

# CS473421 – What is Autodesk Construction Cloud?

**Brandon Lacourciere**

Director, Customer Success | @bcourse

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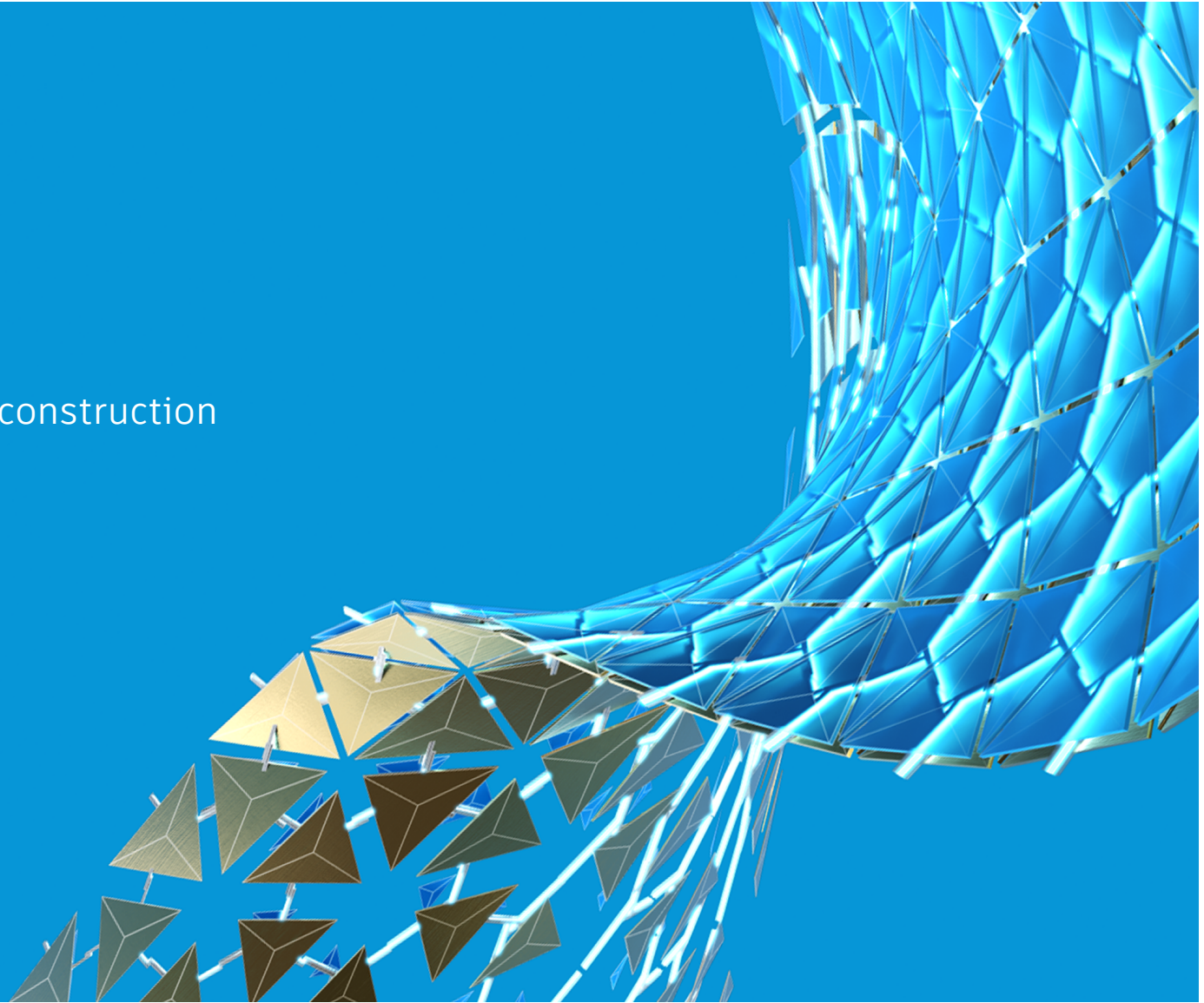
## About the speaker

### Brandon Lacourciere

Brandon grew up in the construction industry, joining his first framing crew at age 16. After receiving his degree in Architecture from Lawrence Technological University, he returned to the construction industry as an estimator and project manager. Noticing an opportunity to improve construction processes through BIM, he founded RevCore Construction Services, specializing in virtual construction and high definition laser scanning. Brandon has spent most of his career partnering with General contractors, union trades, and specialty contractors to solve complex problems on hundreds of projects. Today he is the Director of Customer Success for Autodesk Construction Solutions. He and his team are committed to solving industry challenges and helping customers optimize their workflows using the Autodesk Construction Cloud.

# Agenda

1. Autodesk's journey in construction
2. Where we're going



# CONSTRUCTIONS NOT EASY



Winning work

Broken Processes

Project Delays

Low Margins

Avoidable Rework

Rising Complexity

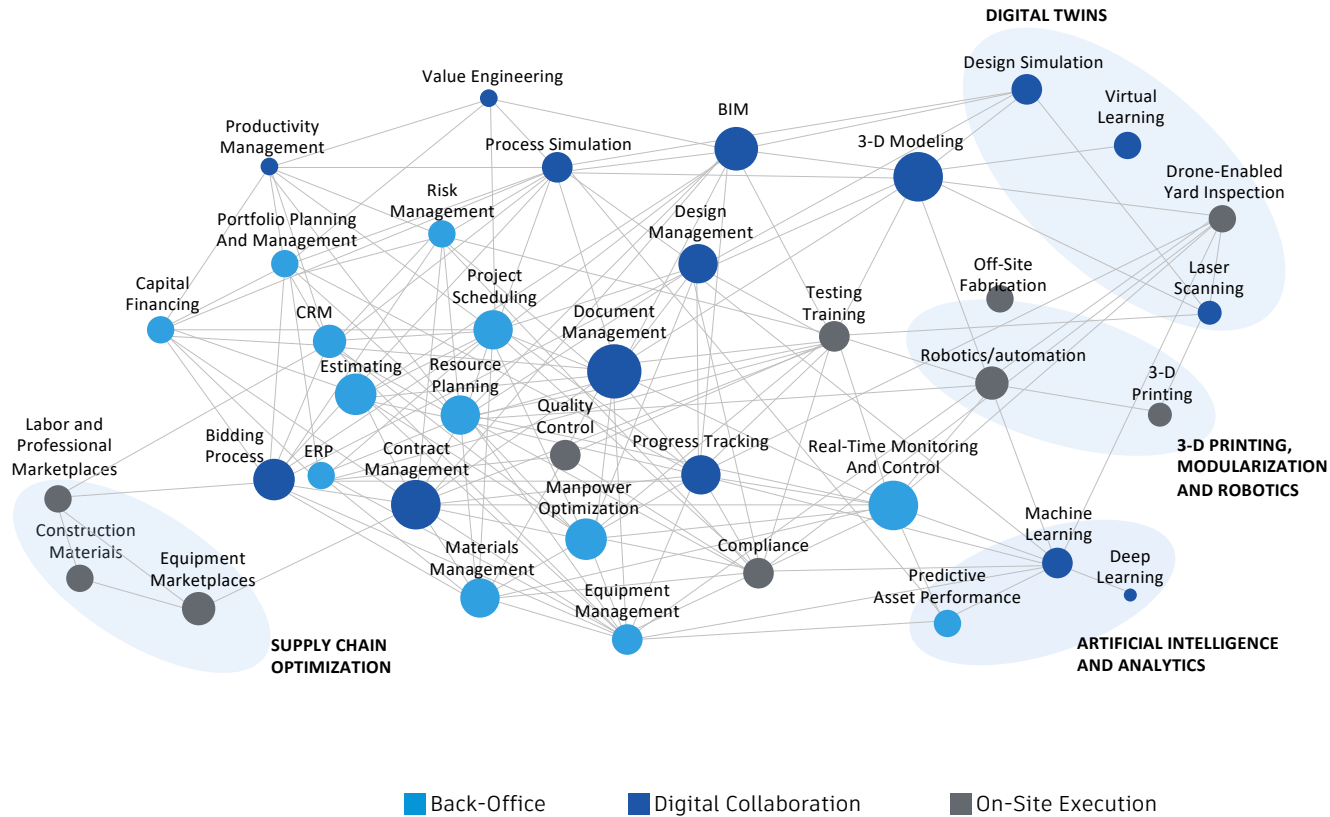
# Technology



# worse



# Construction Technology Ecosystem



25%

construction companies use 5 or more applications

280B

industry annual rework costs

30%

Of project data created is lost at closeout.

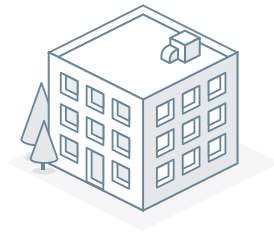
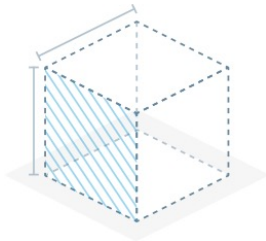


**AUTODESK CONSTRUCTION CLOUD™**





# AUTODESK CONSTRUCTION CLOUD™



**DESIGN**

**PLAN**

**BUILD**

**OPERATE**



# Autodesk's Journey in Construction

# Autodesk's Journey in Construction

 Connected Construction

 Project Lifecycle

 Field Execution

 Design & Coordination

2006

2008

2010

2012

2014

2016

2018

## Guiding principles along the Journey



Listen to the customers



Seek solutions to  
address your pain points



Know our own limits

# Autodesk's Journey in Construction

## Design & Coordination



# SOCIAL MEDIA ARRIVES



# Autodesk's Journey in Construction



Field Execution



Design & Coordination

2006

2008

2010

2012

2014

2016

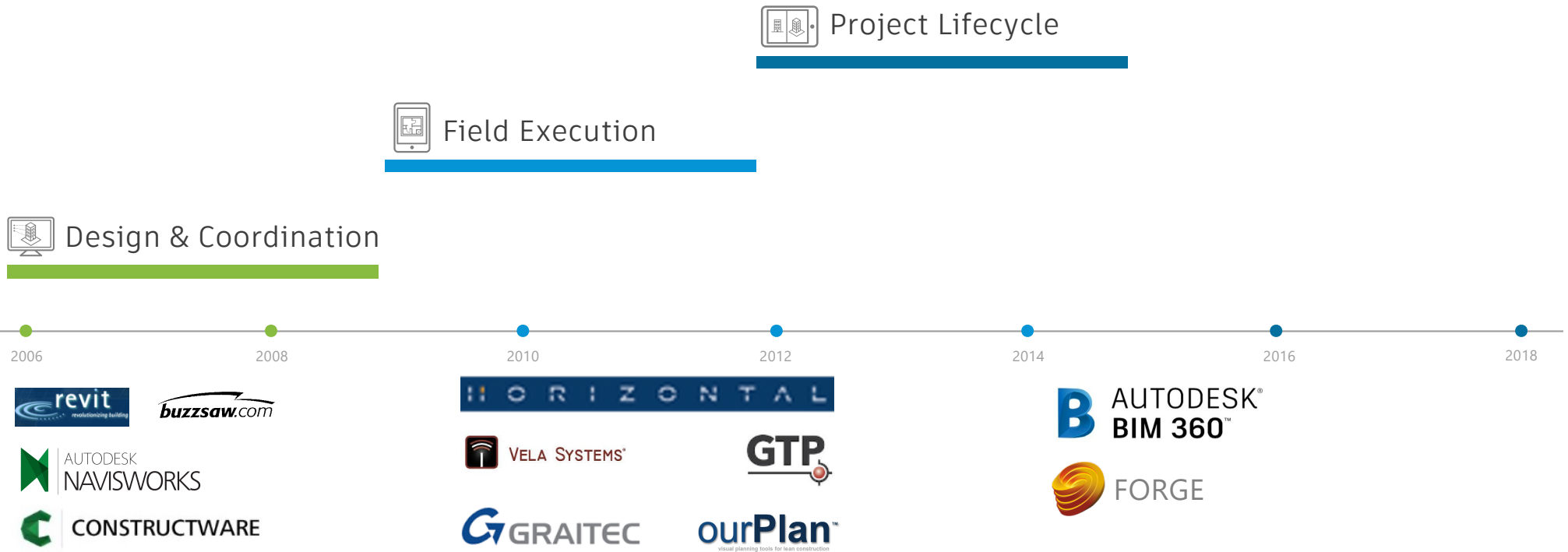
2018





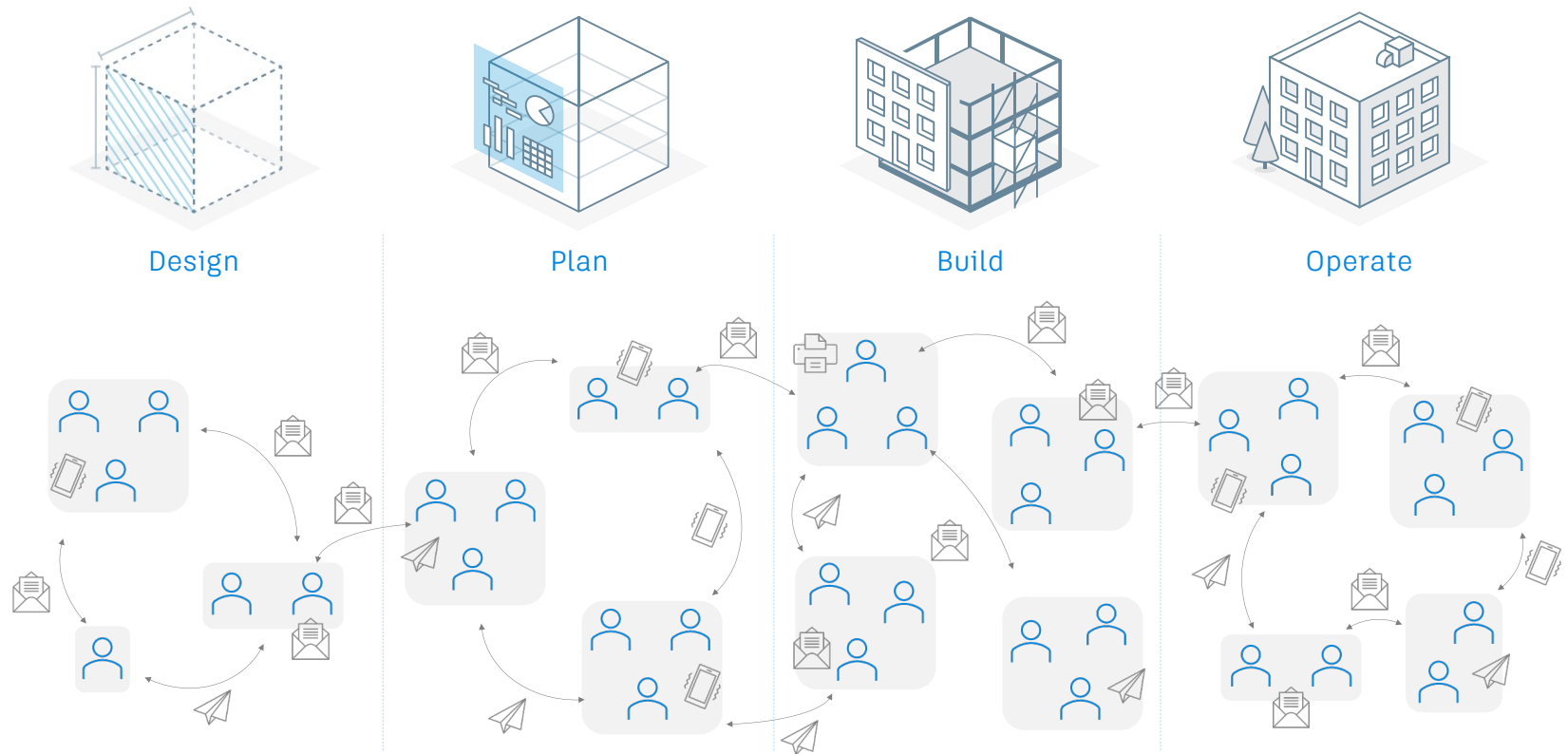


# Autodesk's Journey in Construction





# Construction is Collaborative, Yet Fragmented



*>70% of the global construction industry is still working from traditional paper-based processes*



# Autodesk's Journey in Construction

 Connected Construction

 Project Lifecycle

 Field Execution

 Design & Coordination

2006

2008

2010

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2014

2016

2018



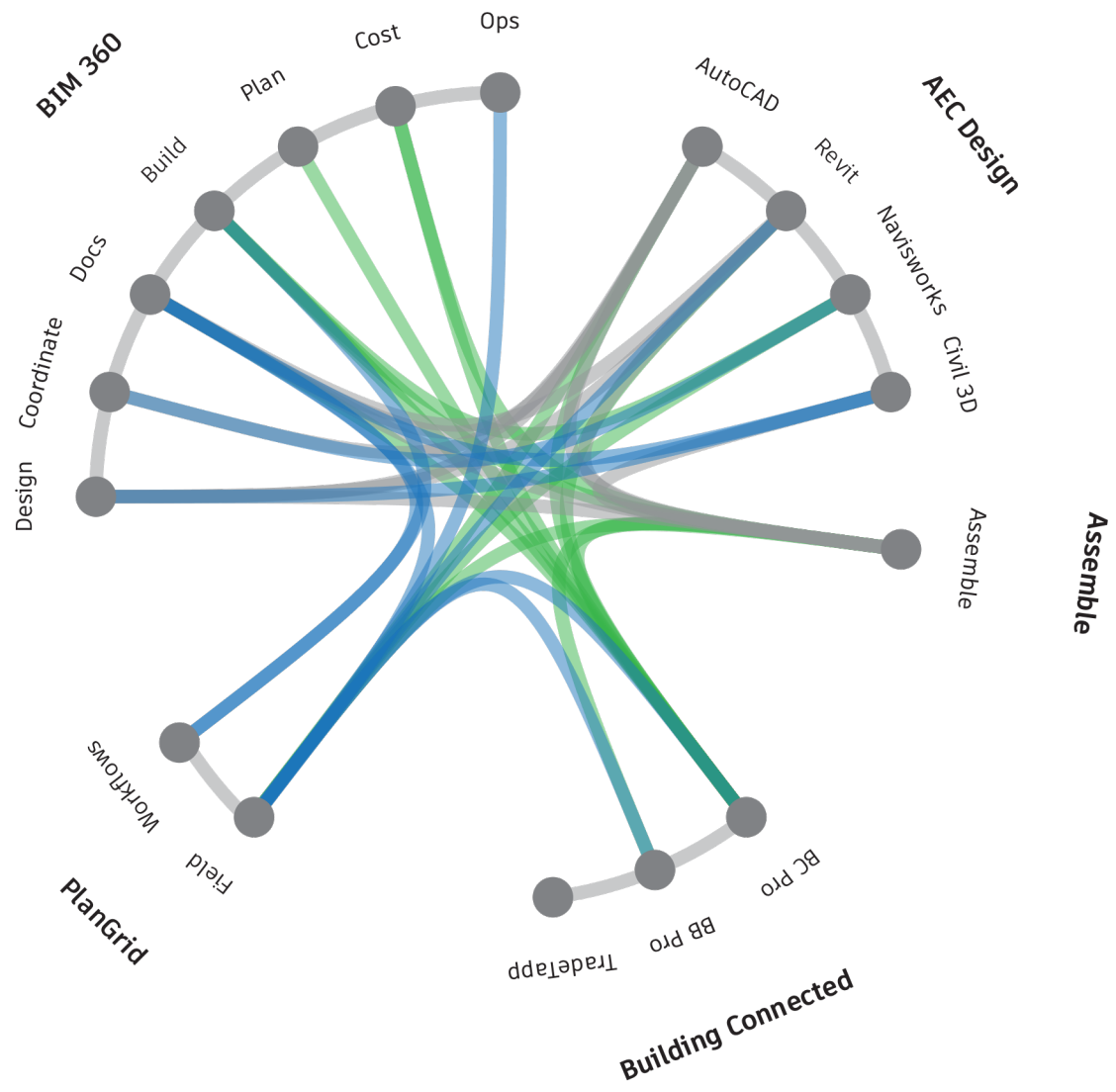


**assemble**  
AN AUTODESK COMPANY

**BIM 360™**

**BUILDINGCONNECTED**  
AN AUTODESK COMPANY

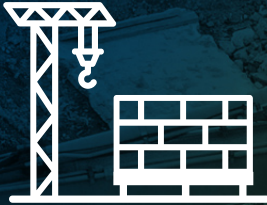
**PlanGrid**  
AN AUTODESK COMPANY





DESIGN

**R** REVIT™



PRECONSTRUCTION

**B** BIM 360™ DESIGN



CONSTRUCTION



OPERATIONS

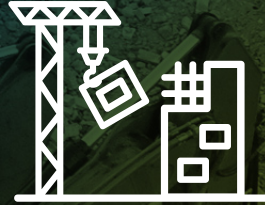




DESIGN



PRECONSTRUCTION



CONSTRUCTION



OPERATIONS



REVIT™



BIM 360™ DATA

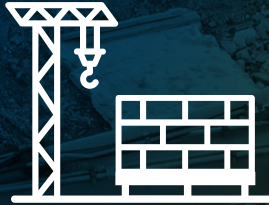


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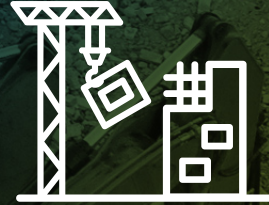




DESIGN



PRECONSTRUCTION



CONSTRUCTION



OPERATIONS

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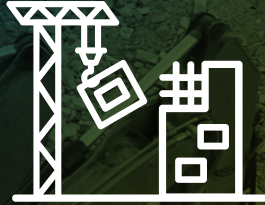
 **PlanGrid**  
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DESIGN



PRECONSTRUCTION



CONSTRUCTION



OPERATIONS

 **PlanGrid**  
AN AUTODESK COMPANY

 **BIM 360<sup>™</sup> OPS**

# Skanska UK Connects the Field and Office



**SKANSKA**

Site Harpur Centre	Activity Scaffolding to side of building	Conducted by name Daily Type	Signature 	Date 12/1/19
Risk Assessment No. 03	Review Date 02/01/2020	Revision No. 01	Conducted by name	Signature Date
Person Supervising Work Danny Board	Employer Access Scaffold	Approved by name	Signature Date	
Persons Exposed 0	Employees 4	Other Workers 0	Public/Visitors 0	Vulnerable Persons 0 Total at Risk 4

5	5	10	10	20	20
4	4	8	8	16	16
3	3	6	6	12	12
2	2	4	4	8	8
1	1	2	2	4	4
1	2	3	4	5	

**Likelihood**      **Severity**

Rating 1 = Very unlikely  
Rating 2 = Unlikely  
Rating 3 = Likely  
Rating 4 = Very likely  
Rating 5 = Almost certain

Rating 1 = No injury  
Rating 2 = Minor injury or illness  
Rating 3 = 7 day injury or illness  
Rating 4 = Major injury or illness  
Rating 5 = Fatality, disabling injury, etc

**Risk = Likelihood x Severity**      Low      Medium      High

All risks must be reduced to as low as is reasonably practicable, by applying control measures that reduce the likelihood of an incident, severity of an incident, or both. Risks that are defined as 'high' after control measures have been applied, must be re-reviewed and further control measures implemented to reduce the risk to low or medium

HAZARD	Factors of Harm		Risk Multiple of columns 1-3	CONTROL MEASURES	Residual risk Multiple of columns 5-6		Control measures implemented by (name)	Control Frequency Check Rate
	Likelihood	Severity			Likelihood	Severity		
Erection of scaffold - falling objects/collapse of scaffold			20	All Scaffold contractors will be members of NASC Skanska require that any scaffolding contractor contracted to work on a Skanska UK project employs a		5	Danny Board	Daily



AUTODESK BIM 360 | United Construction | Corporate Headquarters

## Document Management

Issue #161

DETAILS    ATTACHMENTS    **ACTIVITY**

ID	Type	Sub-type	Activity	Date
33	Punch List	Work to	Attached a document from Document Library 04P_002.pdf	Dec 2, 10:52 AM
32	Commissioning	Commis		
31	Commissioning	Commis	Attached a document from Document Library 04P_002.pdf	Dec 2, 11:03 AM
30	Quality	Quality		
27	Coordination	Clash		
26	Coordination	Clash		
25	Coordination	Clash	Attached a document from Document Library 04P_002.pdf	Dec 2, 11:10 AM
23	Coordination	Clash		

Showing 1 - 16 of 16



# Autodesk's Journey in Construction

# 2020



2006

2008

2010

2012

2014

2016

2018



Digitization

Skill Shortage

Prefabrication

Green Construction

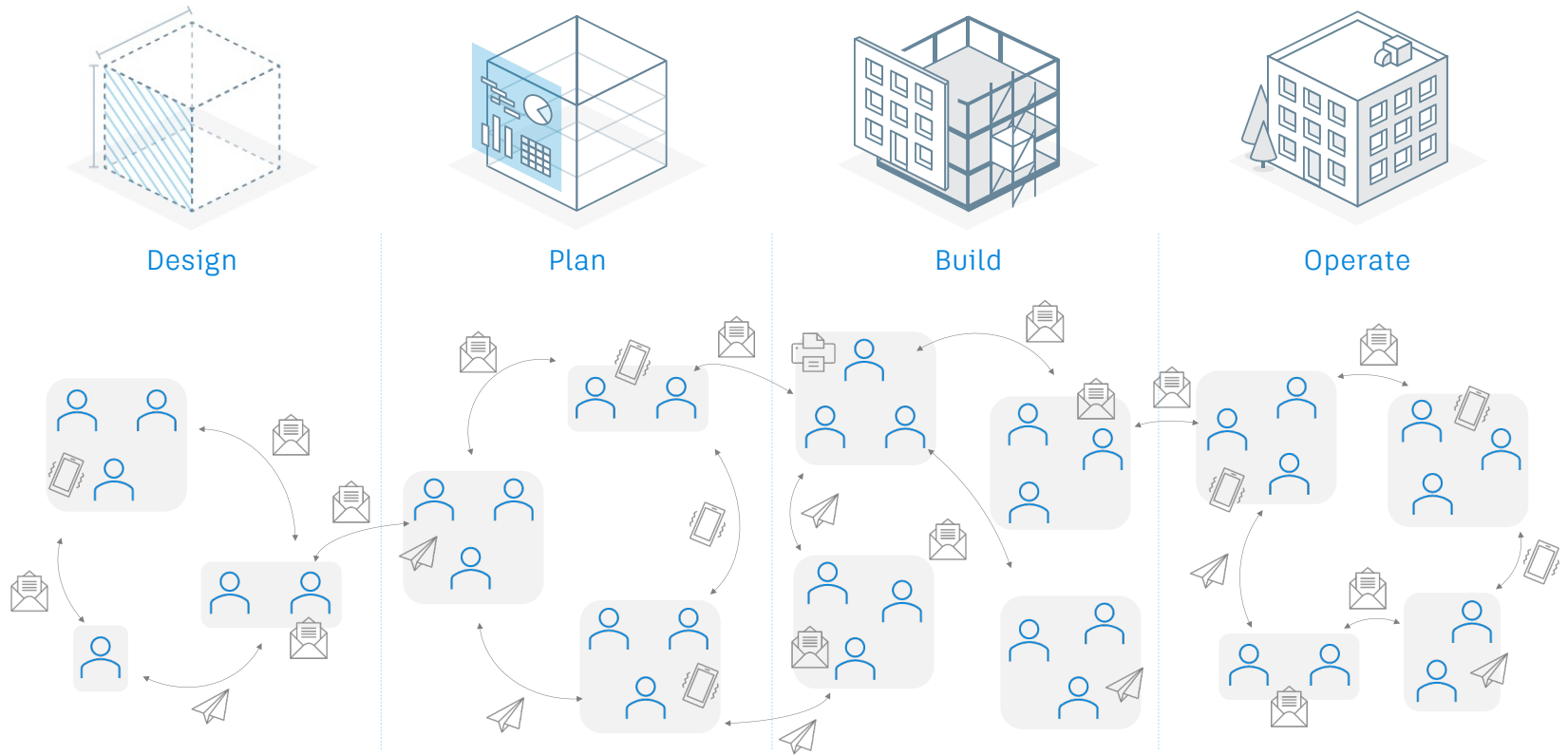
COVID-19

Augmented Reality

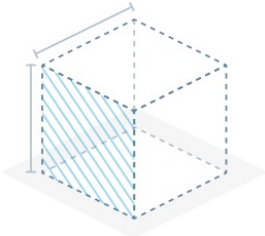




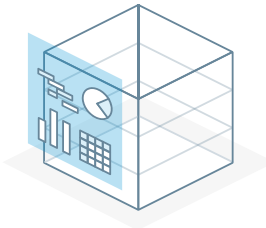
# Construction is Collaborative, Yet Fragmented



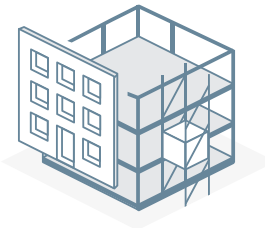
# Connected construction technology can transform the business



Design



Plan



Build



Operate

	Design	Plan	Build	Operate
Capabilities	<ul style="list-style-type: none"> <li>• Design Authoring</li> <li>• Design Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Model Coordination</li> <li>• Model Conditioning</li> <li>• Quantification</li> <li>• Bid Management</li> <li>• Qualification</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Cost Control</li> <li>• Field Collaboration</li> <li>• Quality &amp; Safety</li> <li>• Commissioning</li> </ul>	<ul style="list-style-type: none"> <li>• Facilities Maintenance</li> <li>• Asset Lifecycle</li> </ul>
Shared Data	Models · Drawings · Issues · Specifications · RFIs · Cost · Assets · As-Builts			
Insight	Predictive Analytics · Benchmark Reports · Mitigation Strategies			
Network	Builders Network			





# Unified Framework





# AUTODESK CONSTRUCTION CLOUD™

## DESIGN

---

**AUTODESK  
BIM COLLABORATE**

AEC COLLECTION

## PLAN

---

**AUTODESK  
QUANTIFY**

**AUTODESK  
COORDINATE**

**BUILDING  
CONNECTED**

**ASSEMBLE**

## BUILD

---

**AUTODESK  
BUILD**

PYPE

## OPERATE

---

**BUILDING  
OPS**

---

## AUTODESK DOCS

Models · Drawings · Issues · Specifications · RFIs · Cost · Assets · As-Builts · Photos · Videos

---

## INSIGHTS

Dashboards · Reports · Construction IQ · Data Connector

---

## ADMINISTRATION

User Management · Autodesk ID · Project Administration

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# AUTODESK CONSTRUCTION CLOUD™

AUTODESK  
BIM COLLABORATE

AUTODESK  
QUANTIFY

AUTODESK  
BUILD

Capabilities	Design Collaboration	Coordination	Quantification	Project Management	Cost Management	Quality	Safety	Project Closeout
Workflows	<ul style="list-style-type: none"> <li>• Constructability Review</li> <li>• Change Visualization</li> <li>• Revit Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Model Coordination</li> <li>• Constructability Review</li> <li>• Quality Planning</li> <li>• Issue Management</li> </ul>	<ul style="list-style-type: none"> <li>• Scope Analysis</li> <li>• 2D/3D Take Off</li> </ul>	<ul style="list-style-type: none"> <li>• RFIs</li> <li>• Submittals</li> <li>• Meeting Minutes</li> <li>• Daily Reports</li> <li>• Progress Tracking</li> </ul>	<ul style="list-style-type: none"> <li>• Contract Creation / Administration</li> <li>• Change Orders</li> <li>• Payment Applications</li> <li>• Forecasting</li> </ul>	<ul style="list-style-type: none"> <li>• Quality Planning</li> <li>• Quality Checking</li> <li>• Punchlists</li> <li>• Issue/Task Management</li> </ul>	<ul style="list-style-type: none"> <li>• Safety Planning</li> <li>• Safety Training</li> <li>• Safety Observations</li> <li>• Safety Inspections</li> </ul>	<ul style="list-style-type: none"> <li>• Commissioning</li> <li>• Turnover Documentation</li> <li>• Warranty Mgmt.</li> <li>• Final Completion</li> <li>• As-Built Survey</li> </ul>
	<b>Document Management</b> Document Control · Document Versioning · Document Approvals							
Unified Data	Models · Drawings · Documents · Cost Items · Assets · As-Built · Photos · Videos							
Insights	Dashboards · Reports · Construction IQ · Data Connector							
Admin	Admin Console · Permissions · Project Setup · Templates · Notifications							



# Single Point of Entry

AUTODESK CONSTRUCTION CLOUD

James Taylor

## Project Directory

All Projects ACC Project Templates

Create Project Search project name, address, organization or project code.

Project Name ^	Project Type v	Project Code v	Last Updated v
SF MoMa Museum Main St, Houston, Texas	ACC	XXXXXXXXXX	6 hours ago
15550 Banner Behavior Health Hospital (BBHH) Main St, Scottsdale, Arizona	ACC	XXXXXXXXXX	Feb 10, 2019
15592-SJHMC Absorption Chiller Replacement Main St, Scottsdale, Arizona	BIM360	XXXXXXXXXX	Nov 24, 2018
18600 - SOMC Vacuum Pump Replacement Main St, Phoenix, Arizona	PlanGrid	XXXXXXXXXX	Sept 14, 2019
19628 - ADC Tiberius - Chiller Cooler Expansion Main St, Phoenix, Arizona	ACC	XXXXXXXXXX	Feb 10, 2019

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# Progress Tracking

**Autodesk Construction Cloud**

Build | SF MoMa

AI56.1 (90% Progress Set - Architecture)

### Progress Tracking (4)

Hide progress markups

- Ductwork - Phase A - Zone 1... Commissioned  
Aug 18, 2020 by Brandon Lacourciere
- Ductwork - Phase A - Zone 1... Installed  
Aug 18, 2020 by Brandon Lacourciere
- Ductwork - Phase A - Zone 1... Arrived on Site  
Aug 18, 2020 by Brandon Lacourciere
- Ductwork - Phase A - Zone 1... N/A

### Ductwork - Phase A - Zone 1

Remove

- Ordered
- Arrived on Site
- Installed
- Commissioned
- Complete

Object Type  
Changing this object will reset previously tracked data

Ductwork - Phase A - Zone 1

Cancel

Submit

**GENERAL NOTES**

- Provide steel plate suspension at perimeter suspension points and at ceiling type A/C/E (020112), (02, 10A) under ceiling (02, 10A00).
- Center suspension hangers to 2x2 ceiling panels.
- Center panel and hanger at grid spacing to form square panel alignment.
- Provide 1/2" Assembly (A/C/E) (020112) to hydraulic ceiling application at termination of ductwork at lower floor level (020112), (02) (020112) (02, 10A00).
- MC installed emergency and carbon monoxide for location of emergency alarm.
- MC ADD for return air plenum (A/C/E) at conference and plenary rooms.
- MC ADD for ceiling and suspension details.
- MC ADD.
- Install ceiling lines (020112) at 12" @ 12" to access for fire/smoke detectors. Coordinate fire and smoke detector location with mechanical contractor.
- The suspended ceiling shall have load capacity and fire/smoke resistance of 100 lbs/ft<sup>2</sup> and 1-hour fire rating. All materials shall be approved by the mechanical contractor. Coordinate fire and smoke detector location with mechanical contractor. Coordinate fire and smoke detector location with mechanical contractor. Coordinate fire and smoke detector location with mechanical contractor.
- Except where light fixtures are used for general illumination, suspension hangers and other penetrations through the ceiling shall be made stainless steel (020112), (02) (020112) (02, 10A00) and shall be finished to match the ceiling. Coordinate fire and smoke detector location with mechanical contractor. Coordinate fire and smoke detector location with mechanical contractor. Coordinate fire and smoke detector location with mechanical contractor.
- Provide suitable attachment of any fixture where a coordinate also provides for suspended ceiling attachment.

Level 6 (02) - North Dr



# Quantify

Concrete

Takeoff

Name  
PS - Interior Partition- 4 7/8" - 1HR

TAKEOFF OBJECTS

16 Area Takeoffs

Height (LF) \*

QUANTITY PREVIEW

C1010.10 (Interior Fixed Partitions)	6013.39 SF
--------------------------------------	------------

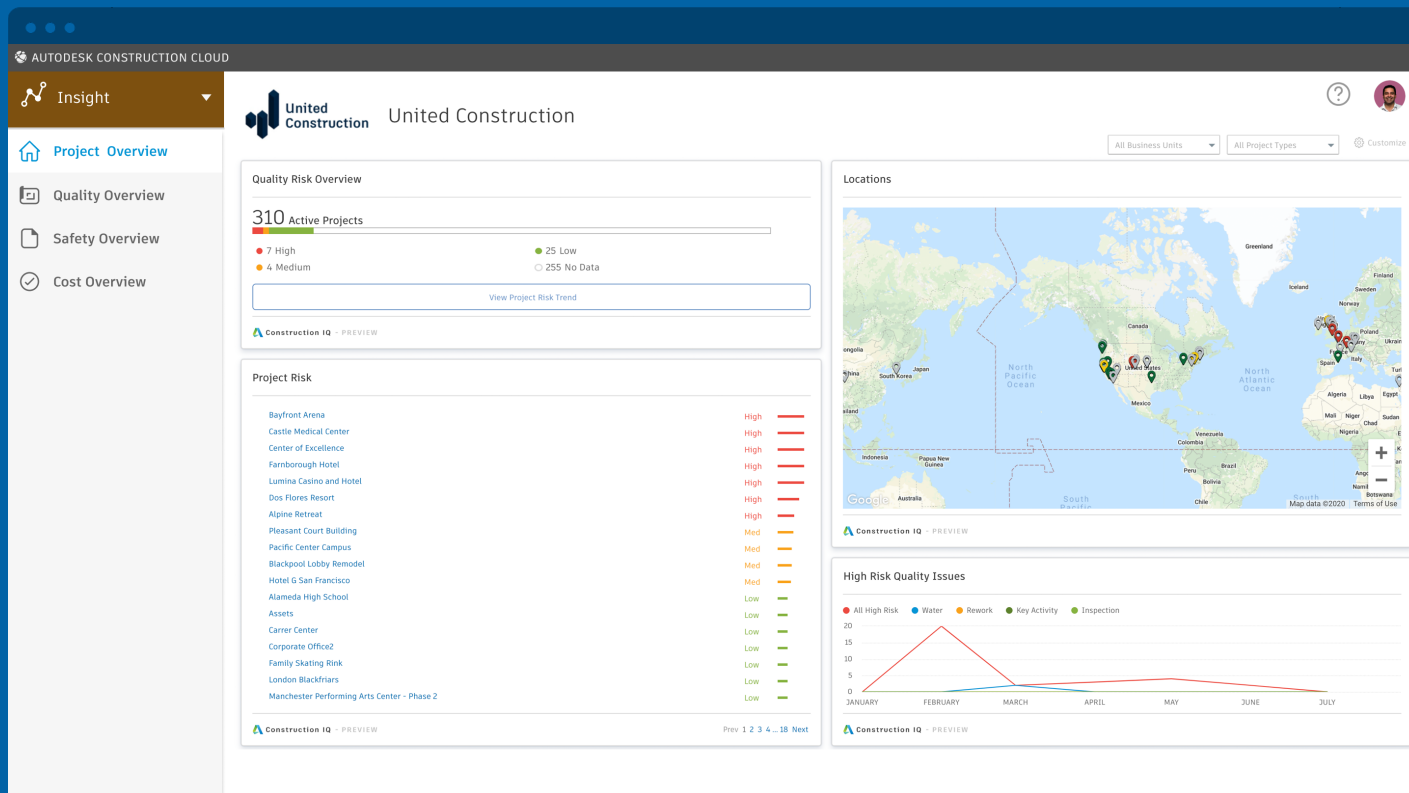
Materials

09 21 16 (Gypsum Board Assemblies)	12026.77 SF
05 41 00 (Structural Metal Stud Framing)	546.69 LF
09 91 23 (Interior Painting)	6013.39 SF

Cancel Save



# Cross-Project Insights





# The Next Phase of the Journey





# Autodesk Acquires Pype

 AUTODESK + aurigo<sup>®</sup>



# AUTODESK



# bridgit



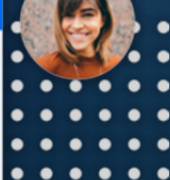
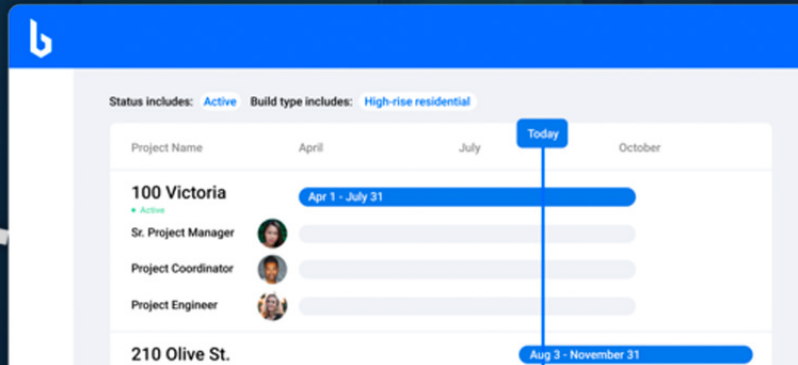
- Vermont Public House**  
(Construction)
- Arborview Tower**  
Active
- Essex Assisted Living**  
(Pre-construction)



**Makenzie Thomas**  
Site Superintendent ● Over allocated

June 1 - Aug 26 200%

Project	Role	%
Maplewood Mall	Superintendent	100
Essex Assisted Living	Superintendent	100





**Listen to our  
customers**

**Seek solutions to  
your pain points**

**Know our own  
limits**



# BIG ROOM



# OVER 1200 Improvements

- ### PlanGrid Sheets
- Revit Plug-In Fix
  - OCR for INTL Languages
  - Trim Sheet Numbering for ISO-19650

- ### Forms
- Integrate in technical bootstrap
  - Template Types: set, edit, filter
  - Native Forms: Report Validation
  - Native Forms: Date & dropdown menu items
  - Export emails migration to Notifier
  - Customer API: Field Report Template
  - Custom Forms API
  - Draft Awareness for Reviewers
  - Sequential editing in Field Reports

- ### RFIs on Mobile (Android)
- Step-Back
  - Create RFI from Sheet Viewer

- ### Site Vision
- Media Thumbnails
  - Custom Photo Reports
  - Showing RFI & Field Report photos in gallery

- ### Submittals
- Submittals to the Field - PG
  - Filter & Sort on Mobile
  - Default Watchers

- API
- Public APIs & Adding Submittals Connected to ACC
- Connect

- ### BIM 360 Docs Document Management
- Public URL / Share File
  - Permissions API
  - Vector PDF Improvements

- ### BIM 360 Build Issues
- Issue Templates
  - Pin Issues to Locations
  - Enhancements

- ### RFIs
- Edit closed RFIs
  - RFIs on Mobile (Android)
  - Modify RFI Pushpin
  - RFI & PCO Link
  - Permission Change
  - Improved Status Visibility
  - Submittal Workflow Enhancements

- ### Cost Management
- Pay Applications
  - Public APIs
  - Email Integration
  - History/Milestone Visibility
  - Public APIs ACC Connect
  - Cost Budget PDF Report - Phase 1
  - Supplier & Owner Access
  - Tracking Actual Costs
  - Document Generator Creates PDF Reports
  - Cost Budget PDF Report - Phase 2

- ### Assets
- Asset Module
  - Link from Issues
  - Checklists & Create Asset via Mobile

- ### Submittals
- Enhanced Submittals List Experience
  - Contractual Date Tracking - Phase 1
  - Improved Status Visibility (works iOS)
  - Submittals to the Field - BIM 360
  - XLSX Export
  - Enhancements
  - Tracking Contractual Dates - Phase 2

- Item Based Submittals Workflow
- Revision Closed Submittal
- Reduced Email Cluttering
- Meeting Minutes
- Meeting Minutes on Mobile
- Archiving Existing Issues to a Meeting Item
- Link Issue or RFI to Meeting Item
- Rich Text Formatting
- PDF Export Localization
- Zoom Integration
- Description Editor - Advanced Text Editing

- ### Checklists
- bringing Android to parity with iOS (some also on iOS)
  - Several Improvements
  - Archiving checklists & email notifications\*

- ### BIM 360 Docs
- Issues
  - Workflows
  - Document Generator
  - Improved file processing error handling

- ### Coordination
- Project Files
  - Model Coordination Forms API
  - Clash Enhancements (coupled with Clash for Revit)
  - Screen Shots
  - Navisworks Issues Plugin\*
  - Clash Matrix Enhancements\*
  - Model Viewer Enhancements\*

### BIM 360 Insights

- ### Construction IQ
- User Risk for Executives
  - Safety Risk Factor Card
  - 2 New Reports
  - Issue Library Enhancements
  - Issue Report Enhancements
  - Data Selector: Add RFI Workflow
  - Customizing Executive Insights (Partner Card Additions)
  - Daily Logs Report Enhancements
  - Add Custom Attributes Data Download, Issue / Report, and Email Notifications
  - Project Controls

- ### Insights
- ESRI Partner Card
  - Intelliwave Partner Card
  - Raken Partner Card
  - Project Level Docs

- ### BIM 360 Admin
- Project Services Page
  - Scaling for Large Projects
  - Quantification & Reporting Module Integration
  - GUID Trim for Reports
  - BCP Pro

- Autodesk ID\*
- Bidder history in Reports
- Additional Items section in Bid Leveling
- Performance improvements to viewing the Bid Requests
- Direct Lists
- Autodesk ID - Group
- Dashboard
- Suggested groups
- New bid forwarding email
- Office-level trades
- BC Pro x BB Pro Integration

- Customize columns
- Change opportunity request type
- Faster import of bids
- Enhanced search for opportunities\*
- Enhanced new opportunity creation\*
- Takeoff across sheets
- Adding Color Picker

### BIM 360 Plan

- Linked Activities

- ### TradeTap
- User & Project Data
  - TradeTap / BC Pro - Vendor Unification \*
  - Public Link to Share\*
  - Record 'Request for Corrections' Message\*
  - None' Qual Status Filter\*
  - Display 'Contacted By' BC User Name\*
  - New Prequalification Fields in BC\*
  - New 'Reviewers' Column\*
  - Qualification Status Timestamp\*
  - Enterprise Certification Expiration Date\*

- ### Assemble Reports
- Power BI Improvements
  - User & Project Data
  - Revit Publishing Fix

### Aurigo

- Aurigo / PlanGrid Integration

- Command Row Tap





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