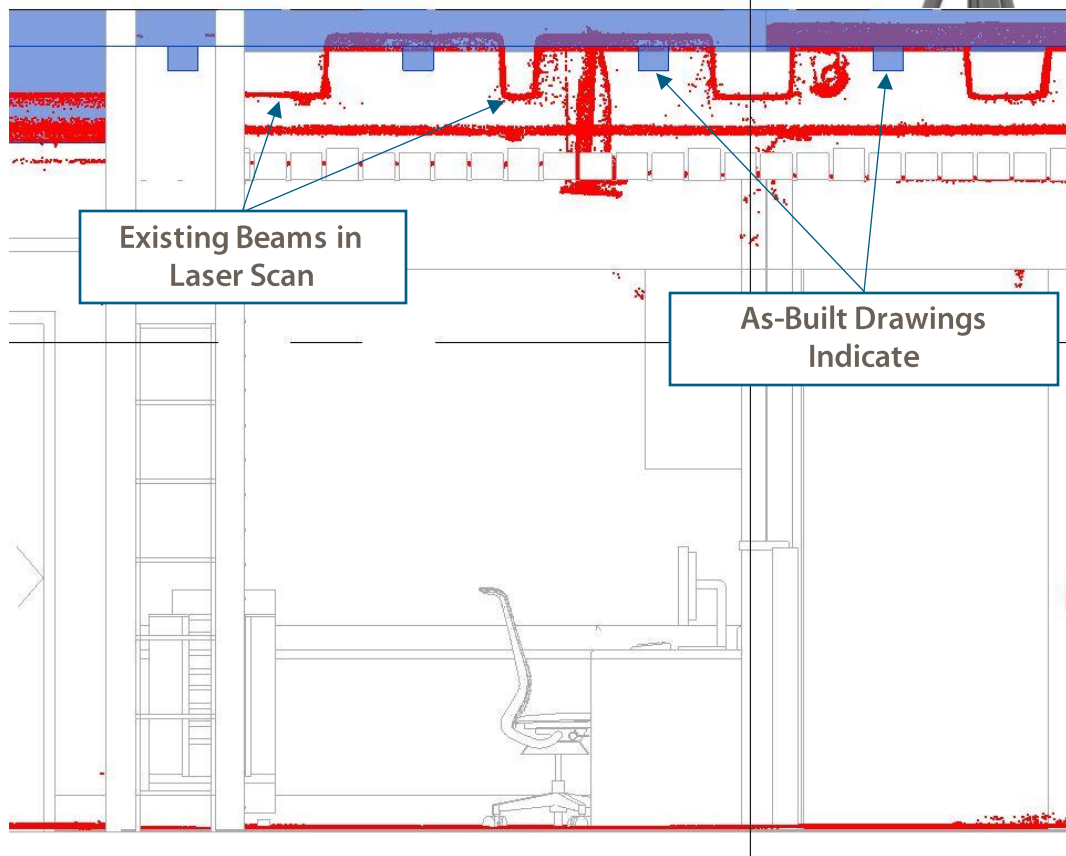


Installation Clarity & Minimized Field Coordination



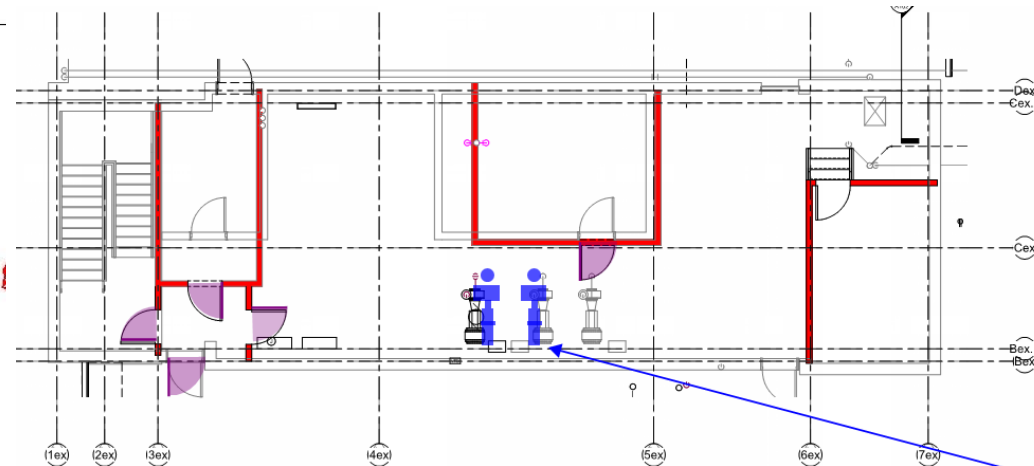
Align Reliable As-Builts with Data Driven Design

- ✓ Reduce On-Site Surprises
- ✓ Inform Decision Making
- ✓ Reduce RFIs and Change Orders



Mechanical Penthouse w/ Laser Scan
1/4" = 1' - 0"

2021-03-03 roof laser scan overlaid with design model.



Mechanical Penthouse Interior Wall As-Builts
1/4" = 1' - 0"

Mechanical penthouse interior wall as-built conditions (captured from 2021-03-03 laser scan) shown highlighted in red on left.

Purple highlight = locations of additional door swing or door swing discrepancy found.

As-built location of existing chilled water pumps based on 2021-03-03 laser scan.

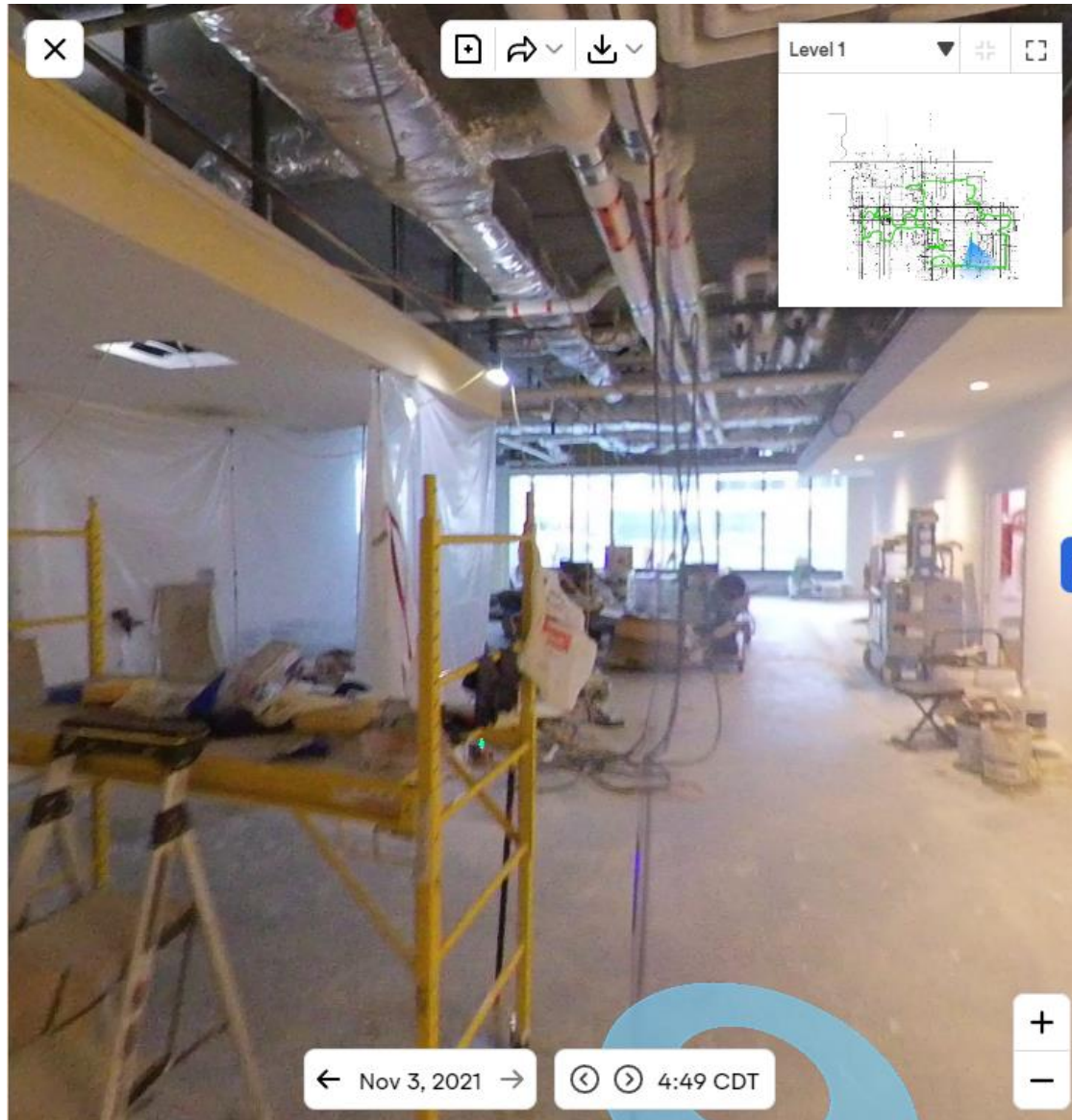
Reality Capture – Model Generation



Drones - QA/QC Design



360 Photo – Platform



Next Steps

Leverage Data in the Project Process

Find Your Seat at the Table

Data Literacy on Projects

- Know what is being generated and how to leverage.
- Know what project platforms are being used
- Know what data and processes are in the contract

Production Investment

- How are the contract documents generated?
- Shop Drawing & Submittal Efficiency

Process Investment

- What is my discipline's greatest project risk?
- Find the right level of investment & integration



Do

Ask Questions, Start Conversations

- Learn about the platforms on Projects
- Ask what your requirements are, before you sign the contract

Make small time investments

- Learn about the platforms on Projects
- Focus on your scope and tech
- Sit in coordination meetings

Make small tool investments

- iPads
- iPhones
- 360 Cameras

Don't

Get overwhelmed and walk away from projects

- Gilbane VDC will help you get in the mix

Feel like you need to know everything

- Start the conversation early

Make large investments

- Don't need to go "all in"
- Slowly build the value prop
- Slowly integrate with your processes

Bring in a 3rd party and forget about it

- Stay engaged
- Sit in coordination meetings



Questions?