



CS502282 - Scaling Up Enterprise Launch

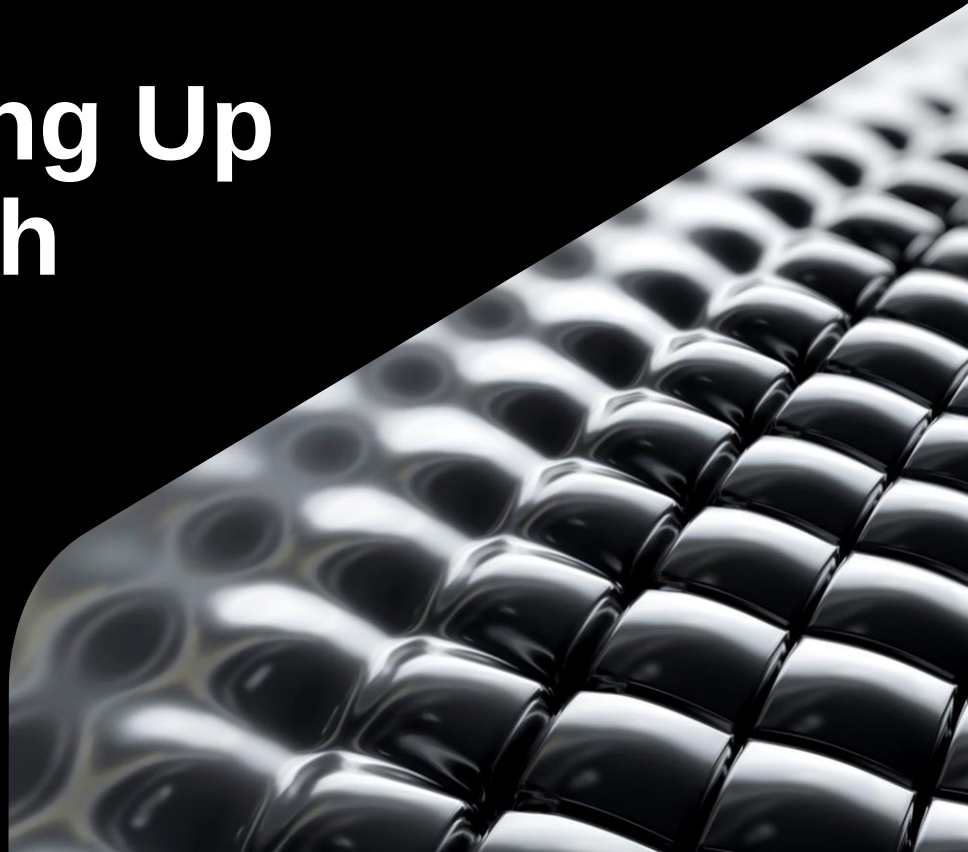
A Case Study of BIM 360 to Autodesk
Construction Cloud

Lauren L. Collier

SSOE Group - Director of Project Technology | @LLC_Collier

Mark LaBell

SSOE Group - Innovation Technology Leader | @mark_labell_jr



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

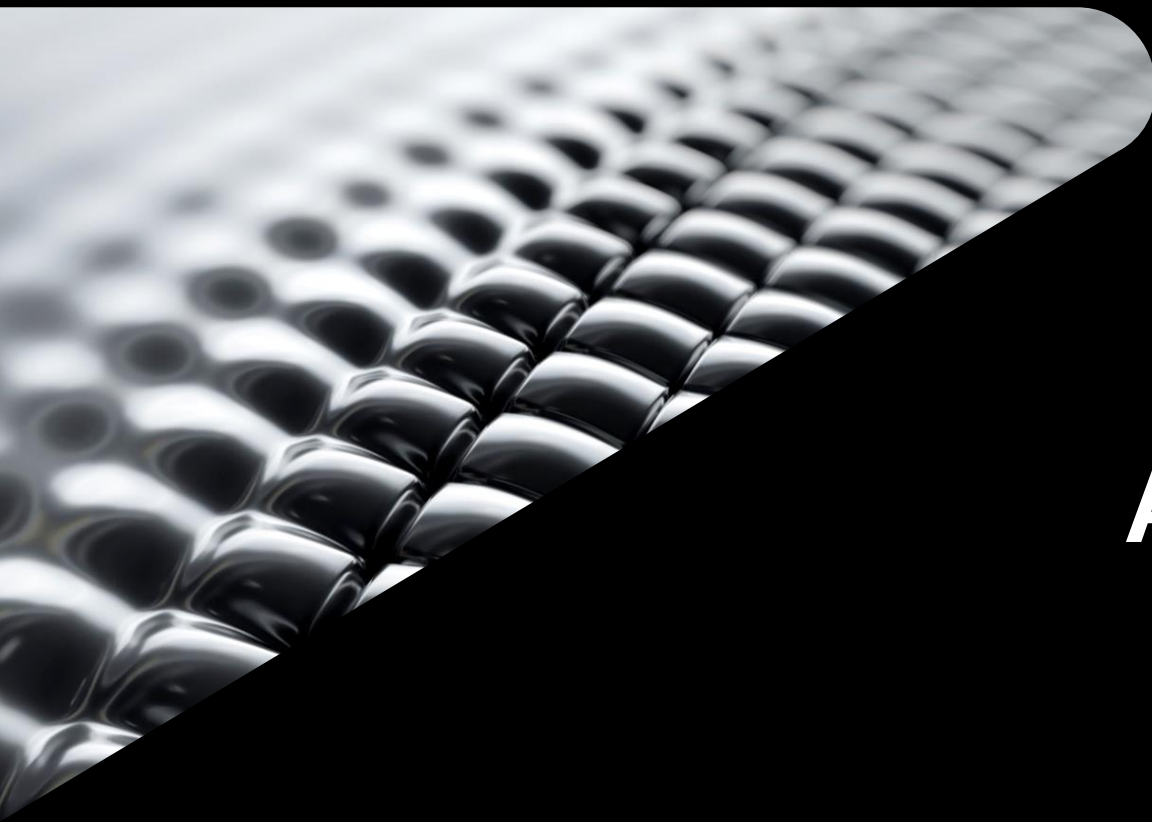
Internal Users

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



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

2018-20



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.

2021



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..

2022



Phase 2

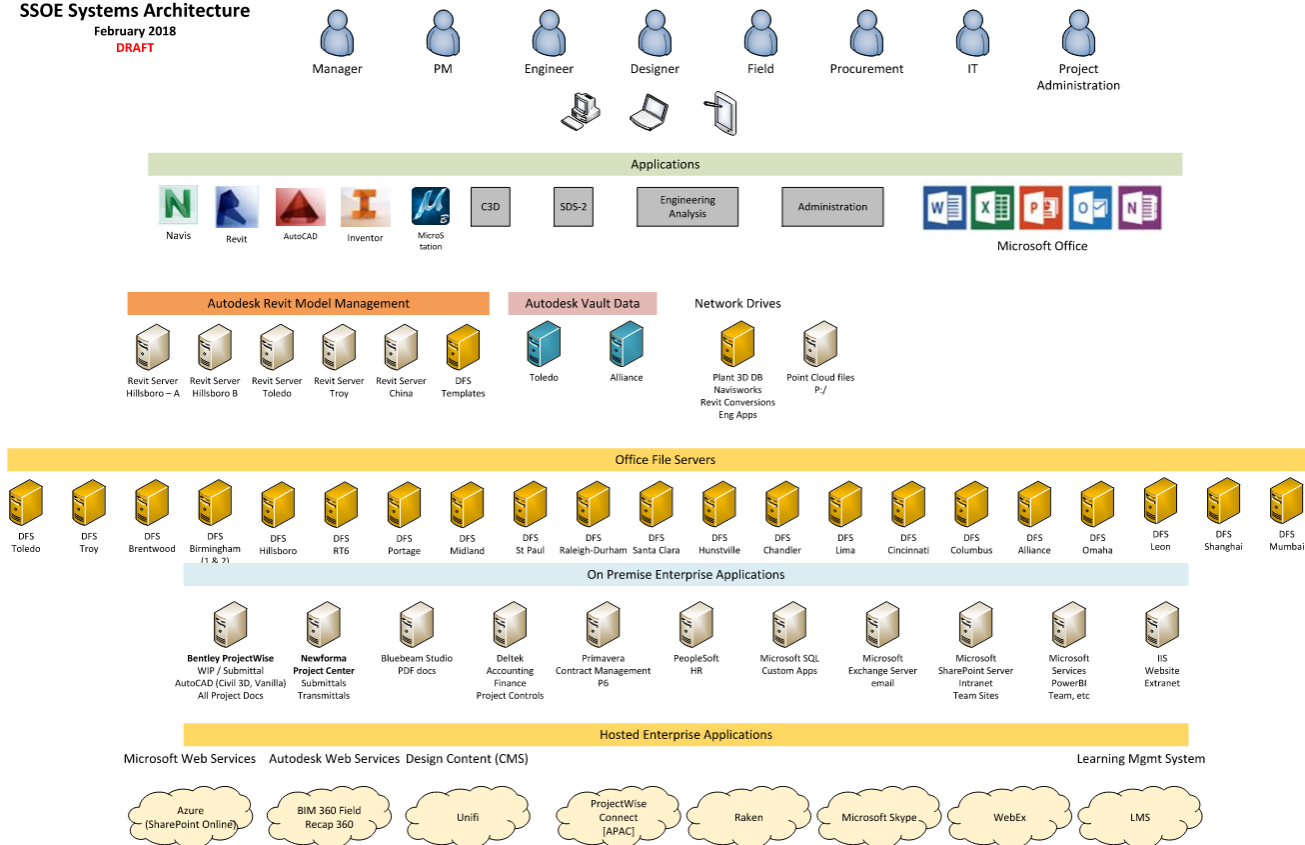
- ACC Go Live for all new projects 5/31/22.
- Revised training for differences
- Implement more data reporting and automations to streamline due dates, employee availability and status.
- Refine Quality procedures

Data Architecture – Mapping Exercise

SSOE Systems Architecture

February 2018

DRAFT

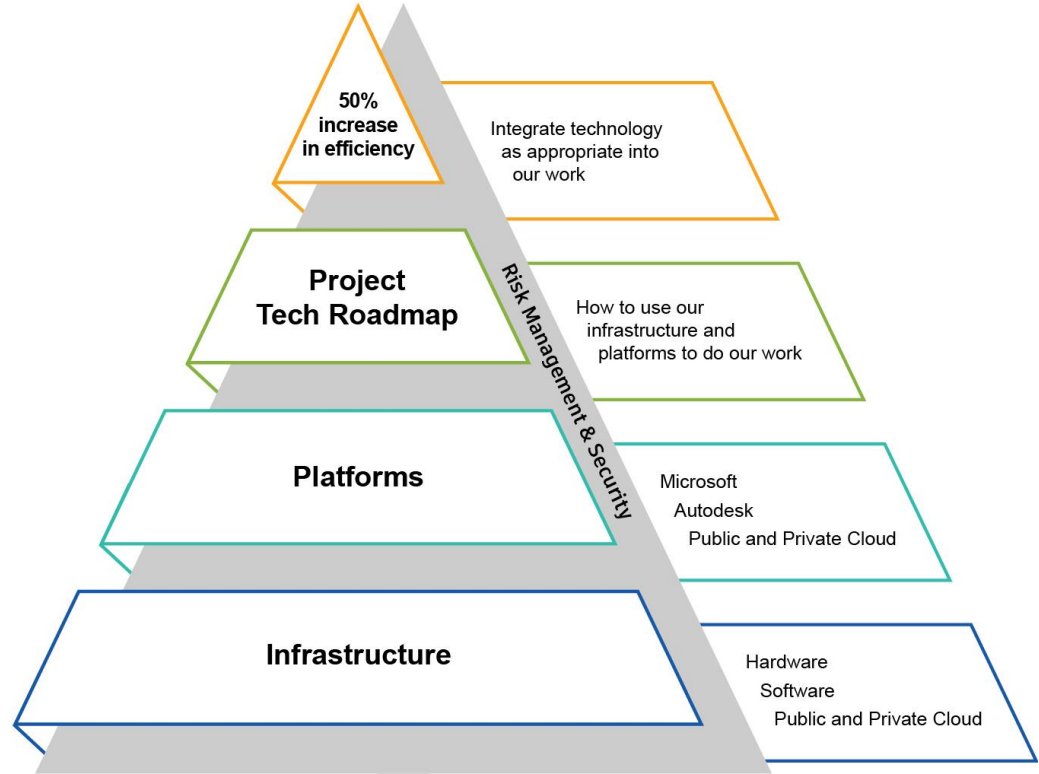


SSOE Group's Digital Strategy

Our digital transformation process

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

- Current State
- Strategy
- Change Management
- Continuous Improvement



2025 Technology Vision



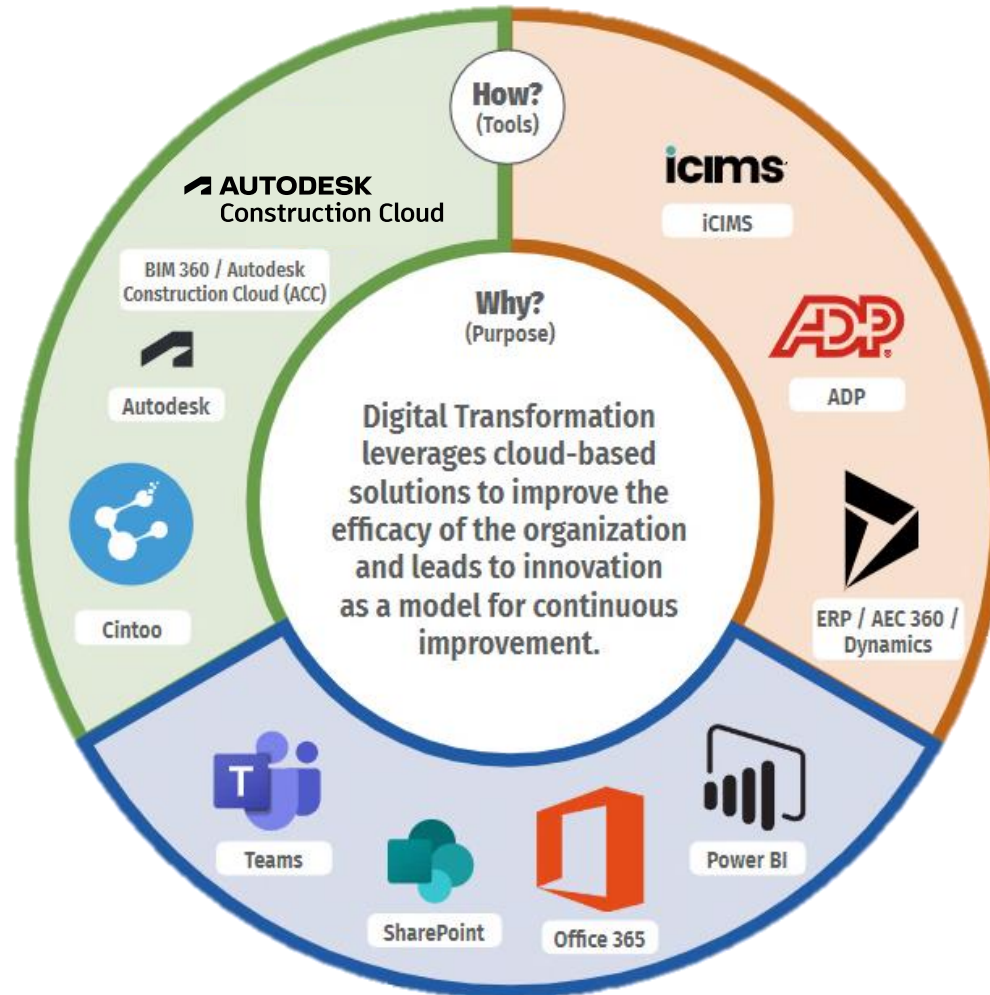
The North Star

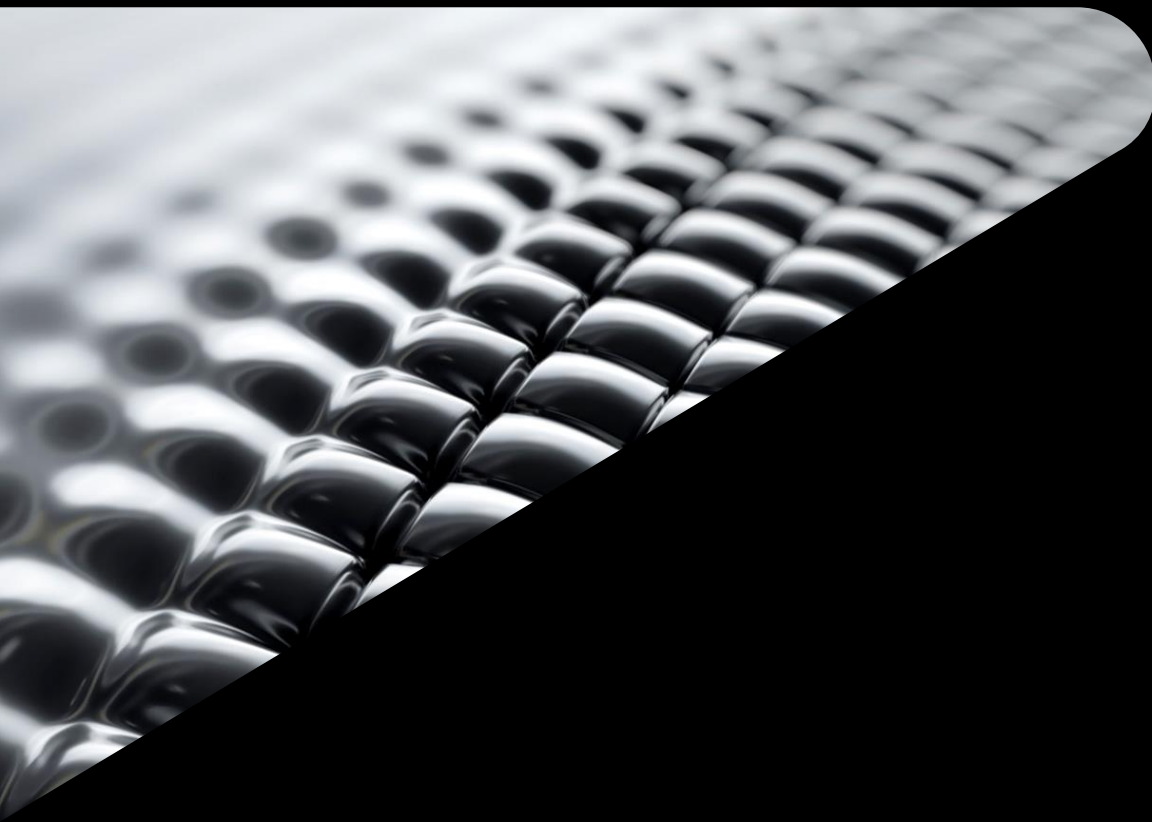
Key

Design Tools

Collaboration & Communication

Business Tools





The Plan

Pilots & Resources

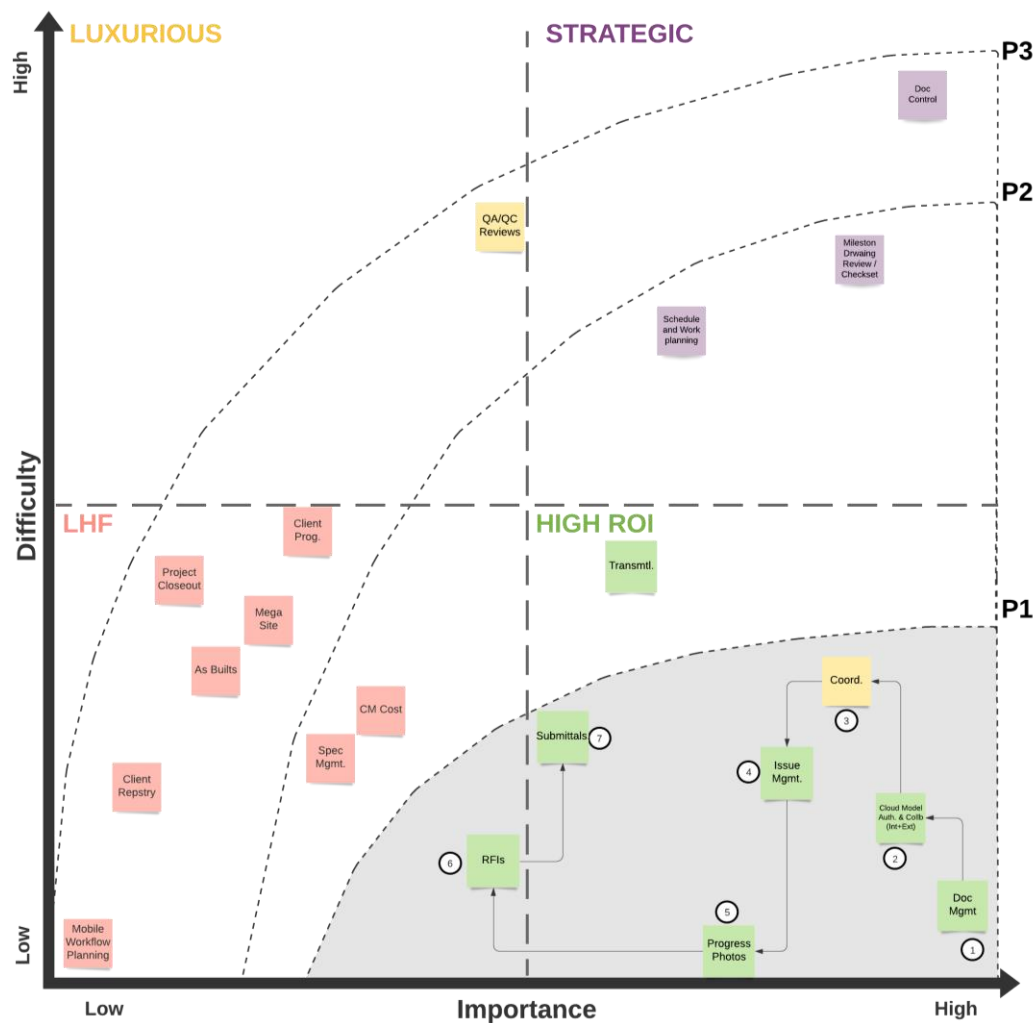
Why, Who, What, and When

Breaking down what is necessary for Full Enterprise cut over.

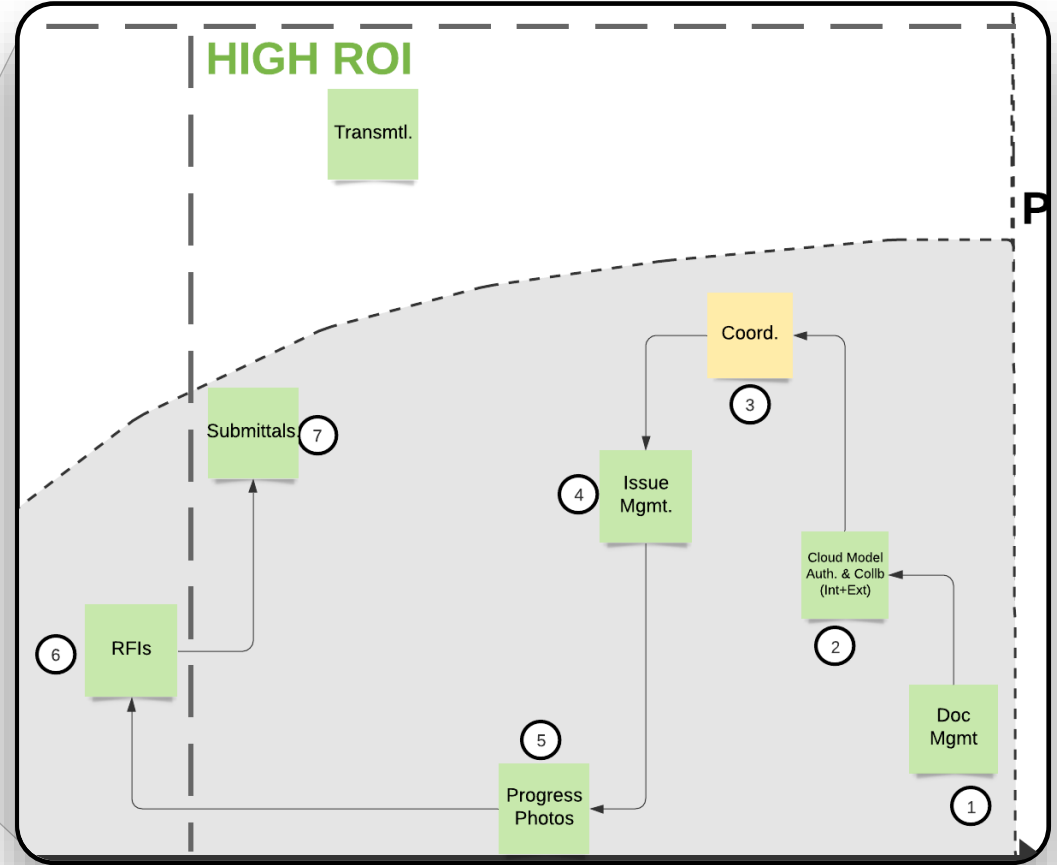
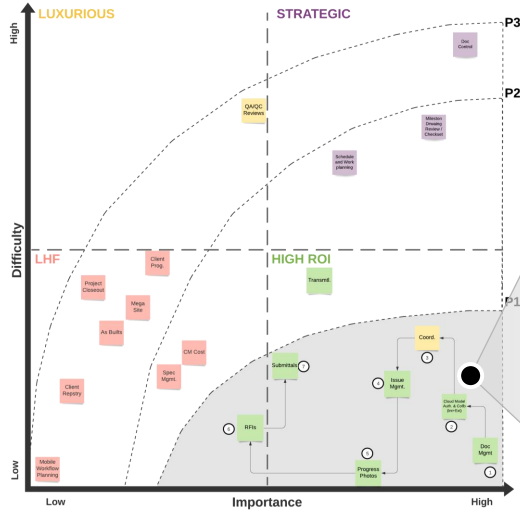
- T.E.A.M. approach, Each business unit 1 Egr/Arch and 1 Proj Mgr on the Core Team.
- Weekly mtgs to review schedule, commitments, budget and as final buy-off.
- Breakout meetings to work on process changes; core team pulled in additional staff.
- Heavily focused marketing involvement. Targeted communications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



Planning Process



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.





Project Home
Landing Page
Dashboards
Actionable Info



Insight
Dashboards
Project Data Visualization
Detailed Analytics
Reports



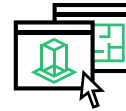
Project Management
Submittals
RFIs



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

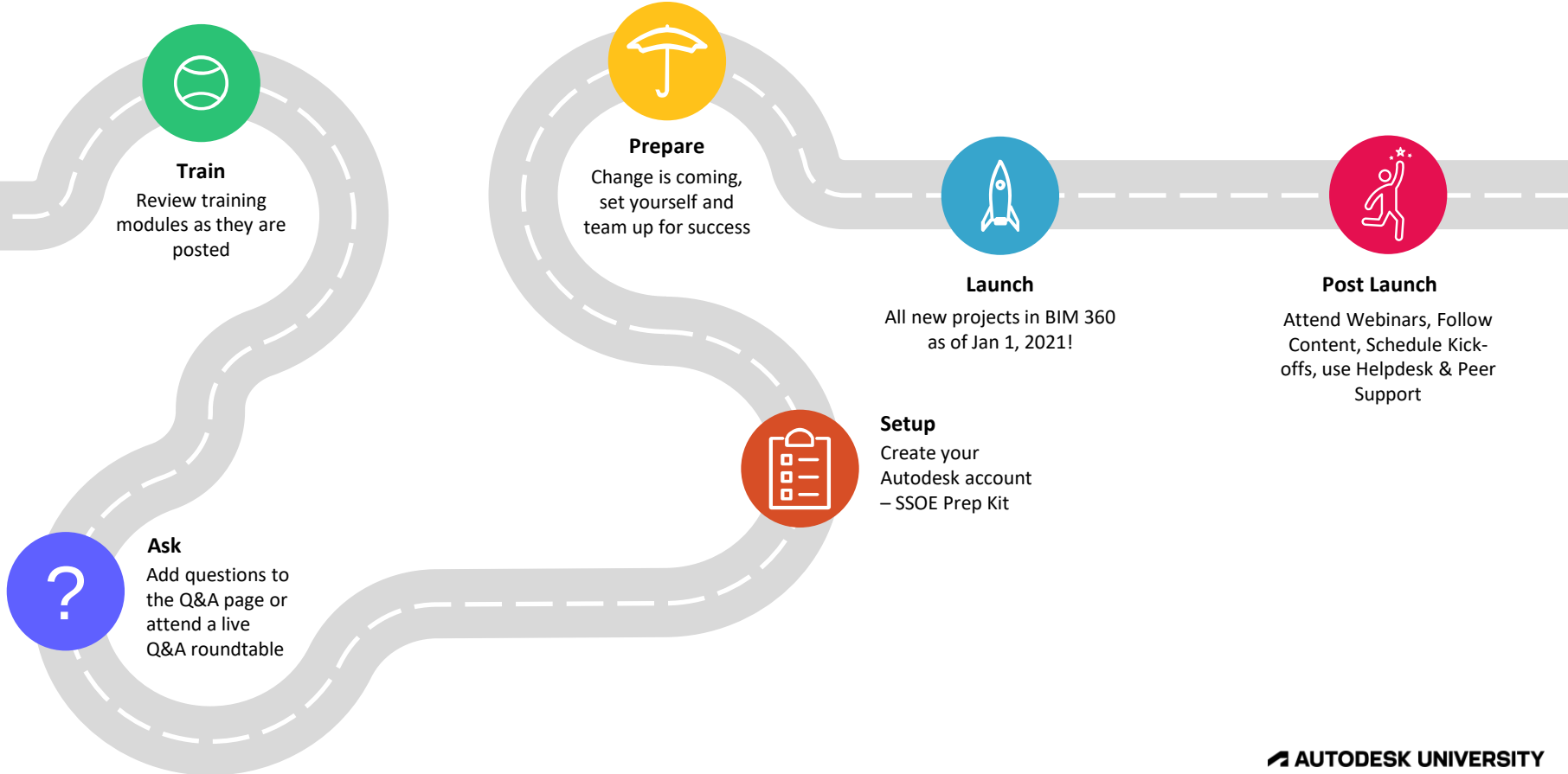


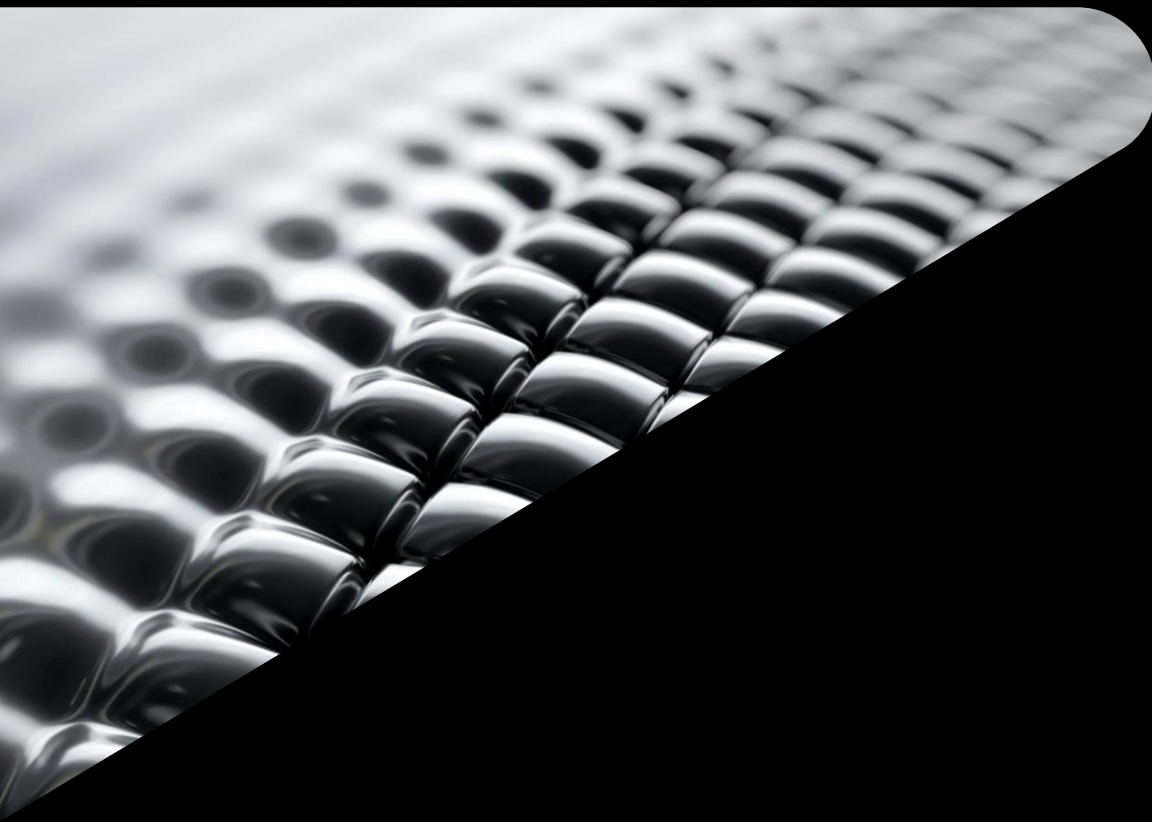
Cost
Management
Budget and Cost
Control

BIM 360 Modules

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

Training / Communication





BIM360 Launch

Enterprise-wide January 1st, 2021

Project Start-up Automation

Saves 1.5 FTE's a year

CARDINAL

LAUREN COLLIER

Project Setup Requests

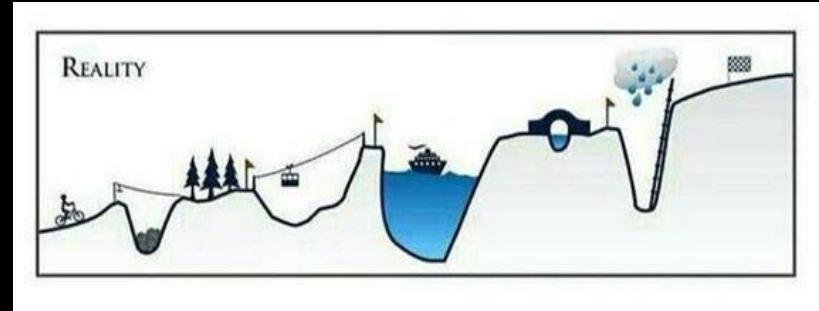
Total Setup Automations: (2307)

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, vhte@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)



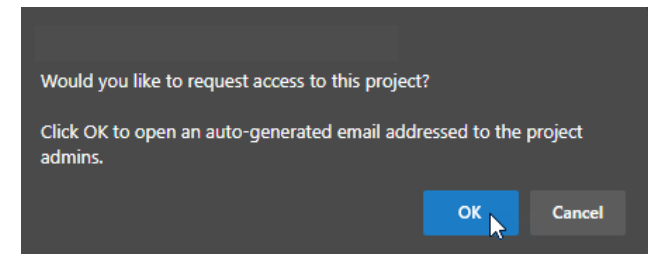
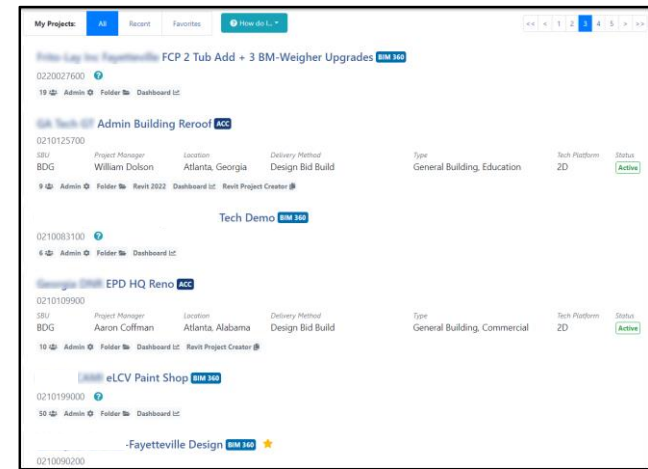
Next 18 months



Project Access Request

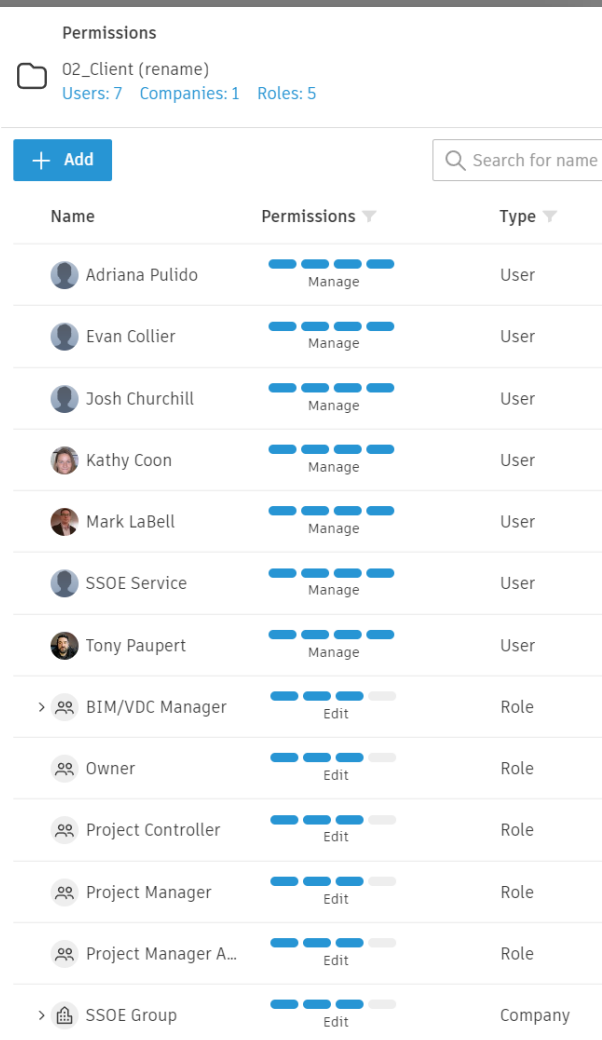
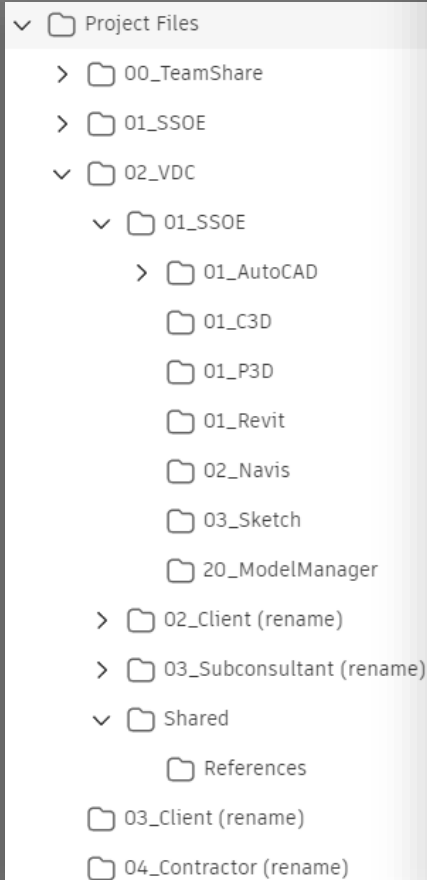
Mind shift change from All Access to Per Project

- 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

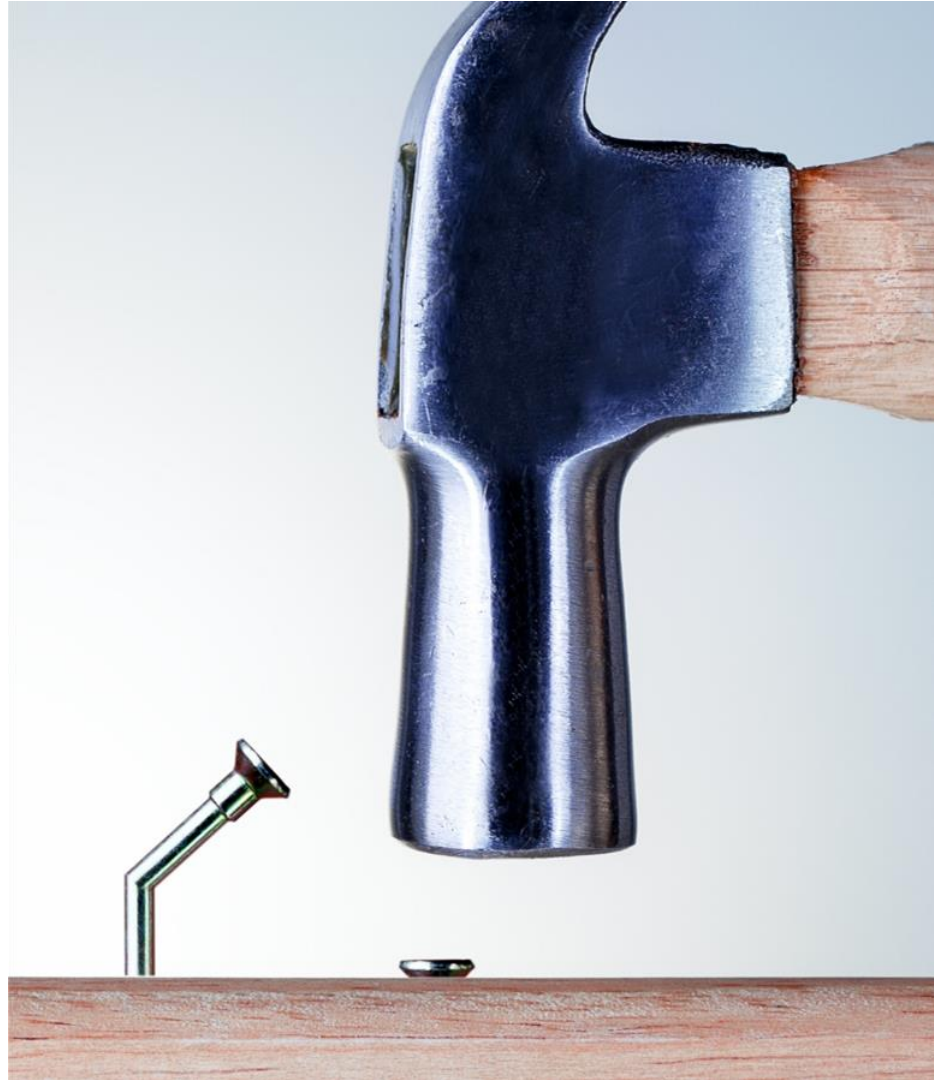
- Docs
 - Folder Access
 - SSOE Employees = Company
 - External = External ____
 - Client = Owner
- PM
 - Full control of their projects
 - Takes a lot of unplanned time to coach
- Desktop connector
 - Like no other system ever used.



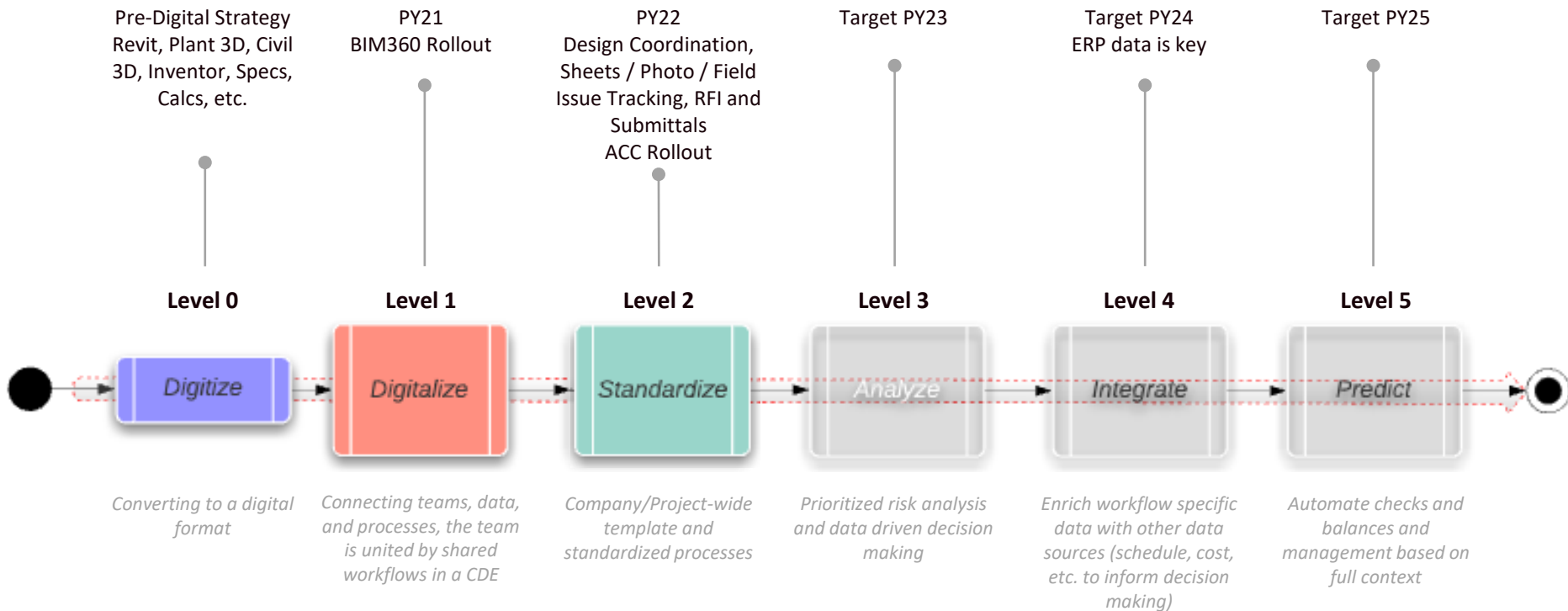
Lessons Learned

Items we discovered during roll-out

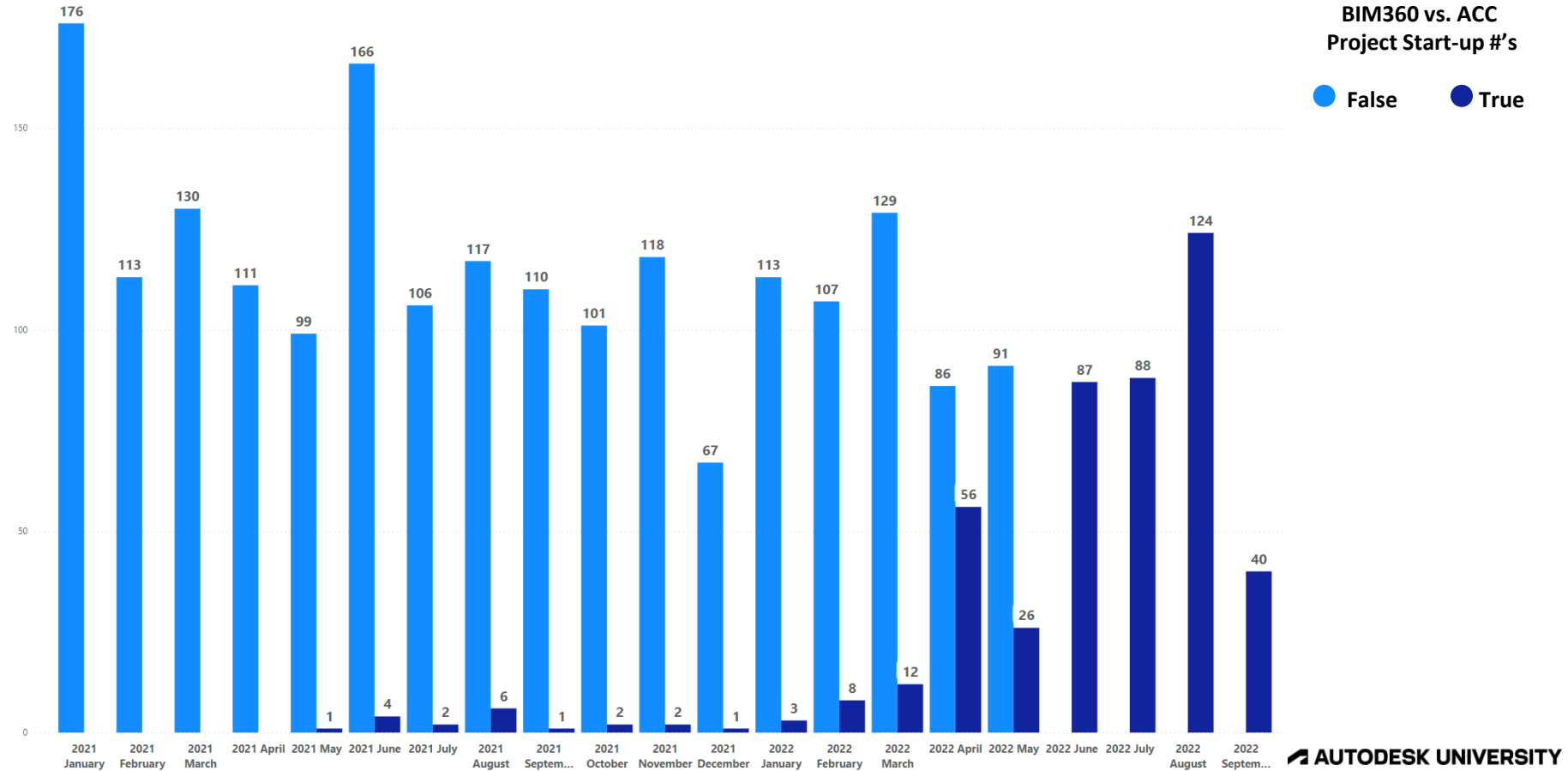
- Desktop Connector, doesn't lock files, latency issues, and not like anything out there.
- When to use the web interface over Desktop Connector.
- Migration of projects and confusion of old methods and do we use new tools.
- Autodesk training is good, custom workflows are better. Sitting over the shoulder 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

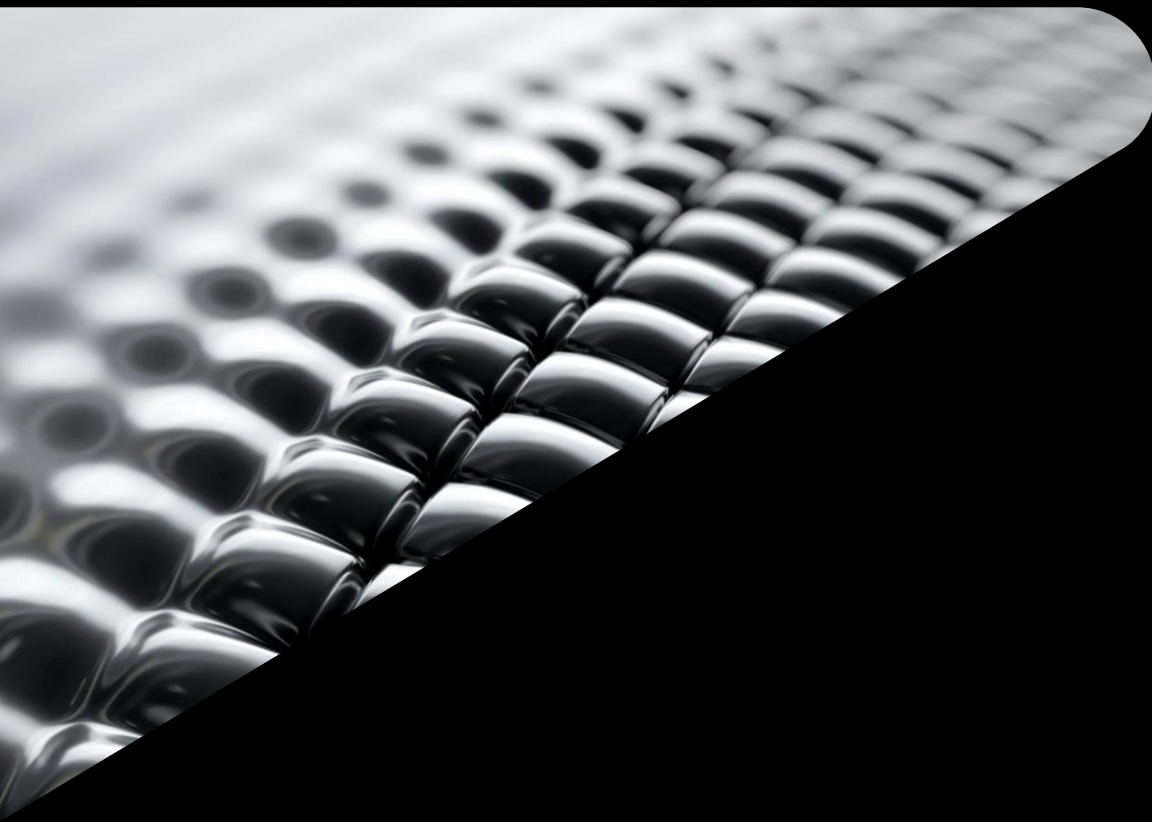


Digital Transformation - SSOE Progress



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

Field Enhancements

AE-110 (Stick Set for Punch) ▾

Issue #766

Details Activity log

[Unpublish](#) [Delete](#)

of corrosion of the steel.
Provide 3rd Party Testing and Observation Reports.

Assigned to
Unspecified

Watchers
Select watchers

Location
Unspecified

Location details
Unspecified

Due date
Unspecified

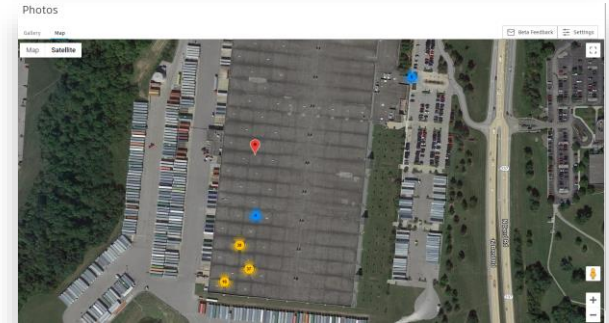
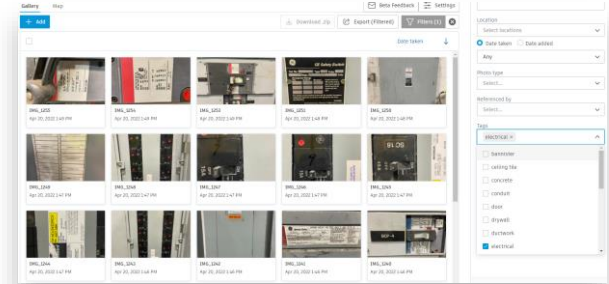
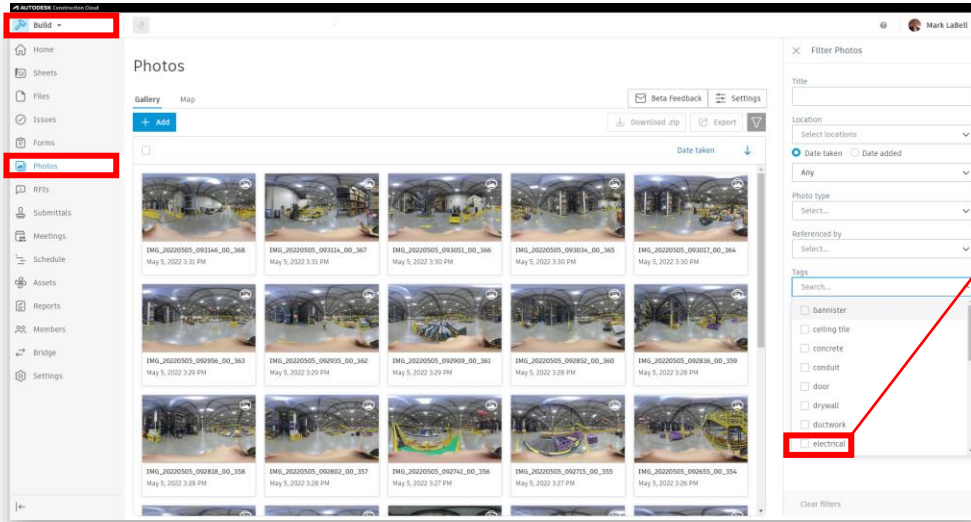
Start date
Unspecified

Root cause
Unspecified

References
Add references

Photos

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

ItemsPackagesSpec sections

+ Create item

▼

Export all

🔍 Title, spec, ball in court, or packag

☐ Status	#	Spec	Rev	Title	Type	Priority	Package	Ball in court	Due date	Response	References
☐ Open In review	216	08 4113 Aluminum Sto...	0	216-084113-0 Preformed F...	Samples	Normal	-	John Elvin (SSEO Group)	March 17, 2022	-	-
☐ Open In review	215	08 8000 Glazing	0	215-088000-0 Glazing Ch...	Samples	Normal	-	John Elvin (SSEO Group)	March 17, 2022	-	-
☐ 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	-	-
☐ 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	-	-
☐ Open Reviewed	212	26 0924 Wireless Light...	0	212-260924-0 Wireless Lig...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	Exceptions Noted	-
☐ Closed	211	26 0533 Raceways & B...	0	211-260533-0 Raceways a...	Product Data	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
☐ Open Reviewed	210	22 3300 Electric, Dome...	0	210-223300-0 Water Heat...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
☐ Closed	209	23 3113 Metal Ducts	0	209-233113-1 Metal Duct C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	Exceptions Noted	-
☐ 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	-
☐ Closed	207	26 0533 Raceways & B...	0	207-260533-0 Electrical C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
☐ Closed	206	26 0533 Raceways & B...	0	206-260533-0 Electrical C...	Shop Drawings	Normal	-	Lisa Lewis (SSEO Group)	-	No Exceptions Taken	-
☐ 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

Submittal for review is in FILES

Spec section

26 0533 - Raceways & Boxes for Electrical Systems

Spec sub section

Unspecified

Type

Product Data

Package

Unspecified

Status

Closed

Ball in court (Responsible contractor)

Lisa Lewis (SSOE Group)

Priority

Normal

Attachments (1)

211-260533-0 Raceways and Boxes fo...

John Elvin, 03/07/2022 10:19 AM

☐

☒

Planning & tracking

Planning

Required date

Unspecified

Required approval date

Unspecified

Required on job site date

Unspecified

Lead time (days)

Unspecified

Tracking

Sent to submitter

Mar 02, 2022

Submitter due date

Mar 11, 2022

Received from submitter

Mar 02, 2022

Manager due date

Unspecified

Sent to reviewer

Mar 07, 2022

Reviewer due date

Mar 11, 2022

Received from reviewer

Mar 07, 2022

Published

Mar 07, 2022

Activity log

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

Closed and distributed

Status

Open

Reviewed

Closed

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

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

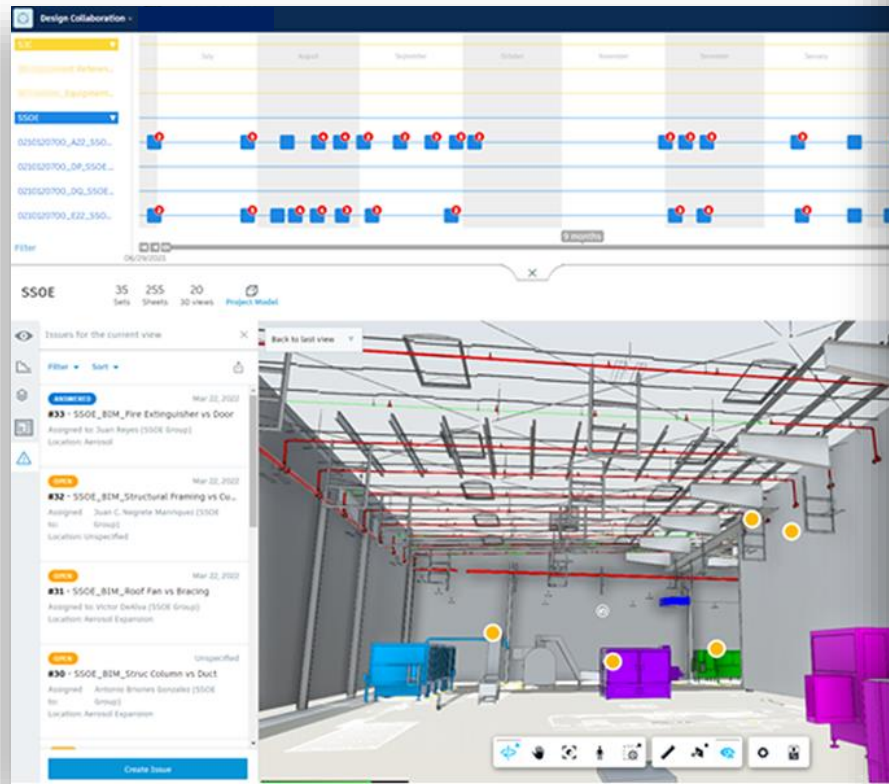
AUTODESK UNIVERSITY

Project Quality Enhancements

The screenshot shows a web application interface for a meeting titled "Corp ACC Bi-Weekly Updates". The interface includes a header with "ZZ_ACC Sandbox", a user profile for "Lauren Co", and navigation links for "Minutes", "02", "Invites", and "References". The main content is a list of tasks, each with a status indicator (blue for "Ongoing", orange for "Open").

Task	Status
1. Add Josh and Mark to ticket	Ongoing
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
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

Modeling Enhancements



Bridge



Master Standards

SSOE Hub



SSOE Projects

Client or Partner Hub



SSOE Custom Data Visualization & Automations

Project Search & Access Request

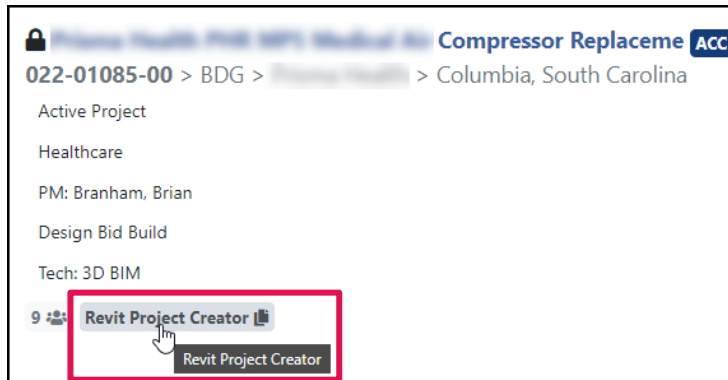
Multi-Project Weekly Summary
(Issues, RFIs, Submittals)

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

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



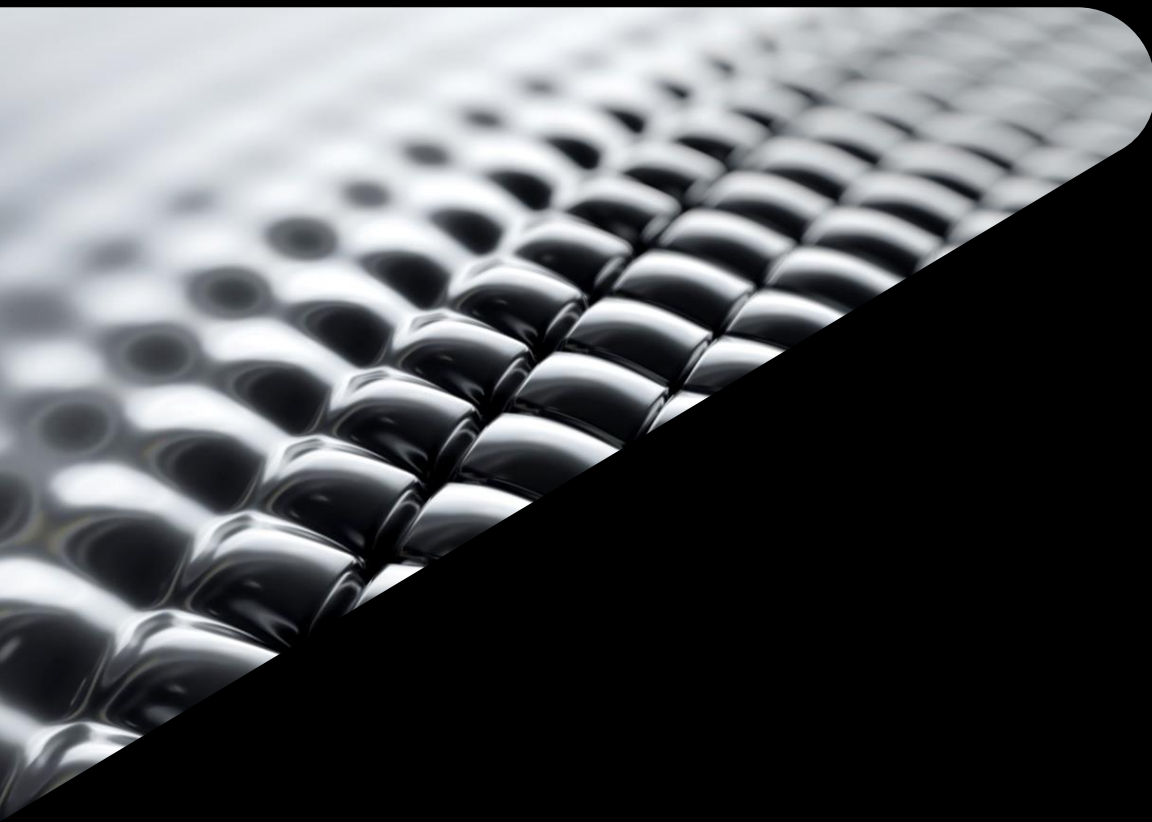
Implementation

- 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

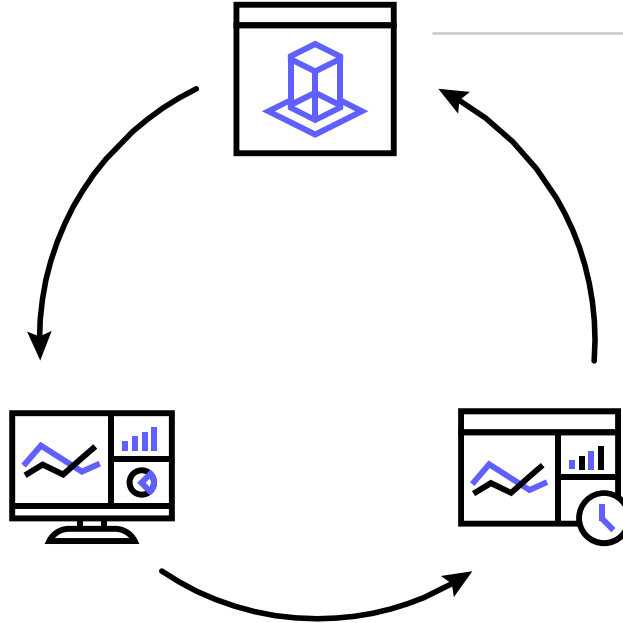


The Future

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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