

ENGINEERING DESIGN AND DATA MANAGEMENT SYSTEM

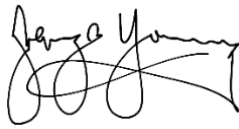
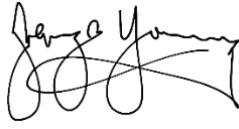
AUTODESK MODENA INTEGRATION REPORT

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Revision: A



APPROVAL

Description	Name	Title	Signature	Date
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DRA Approved	George Young (ZA)	CAD Coordinator		28 October 2020
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REFERENCE DOCUMENTS

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ABBREVIATIONS, TERMS AND DEFINITIONS

Abbreviations/Terms	Definition

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1 CUSTOMER CHALLENGE

DRA had previously relied primarily on non-intelligent 3D AutoCAD Models in an industry moving more and more towards intelligent 3D Models produced by software solutions such as AutoCAD Plant 3D, Advance Steel, Revit etc., while struggling with collaboration between local and global business units and length of time it would take to make relatively small changes to designs. Delivering drawings and quantities to sites on time was a challenge, and a single source of the truth wasn't always possible. We also required a global data management solution that received, and stored and protected all our data, with as much seamless integration with our CAD packages, of which Autodesk AutoCAD, Autodesk AutoCAD Plant 3D and Autodesk AutoCAD Revit were our initial starting points.

DRA initially rolled out Autodesk Vault Professional, starting with a Proof-of-Concept phase with evaluation and configuration in 2014 through to the initial roll-out and deployment in 2015, and are very proud to say that it has evolved into the backbone of our Data Management Solution for Design and Engineering collaboration and management of data that drives the decision making for all EPCM contracts we design and engineer for.

2 EDDMS GOALS

Priority goals identified were as follows:

- 1) Reduce the time taken for the design/engineering team to provide clients with an accurate contractual forecasts and budgets for large EPCM projects.
- 2) Improve workflow and turnaround time on design and engineering changes – we needed a 24/5 approach through our engaged network with our global business units.
- 3) Eliminate manual integration i.e., by reducing rework, implementing automatic revision and version control, implementing ECO's through a traceable workflow and lifecycle which consistently drives accountability and single version of the truth.
- 4) Improve collaboration between all project stakeholders, including customers and global business units
- 5) Have a system that outputs data (such as BOM's) in a format that is flexible to integrate with external third-party applications e.g., Excel to SharePoint / SAP

3 SOLUTION

By implementing Autodesk Vault Professional and taking a concentrated, concerted effort to deploy with appropriate project controls and defined roadmaps in place. We are now able to collaborate across global business units 24/5. We are also able to integrate with our CAD authoring tools and our time and attendance solution. We continue to expand and grow on our CAD authoring tools as each new toolset that Autodesk and Modena bring to the table. This continues to add immense value to our business. We have grown our CAD toolset, which now includes Autodesk Architectural Engineering and Construction Collection and Autodesk Product Design & Manufacturing Collection.

These Autodesk Collections include a vast array of CAD toolsets which have helped us greatly with automated parametrically driven designs, drive seamless collaboration with the CAD toolset and the EDDMS residing in one platform, being the Autodesk platform.

Further, we recently also expanded our Autodesk portfolio with the Autodesk Construction Cloud toolsets which include Autodesk Docs, Autodesk Build and Autodesk Collaborate Pro. These cloud applications have further empowered us to share our data with external stakeholders, in the cloud, but all the while ensuring the security and integrity of our data is protected with its origin being in Autodesk Vault Professional. Again, seamless integration between these platforms has enabled our business to implement this powerful workflow and system that drives our business.

4 BUSINESS OUTCOME

DRA has achieved increased productivity, accuracy, and transparency.

Improved collaboration between global business units

Empowered with the ability to manage our Global Design offices through a central platform. This includes Deliverables in addition to Design Hours.

5 CONCLUSION

Implementing a complex, yet effective and powerful EDDMS, in a multi-disciplinary environment can be a daunting task, especially if you still have a high-performing business to run, and across global continents. DRA however, with the help of Modena OneSolve and Autodesk, have achieved ongoing success and continue to knock down barriers in terms of pushing the software to its maximum to get our ROI, and to have the EDDMS protect our IP, provide accurate information anytime, anywhere, to anyone that we enable access to (also controllable by permissions our company set).

6 PROJECT SUMMARY

6.1 Delivery Date

06 September 2022

6.2 Project Duration

There is ongoing engagement and support with Modena and Autodesk

6.3 Autodesk Solutions

Autodesk Architectural Engineering and Construction Collection (195 Seats currently deployed)

Including but not limited to:

- AutoCAD
- Advance Steel
- Civil 3D
- Fabrication MEP
- Formit Pro
- Infracore
- Navisworks Manage
- ReCap Pro
- Revit
- Robot Structural Analysis Pro
- Vehicle Tracking

Autodesk Product Design & Manufacturing Collection (136 Seats currently deployed)

Including but not limited to:

- AutoCAD
- AutoCAD Plant 3D

- Inventor Professional
- Inventor Nastran
- Navisworks Manage
- ReCap Pro

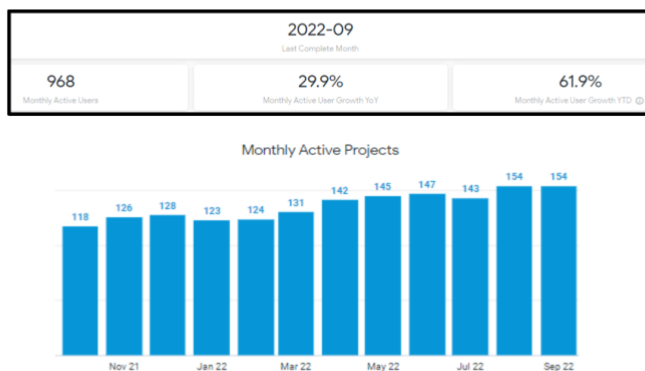
Autodesk Vault Professional (260 Seats currently deployed)

Vault Thin Client is deployed to personnel who are not directly involved in the creation or editing of Design Office content. The Vault Thin Client provides read-only features for viewing and sharing Vault data in a web browser and does not require a Vault Professional license. Personnel who are allocated Vault Thin Client must have corresponding valid Vault account credentials in order to browse the Vault structure, hence the feature is secure.

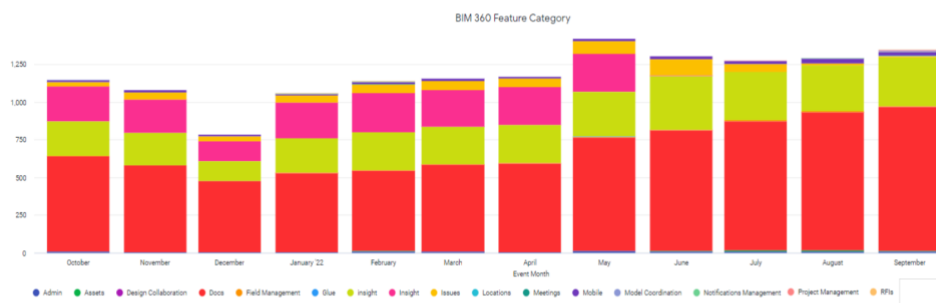
- Autodesk Docs – 1400 user pack
- Autodesk Build – Unlimited access pack
- Autodesk Collaborate Pro – 25 user pack

Refer images below for usage statistics of the BIM 360 / ACC products

BIM 360 Active Projects



BIM 360 Feature Category



The bulk of the BIM 360 usage is centered around: **Docs, Insight, Issues and Mobile.**



6.4 Services Provided:

- Virtualization
- Configuration & Deployment
- Custom Training
- Implementation
- Custom Content Advanced Workshops
- On Site Support
- Advanced Remote Autodesk Specialist Support
- Customer Discovery Workshops – provide insight into what’s next in terms of driving ongoing improvement and expansion of Autodesk toolset