AUTODESK UNIVERSITY 2014

Cracking Vault with AutoCAD Plant 3D and AutoCAD P&ID

Jarrod Mudford – Autodesk Inc

PD5871

In this class you will learn about the facets of AutoCAD Plant 3D software in Vault software. We will cover the features that Vault software has to offer an AutoCAD Plant 3D project or an AutoCAD P&ID project. Specifically we will look at Replication, Lifecycles, Categories, and Attribute Mapping. We will cover the process of creating a new AutoCAD Plant 3D project or an AutoCAD P&ID project and migrating it to Vault software. Then we will look at the migration of an existing AutoCAD Plant 3D project or an AutoCAD P&ID project to Vault software. We will also examine in detail how to manage Data Manager outputs in Vault software. We will cover the specific rules around utilizing Vault software for your project, and we'll also cover the environmental settings and workflow systems you should consider before attempting your project in Vault software. An AutoCAD Plant 3D project or an AutoCAD P&ID project in Vault software should be an exciting and positive experience for the extended design team. This course is the first step in determining that sort of experience.

Learning Objectives

At the end of this class, you will:

- Identify environment and workflow settings that can effect a successful Vault software project
- Learn how to create new, and how to migrate existing, AutoCAD Plant 3D software projects or AutoCAD P&ID software projects in Vault software
- Learn about attribute mapping, categories, lifecycles, and revision schemes with AutoCAD Plant 3D and AutoCAD P&ID software projects

About the Speaker

Jarrod Mudford is a piping designer by profession, working out of New Zealand predominantly in the food and beverage industry. With also a lot of experiences in the oil and gas, geothermal, mining, and water treatment industries, his accolades compliment his career as a Plant Solutions consultant with Autodesk, Inc. His role involves in-depth implementations of solutions with customers' workflows. He enjoys passing on his extensive knowledge to others and assisting in the success of companies utilizing Autodesk products, particularly Plant Design Suite software. Jarrod also has vast knowledge of Inventor software, Navisworks project review software, and Vault software, and he is versed in the advantages of using these alongside AutoCAD Plant 3D software and AutoCAD P&ID software.
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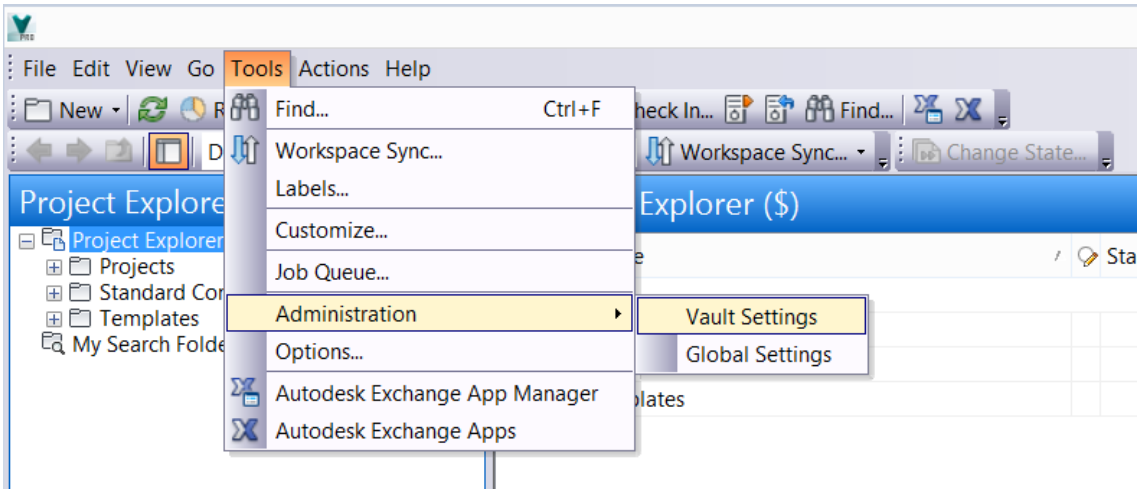
The Set Up of the Vault Environment

Accessing the Vault Options

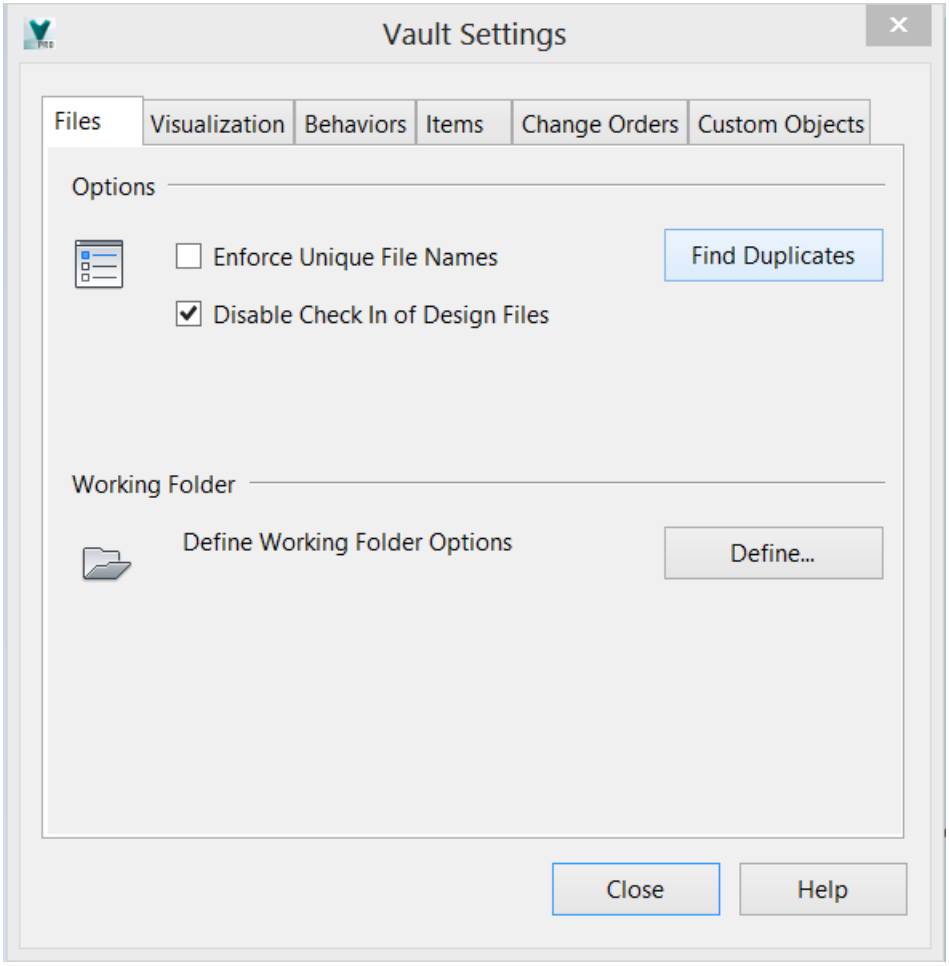
When setting up the Vault Options, you must be a Vault Administrator. You will need to speak to your IT Administrator for such rights.

Open the Autodesk Vault application

All of the Vault Options are available from selecting, Tools > Administration > Vault Settings



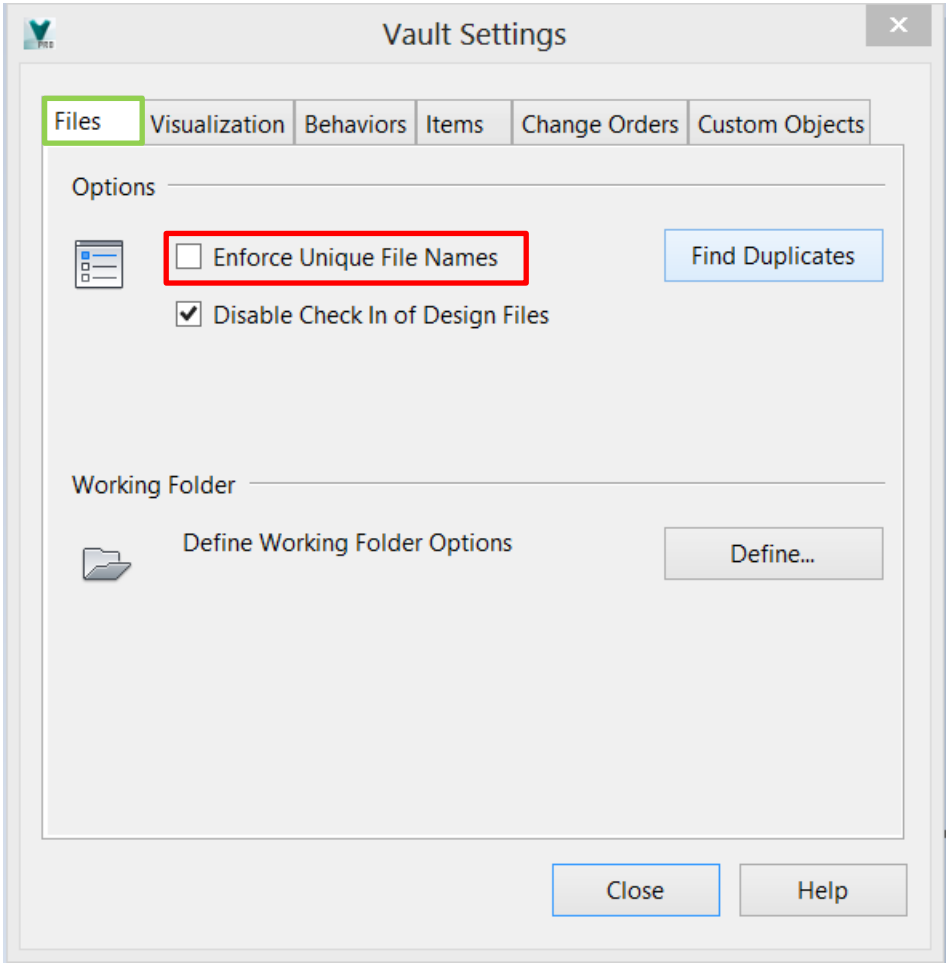
Once you have selected *Vault Settings,* the Vault Settings window will appear. It is from this window that you can access all of the settings we will cover in this section.



Unique File Names

Enforce Unique File Names must not be selected when using AutoCAD Plant 3D with Autodesk Vault. Because there are common file names between projects, this prevents the AutoCAD Plant 3D project being created in Autodesk Vault.

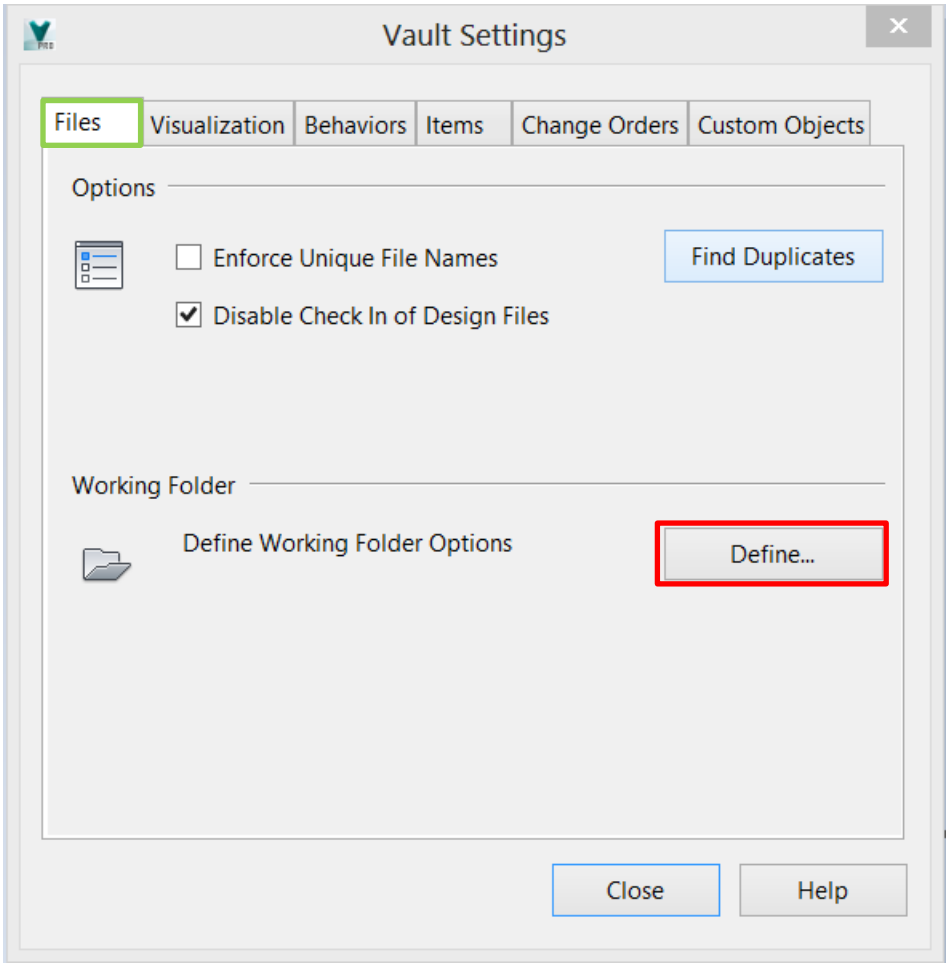
Ensure that *Enforce Unique File Names* is **not** selected.



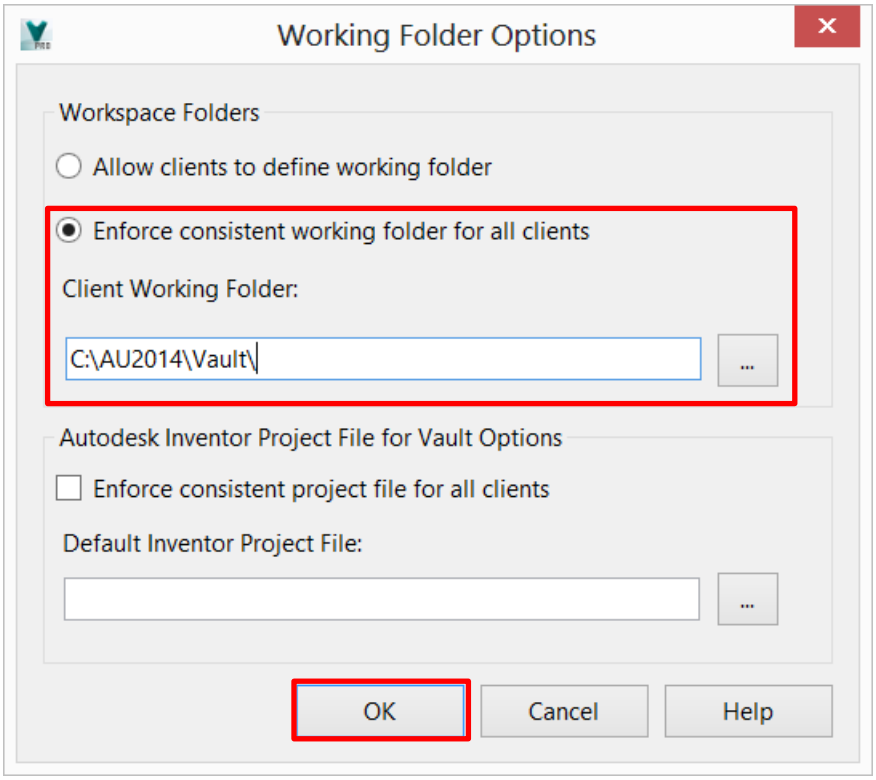
Define Working Folder Options

The working folder for Autodesk Vault is the location on your local hard drive that will contain the AuotCAD Plant 3D project files you are working on. The working folder must be set by the administrator to enforce a consistent workspace location for all users.

Click the *Define* button on the Vault Settings window



Select the *Enforce consistent working folder for all clients* option and then in the *Client Working Folder* field enter the location of the local workspace.

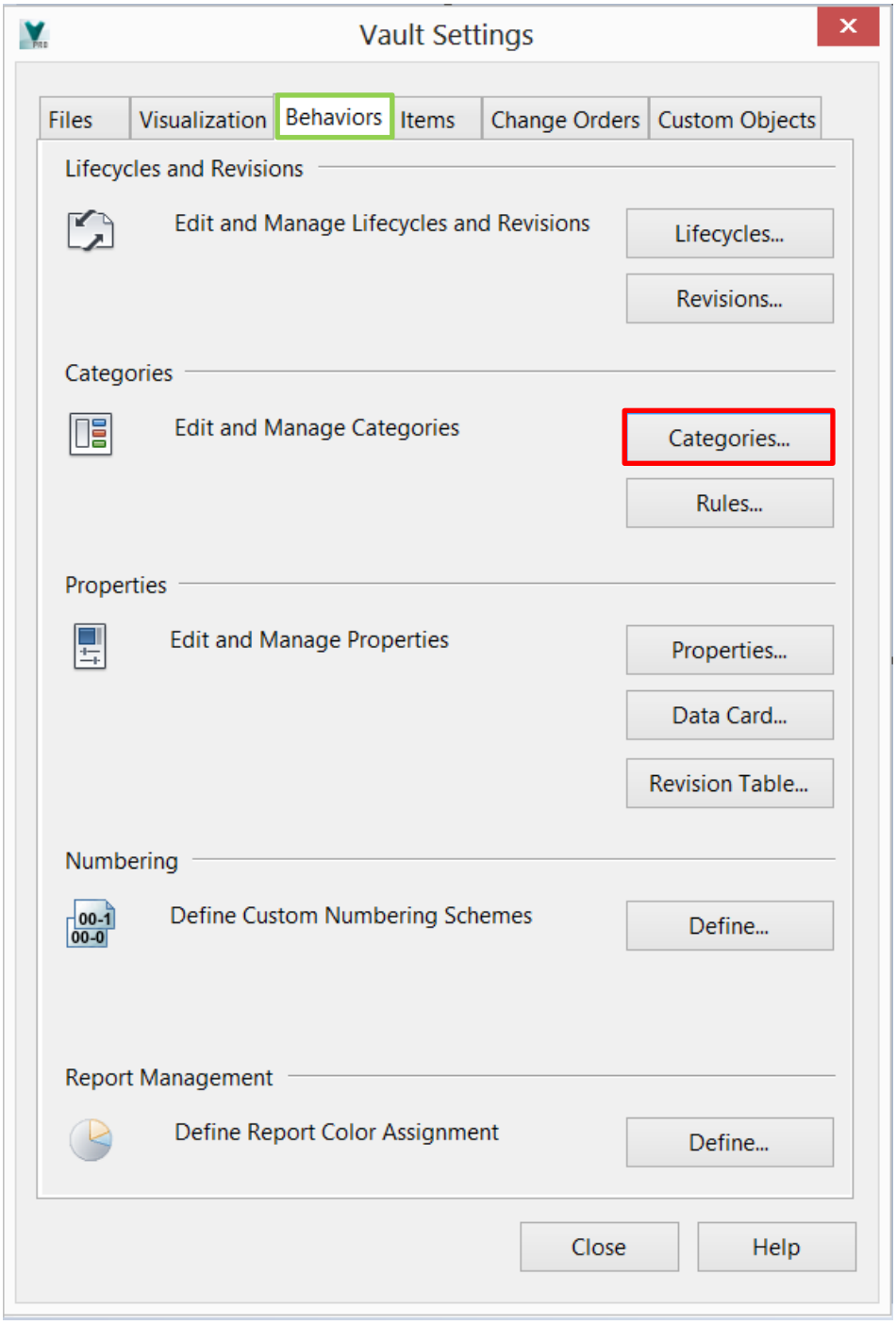


It must be ensured that all users have the same drive formats on their workstations, and that there is enough hard drive space to contain the AutoCAD Plant 3D project.

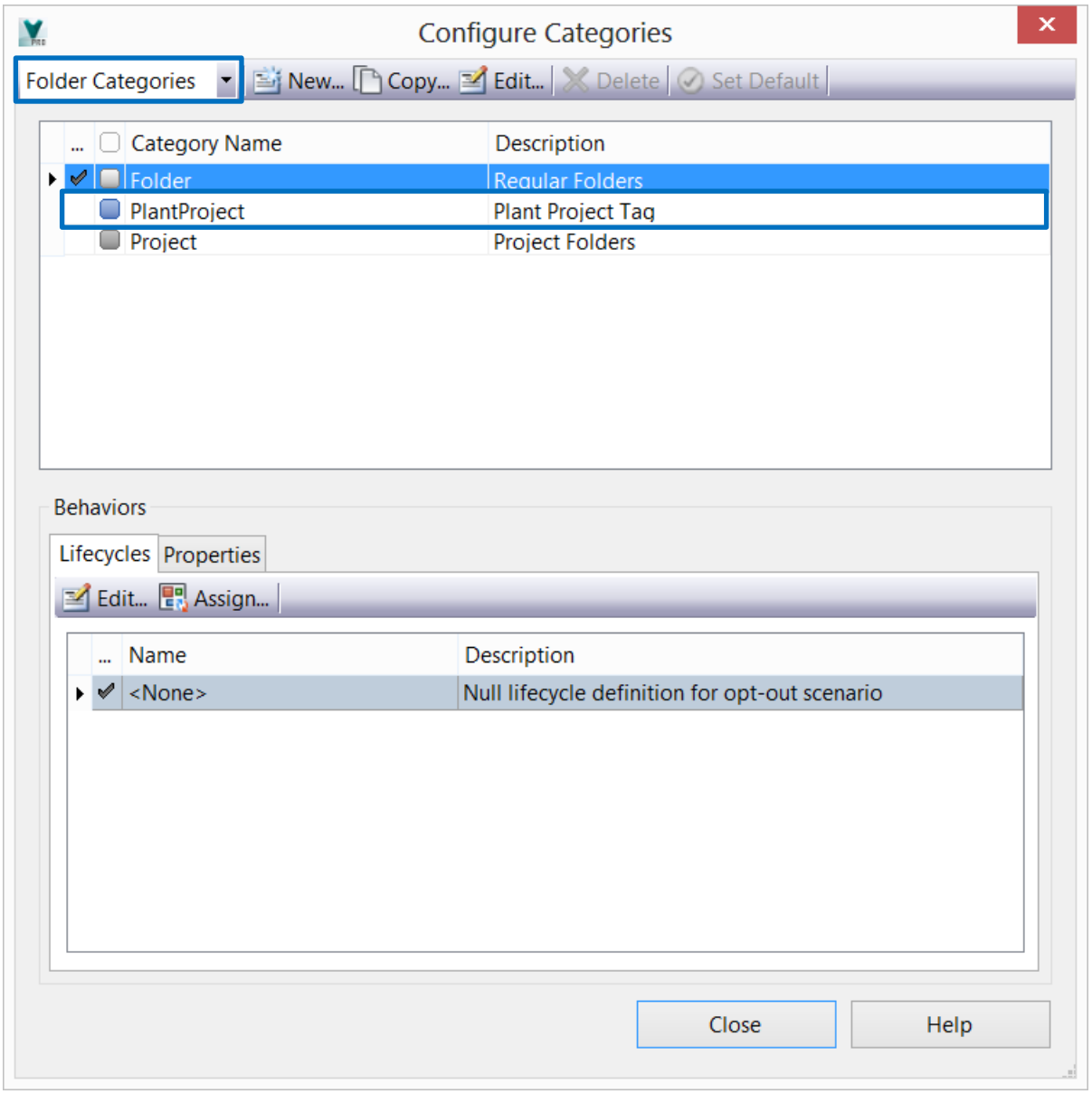
Click the *OK* button to close the Working Folder Options window

Categories

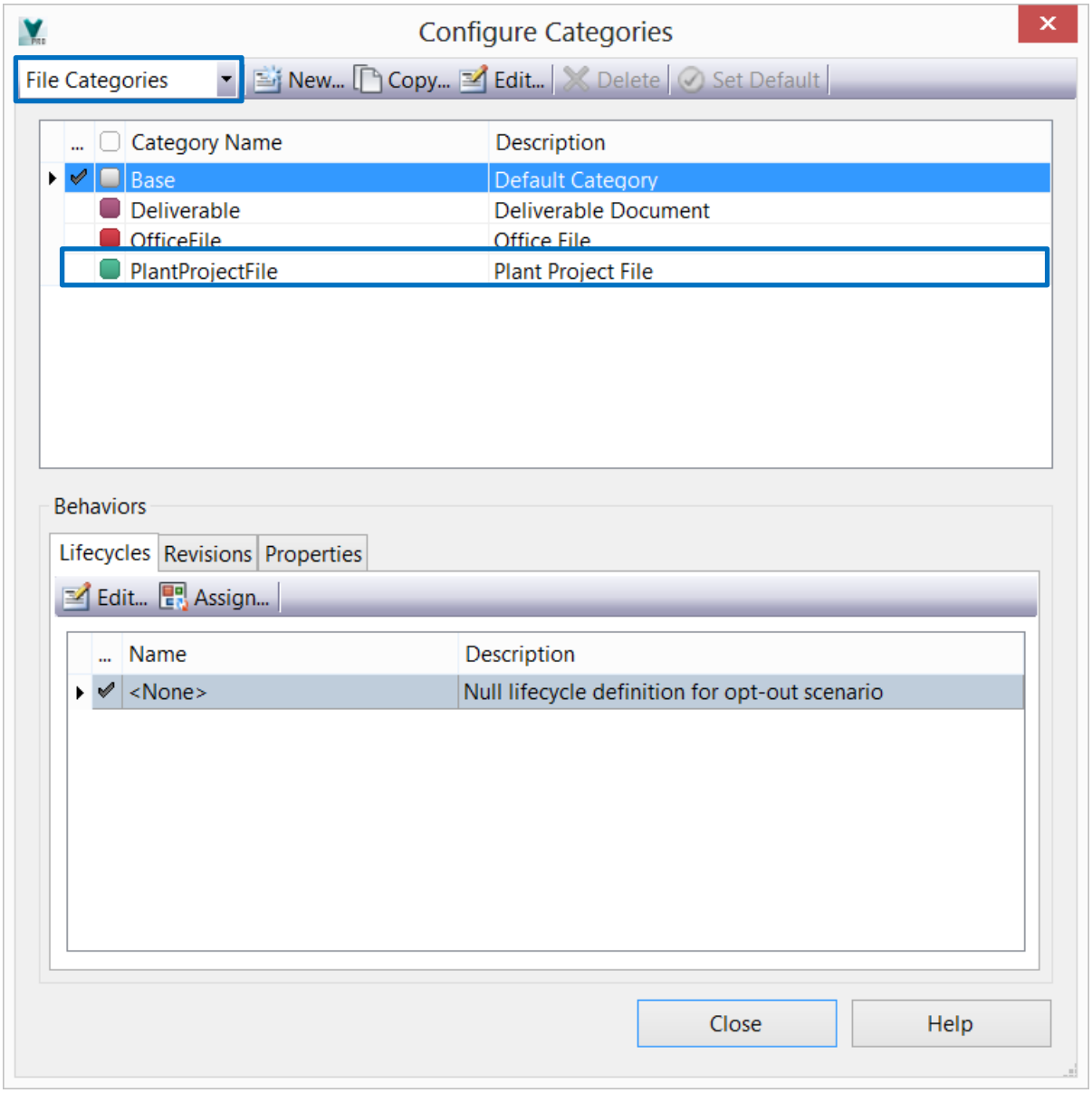
Accessing the Categories is via the *Behaviours* tab on the Vault Settings window. Click the *Categories…* button.



On the Configure Categories window, at the top left, there is a drop down list for the different category types. The Folder Category “PlantProject” is already created for you upon creating the first AutoCAD Plant 3D project in the Vault. You must create the category using the AutoCAD Plant 3D application. If you are at this location and the category is not there, then create a project in the Vault using AutoCAD Plant 3D



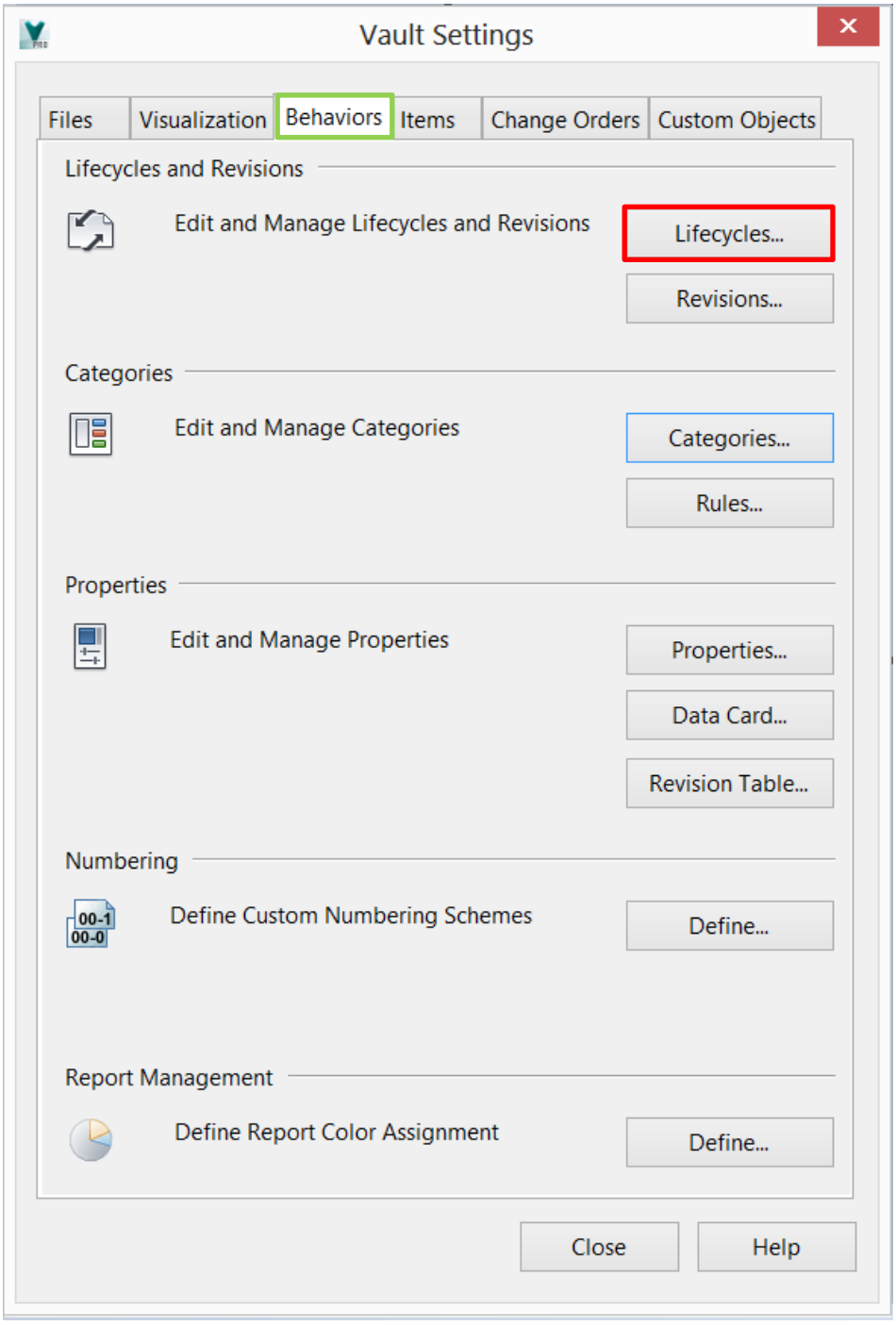
From the drop down list, select *File Categories*. Notice in here there is “PlantProjectFile” already created. Again this is only created for you once you generate the first AutoCAD Plant 3D project in the Vault.



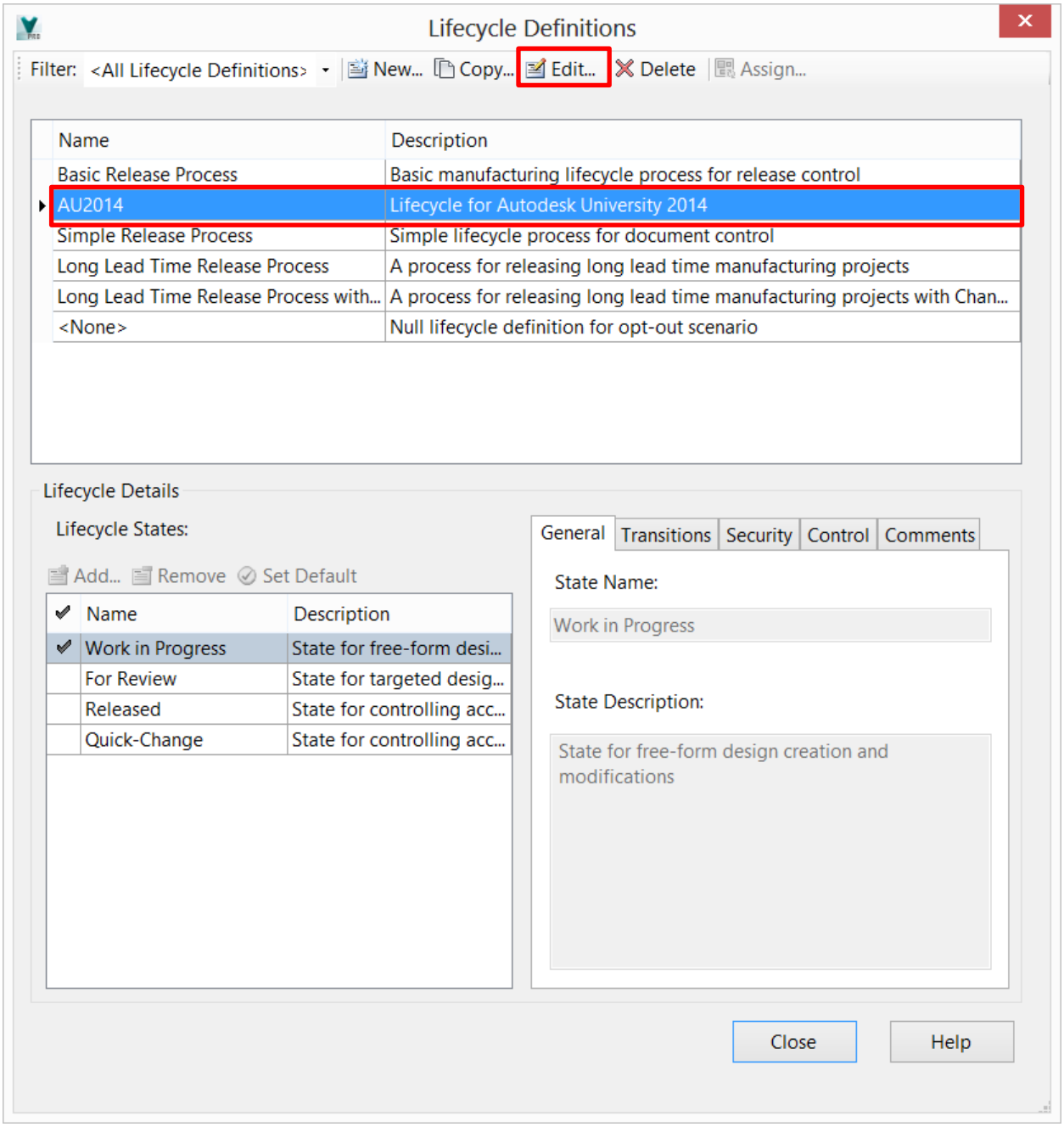
The Categories created by AutoCAD Plant 3D project should not be deleted, modified, or renamed. These categories are currently set by the system and will affect the Vault and AutoCAD Plant 3D projects in an undesirable manner.

Lifecycles

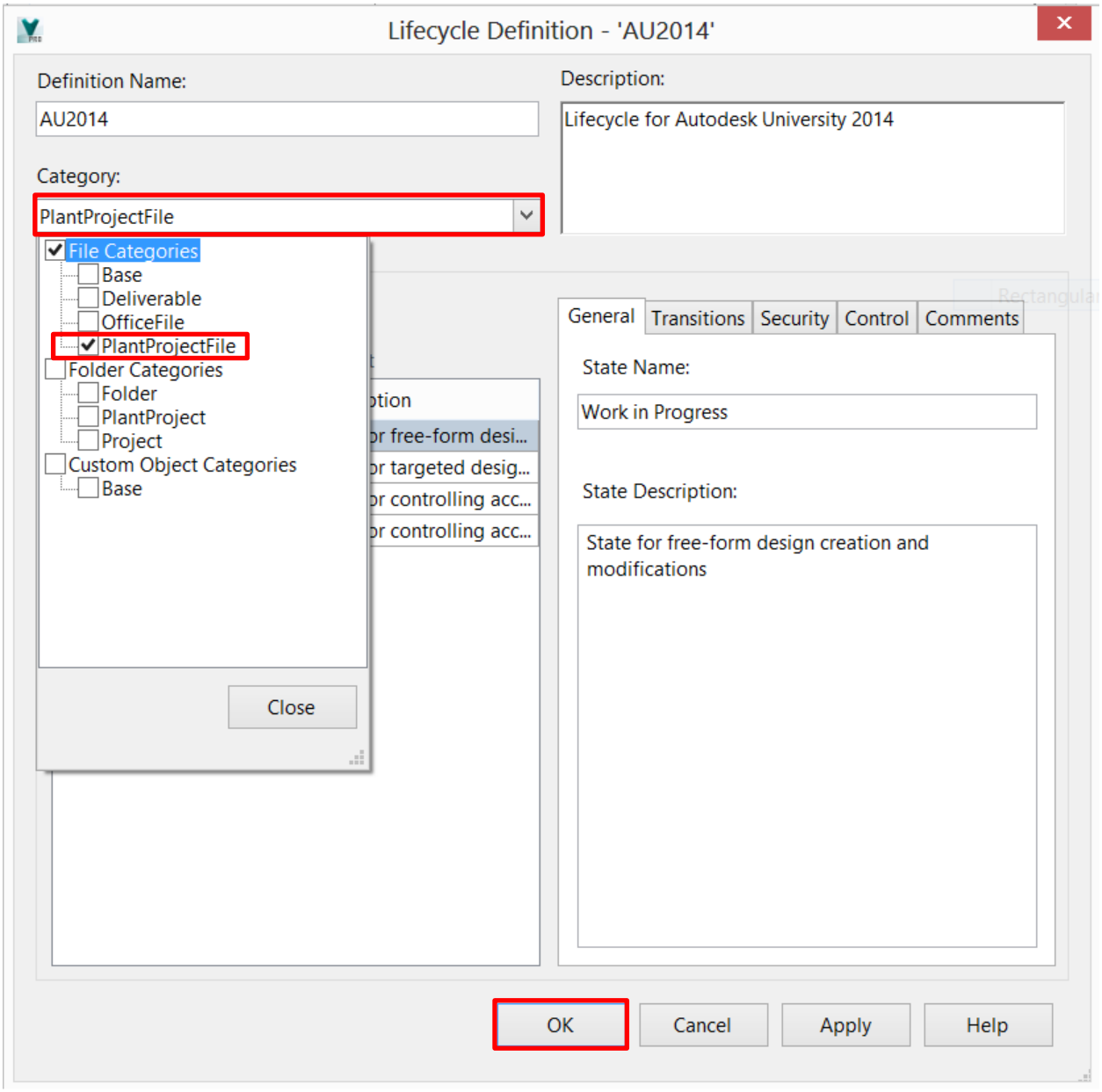
Accessing the Lifecycles via the *Behaviours* tab on the Vault Settings window. Click the *Lifecycles…* button.



In the Lifecycles Definition window, you can set up a new Lifecycle Definition, or select an existing one. Select a Lifecycle Definition and then select *Edit…*



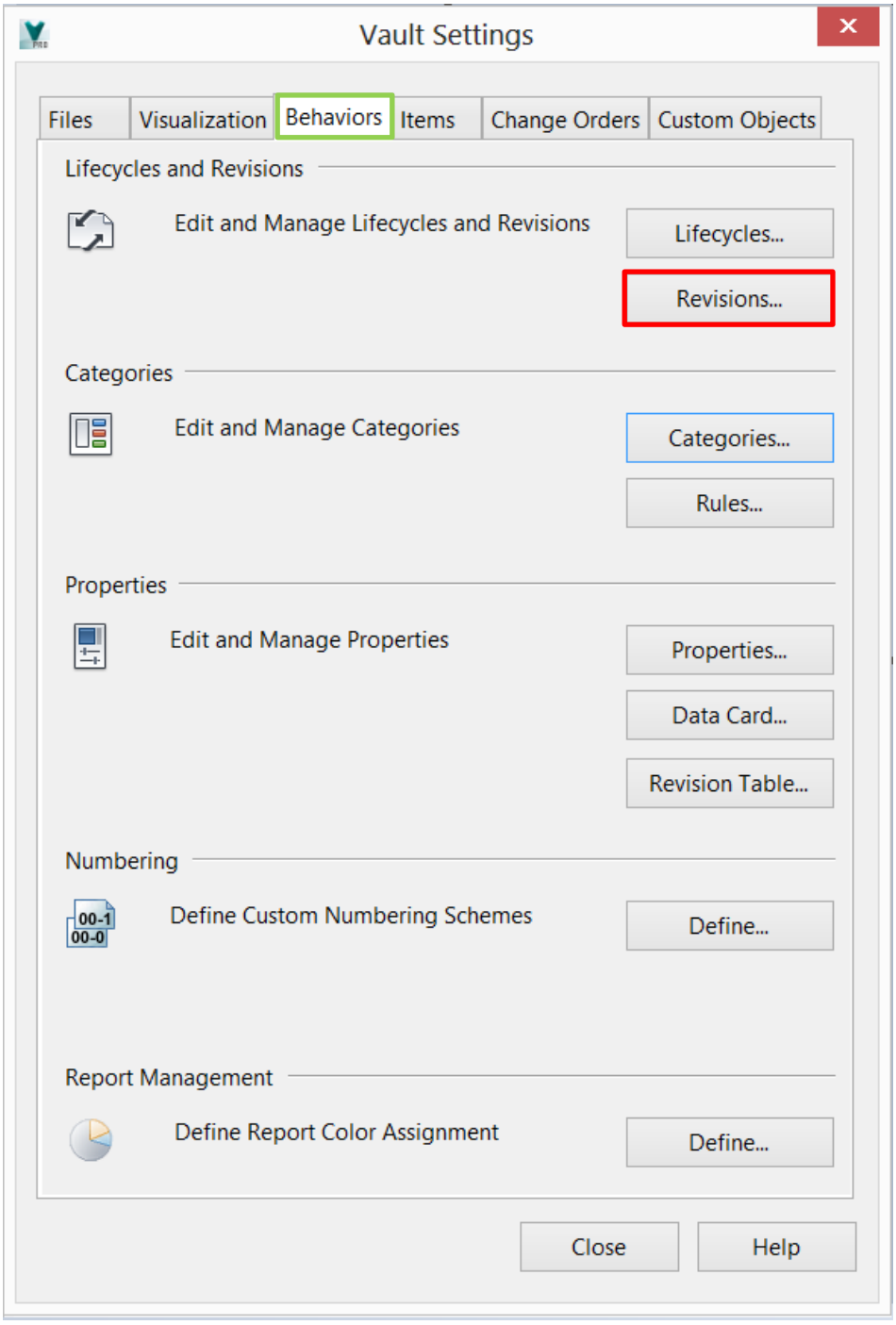
In the window that appears, Select the Category drop down list and select *PlantProjectFile.* This will apply the Lifecycle Definition to the category.



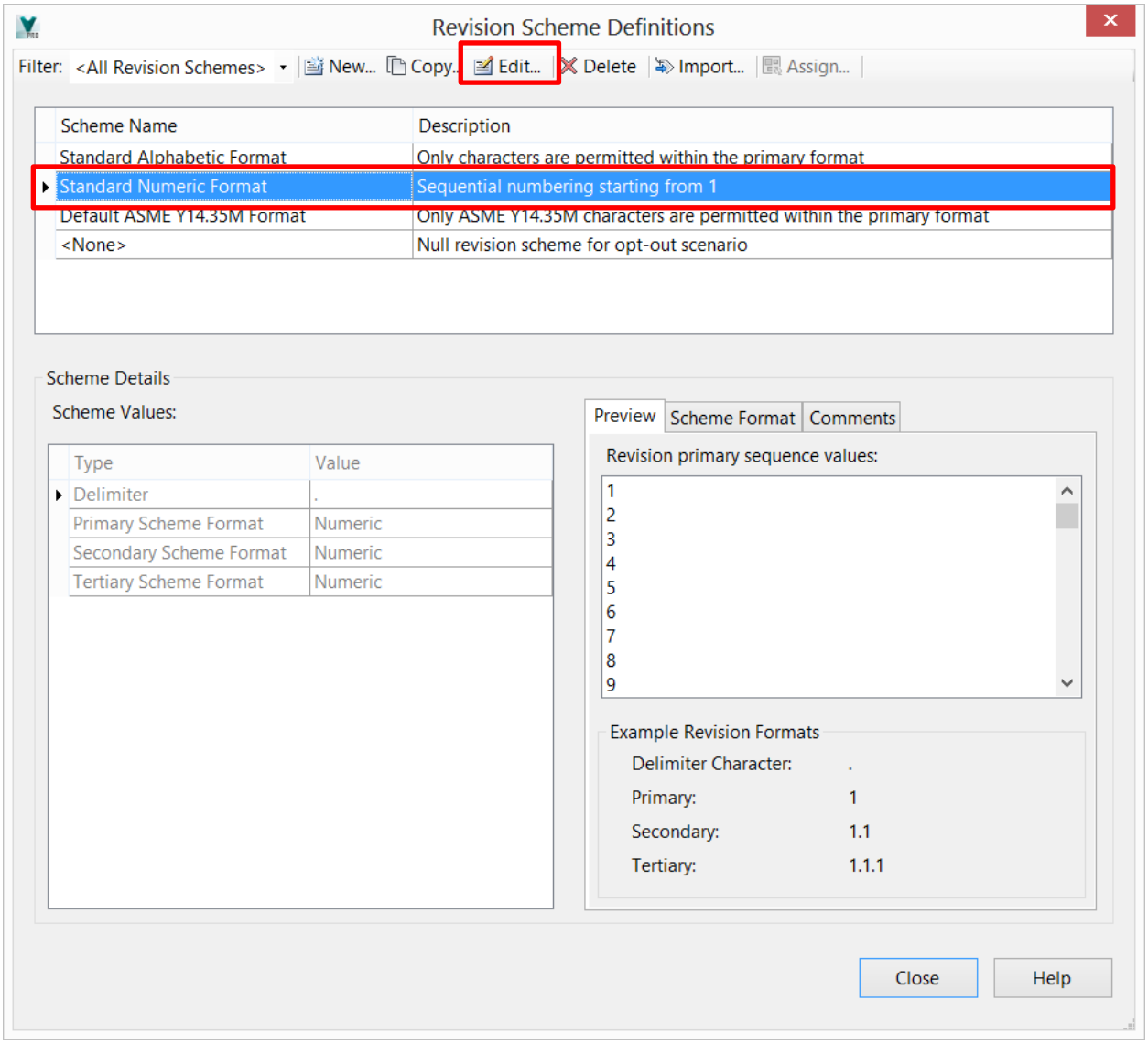
Once the Lifecycle Definition is applied to the Category, click the *OK* button.

Revisions

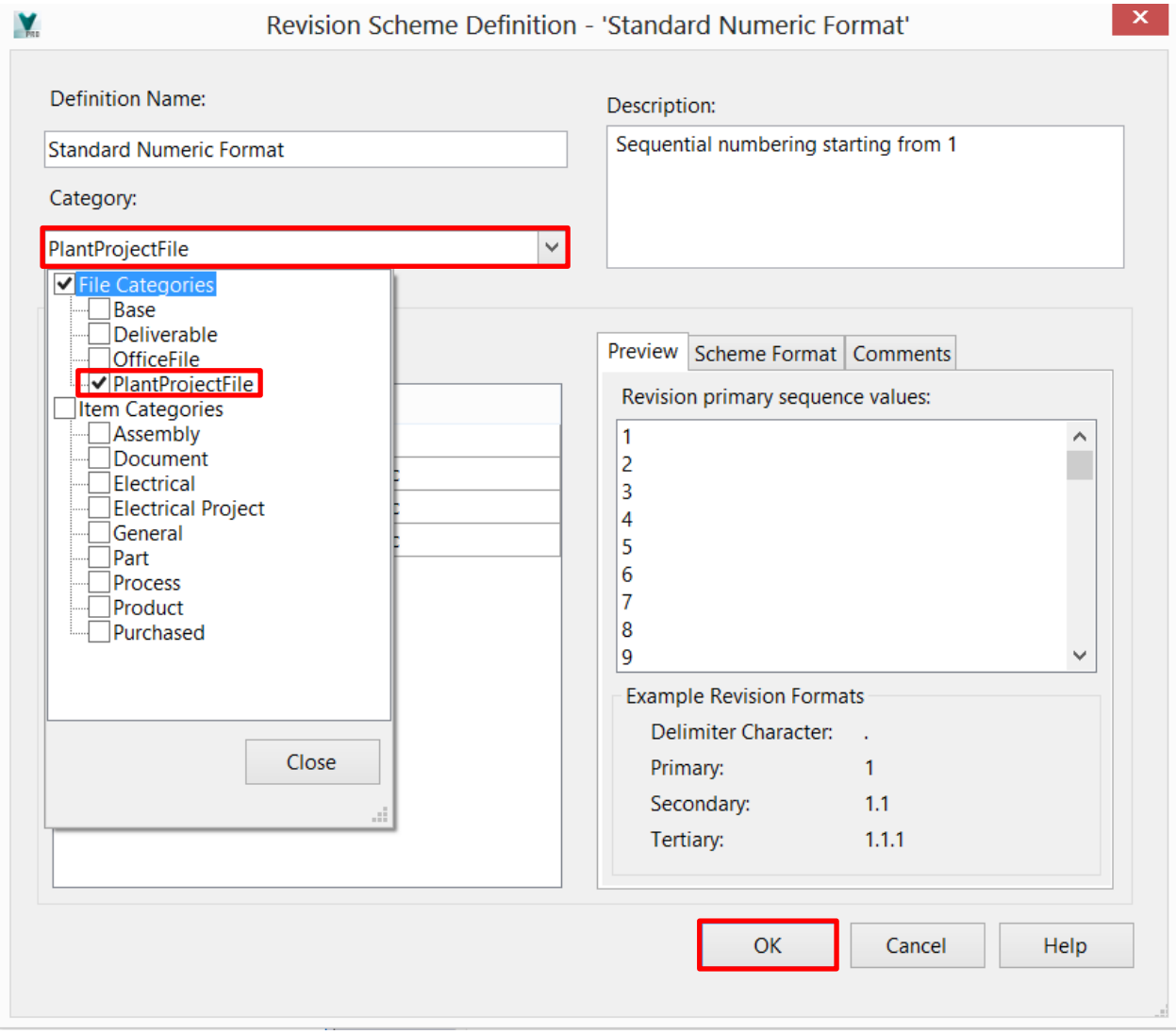
Accessing the Revisions is via the *Behaviours* tab on the Vault Settings window. Click the *Revisions…* button.



In the Revision Scheme Definitions window, you can set up a new Revision Scheme Definition, or select an existing one. Select a Revision Scheme Definition and then select *Edit…*



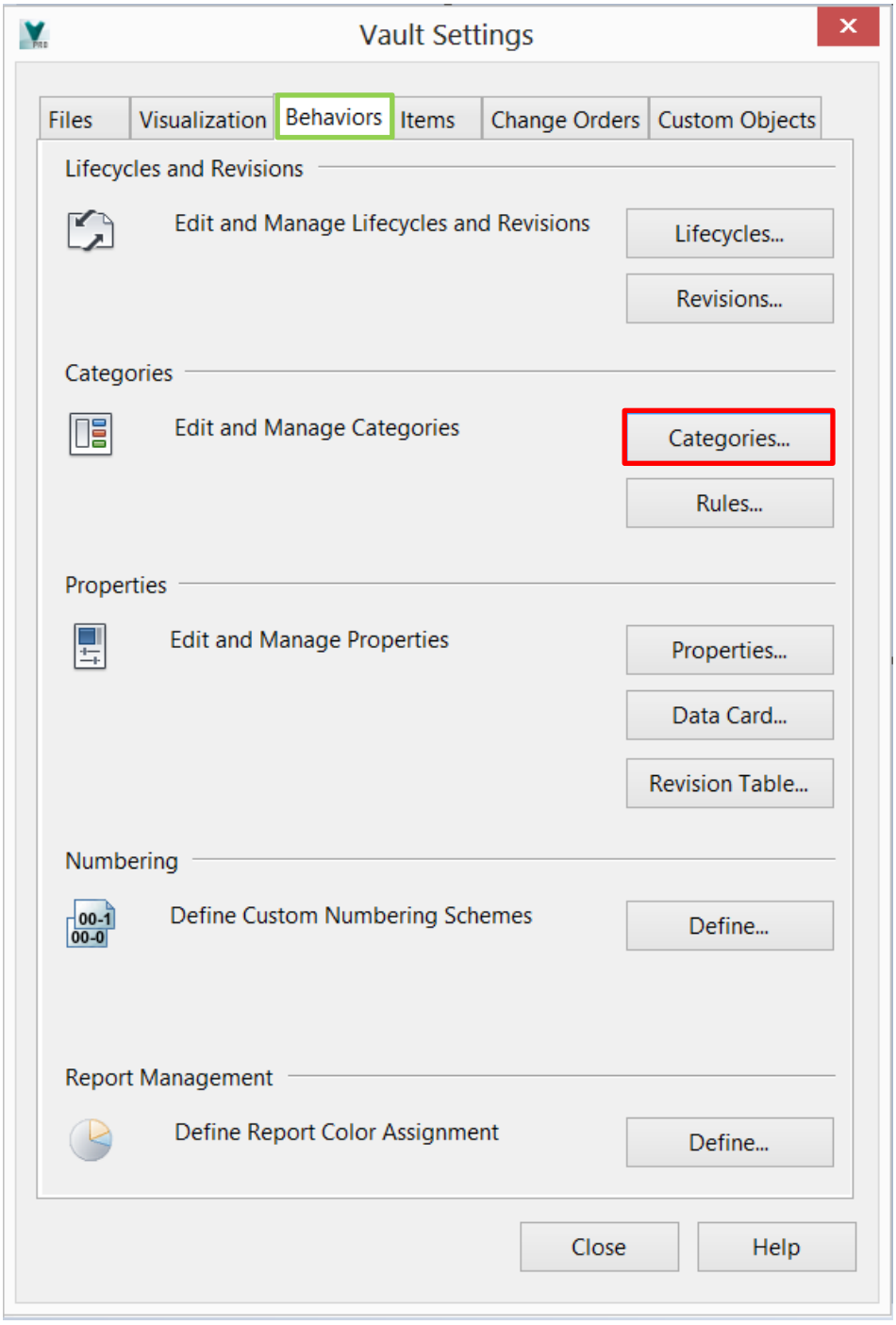
In the window that appears, Select the Category drop down list and select *PlantProjectFile.* This will apply the Revision Scheme Definition to the category.



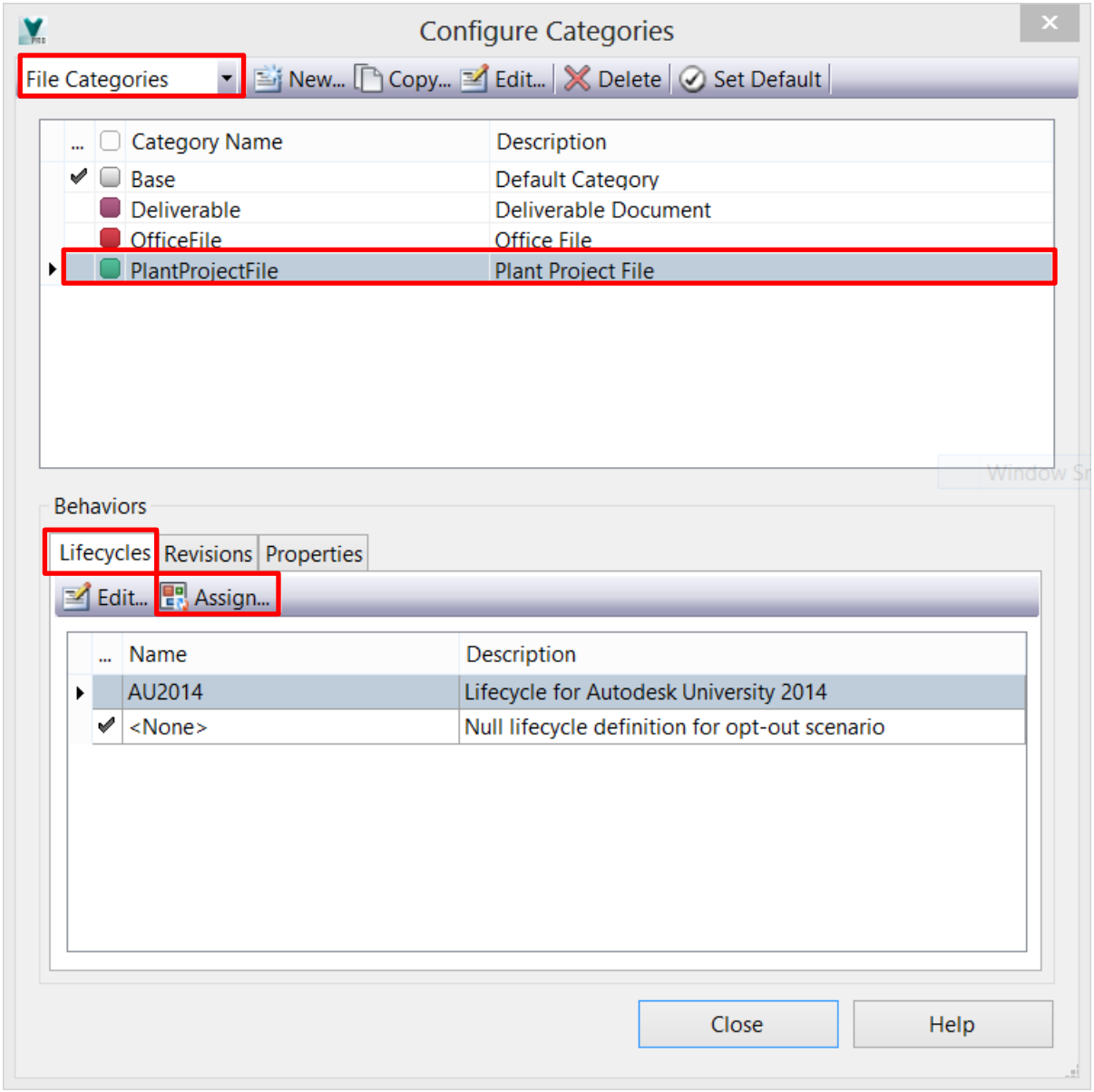
Once the Revision Scheme Definition is applied to the Category, select the *OK* button.

Assigning the Lifecycle and Revision Scheme Definitions to the Category

Accessing the Categories is via the *Behaviours* tab on the Vault Settings window. Click the *Categories…* button.

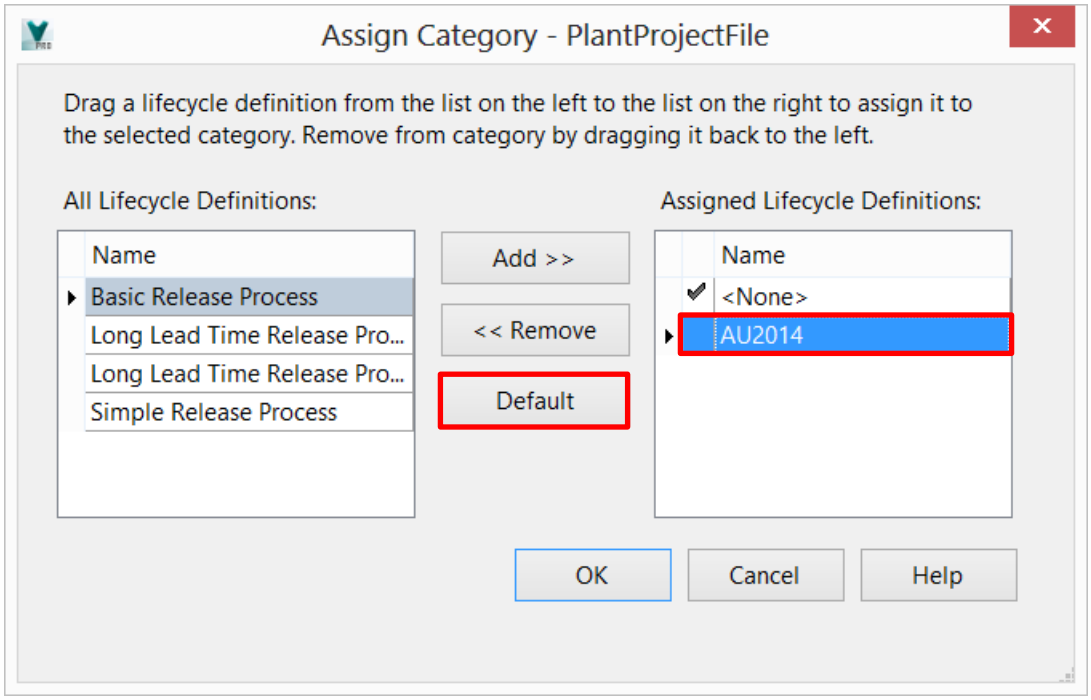


From the drop down list, select *File Categories*. Select *PlantProjectFile* from the list of categories.

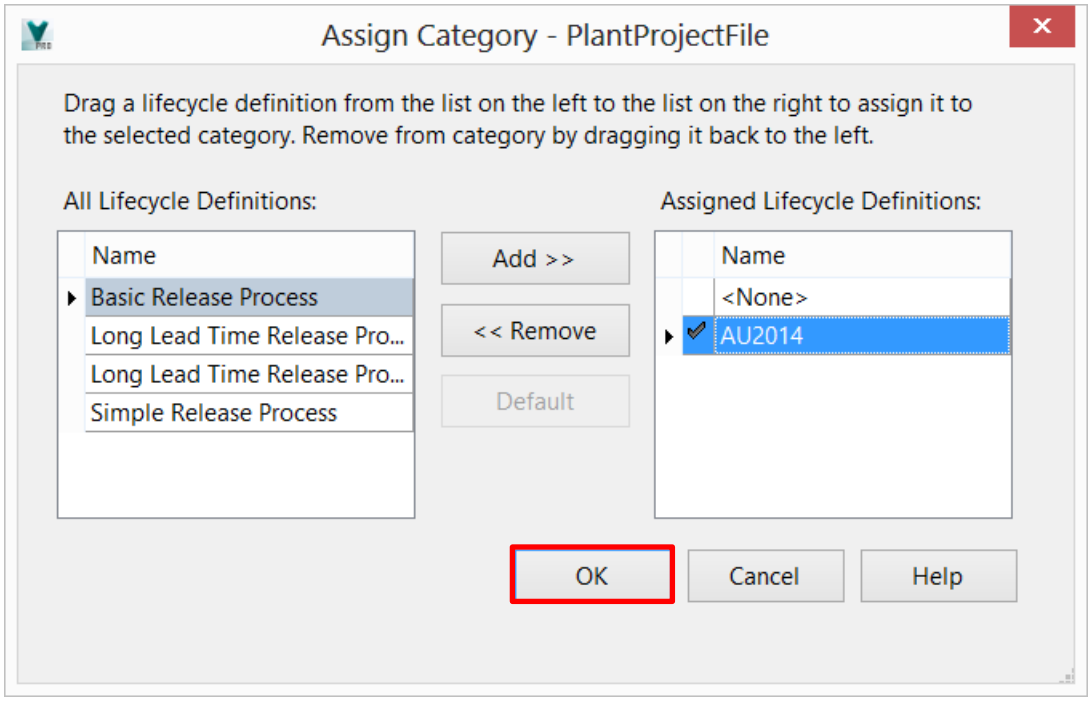


In the lower portion of the window, select the *Lifecycles* tab, and then the *Assign* button.

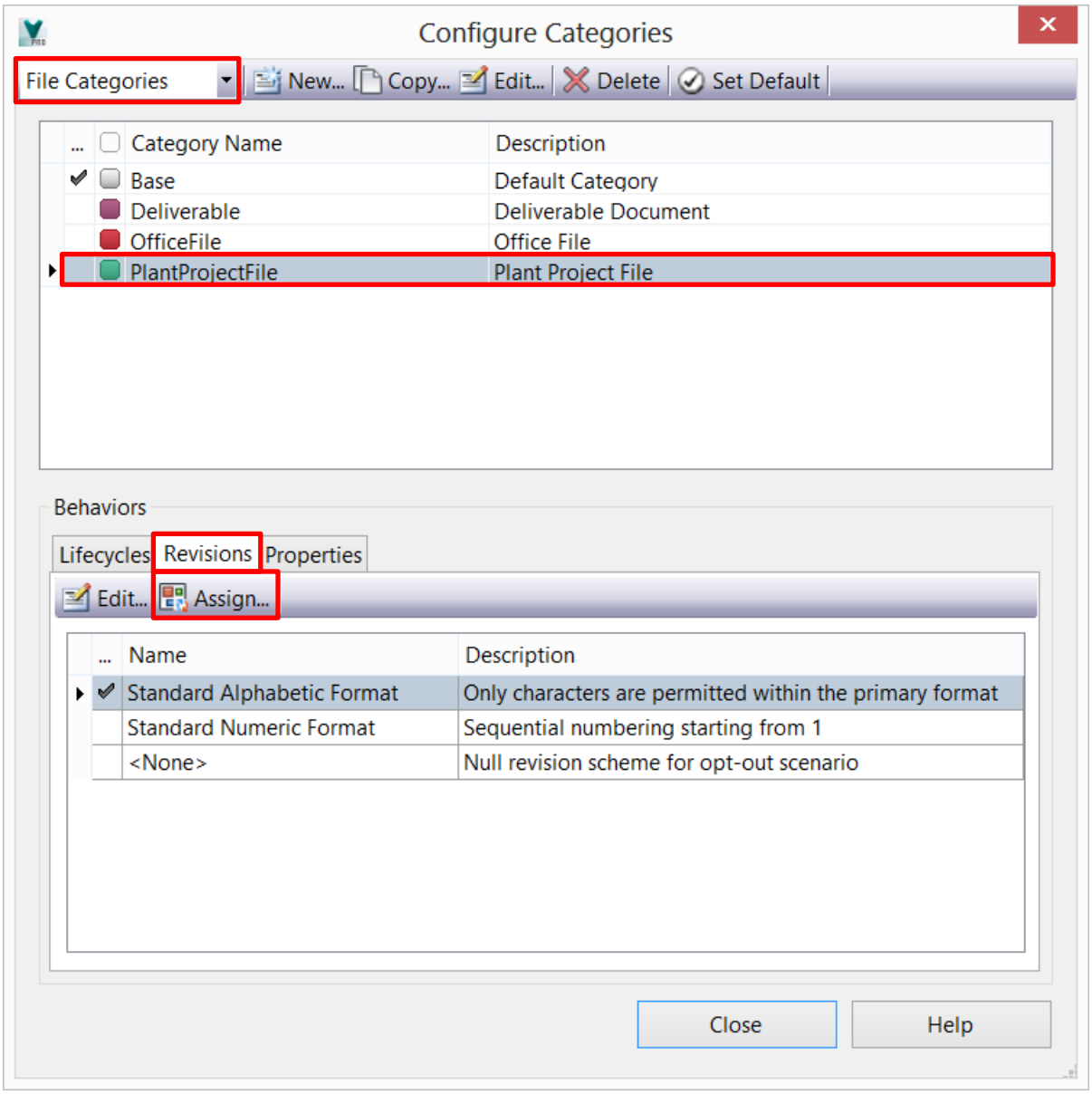
In the Assign Category window, on the right hand pane, select the new Lifecycle Definition, and then click the *Default* button.



Notice that the selected Lifecycle Definition has the check next to it. Click *OK*.

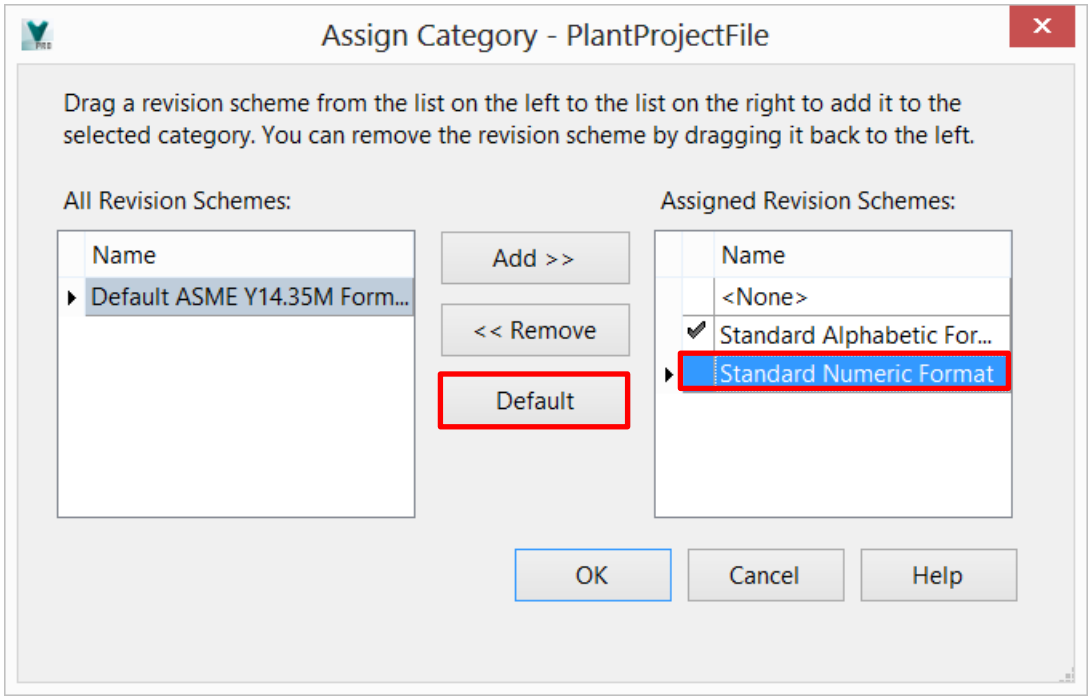


From the drop down list, select *File Categories*. Select *PlantProjectFile* from the list of categories.

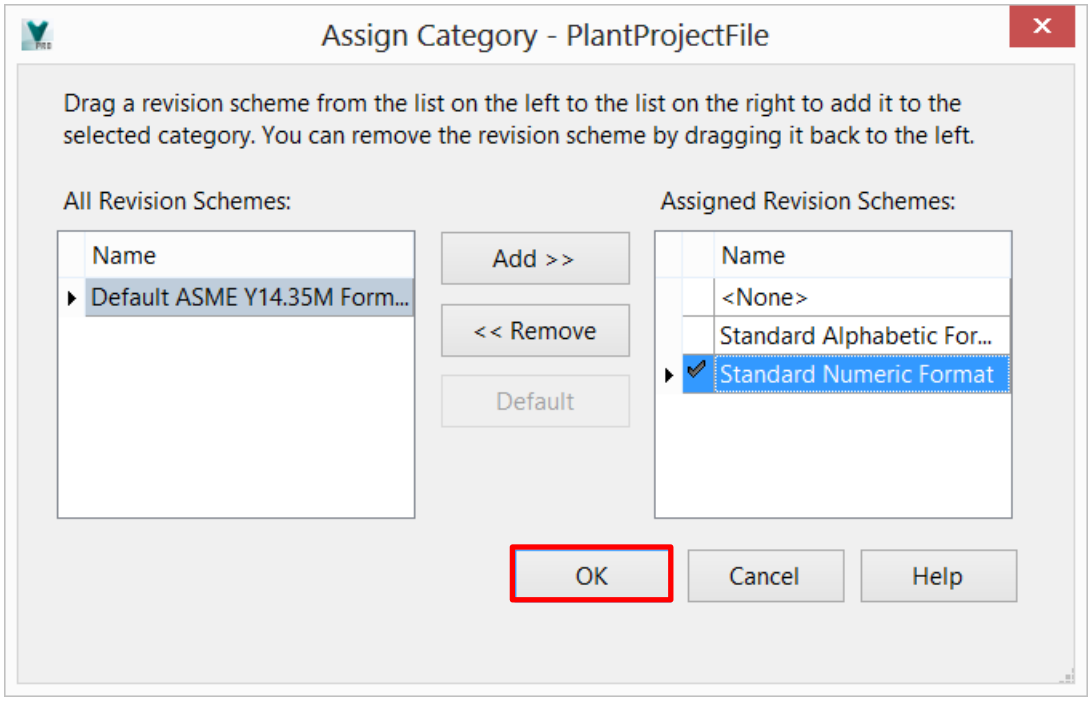


In the lower portion of the window, select the *Revisions* tab, and then the *Assign* button.

In the Assign Category window, on the right hand pane, select the new Revision Scheme, and then click the *Default* button.



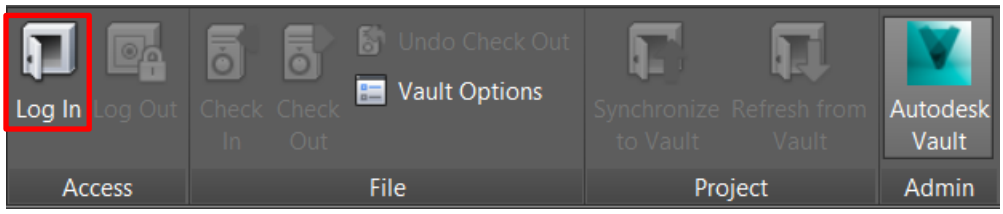
Notice that the selected Lifecycle Definition has the check next to it. Click *OK*.



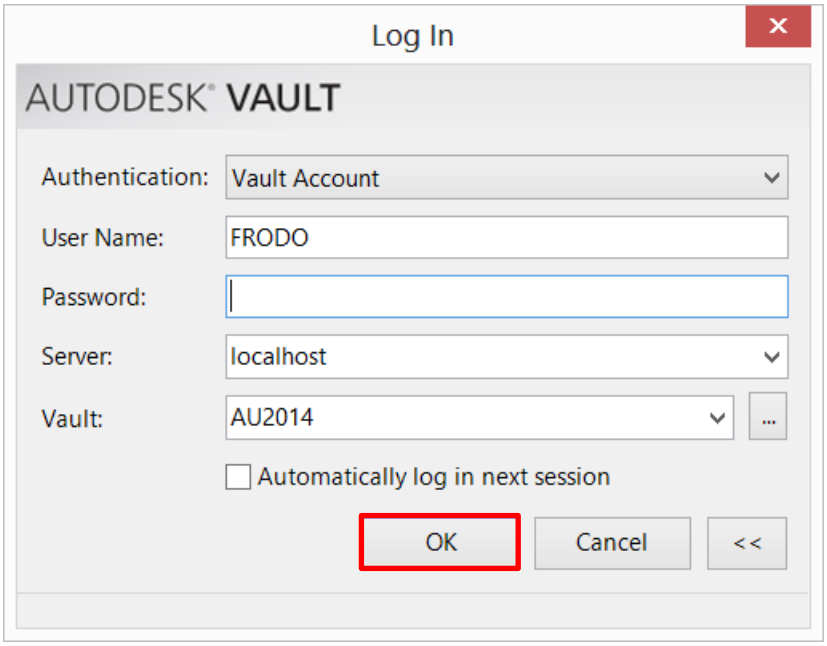
Migrate an existing, and create a new AutoCAD Plant 3D Vault Project

Migrate an existing project.

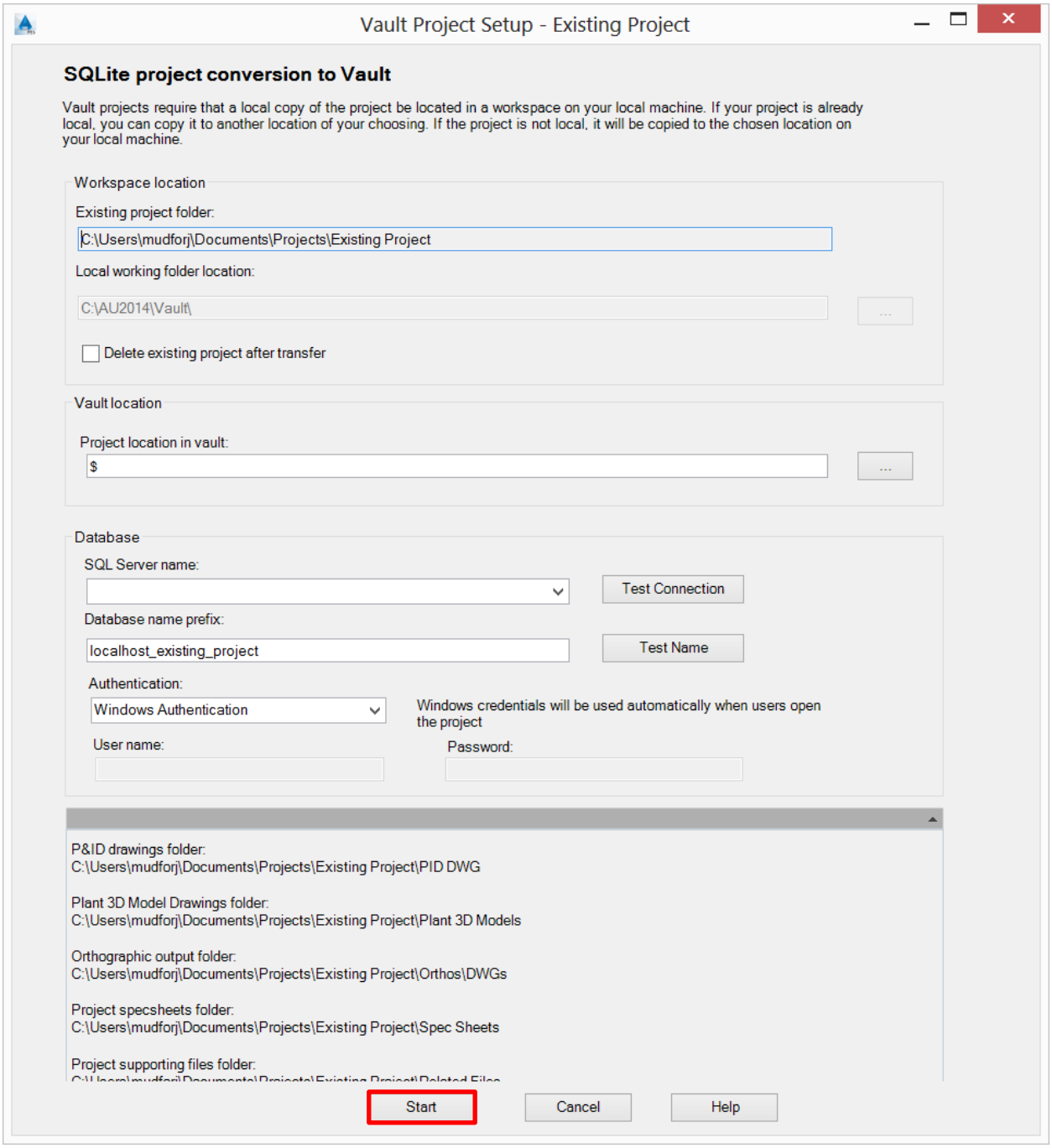
Firstly, you will need to log in to the Vault. Select the *Log In* button on the Vault ribbon.



Enter your credentials on the Log In window. Then click *OK*.

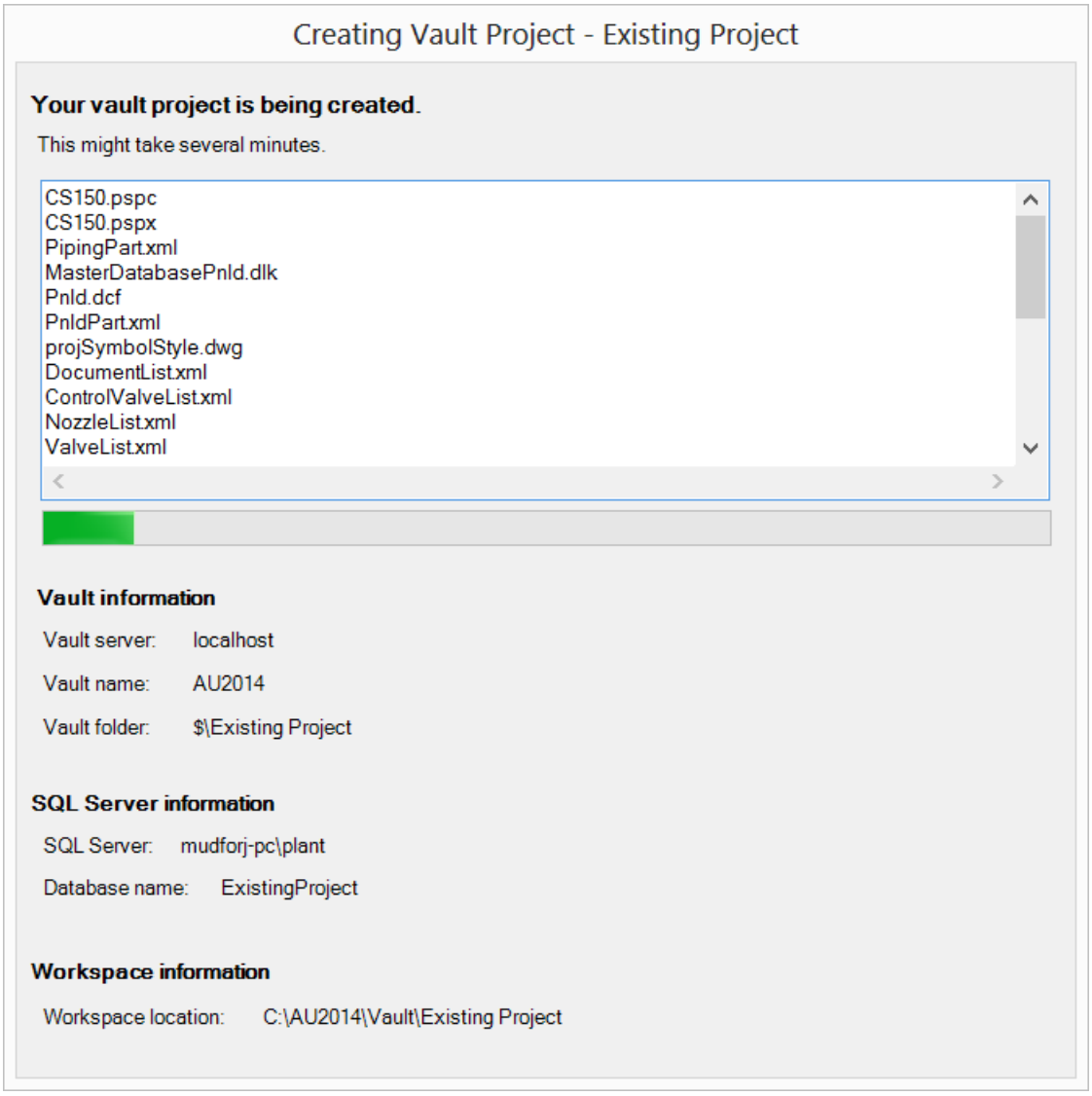


Open the project you wish to migrate, and with all drawings closed, enter PLANTPROJECTTOVAULT into the command line. The “Vault Project Setup – Existing Project” window will appear.



Once the above window has been completed with all the necessary information, click *Start.*

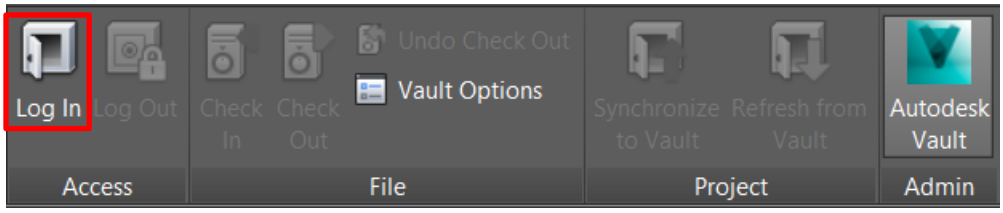
The AutoCAD Plant 3D project will start the migration process, and give an indication of its progress.



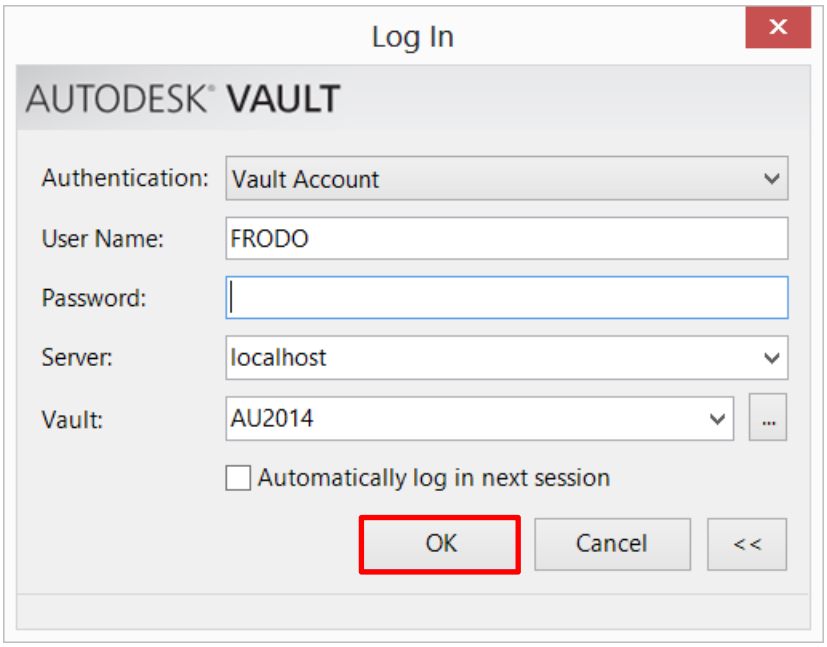
When the window disappears, the project will be completely migrated and ready for you to use.

Create a new project.

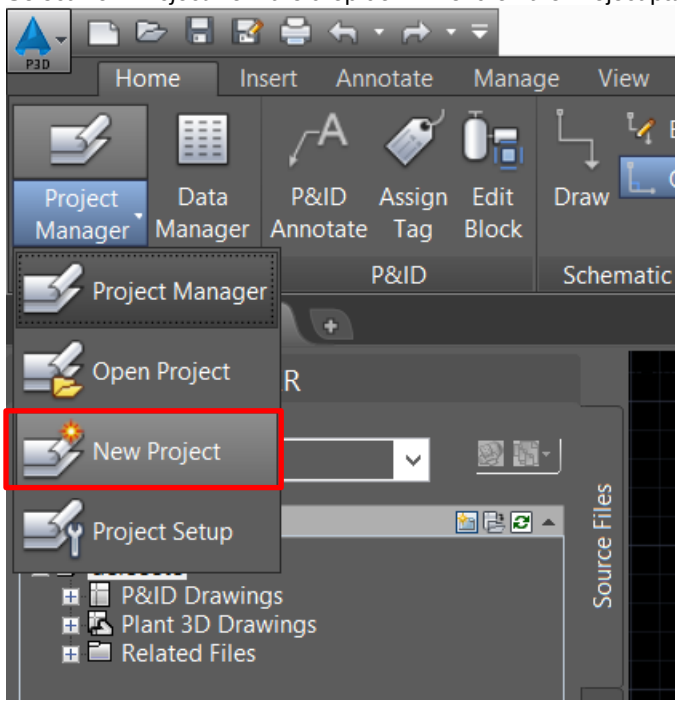
Firstly, you will need to log in to the Vault. Select the *Log In* button on the Vault ribbon.



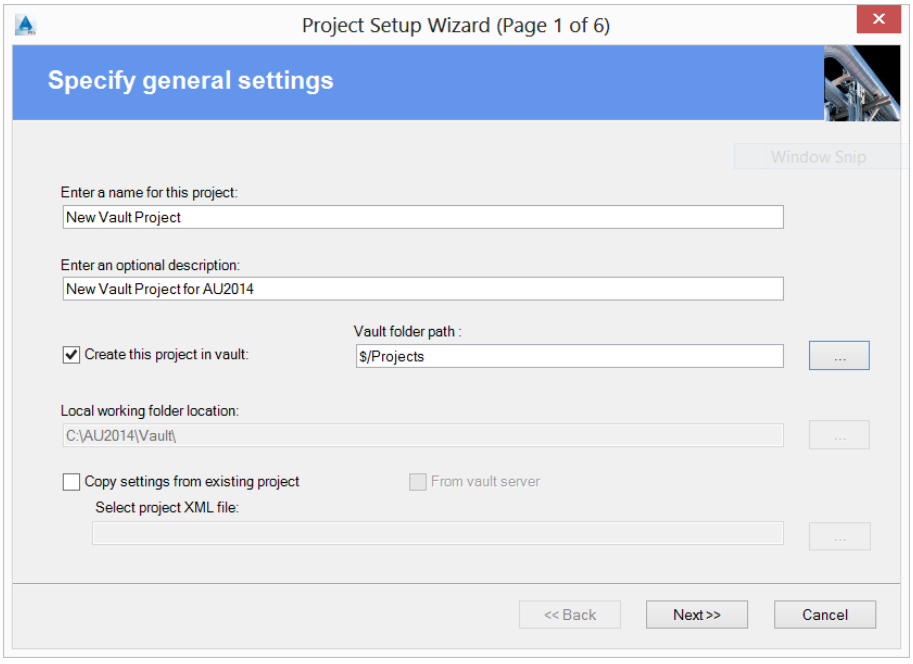
Enter your credentials on the Log In window. Then click *OK*.



Select *New Project* from the drop down menu on the Project panel.



On the first window of the Project Setup Wizard, enter the project details. Ensuring that the *Create this project in vault* check box is marked, and the *Vault folder path* is completed.

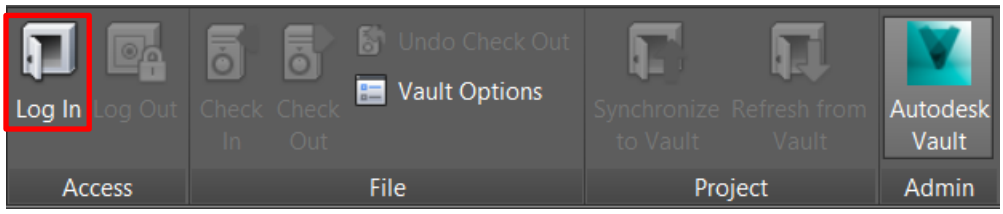


Move through the *Project Setup Wizard* as normal to complete the setup of the project in Vault.

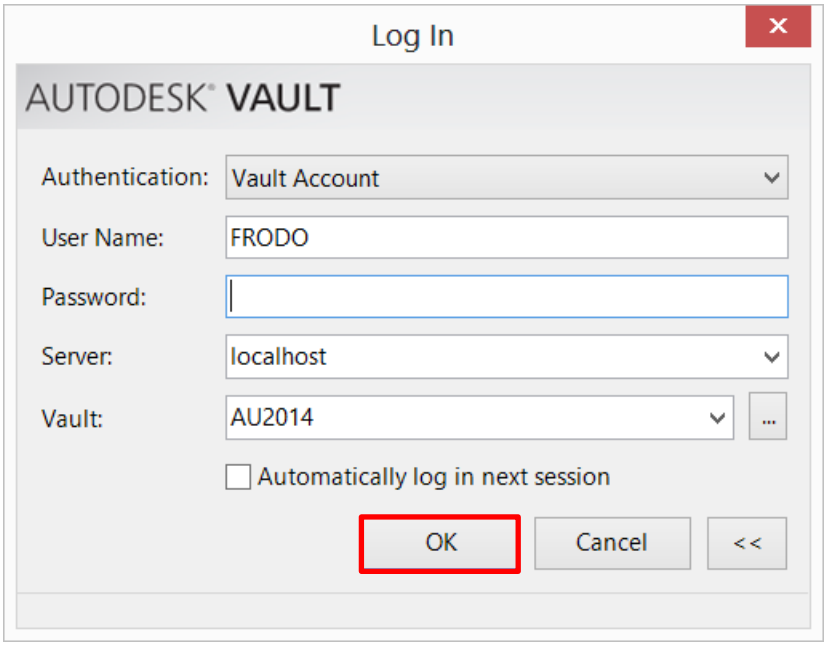
Using the AutoCAD Plant 3D project with Vault

Open a Vault project.

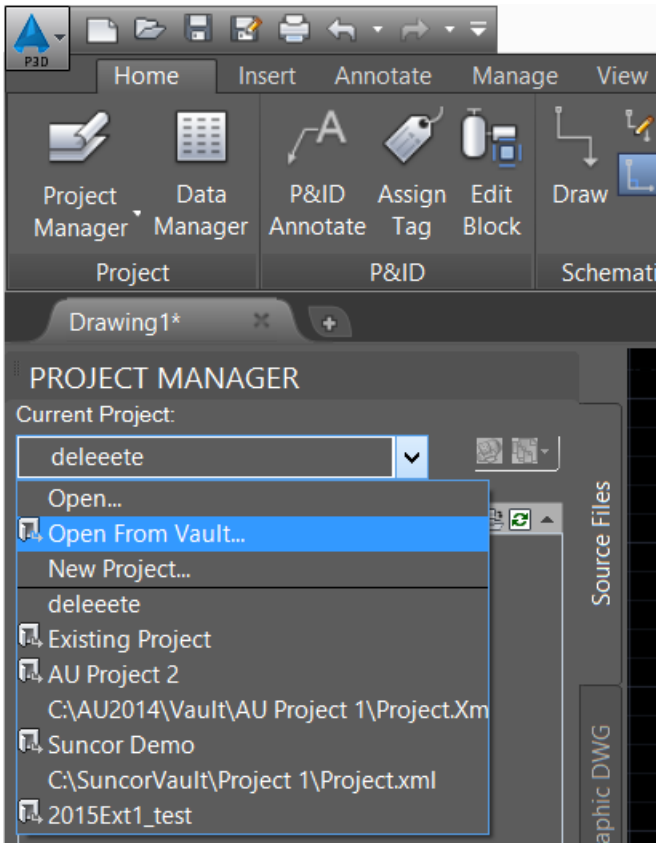
Firstly, you will need to log in to the Vault. Click the *Log In* button on the Vault ribbon.



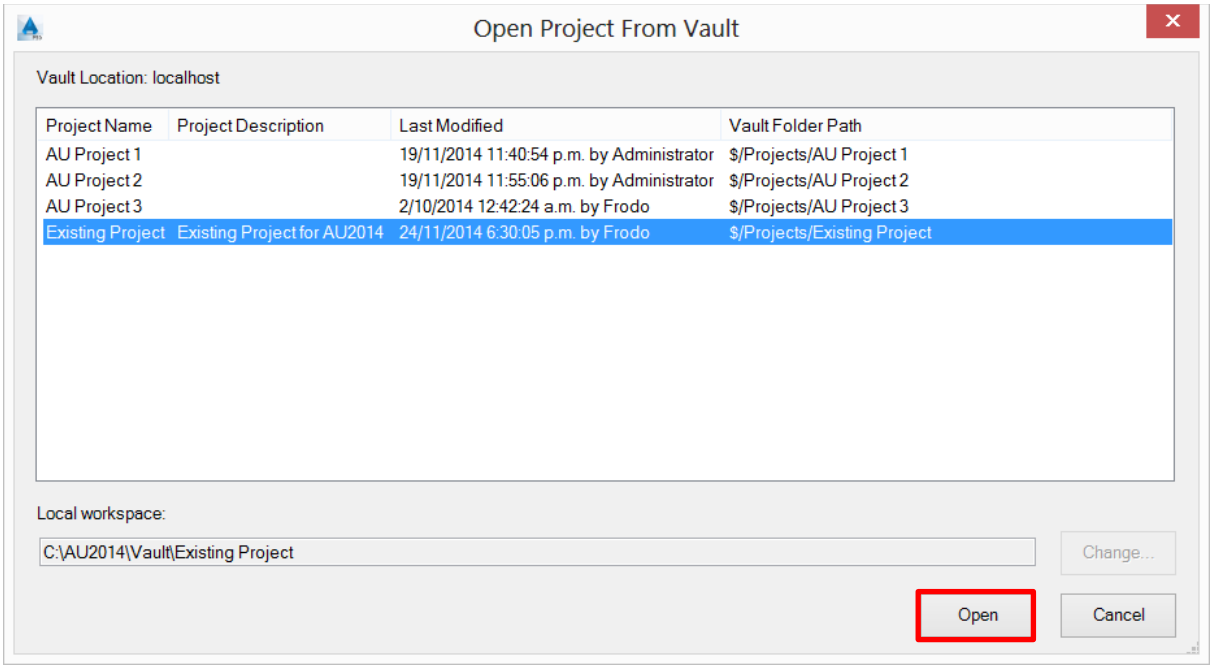
Enter your credentials on the Log In window. Then click *OK*.



From the Project Manager dropdown, select *Open From Vault…*

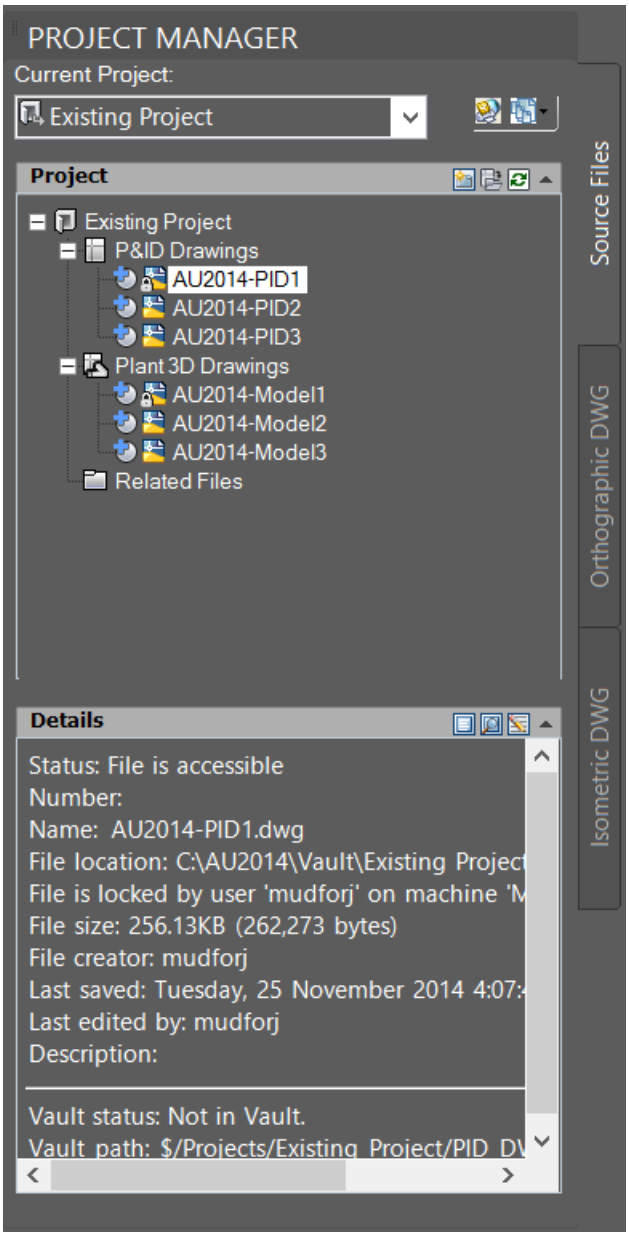


Select the project from the list and then click *Open*.

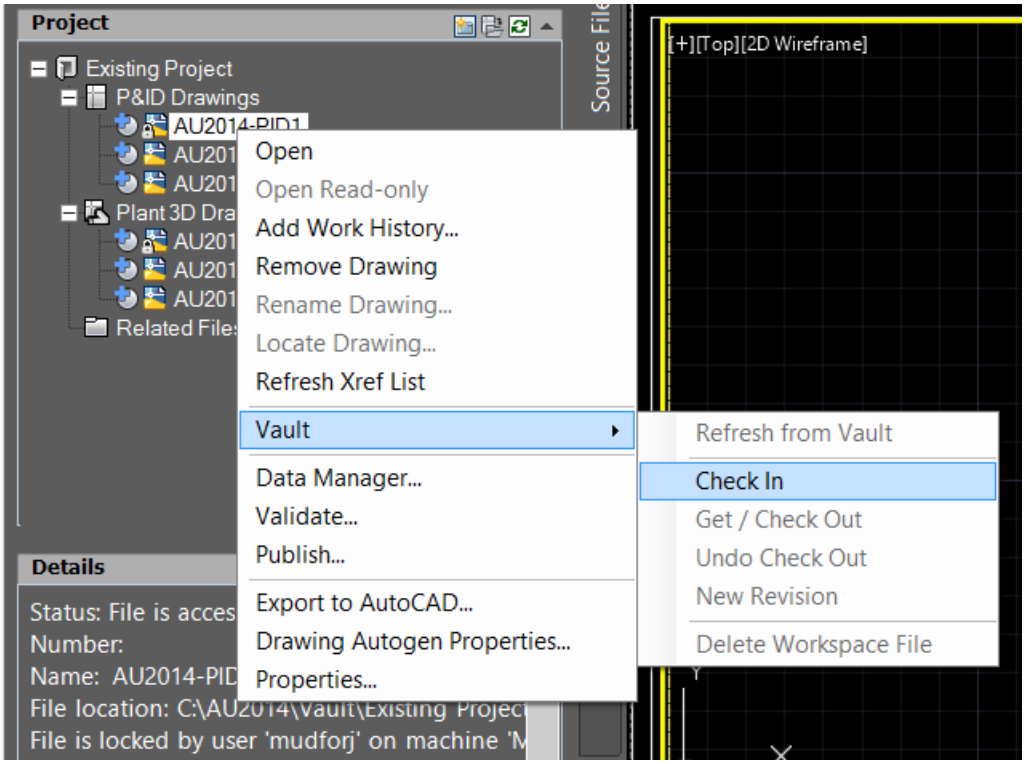


Create new drawings and add to Vault.

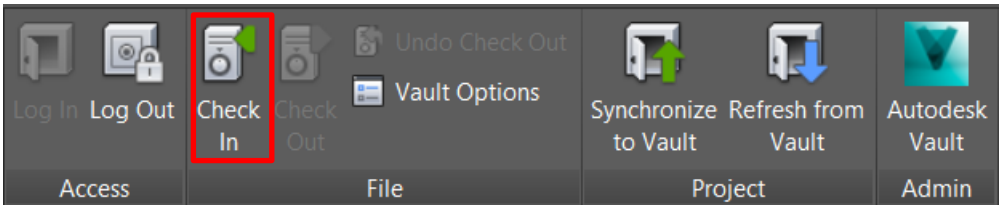
Create new drawings in the project manager as normal. These will appear in the project manager with a Vault icon beside them. The initial Vault icon defines the drawing as “Not in Vault”.



To add the drawings to Vault, you can either right mouse click on the drawing in the project manager and select *Vault>Check In*



Or when you have the drawing active on the screen, click *Check In.*

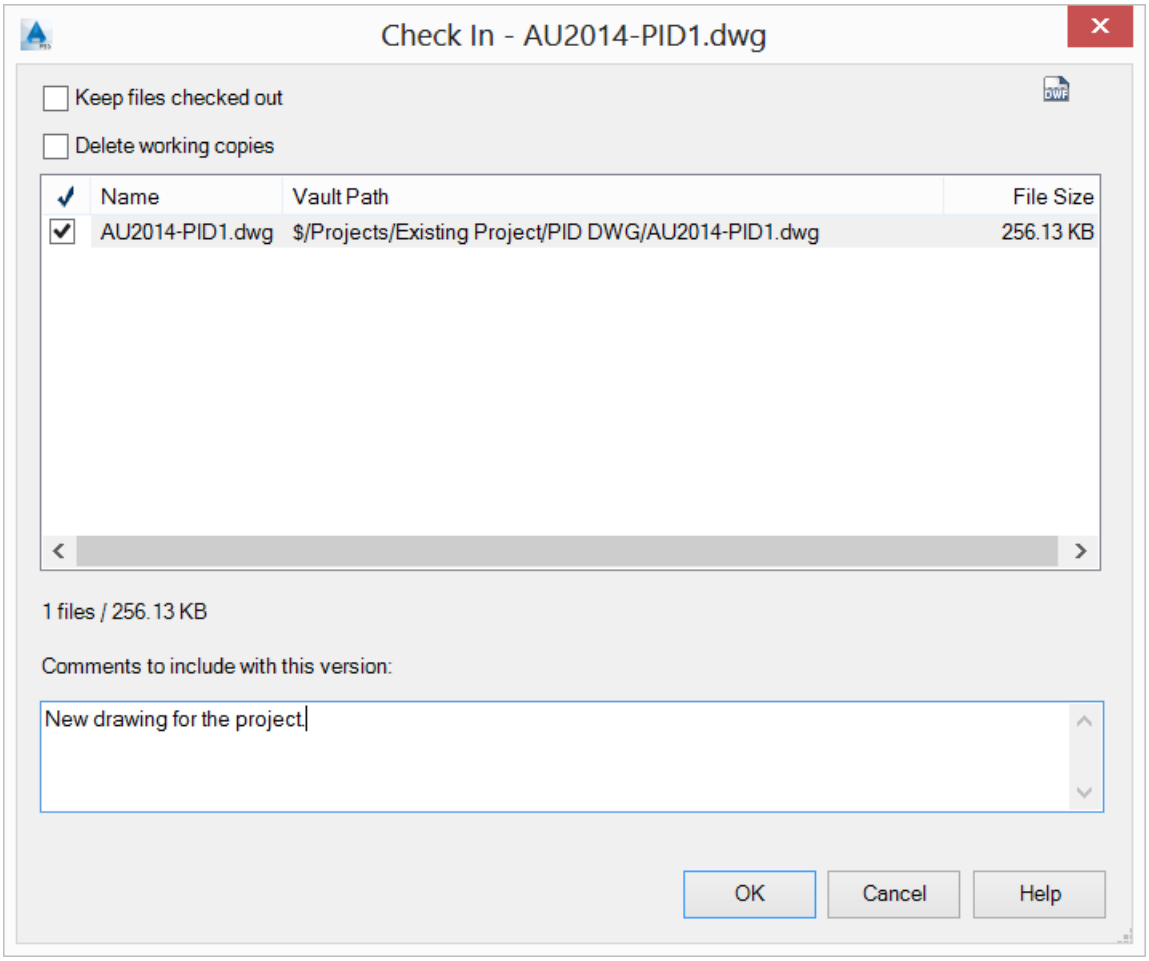


When the Check In window appears, you can select the following options:

Keep files checked out: This will add the current version of the drawing to the Vault but keep it checked out for continued changes.

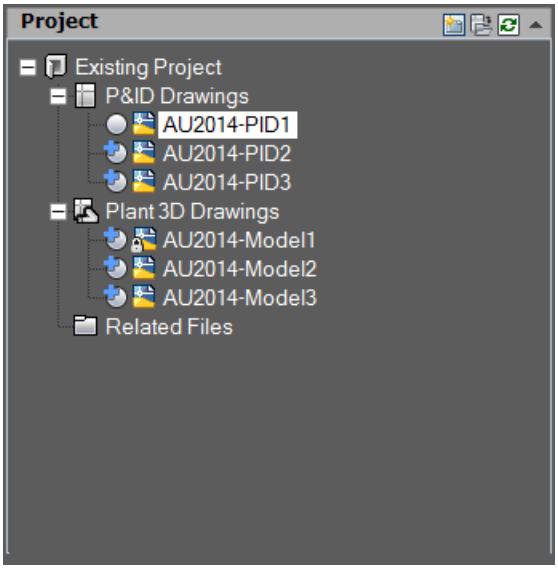
Delete working copies: This will delete the local copy of the drawing after the check in.

Comments: Include comments with the check in. These comments will appear in the Vault.

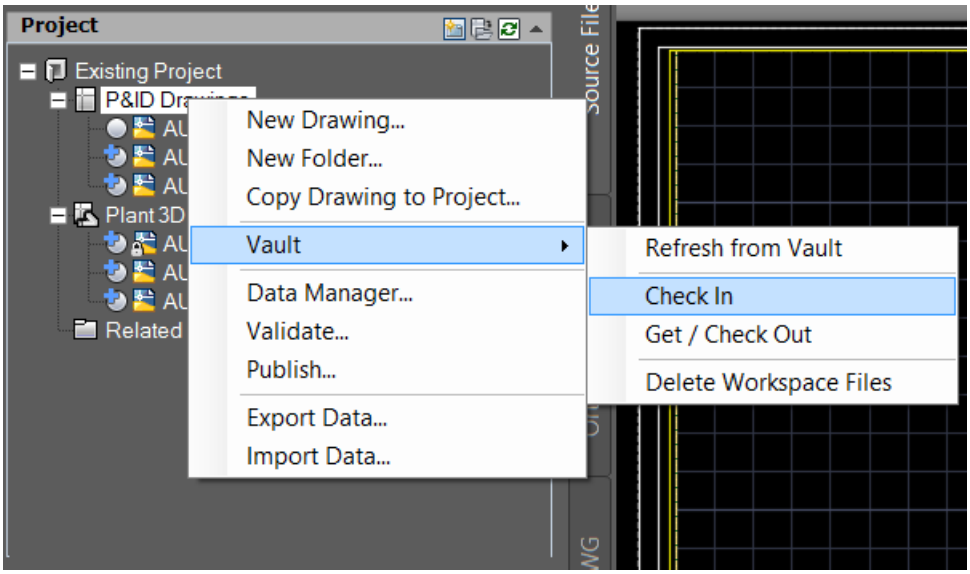


Ensure the file is checked in the list, and then click *OK*.

Take note that the Vault icon has changed.



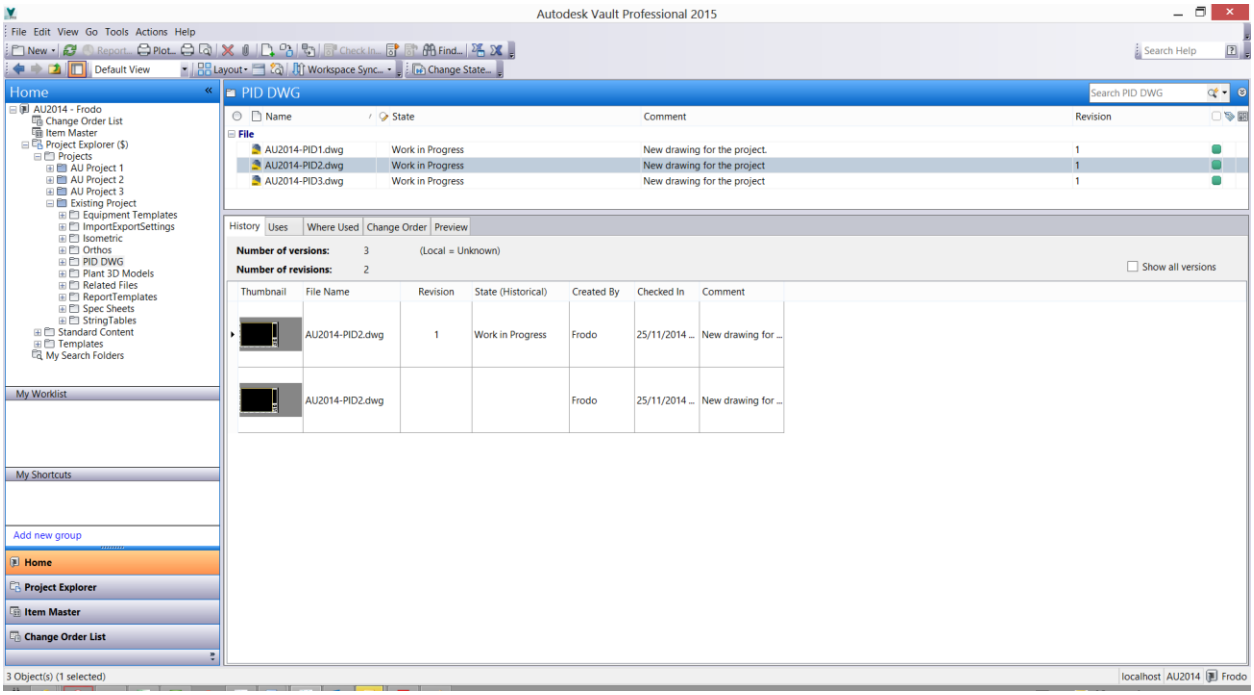
If you would prefer to check in a bulk lot of drawings at the same time, you can right mouse click on any of the higher level nodes in the project manager and go through a similar process.



This will check in all drawings at the lower level, which are checked out to you only.

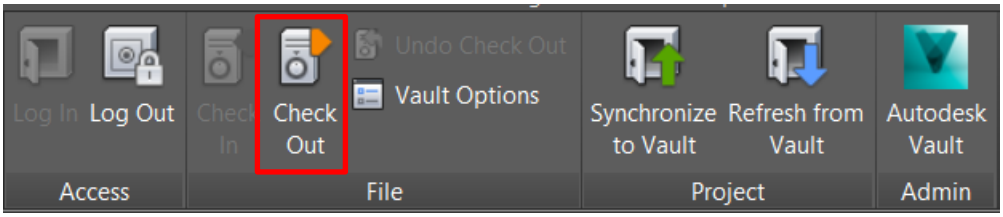
Inside Vault.

In the Vault Explorer, you can navigate to the project and you will notice that the files are now in the Vault.

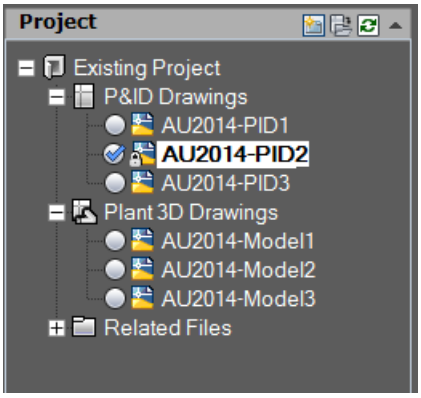


Checking out the drawing.

Back in AutoCAD Plant 3D, a user checks out a file by opening the file and clicking the *Check Out* button on the File panel.

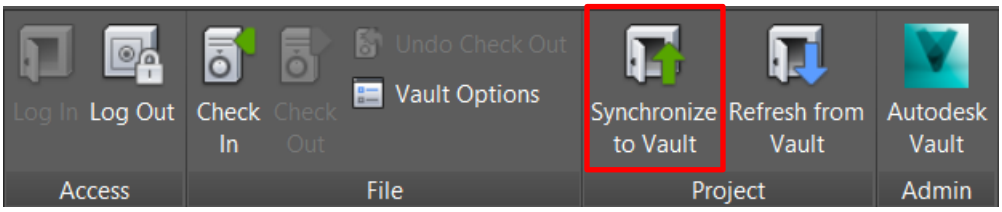


The Project Manager in AutoCAD Plant 3D will show the user that the file is checked out to them by displaying a different icon. Files that are checked out to other users will also be displayed in the project manager.

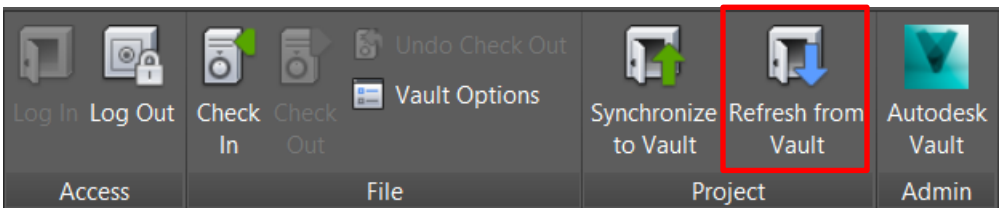


Vault Explorer will also show that the files that are checked out.

When the file is checked out from the Vault, the user that has current ownership of the file can work on the file as normal. Saving will save the file to the local workspace.
A user can Synchronize to Vault, any changes that have been made on their local workspace. This will update the Vault and central database with the latest information, yet retain the ownership/check out of the files. This is something that should be done on a regular basis.
To run the synchronization, click the *Synchronize to Vault* button on the Project panel.



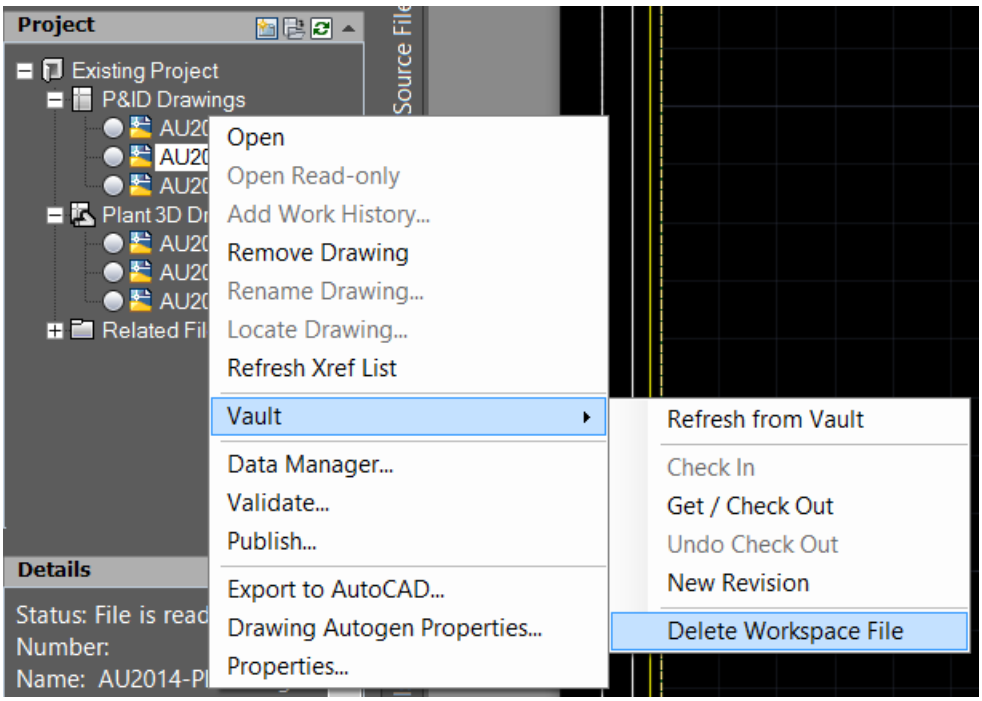
It is also recommended that each user runs the Refresh from Vault command regularly to capture the changes that have been synchronized by other users.
To run the refresh, click the *Refresh from Vault* button on the Project panel.



Clear the local workspace.

The local workspace can become over run with files that are n longer necessary to retain. The drawing files can be cleared from the local workspace via the project manager. It is possible to clear the files individually or by an entire folder or node.

To clear the workspace by selecting individual files, right mouse click on a file, select *Vault>Delete Workspace File*

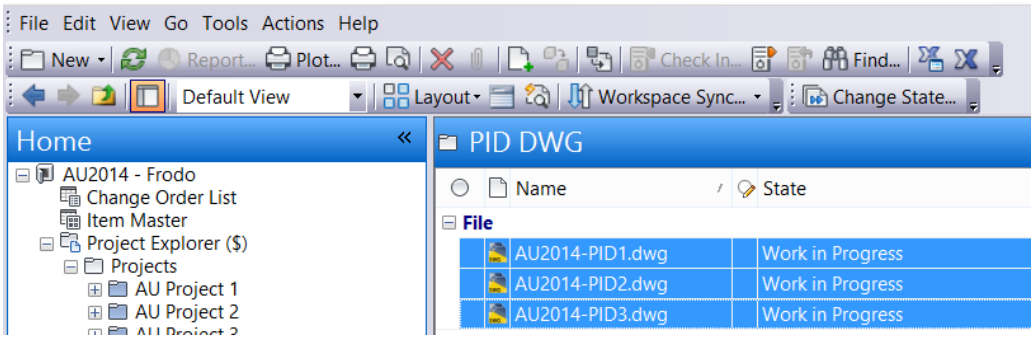


This will remove the single file from the workspace.

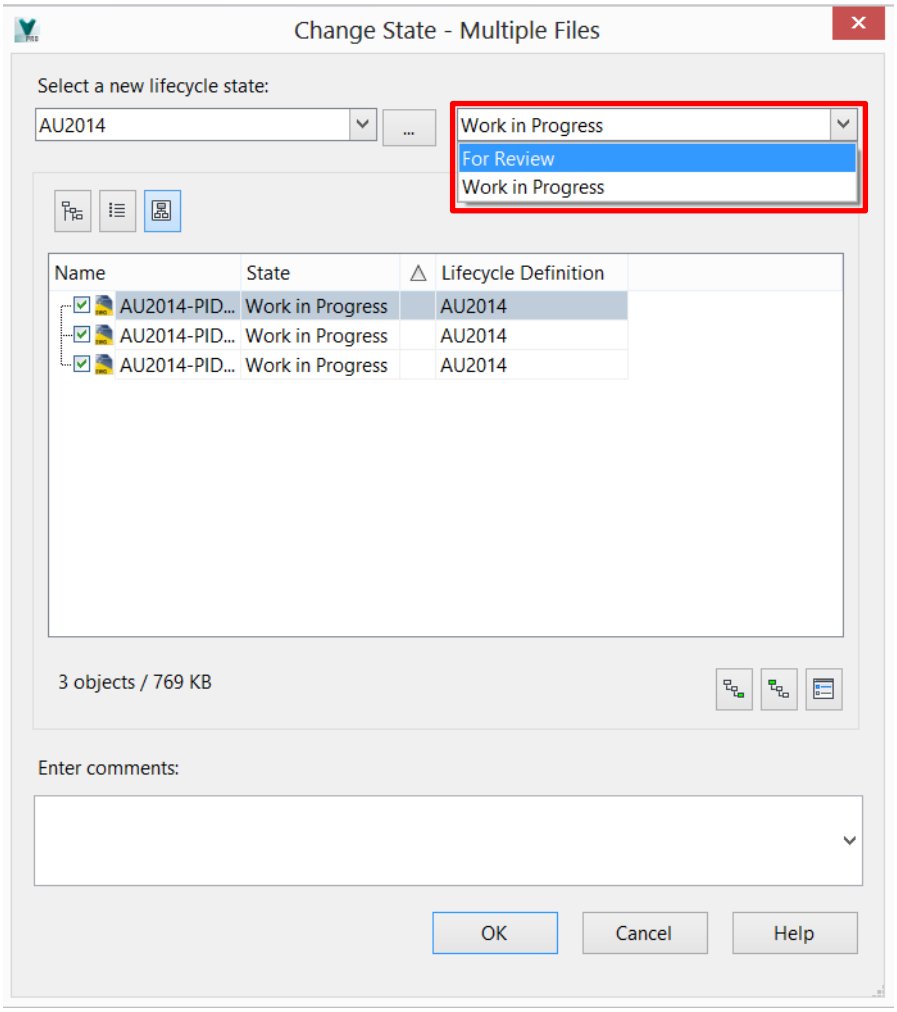
The other option to clear the local workspace is to select the higher level node and go through the same process. This will clear the entire set of files below that level, from the local workspace.

Changing the lifecycle state of the file.

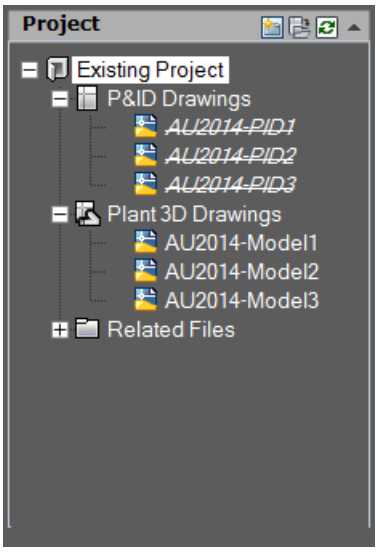
Changing the file to the next state in the lifecycle is done within Vault Explorer.
Select the drawings that you want to change the lifecycle state, and click *Change State*



In the Change State window, select from the drop down at the top right, the new lifecycle state.

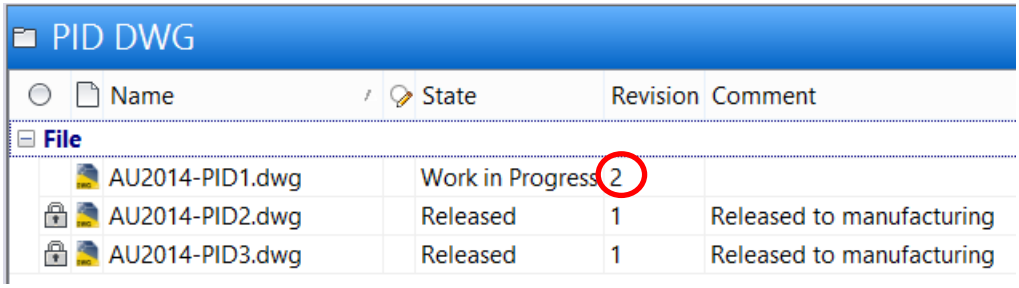


Depending on the lifecycle state and its settings, files may become locked to users.



The process of changing the lifecycle state is repeated, and changed to the desired state. Some lifecycle states are set for only certain groups or users to control. As a file is moved through the lifecycle states, it will eventually come to a released state. The revision of the file is also set inside Vault.

If a change is required on a drawing, the file must be change back to a lifecycle state that is allowed to be checked out for changes. During this lifecycle change, the revision can also be bumped to the next number.



This process repeats itself throughout the design project.