



CS502282 - Scaling Up Enterprise Launch

A Case Study of BIM 360 to Autodesk
Construction Cloud

Lauren L. Collier

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Introductions

and Learning Objectives



Mark LaBell

SSOE Group - Innovation Technology
Leader



Lauren Collier

SSOE Group - Director of Project
Technology



A global project delivery firm for architecture, engineering and construction management

Mission

To deliver unparalleled client value that advances the AEC industry.

Vision

Designing and building the future for our clients, colleagues and communities.

1,254
employees

19
offices

3
countries



98% of clients surveyed would recommend SSOE to their colleagues



\$1.5+ billion in documented total project savings for clients



Ranked a **Top 10** design firm in several industries



150 clients have been with us for over **20 years**

Learning Objectives

- Gain insights from an enterprise launch of BIM 360 and our upgrade to Autodesk Construction Cloud.
- Learn from implementation examples about the effort and planning that's required for full company adoption.
- Learn why upgrading to Autodesk Construction Cloud a year after a BIM 360 launch is critical to project success and our digital transformation.
- Learn about improving your company's digitization journey into construction technology adoption.



Show me the Stats...

Current Statistics

2401 Projects Created via Automation from ERP

** As of 9/16/2022*

Data Synced to SSOE Data-Lake

2054

Active BIM 360

- Test Projects Next Gen Release Date – 12/20
- Go Live of all Projects 1/1/2021.
- Sunsetting projects with ACC rollout.

468

Active ACC

- Test Projects 7/21-5/22
- Go Live for all Projects 5/31/2022

1201

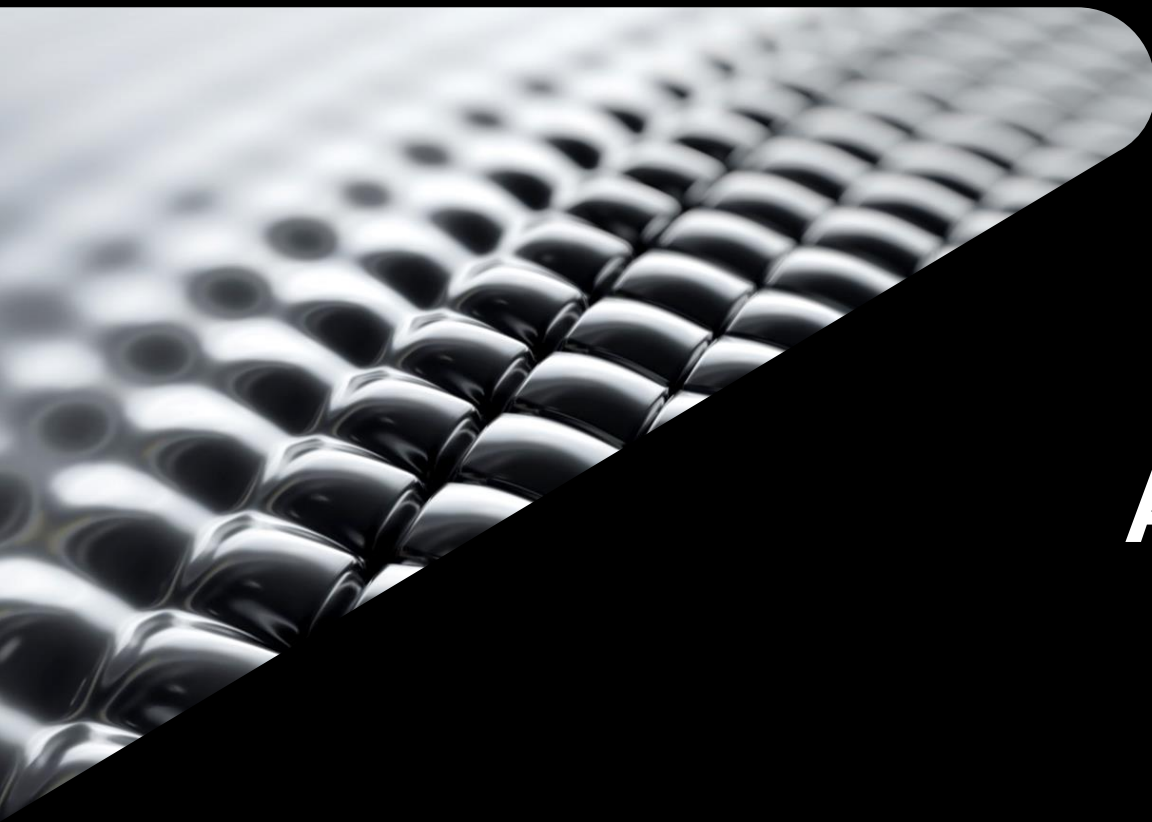
Internal Users

User accounts are automated from date of hire and sync'd to Project O365 email groups

2584

External Users

Access controlled to files via "External Roles" in templates



A little History

Let's review last 5 years....

How did we get here:

2017



2018-20



2021



2022



Research

- Participated in Next Gen beta w/ Autodesk.
- Worked with progressive teams on how to use for Revit Server replacement and quality process improvements.
- Used classic BIM360 for Construction Management Activities- Safety/Quality Checklists and Issues

Planning

- Data Mapping exercise.
- Executive Management presentations around rebuilding all IT systems from the ground up. Finance, HR, SharePoint, Project Delivery systems.
- Operations teams assembled and project plans created.

Phase 1

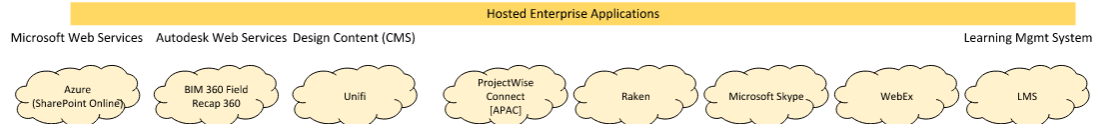
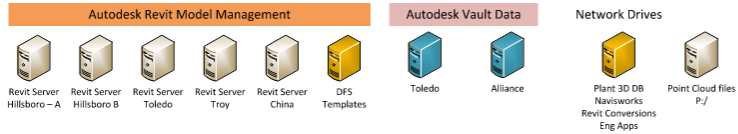
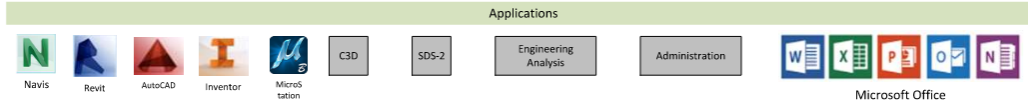
- BIM360 Go Live for all new projects 1/1/21.
- Training program for all staff and roles.
- Round tables therapy sessions, start-up Communities of Practice (CoP)
- Ramp up migration efforts to move projects from legacy systems..

Phase 2

- ACC Go Live for all new projects 5/31/22.
- Revised training for differences
- Implement more data reporting and automations to streamline due dates, employee availability and status.
- Refine Quality procedures

Data Architecture – Mapping Exercise

SSOE Systems Architecture
February 2018
DRAFT

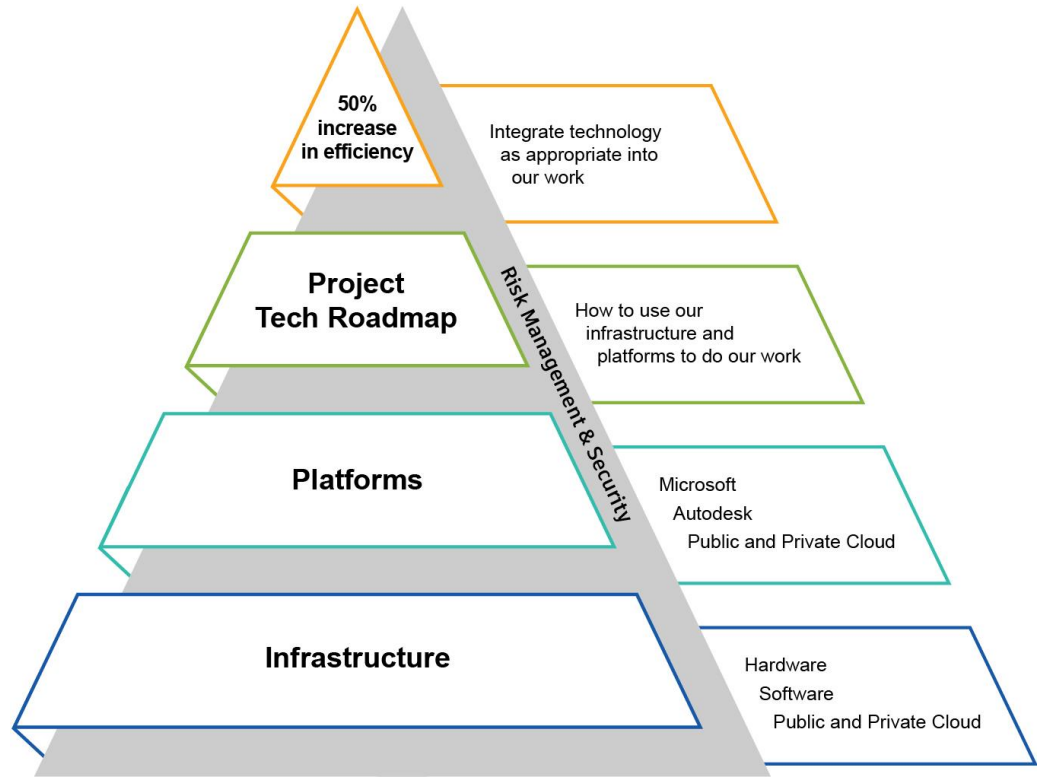


SSOE Group's Digital Strategy

Our digital transformation process

It is a Journey that engages your Company, Clients, & Colleagues!

- Current State
- Strategy
- Change Management
- Continuous Improvement



2025 Technology Vision



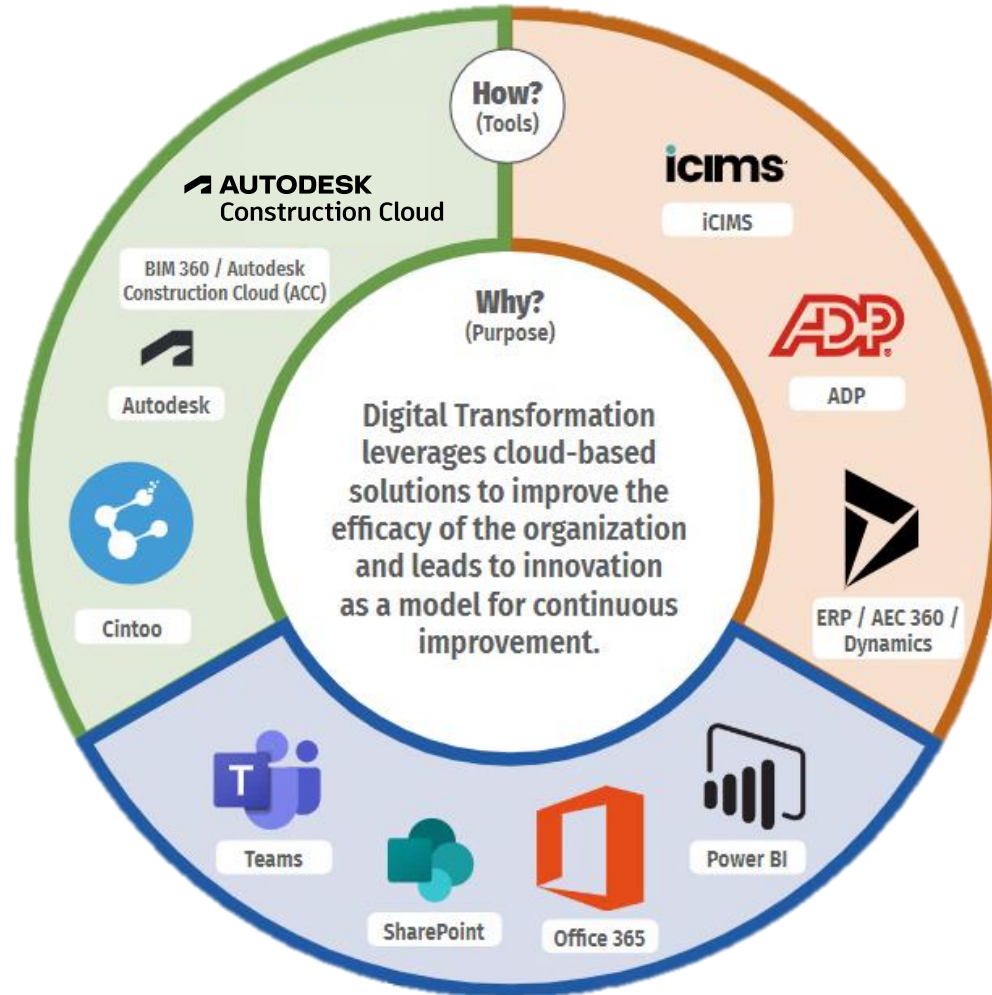
The North Star

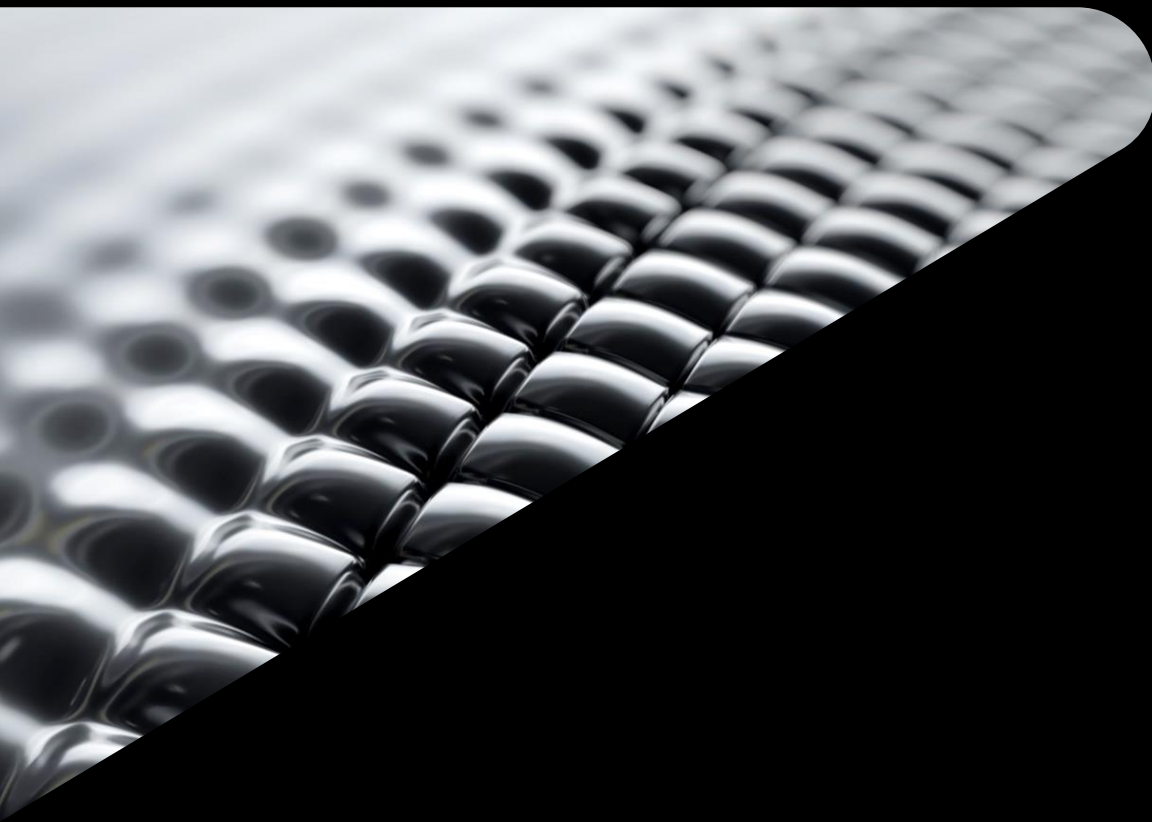
Key

Design Tools

Collaboration & Communication

Business Tools





The Plan

Pilots & Resources

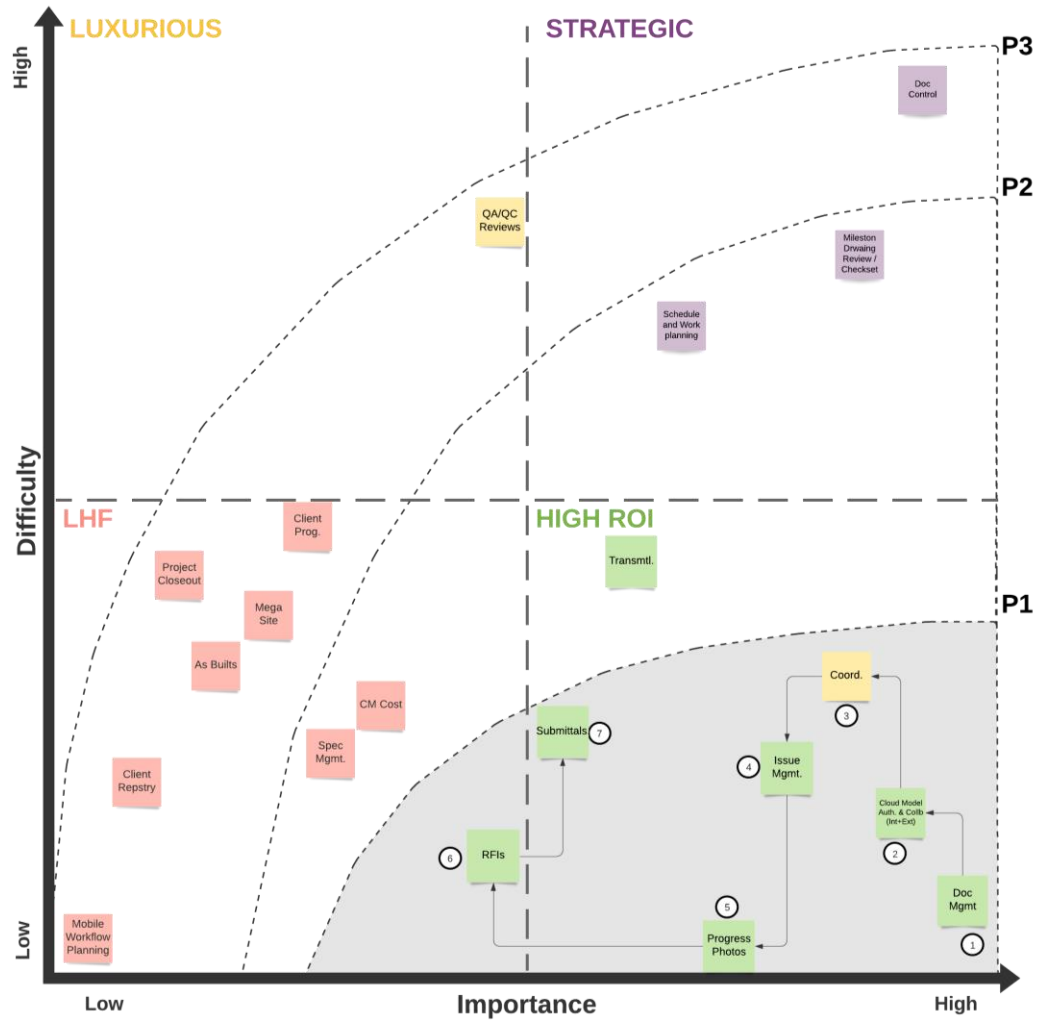
Why, Who, What, and When

Breaking down what is necessary for Full Enterprise cut over.

- T.E.A.M. approach, Each business unit 1 Egr/Arch and 1 Proj Mgr on the Core Team.
- Weekly mtgs to review schedule, commitments, budget and as final buy-off.
- Breakout meetings to work on process changes; core team pulled in additional staff.
- Heavily focused marketing involvement. Targeted communications on a scheduled basis to clearly define why, how and when.



Planning Process



Contract Negotiation

Plan 6-12 months for this process

- SSOE is under an Enterprise Business Agreement (EBA), so we had to negotiate 3 years of cloud token consumption based on predictions of growth and an Unlimited plan for BIM360/ACC.
- Additional services cost tokens based on per use. Do not make it a science project, but just plan for slow growth of non-core modules.
- Bring in your procurement department to help negotiate and review.





BIM 360 Modules

BIM360 offers a wide range of modules, however we are not initially rolling them all out.



Project Home
Landing Page
Dashboards
Actionable Info



Insight
Dashboards
Project Data Visualization
Detailed Analytics
Reports



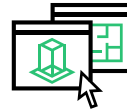
Project Management
Submittals
RFIs



Document Management
Common Data Environment
Design Authoring
Version Control/Compare
Design & Field Issue Tracking
2D & 3D Model Viewing
Transmittals



Design Collaboration
Authorized Data Exchange
Revit Cloud Worksharing



Model Coordination
Model aggregation
Clash detection



Field Management
Checklists & Issues
Daily Logs



Assets
Track assets
throughout
their lifecycle

Cost
Management
Budget and Cost
Control

Modules included in Jan. 1, 2021 rollout

Modules to be rolled-out – Spring, Summer, and Fall 2021-
Winter 2022

Training / Communication



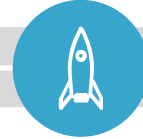
Train

Review training modules as they are posted



Prepare

Change is coming, set yourself and team up for success



Launch

All new projects in BIM 360 as of Jan 1, 2021!



Post Launch

Attend Webinars, Follow Content, Schedule Kick-offs, use Helpdesk & Peer Support



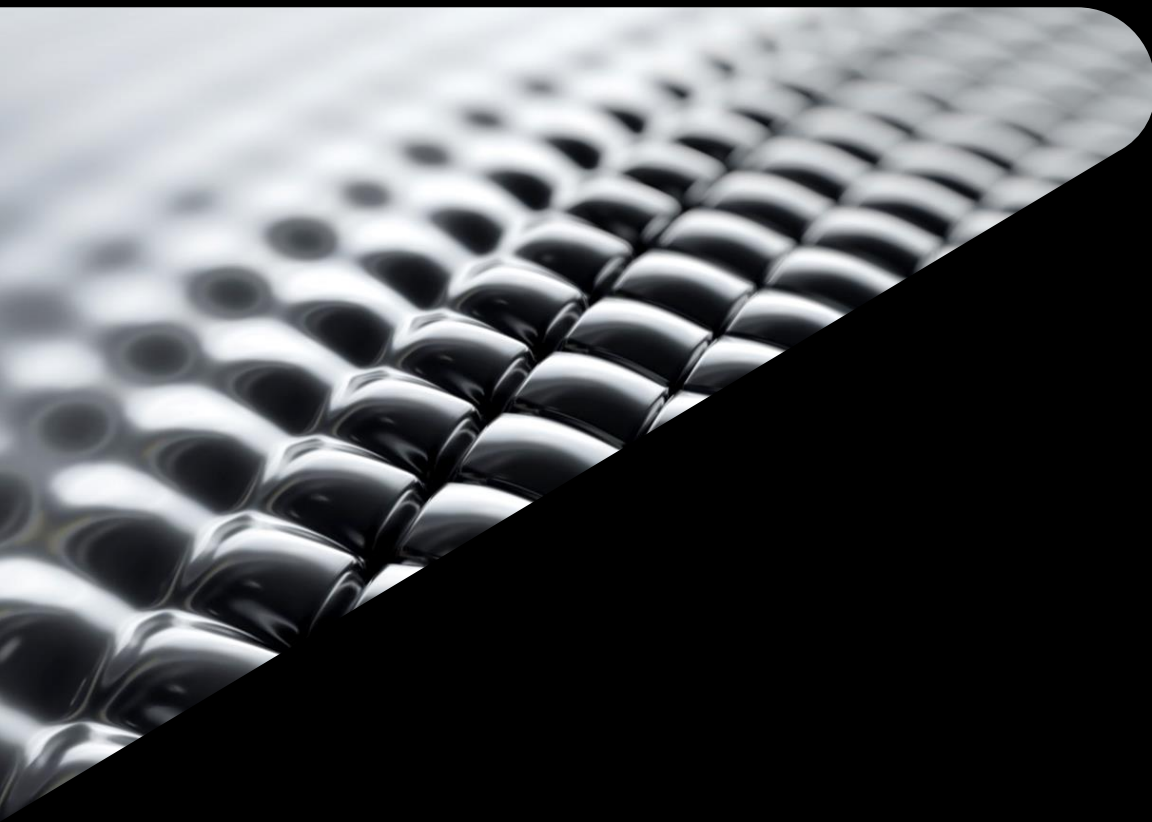
Setup

Create your Autodesk account – SSOE Prep Kit



Ask

Add questions to the Q&A page or attend a live Q&A roundtable



BIM360 Launch

Enterprise-wide January 1st, 2021

Project Start-up Automation









































Saves 1.5 FTE's a year

5 CARDINAL

LAUREN COLLIER   

Project Setup Requests

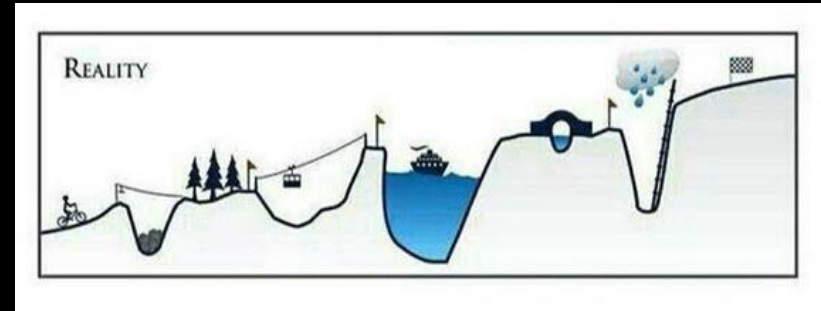
Total Setup Automations: (2307)

Id	Date	Number	Name	Type	Template	Default Owners	Project Created	O365 Created	Owners Notified	External Email	Project Link	Member Admin	O365 Admin
2389	8/19/2022 4:49 PM 5.8 mins	0220134000	 3: Proposal Creation Opportunity - Rename	Manufacturing / Factory	ZZ_Template_SSOE Standard Project- ACC	tvargo@ssoe.com, htrevino@ssoe.com, vdenny@ssoe.com							
2388	8/19/2022 4:38 PM 3796.4 mins	0220133900	 3: Proposal Creation Opportunity - Rename	Manufacturing / Factory	ZZ_Template_SSOE Standard Project- ACC	tvargo@ssoe.com, htrevino@ssoe.com, vdenny@ssoe.com							
2387	8/19/2022 3:45 PM 9.2 mins	0220133800	 3: Proposal Creation Opportunity - Rename	Retail	ZZ_Template_SSOE Standard Project- ACC	abehan@ssoe.com, vhite@ssoe.com, htrevino@ssoe.com							
2386	8/19/2022 2:58 PM 6.7 mins	0220131700	 Active Project - Rename	Office	ZZ_Template_SSOE Standard Project- ACC	bschaff@ssoe.com, khurley@ssoe.com							
2385	8/19/2022 12:21 PM 15.4 mins	0220133600	 3: Proposal Creation Opportunity - Rename	Office	ZZ_Template_SSOE Standard Project- ACC	jbond@ssoe.com, jbence@ssoe.com							

First 30 days (Jan 2021)



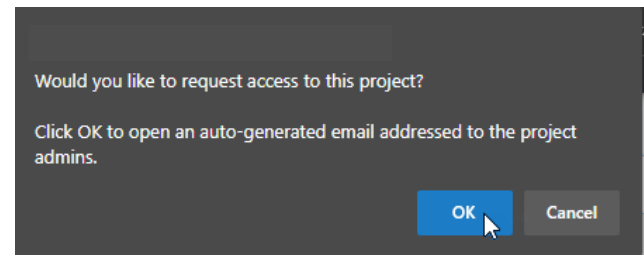
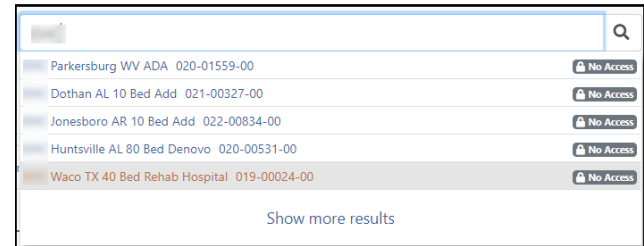
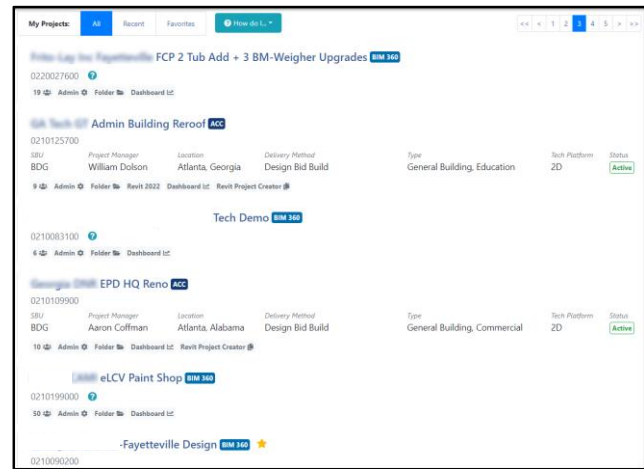
Next 18 months



Project Access Request

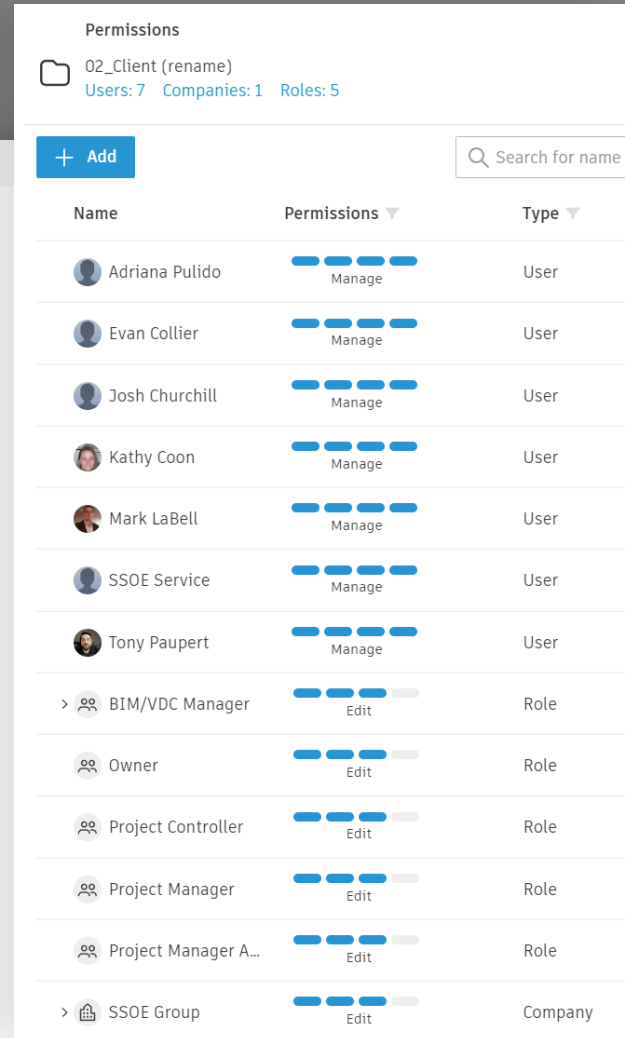
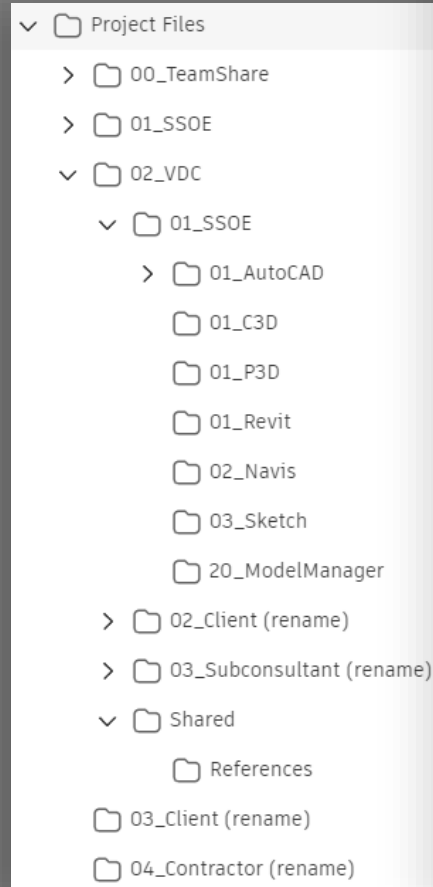
Mind shift change from All Access to Per Project

- BIM 360/ACC 2500+ Active projects
 - Automated Project Naming from ERP @Opportunity
 - End Client_Short Description
 - Project number, Location, PM, PMA, BIM Mgr. All assigned from ERP @project creation
 - ACC & ERP data combined in Data Lake for our Cardinal Webpage
 - Legacy DMS 3000 Active Projects
 - All Access unless Confidential – Alpha Numeric/Client/Location/Project Number/Folder structure
- SSOE Users can search all Active by ACC or ERP Metadata
- SSOE Users can request Project Access via SSOE Webpage
 - Sends notification to Project Admins
 - Average wait time in less than 15 min



Focus of Rollout

- Docs
 - Folder Access
 - SSOE Employees = Company
 - External = External ____
 - Client = Owner
- PM
 - Full control of their projects
 - Takes a lot of unplanned time to coach
- Desktop connector
 - Like no other system ever used.



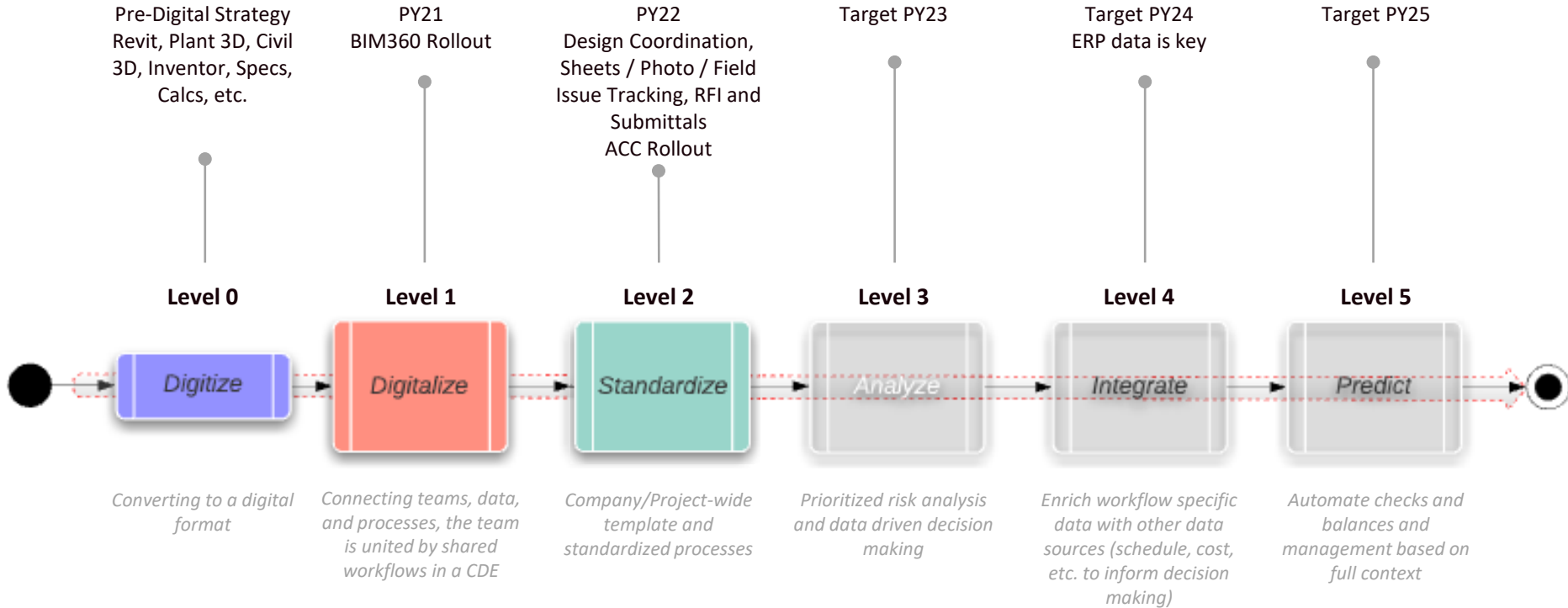
Lessons Learned

Items we discovered during roll-out

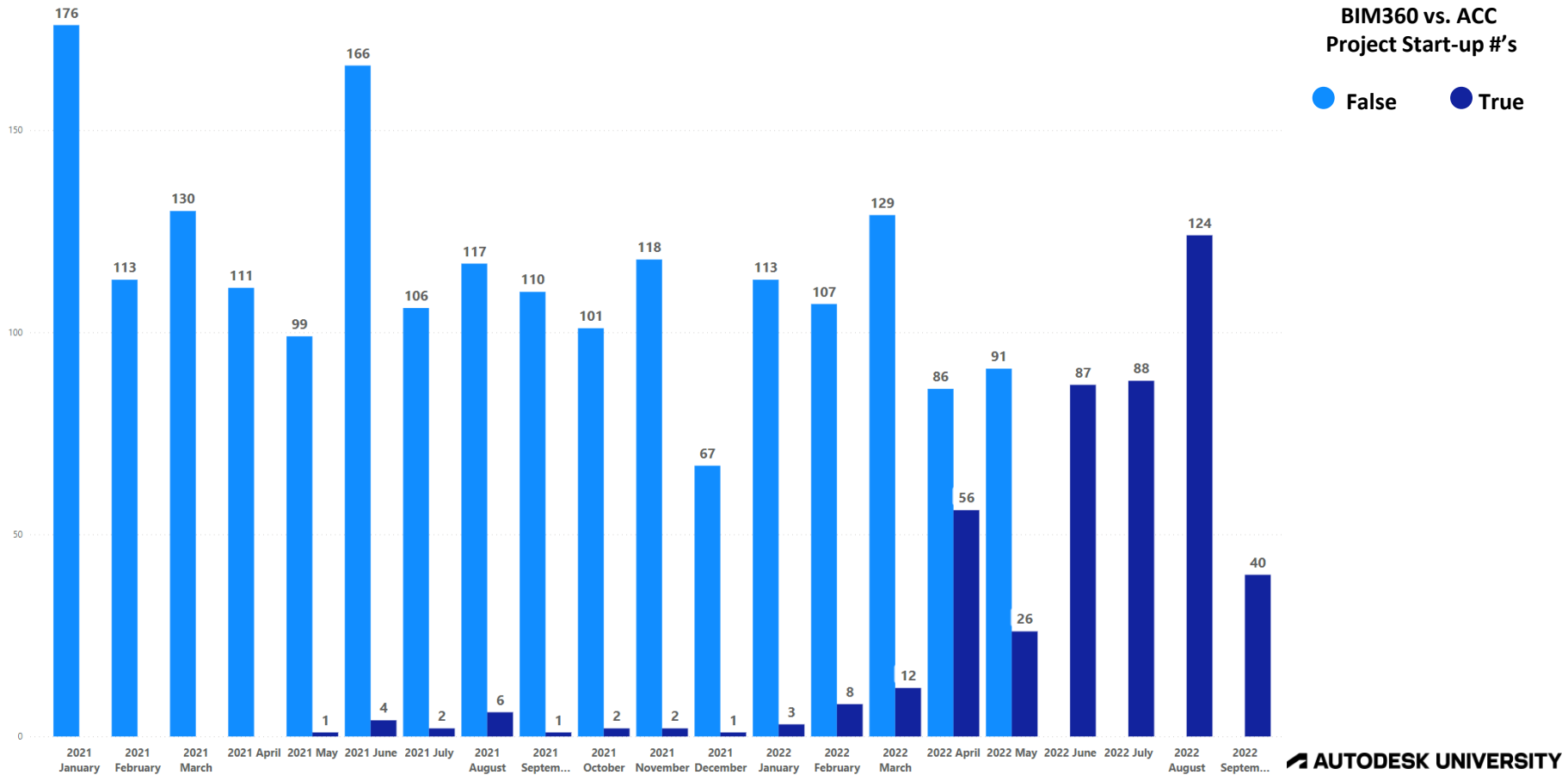
- Desktop Connector, doesn't lock files, latency issues, and not like anything out there.
- When to use the web interface over Desktop Connector.
- Migration of projects and confusion of old methods and do we use new tools.
- Autodesk training is good, custom workflows are better. Sitting over the shoulder is the best.
- Sandboxes for users to play before and after rollout.
- Permissions – Companies, Roles, Users
- Full-time Team – Lead and support staff burn-out
- LEADERSHIP – Buy-in & support across all levels

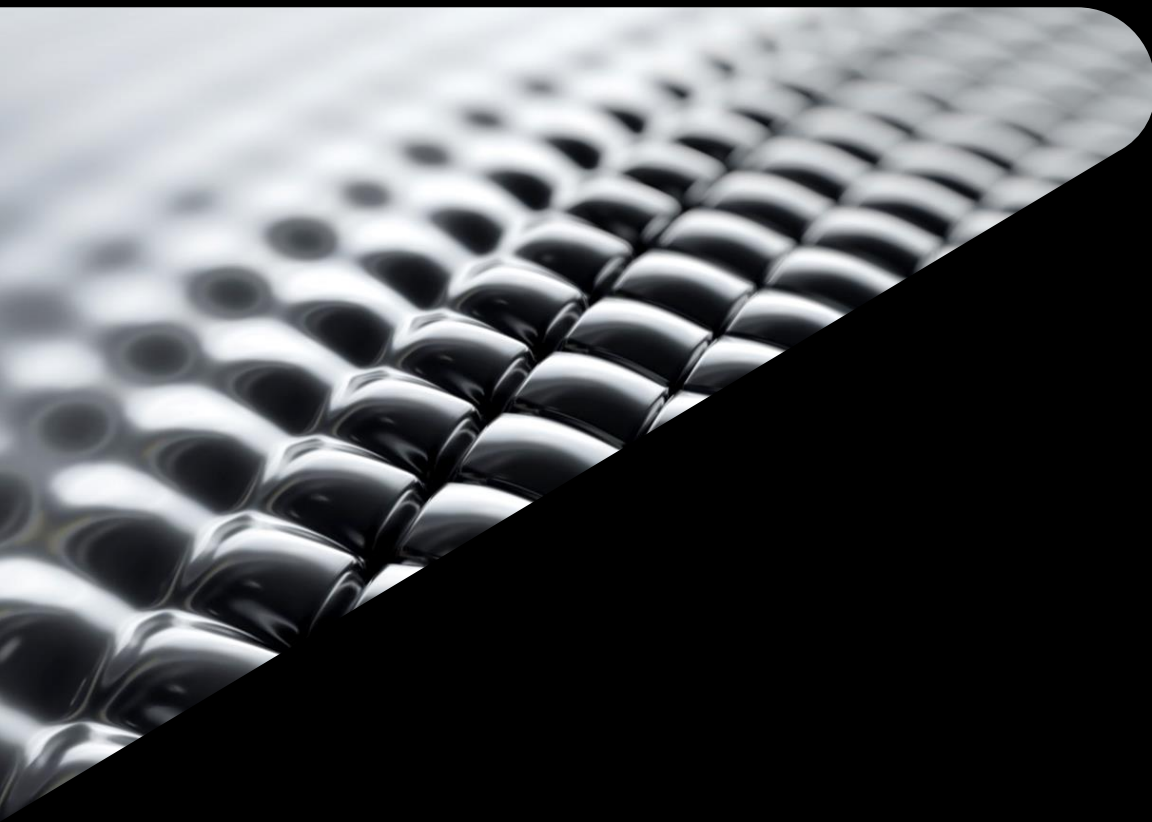


Digital Transformation - SSOE Progress



BIM360 – ACC Transition 2022





ACC - Launch

Enterprise-wide May 31st, 2022

License Administration

External Users Require More Attention

- Enterprise Customers
 - Starting In April all new external users get Unlimited Build
 - If added to BIM360, then added to an ACC project an Account Admin will still need to manually add
- Once a license is assigned, it travels outside of your hub.
- Internal users get access right away because of Account Administration automation.

Company

Select a company (optional) ▾

Role

Select a role (optional) ▾

Access level

Select... ▾

Member subscription ⓘ

Autodesk BIM Collaborate

Assign subscription ▾

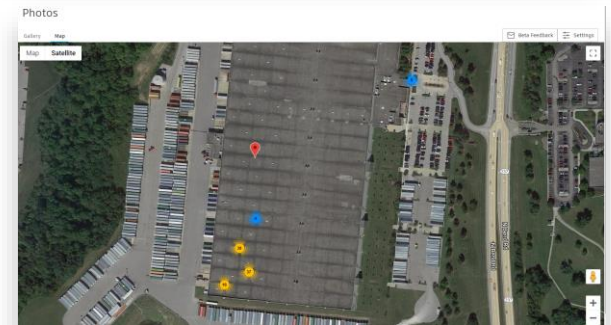
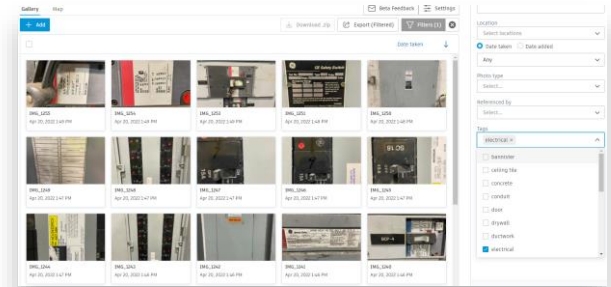
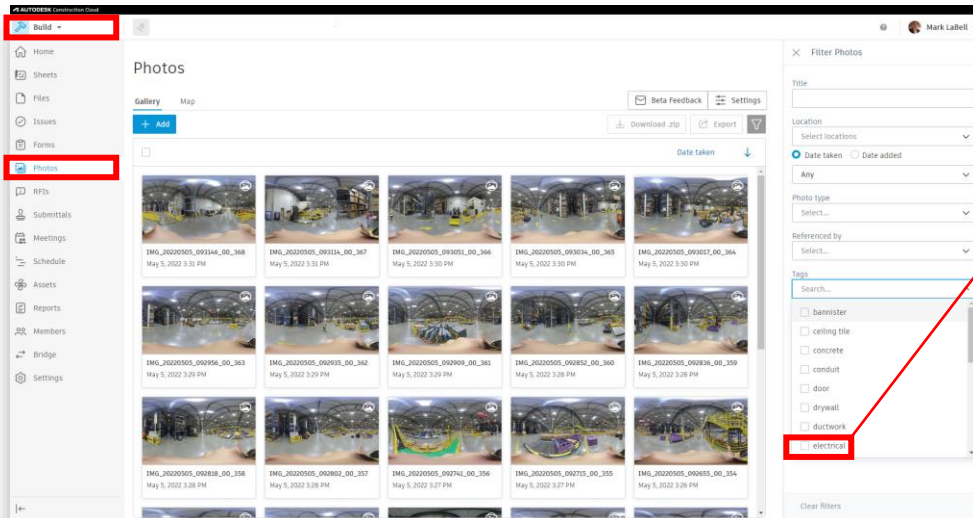
Autodesk Takeoff
Token Flex

Autodesk Build

Assign subscription ▲

Autodesk Build Unlimited
Token Flex

Photos Enhancements



- Photos is a library with auto tagging, viewing and linking to plans, RFIs, Issues, and models. Supports 360-degree camera and GPS tracking for map view (lower right image). Photos can easily be shared with external members.
- Photos stored in folders do not allow any of the above features which is why the folder structure was removed from the default SSOE structure.

Project Quality Enhancements

Submittals

Items Packages Spec sections

+ Create Item

Export all

Title, spec, ball in court, or packag

<input type="checkbox"/>	Status	#	Spec	Rev	Title	Type	Priority	Package	Ball in court	Due date	Response	References
<input type="checkbox"/>	Open In review	216	08 4113 Aluminum Sto...	0	216-084113-0 Preformed F...	Samples	Normal	-	John Elvin (SSEO Group)	March 17, 2022	-	-
<input type="checkbox"/>	Open In review	215	08 8000 Glazing	0	215-088000-0 Glazing Ch...	Samples	Normal	-	John Elvin (SSEO Group)	March 17, 2022	-	-
<input type="checkbox"/>	Open In review	214	22 1123.13 Domestic Wat...	0	214-221123.13-0 Domestic ...	Shop Drawings	Normal	-	Kevin Stockdale (SSEO Group)	March 17, 2022	-	-
<input type="checkbox"/>	Open In review	213	07 9200 Joint Sealants	0	213-079200-0 Joint Seala...	Product Data	Normal	-	John Elvin (SSEO Group)	March 14, 2022 3 days remaining	-	-
<input type="checkbox"/>	Open Reviewed	212	26 0924 Wireless Light...	0	212-260924-0 Wireless Lig...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	Exceptions Noted	-
<input type="checkbox"/>	Closed	211	26 0533 Raceways & B...	0	211-260533-0 Raceways a...	Product Data	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
<input type="checkbox"/>	Open Reviewed	210	22 3300 Electric, Dome...	0	210-223300-0 Water Heat...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
<input type="checkbox"/>	Closed	209	23 3113 Metal Ducts	0	209-233113-1 Metal Duct C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	Exceptions Noted	-
<input type="checkbox"/>	Open In review	208	22 1316 Sanitary Wast...	0	208-221316-0 Sanitary Wa...	Shop Drawings	Normal	-	John Elvin (SSEO Group)	March 10, 2022 1 day overdue	Revise and Resubmit	-
<input type="checkbox"/>	Closed	207	26 0533 Raceways & B...	0	207-260533-0 Electrical C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
<input type="checkbox"/>	Closed	206	26 0533 Raceways & B...	0	206-260533-0 Electrical C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
<input type="checkbox"/>	Open	205	07 1326	0	205-071326-0 High Tempo...	Product Data	Normal	-	John Elvin	March 10, 2022	-	-

Project Quality Enhancements

Official response

No Exceptions Taken

Katherine McKeever on 03/07/2022 at 08:15

211-260533-0 Raceways and Boxes fo...
John Elvin, 07 March

General information

Description	Spec section	Status
Submittal for review is in FILES	26 0533 - Raceways & Boxes for Electrical Systems	Closed
	Spec sub section	Ball in court (Responsible contractor)
	Unspecified	Lisa Lewis (SSOE Group)
	Type	Priority
	Product Data	Normal
	Package	
	Unspecified	

Attachments (1)

	For review	Official response
211-260533-0 Raceways and Boxes fo... John Elvin, 03/07/2022 10:19 AM	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Planning & tracking

Planning	Tracking	
Required date	Sent to submitter	Sent to reviewer
Unspecified	Mar 02, 2022	Mar 07, 2022
Required approval date	Submitter due date	Reviewer due date
Unspecified	Mar 11, 2022	Mar 11, 2022
Required on job site date	Received from submitter	Received from reviewer
Unspecified	Mar 02, 2022	Mar 07, 2022
Lead time (days)	Manager due date	Published
Unspecified	Unspecified	Mar 07, 2022

Participants

Manager

- Lisa Lewis (SSOE Group)

Reviewer

- John Elvin (SSOE Group)

Co-reviewers (1)

- Ken Daenecke (SSOE Group)

Responsible contractor

- Lisa Lewis (SSOE Group)

Watchers (2)

- John Elvin (SSOE Group)
- Steven Jackson (SSOE Group)

References (0)

Add references

Activity log

Add a comment, use '@' to mention...

- Closed and distributed**
Status: Open → Closed
Reviewed: Mar 07, 2022
Published: Mar 07, 2022
Lisa Lewis on 3/7/2022 at 10:31 AM
- Returned to manager**
Received from reviewer: Mar 07, 2022
Ball in court: John Elvin → Lisa Lewis
John Elvin on 3/7/2022 at 10:19 AM
- Attachment was added**
211-2605...PD.pdf
John Elvin on 3/7/2022 at 10:19 AM
- Returned to reviewer**
Sent to reviewer: Mar 02, 2022 → Mar 07, 2022
Ball in court: Lisa Lewis → John Elvin

Project Quality Enhancements

ZZ_ACC Sandbox

Meetings >

Minutes | 02 | Corp ACC Bi-Weekly Updates

Invitees | References

1. Add Josh and Mark to ticket Ongoing
CK
2. Download data from BIM360 Ongoing
3. Create new project in ACC Ongoing
4. Manual Cardinal Sync Ongoing
5. Upload data and let staff know work is complete Ongoing
6. Archive BIM360 project, add DO NOT USE to name and Project number Ongoing

▼ Company Creation Form

1. Who is Responsible for inputting data? Open
JC

▼ JIT ACC Training for Staff

1. May be a request coming from Faith. Need to point users to ACC training modules available on line. Open

▼ PW Removal/ACAD 2022 Rollout

1. PW will be removed from all machines when 2022 rolls out. Users that still need PW will need to install Ongoing
2. Project users may fall under 100 hr threshold. Will need PW access. These users will need to submit a ticket to be placed on exception list. Ongoing

Bridge



Master Standards

SSOE Hub



SSOE Projects

Client or Partner Hub



SSOE Custom Data Visualization & Automations

Project Search & Access Request

Multi-Project Weekly Summary
(Issues, RFIs, Submittals)

Week Summary

08/15/2022

Assigned to Me All Items

Issues RFIs Submittals

Mon 8/15	Tue 8/16	Wed 8/17	Thu 8/18	Fri 8/19
	Steam Generator Revised Submittal Ralph Bednarz OPEN	-B02_BROWNFIELD 301 SUB-B02-FINSA-EXTERIOR POLE LUMINARE Submittal Refugio Garcia OPEN	BROWNFIELD MODIFICATIONS Fire Sprinkler Roof Support RFI Glenn Meiring OPEN	BROWNFIELD MODIFICATIONS Front entrance walkway detail RFI Jeff Haines OPEN
	Tool Install RFI #0276: Pipe Painting Confirmation RFI Brittney Reckers OPEN	RFI-B02-FINSA-INTERCONNECTION FAS TO SMOKE EXHAUST EQUIPMENT RFI Miguel Angel Gomez ANSWERED	Shower Mixing Valves RFI Nicholas Hamilton ANSWERED	-B02_BROWNFIELD B01 RFI-B02-EXP-REVIEW FOR INJECTION DUCT DIMENSION ANSWERED
	TITAN PROJECT Vertical Electric Service RFI Cody Pfister OPEN	TITAN PROJECT Steel/Concrete Discrepancies RFI Jason Atencio OPEN	-B02_BROWNFIELD B01 RFI-B02-FINSA-AHU PRESSURE REGULATORS RFI Heyerdhal Galvan Alatorre SUBMITTED	RFI-B02-MEASUREMENT POINTS (REFURBISH_CONTINUATION) RFI Jesus Granados Elias SUBMITTED
			PROJECT Schuf Filters Submittal Richard Brennan OPEN	PROJECT TITAN Perimeter & Interior Column Dimensions

My Projects: All Recent Favorites [How do I...?](#)

Only show my projects
 Sort by PY

Prefix

- 021 **127**
- 022 **75**
- P22 **59**
- 020 **43**
- P21 **30**

[Show more...](#)

SBU

- BDG **352**
- Systems **3**
- Corporate **1**

PM

- Ronald Bruner **58**
- Michelle Alfieri Lowinger **55**
- Jana Bence **47**
- Amy Cope **46**
- Andrew Burrell **38**

[Show more...](#)

022-01275-00 > BDG > Taylor, Michigan
Active Project
Healthcare
PM: Courtney Scott
Design Bid Build
Tech: 2D
4 Revit Project Creator

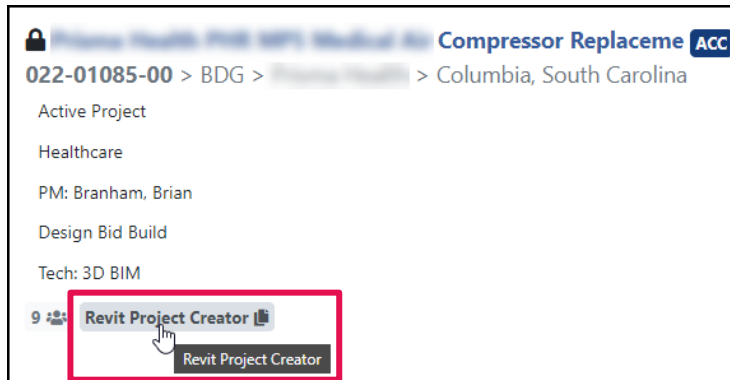
Ambulatory Interior Renovation BIM 360
021-00600-00 > BDG > Health > Columbia, South Carolina
Dormant Project
Healthcare
PM: Aull, Robert
Design Bid Build
Tech: 3D BIM
3

Portland Maine ADA BIM 360
017-01487-00 > BDG > Health Corporation > Portland, Maine
Active Project

Revit model automation

Streamlining J.I.T. consistent set up

- Populates Project Data from our Data-Lake
- Uses Open Revit & ACC API's and Forge App
- Pulls Proper Revit Templates (ACC Templates project)
- Creates, Links, & Publishes Cloud Workshare in Standard Docs Location
- Initiates Design Collaboration



Revit Project Creator

Submitting this form will trigger the automatic creation of Revit models in the selected ACC project.

Project Name: Medical Air Compressor Replaceme

Project Number: 0220108500

Requester: Lauren Collier

Requester Id: lcollier@ssoe.com

Template: 2022 SSOE Imperial

Emails To Be Notified (separated by commas): lcollier@ssoe.com

Models To Create

Discipline	Count
Architecture	1
CAD	1
Electrical	1
Mechanical	1
Plant 3D	1
Point Cloud	1
Structural	1
Telcom	1

+ Add Row

Ignore Previously Generated Models

Project Info Parameters

Name	Value
Client Name	Health
Project Name	Medical Air Com
Project Number	022-01085-00

+ Add Row

The Must Haves

Checklist for Scalable Success

Scalable Success



Planning

- Build your Why & Purpose
- Pilot & Incubate in operations
- Build your Advocates in operations
- Build out multi-phase approach
- Executive Leadership



Resources

- Core Team
- Admin & Support Team
- Training & Communication
- Developers
- Build Experts – All levels of Project
- Budget – Team, Training, automation



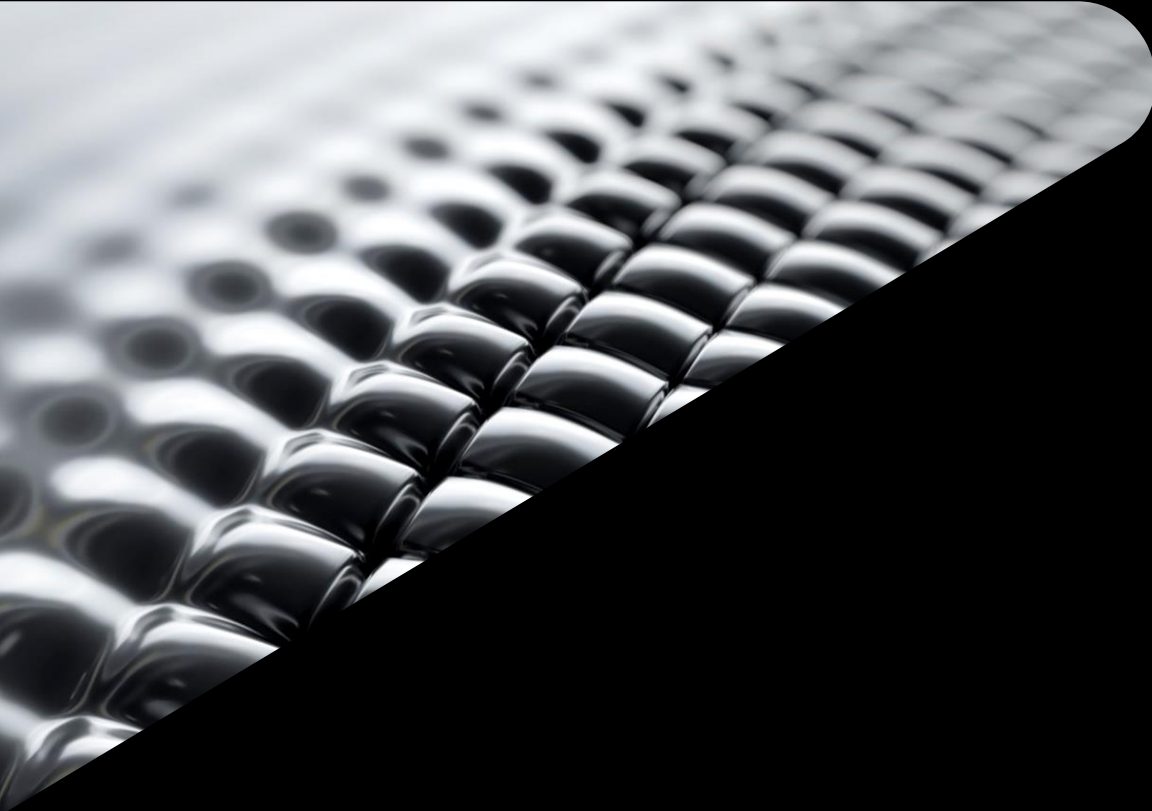
Implementation

- Leadership – All Levels
- Full-Time Team
- Desktop Connector – Testing, Software roll-out
- Sandbox spaces
- Internal & external training material & marketing campaigns (mixed media)
- Flexibility & Patience



Sustaining

- New Feature – incubation / Pilots / Roll-outs
- COP's – Maintain Continuous Improvement
- Regular check-ins with operations
- Process re-definition and improvement

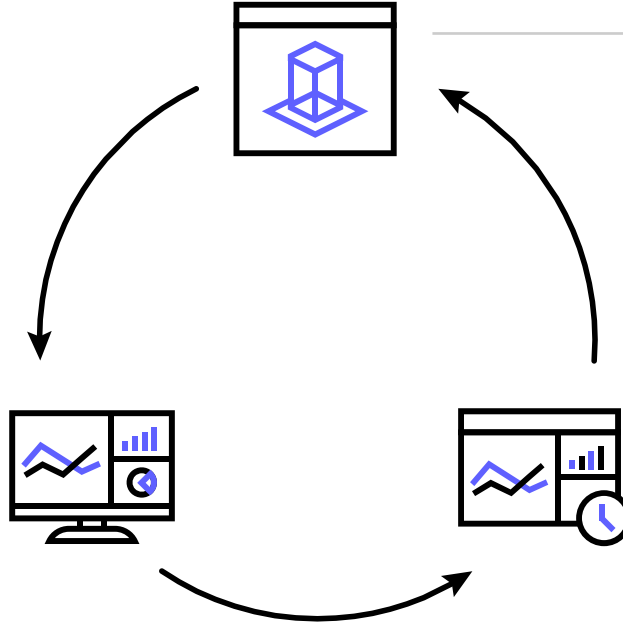


The Future

ACC Phase 3

Innovating more with ACC & Data!

- New ACC Features & Enhancements
- Desktop Connector 2.0
- Enhancing Design/Model Collaboration Workflows
- Issues, Photos, & Forms
- Assets (Design-Build-Buy-Operate)
- Schedule
- Meeting Minutes
- 'Correspondence
- Take-off
- Auto-Spec



- Automations
 - Models / Drawings
 - Data – in/out
- Integrations
 - Bridge
 - 3rd Party Apps / Cintoo
 - SSOE Forge Apps
 - SSOE Data Lake

- Dashboarding
 - Enterprise
 - Market Portfolio
 - Client
 - Project
 - User



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