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## Add It Up: How to Succeed with Vault Add-ins

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### Learning Objectives

- Learn how to configure Vault to work with multiple Autodesk offerings
- Understand How AutoCAD Electrical and Vault work together
- Learn how to manage AutoCAD Plant 3D project data with Vault
- Discover the roles of Revit, Revit Server, and Vault
- Learn how to effectively collaborate using vault across multiple disciplines

### Description

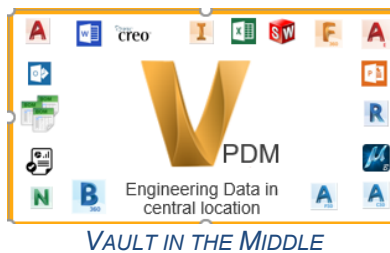
Vault software offers many different add-ins to let you interface with many of the Autodesk offerings. So how does Vault work with some of the different CAD products? What do you need to know to utilize Vault with these products? How do they differ from each other? Learn how to configure and manage multiple CAD products with Vault. Get the tools you need to expand your Vault functionality. This class will discuss general best practices for Vault add-ins, and dive more deeply into AutoCAD Electrical software, AutoCAD Plant 3D software, and Revit software. We'll also touch on some basics to interface with BIM 360 software and Fusion Team. Get tips and tricks, and learn some possible pitfalls and limitations. We'll cover what's different, what's the same, what you need to know for each of the covered products, and what does or doesn't function as expected in Vault software.

### Speaker(s)

My expertise is with Vault and SQL server. I have over 25 years of relational database experience in Microsoft SQL Server and Oracle. Proficient in Database performance and tuning, backup and restore, replication and various and other areas or Database support and administration. This knowledge allows me to be better able to support my customers in their Vault Rollouts, upgrades, maintenance, troubleshooting, and migrations. My experience spans multiple industries from manufacturing to advertising to finance. Customer Service, especially as it pertains to the Database, has been my passion. Being part of the Autodesk team as a DSS supporting Vault allows me to continue following that passion.

## Vault Add-ins

Autodesk® Vault is purpose built to help customers manage more efficiently their engineering data, improve collaboration within their teams, and take control of the product development processes. Vault is tightly integrated with more than 30 Autodesk design applications and provides powerful revisioning and access control capabilities. With simplified installation and optional multi-site scalability, Vault is used by Autodesk customers worldwide to connect their people, processes and data so they can get more done, better, in less time. During this class, by focusing on some of the specific design applications (AutoCAD Electrical, AutoCAD Plant3D, and Revit), we discuss some of the ways Autodesk Vault at the center of your workflow can help improve work efficiency.



## Benefits of Using Vault

- CAD integration
- Ability to quickly locate data
- Common Location for all your data
- Collaboration both internal and external
- Easily Copy/Reuse
- Historical Version and Revision management
- Scalable for larger workgroups and multiple sites
- Automated Release and Change Process

## Additional Resources for Vault

[Vault Versions and Revision Management \(AU Class\)](#)

[What is Vault](#)

[Autodesk App Store – 3<sup>rd</sup> party Add-ins and more](#)

<https://www.autodesk.com/autodesk-university/class/Vault-Professional-You-Got-It-Now-What-2013>

[Vault at Autodesk University this year](#)

[Managing and enforcing standards with vault](#)

## **AutoCAD Electrical (ACAD-E)**

There are different ways to implement the use of Vault with AutoCAD Electrical. You can use it to store, check-in and check-out your design data or you can fully integrate (recommended) your AutoCAD Electrical environment with Vault.

### **Benefits of using Vault and AutoCAD Electrical**

Beyond the Vault benefits themselves, because Vault is ACAD-E aware and AutoCAD Electrical is Vault aware the products are made to work extremely well together. Some Additional benefits include;

- Import BOM's - As users create schematics, BOM data is added to the symbols for use in reports, and as that data is included in the project it is included in Vault to and used to create items.
- Ability to revise the content without having to rename the .dwg or redo any Icon menu path or support path settings.
- Search for information across multiple drawings and projects
- Open a schematic and AutoCAD Electrical will check out and back in needed files so multiple people can be working in the same project on different files.

### **AutoCAD Electrical Mappings to Vault**

A project file is assigned to an item. The item is assigned properties which map to the data in AutoCAD Electrical and data is transferred from Vault Professional Item Properties into the AutoCAD Electrical Project File line descriptions. Item Mappings have to be established before you can assign an item number to the project. There are three different types of property associations commonly used for mapping to AutoCAD Electrical.

- Item > Electrical - Used to map to AutoCAD Electrical drawing files and extract Bill of Material data.
- Item > Electrical Project - Used to map to an AutoCAD Electrical project file and extract project line data.
- Reference Designator - Used to map to AutoCAD Electrical drawing files and extract Description and Rating data.

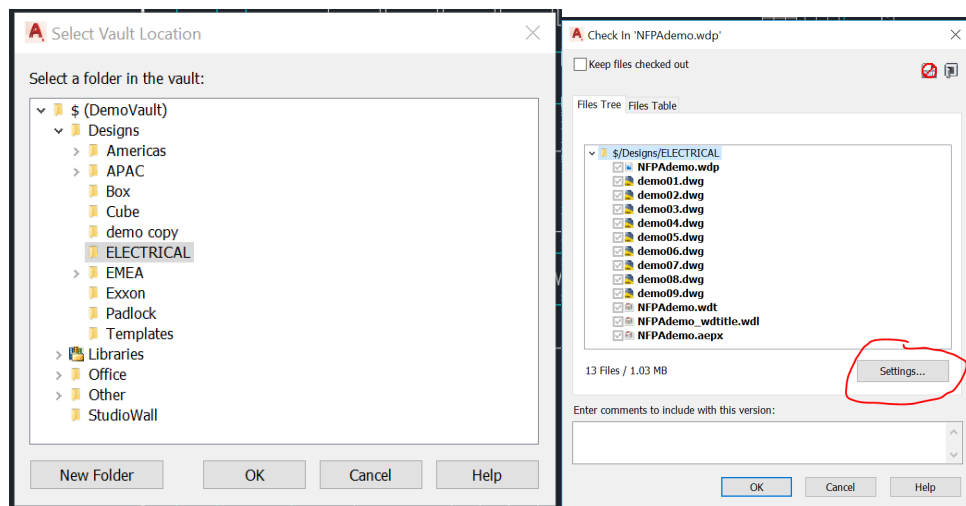
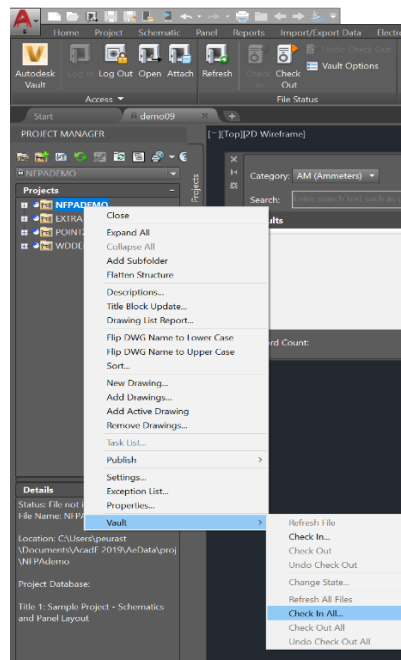
### **Storing your Library files in Vault**

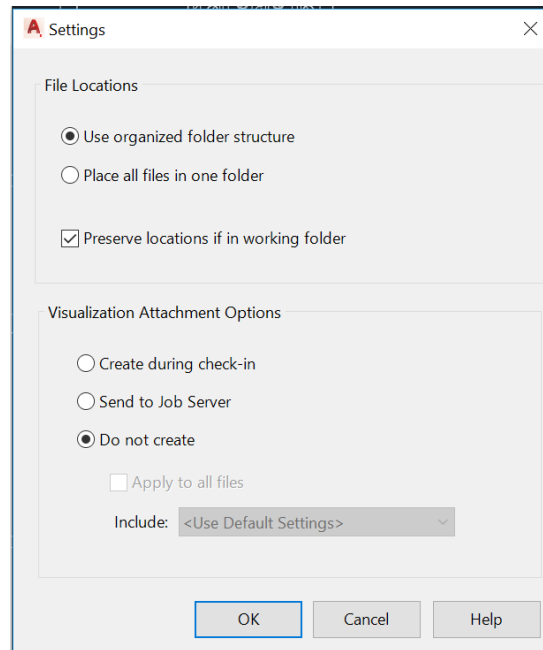
AutoCAD Electrical libraries contain blocks used for symbols and layouts. You can choose to store these library files in Vault – however there are some things to take into consideration;

- All users will need a local copy of all libraries needed
- If a component is added to the library all users have to get a new local copy
- New content from new releases will need to be added to Vault.

## Setting Up AutoCAD Electrical and Vault

AutoCAD Electrical and the Vault client must be installed on the workstation. If AutoCAD is installed prior to installing Vault the Add-in is usually installed automatically, otherwise you will need to add it through add/remove programs. To begin using Vault you will need to open ACAD-E and open or select your project in vault and use the Check-in All option. (This option is also available through the Project Manager in ACAD-e) choose the folder in Vault you wish to use configure your desired settings.





## Additional Resources AutoCAD Electrical

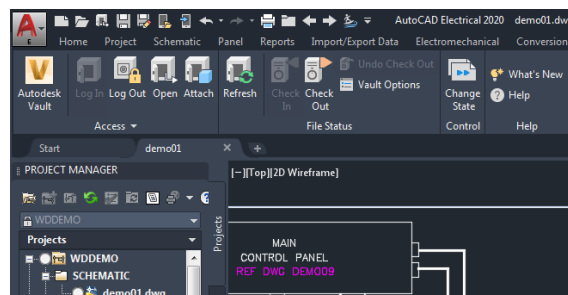
[About using Autodesk Vault with AutoCAD Electrical](#)

[Vault and the AutoCAD Electrical Toolset](#)

[Integrate AutoCAD Electrical with Vault](#)

[AutoCAD Electrical and AU this year](#)

[Using AutoCAD Electrical with Vault](#)



ACAD-E Vault add-in ribbon

## AutoCAD Plant3D

Management of Plant3D in Vault is handled through the Project. Plant3d installation consists of a Plant3d Database and then a local database on each installed client. The communication with Vault happens at the Client level and the Plant3d database itself if not aware of Vault, it communicates to the local databases. Because of this, the location of the installation can have noticeable effects on the performance of the application. All modifications to the files and metadata must occur in Plant3D or you will not be able to sync between Plan and Vault.

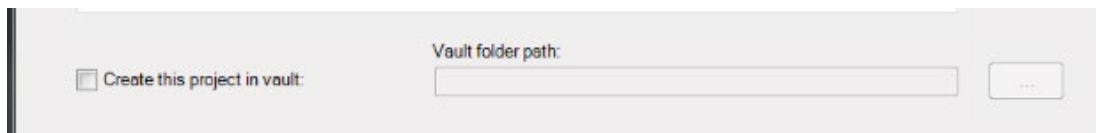
### Benefits of using Vault and AutoCAD Plant3d

Once again you have the standard Vault benefits, although it should be noted that you must use pre-defined Plant3d lifecycles and categories. Beyond this, additional benefits include;

- No need to keep your working files on a network share, projects are modified in the local workspace and then synchronized to vault.
- Vault uses SQL for the Master project database which is synchronized to match the files that are checked in to the vault
- The files being used are locally stored – and downloaded to the local machine when needed
- Backup of your models

### Setting up Plant3d for Vault

Setup is straightforward and easy. When creating a new project check "make this a vault project" during project creation.



If using an existing project, you can move it to vault using the "plantprojecttovault" command. After a project is in vault users must have a vault user configured and the SQL database must be set to have the "public" role turned on or configured for each user to have access. If there are ever inconsistencies between the databases, the command plantvaultprojectreconcile" can be used to restore or correct the inconsistencies.

## Additional Resources for Plant3D

[Plant3D requirements](#)

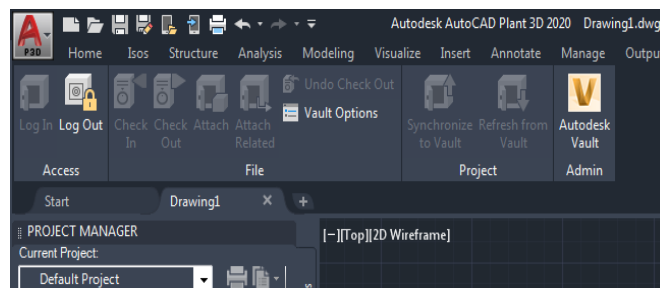
[Plant3D best practices](#)

[AutoCAD Plant 3D at AU this year](#)

[Configuring Vault for Plant Projects](#)

[Plant and Vault](#)

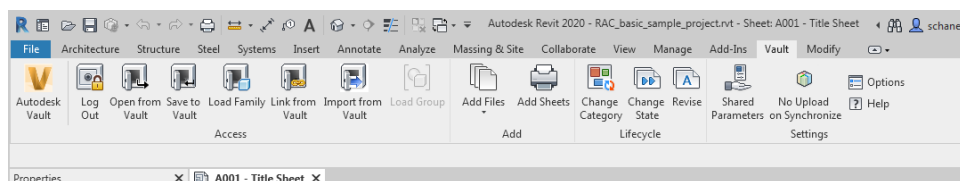
[Plant3d blog](#)



*PLANT3D VAULT ADD-IN RIBBON*

## Revit

Autodesk Vault integrates with Autodesk Revit Architecture, MEP, and Structure. With Vault and Revit, designers can browse for their project files from Vault, but can also access related information such as templates, family content or other relevant project documents. File linking from Vault includes multiple file types and insertion options, providing a managed environment for linking approved files from within Revit.



*REVIT VAULT ADD-IN RIBBON*

## Essential concepts to understand when working with the Revit Vault add-in.

Using Revit Server or work shared central files.

- Unlike all other Vault add-ins, the Revit add-in does NOT require a check out. Copies of the project file are added to Vault at specified milestones or automatically after a Revit Synchronization with Central. **Note:** Revit Server files and work shared central files can only be added to Vault using the Synchronize with Central command.

Using Vault with non-shared project files.

- The project file can be downloaded using the Open from Vault command. This will automatically check out the file for editing. Once you are done editing the file, check the file back into the vault by using the Save to Vault command.

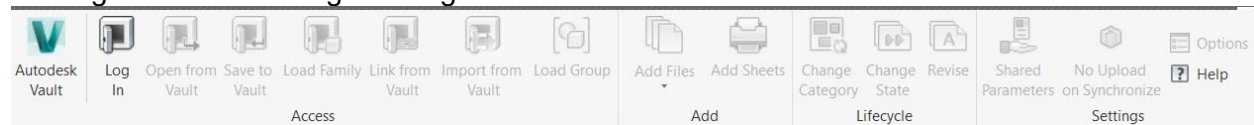
## Benefits of using Vault and Revit

As with the previously discussed add-ins you have Vault benefits such as version

- Ability to browse for project files and access related information such as project documents, templates and family content
- Works with Revit Server projects or individual files
- Ability to search for content and index properties across family files.
- Projects can have a common set of family files
- Revit server is Vault aware
- The Search Revit Family Files feature allows you to locate family types quickly across multiple family files.

## Setting up Revit and Vault

- Install Revit Server
- Install Vault Server
- Configure users to access both systems
- Enable Revit Indexing from the Vault ADMS Console
- Install both the Revit and vault clients on the workstation
- Login to Revit and login through the vault add in



- You are now ready to use files, load families, or add files as needed.



## Setting up Revit Families in vault

- Load the desired Revit families into the vault(I used all the default ones from a Revit base install for testing)
- Run the vault installer to ensure that the Revit interoperability is installed
  - <https://knowledge.autodesk.com/support/vault-products/troubleshooting/caas/CloudHelp/cloudhelp/2017/ENU/Vault-Install/files/GUID-84C75321-86F1-4517-A33C-606550F9F3B5-htm.html>
- Disable Revit indexing from within ADMS
- Reboot the ADMS server
- After reboot Enable the Revit indexing for the vault in question
- Wait 5-10 minutes
- Check the ADMS console log for the following line
  - Enabling the Revit Indexing Service completed successfully.
  - (location of ADMS console log:  
C:\ProgramData\Autodesk\VaultServer\FileStore)
- Open a sample project in Revit
- Log into the vault add in
- Try to load a family

## Additional Resources for Revit

[Using Vault with Revit](#)

[Revit Classes at AU this year](#)

[Revit and Vault Bim Integration](#)

[Autodesk Vault for Revit Users](#)

## Collaboration with Bim and Fusion

During the class, I will briefly touch on the difference between using Vault with Bim360 and Fusion Team.

### Benefits of using Vault with Bim or Fusion

- Collaboration both internally and externally
- Bi-directional exchange of CAD documents securely and transparently
- CAD awareness & folder links support
- Ability to share selective data with external collaborators

### Additional Resources Bim and Fusion

[Vault at the Center of your Data](#)

[Vault and Fusion Team](#)

[Using Vault to upload documents to Bim360 or Fusion360](#)

## Additional Information

if you need further assistance please make sure to log a ticket using your Autodesk account