AUTODESK UNIVERSITY

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Why Hazen and Sawyer chose ACC Design over other Doc. Management Systems

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Learning Objectives

- Identify roadblocks and challenges before selecting a Document Management System
- Understand and Explain the Success and Challenges Hazen encountered with ACC, BIM 360, ProjectWise, Panzura, Nasuni, and more.
- Evaluate which Document Management System will be the best choice for you
- Develop an Implementation Plan

Description

This session will discuss why Hazen chose to implement the Design features of Autodesk Construction Cloud for Civil 3D, Plant 3D, and Revit after extensively testing a variety of other Document Management Systems (Nasuni, Panzura, ProjectWise, BIM 360).

Things covered will be: How testing was performed and over what time frame. The key factors that led Hazen to choose ACC. What our experience was with each DMS. How Hazen is transitioning to ACC from other Document Management Systems. What the positives and negatives are of utilizing ACC Design. What our internal feedback has been from both Designer, Engineers, and Project Managers. What improvements Autodesk can implement to make ACC even better.

Along the way we'll provide details on ACC workflows Hazen has developed and their resulting project efficiencies. We'll also touch on the possibilities of future ACC implementation around the Takeoff and Build features.

Speaker

In my 25-year career I have worked with many Autodesk products from AutoCAD 9, Mechanical Desktop, to Land Development Desktop (LDD), and now to Civil 3D, Plant 3D, and Revit. In the Document Management space, I've worked with everything from Vault, Buzzsaw, ProjectWise (on-prem and cloud-hosted), Newforma, the various evolutions of BIM 360, a variety of network accelerators, and the Autodesk Construction Cloud (ACC).

I started working at Hazen and Sawyer in 2016 as an Application Specialist. I lead a team that works with internal CAD/BIM and GIS service groups to ensure our project teams can work as efficiently and consistently as possible.

The team's primary focus is Design and Data-driven software and systems (Autodesk, Bentley, ESRI, Microsoft, etc.). We are responsible for the implementation, administration, maintenance, support, and training for all of software and systems we manage. We also provide cross-platform innovation, research and development services, and assist with scaling new services both internally and externally.

Identify roadblocks and challenges before selecting a Document Management System

We (Hazen) started our document management search in 2016 with a single goal:

- Choose a cloud hosted DMS to be the location for ALL project files.

We quickly realized that our goal came with some challenges:

- Hazen's established Design Workflows allow multiple people to work on a single project at the same time. Specifically, with Revit, central models were a requirement on every project.
- Hazen operates as a single company without any regionalization. This means internal cross-office collaboration happens on every project.
- SharePoint was already the established location for Office files, PDFs, photos, etc.
- There were not many cloud-based Doc. Management Systems available in 2016

Having identified these challenges we pivoted from our goal, working with the business on a needs assessment to determine what was required from a cloud based DMS. Those needs were turned into a prioritized list of evaluation criteria which was utilized to evaluate each DMS.

New Evaluation Criteria

Below outlines the evaluation criteria we utilized in its prioritized list. The most important thing was that established workflows were not disrupted, we developed the list from there. System Security being 8th may surprise some, but there was a base level of security we required before a system would even be considered.

1. No disruption to Hazen Workflows
2. Seamless Cross-Office (Internal) Collaboration
3. Seamless External Collaboration
4. Integration with Revit
5. Integration with Civil 3D
6. Integration with Plant 3D
7. Integration with Sheet Set Manager
8. System Security
9. Administration

Direct system cost is not on this list as we were focused on capabilities and performance first. Direct cost figured into the business case and ROI once a choice was made. Administration is on this list because every DMS requires overhead time to administer which ultimately has a financial impact beyond direct cost and we wanted to capture that.

Taking all of this into account a table was developed using the evaluation criteria and the various DMS that we tested. This provided an easy way to identify, track and compare how each system performed in each category.

D.M.S.	Hazen Workflows	Internal Collab.	External Collab.	Civil 3D	Plant 3D (P&ID)	Revit	Sheet Sets	Security	Admin
Buzzsaw	✚	▬	▬	✚	▬	✖	✚	▬	▬
Riverbed	✚	▬	✖	✚	✚	✚	✚	✚	✚
ProjectWise	✖	✚	✚	✚	✖	✚	▬	✚	✚
Revit Server	✚	✚	✖	✖	✖	✚	✖	✚	✚
BIM 360 Team	✚	✚	✚	✖	✚	✚	✖	✚	▬
BIM 360 Docs	✚	✚	✚	✚	✚	✚	✖	✚	▬
Nasuni	✚	▬	✖	✚	✚	✚	✚	✚	✚
Panzura	✚	✚	✖	✚	✚	✚	✚	✚	✚
ACC Design	✚	✚	✚	✚	✚	✚	✖	✚	▬

Hazen's DMS Evaluation Table

Understand and Explain the Success and Challenges Hazen encountered with ACC, BIM 360, ProjectWise, Panzura, Nasuni, and more

As previously mentioned, this journey began in early 2016 which was when I started working at Hazen. When I started here there were already three systems in place:

Traditional WAN with Riverbed Accelerators

Every company at some point had a WAN, most still do. Hazen's WAN is still operational; however, the Riverbeds were decommissioned in early 2018.

- Successes
  - No Disruption to Hazen Workflows
  - All file types work as intended
- Challenges
  - Latency between servers
  - Internal Collaboration inefficient due to network latency
  - No method of providing external collaboration

Autodesk Buzzsaw (decommissioned 2017)

Hazen had a pre-established Buzzsaw environment when I started working for them. I took this on almost immediately with the goal being to decommission it in favor of our new cloud-hosted solution. At the time (2016) we were about to pilot test ProjectWise.

- Successes
  - No Disruption to Hazen Workflows
  - Buzzsaw provided a means of External Collaboration
  - Buzzsaw improved cross-office collaboration internally
- Challenges
  - Suffered from a partial implementation
  - Lack of structured support and administration
  - Sync times were not ideal

ProjectWise (Implemented Q1 2017 – Decommissioned Q1 2022)

Having worked with (an on-premises) ProjectWise environment in at previous job, combined with the fact that Bentley had introduced their cloud-hosted/managed services version of ProjectWise in 2016 we chose to pilot ProjectWise in 2016. The pilot testing was successful, and we fully implemented ProjectWise in Q1 2017.

- Successes
  - Provided a means of External Collaboration
  - AutoCAD & Civil 3D Integration
  - External Reference & Data Shortcut Management. PW handles these better than any other system we've worked with.
  - Administration of ProjectWise was very easy
  - Bonus ability to utilize PW for CCTV file hosting on sewer inspection projects.
- Challenges
  - ProjectWise unfortunately was a big disruption to Hazen workflows, in that Revit central models did not perform well at all.
  - Plant 3D Integration was a problem as well. PW integrated with the P3D software but not the P3D internal Project data.
  - PW Integration with MS Office was not as robust as SharePoint's

Revit Server (Implemented Q4 2017 – Decommissioned Q4 2018)

With the challenges encountered between Revit Central models and ProjectWise, Hazen's ITS department implemented Revit Server to help internal collaboration.

- Successes
  - No Disruption to Hazen Workflows
  - Revit Server improved performance over the WAN
- Challenges
  - No method of providing external collaboration
  - Compatible with only Revit models
  - Competing with BIM 360 Team

BIM 360 Team (Implemented Q4 2017 – Decommissioned Q4 2018)

While ITS implemented Revit Server, my team and I implemented BIM 360 Team. This was a successful implementation, but not without its challenges.

- Successes
  - No Disruption to Hazen Workflows
  - Provided a means of External Collaboration
  - BIM 360 Team had a built-in web viewer for Revit models
  - Bonus – BIM 360 Team integrated with AutoCAD P&ID (Autodesk retired P&ID in favor of Plant 3D in 2019)
- Challenges
  - Collaboration for Revit add-on was a challenge to administer and maintain
  - System Administration left a lot to be desired
  - Autodesk released BIM 360 Document Management

BIM 360 Docs (Implemented Q2 2018 – Decommissioned Q1 2022)

When Autodesk released the next evolution of BIM 360, we tested it out pretty quickly and soon after implemented it fully.

- Successes
  - No Disruption to Hazen Workflows
  - Integration with Revit, Plant 3D, and Civil 3D
  - Provided a means of External Collaboration
  - Integrated web-viewer for Revit models
  - Integrated web-viewer for Drawing files
- Challenges
  - Lack of integration with Sheet Sets
  - We had to do a phased implementation due to the integrations with Revit, Plant 3D, and Civil 3D happening over the course of multiple years.
  - System Administration leaves a lot to be desired

BIM 360 Docs was the first DMS that caused no disruptions to Hazen workflows and integrated with our core software (Revit, C3D, & P3D). However due to the delayed integrations by Autodesk ProjectWise was only utilized for Civil 3D work from Q2 2020 until Q1 2022.

Nasuni (Implemented Q2 2018 – Decommissioned Q1 2020)

Our ITS department implemented Nasuni internally as a replacement for the decommissioned Riverbeds. Nasuni helped with performance over the WAN but having 60+ offices and therefore 60+ Nasuni nodes we encountered some challenges.

- Successes
  - No Disruption to Hazen Workflows
  - All file types work as intended
- Challenges
  - No method of providing external collaboration
  - Sync Times for CAD/BIM and GIS files were not as efficient as we liked
  - BIM 360 Docs was implemented

Panzura (Implemented Q1 2020 – Current)

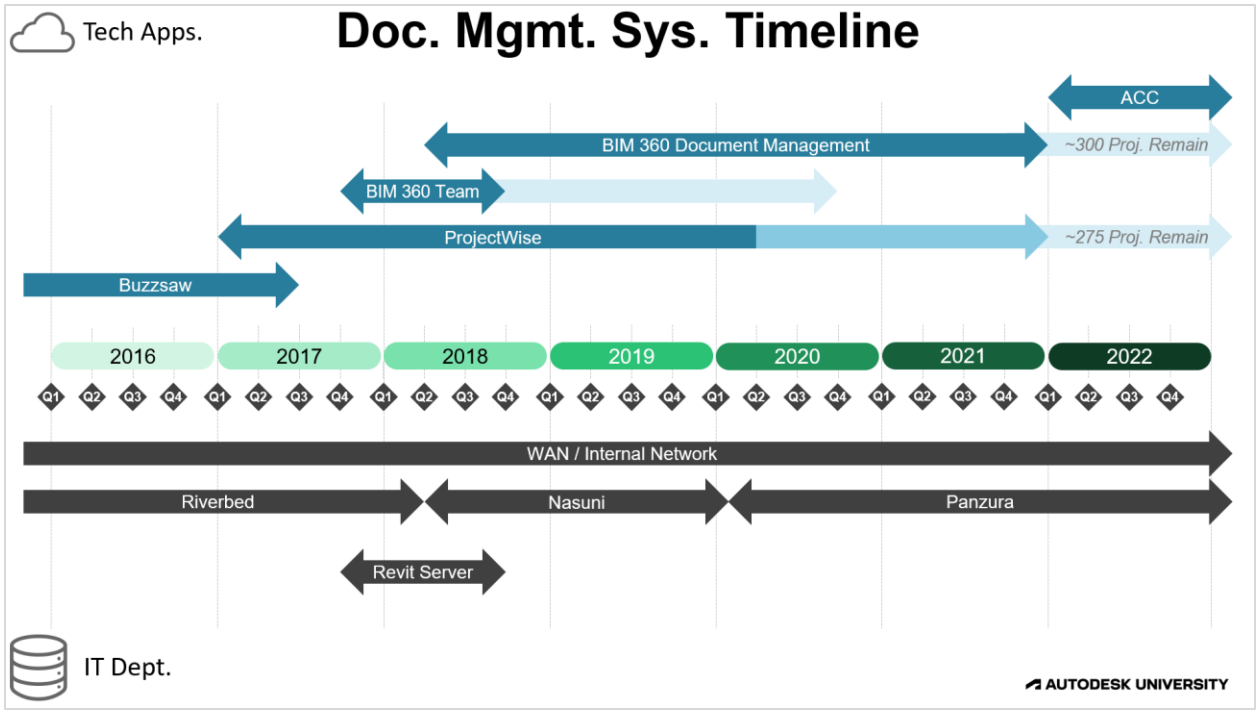
With the challenges encountered with Nasuni, ITS implemented moved to Panzura. Panzura has been successful since it's implementation and remains operational.

- Successes
  - No Disruption to Hazen Workflows
  - Sync Times over WAN were improved
  - All file types work as intended
- Challenges
  - No method of providing external collaboration

Autodesk Construction Cloud (Implemented Q1 2022 – Current)

When Autodesk released the next evolution of BIM 360, we tested it out pretty quickly and soon after implemented it fully.

- Successes
  - No Disruption to Hazen Workflows
  - Integration with Revit, Plant 3D, and Civil 3D
  - Provided a means of External Collaboration
  - Integrated web-viewer for all design files
- Challenges
  - Lack of integration with Sheet Sets
  - Desktop Connector Update schedule
  - System Administration leaves a lot to be desired



Summary Timeline of Hazen's DMS Journey

As we (Hazen) have transitioned down this Document Management path, we've made the decision to leave active projects in the System they originated rather than migrate them to ACC. The decommission dates listed when we decided to decommission that system which also means no new projects will be opened within that system. In most cases the respective system has or will remain active until its existing projects have been completed.

Summary
The needs of each company will differ, therefore when evaluating potential Document Management Systems, the chosen system should best fit the company's needs.

The Autodesk Construction Cloud provides a single location for all our design files while also being the best option to facilitate Hazen's design workflows. Beyond that there are options within ACC to better integrate our design work with downstream services.

- Hazen is currently pilot testing ACC Build with our Construction Services team and are working with our Cost Estimating team to test our Takeoff as well.

- ACC is also playing a critical role in our Beyond-BIM workflows as we transition BIM data and content to Asset and Facility Management software.

Evaluate which DMS will be the best choice for you

When trying to determine which Document Management System is the best fit:

1. Perform and internal Needs Assessment
2. Prioritize those Needs
3. Have clearly defined goals that outline what "Done" looks like
4. Meet with all stakeholders to ensure all departments are on the same page
5. Research each Document Management System before testing or implementing
6. Create a detailed implementation plan prior to starting any implementation

Once a DMS has been vetted, chosen, and the implementation plan is complete, communicate that to your company and celebrate it. It takes a team of people to get this accomplished and crossing the Go-Live finish line is a big milestone.

Implementation Plan Outline

Providing a template for this is difficult because every company is going to have different needs and prioritize those needs differently. What I can provide is a general outline of an implementation plan. I hope this is helpful.

1. What type of implementation will be done (Full, Partial, Phased)?
2. Will the implementation be local, regional, national, global?
3. Will this be internal only or include external access?
4. Does this DMS offer add-ons or modules? If yes:
    - Determine if any of these will be implemented, either now or in the future
    - Future implementations may have an impact on licensing, folder structure & permissions.
5. How many people are expected to use this system?
6. What role will those people have in this system?
7. How will those roles translate to permissions?
8. Will those roles translate to license needs?
9. What type of project files will be kept in this DMS?
10. Develop a project folder structure and create a project template.
    - With user roles established, what permission levels will be required within the folder structure.
11. Are there multiple levels of Administration?
12. Who will the Administrators be and at what level?
13. What level of Training will be required?
    - Administrator Training
    - Train the Trainer
    - User Training
14. Who will be performing the user training, internal staff, or vendor?
15. What level of support will be required?
16. Who will perform the needed support and through what means?
17. What level of communication will be necessary to inform the business?
18. Timeline determinations:
    - When will the DMS be opened/stood up?
    - When will Admin training happen?
    - When will user training happen?
    - When is the official Go-Live to start putting projects in the System?
19. Beyond Implementation
    - Develop a user account policy
        - Internal and External accounts
        - When to disable or delete a user's account
    - Develop a project archiving plan
        - For project milestone archiving and project closeout archiving.
    - Develop a disaster recovery plan.