



Intergraph Smart 3D™

Setup and Administration Practice Labs



PROCESS, POWER & MARINE

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Intergraph Corporation
300 Intergraph Way
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LAB 1: Domain, server and client setup

Objectives

After completing this lab, you will be able to:

- Create SmartPlant 3D users and groups in Windows.

Before starting...

The practices performed in this guide will make changes to the training plant that will leave it in a state not suitable for the continuation of other lab practices. It is strongly encouraged to discard databases used during this class and restore fresh copies for future practices.

Create users and groups in Windows

In class you will do this locally on the training workstation. At the office, users and groups are created at the Domain level

1. Open Control Panel > Administrative Tools > Computer Management > Local Users and Groups
2. Create the following users, set password to be same as username: pipe1, pipe2, struct1, struct2, elect1, hvac1, equip1 (uncheck option- “User must change password at next logon”)

Note: If an error message regarding policy requirements for the password appears on screen, then use a password that matches settings of the local or domain policy.

3. Create new groups named Pipe, Structure, S3Dadmins, S3Dusers, ProjectA
4. Assign users to groups as follows;

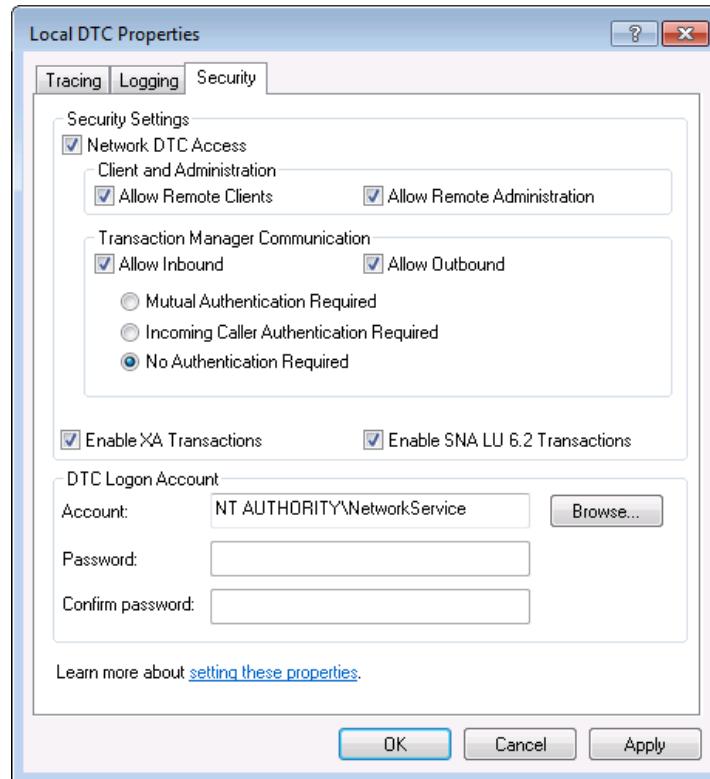
Group	Users
Pipe	pipe1; pipe2
Structure	struct1; struct2
S3Dusers	pipe1; pipe2; struct1; struct2; equip1; hvac1; elect1
S3Dadmins	pipe1; struct1; administrator
ProjectA	pipe1; struct1

Verify MSDTC settings for the Name Generator

In class, a functioning database system may already be provided. Proceed to install and configure required pre-requisite software, following the installation guide provided with the Smart 3D CD (this step may have been completed with the assistance of the instructor). The training workstation will be acting as a database server, reference data server, name generator and administrator workstation.

At the office, MSDTC must be configured on the Name Generator as follows:

Go to: Control Panel > Administrative Tools > Component Services > Computers > My Computer > Distributed Transaction Coordinator > Local DTC > right click then Properties > Security tab:



On an entirely stand-alone machine this may not be required for Smart 3D to function.

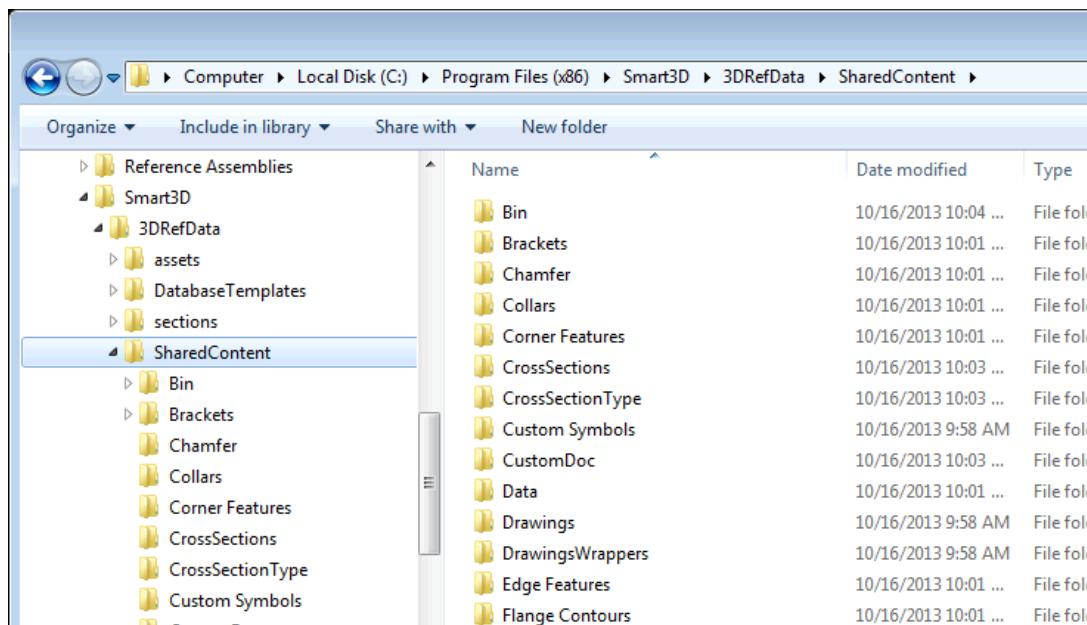
Note: If the Windows Firewall is enabled, you must set proper exceptions as outlined in InstallationGuide.pdf document delivered with the software.

Close the component services window and any other windows.

Assign permissions in the file system

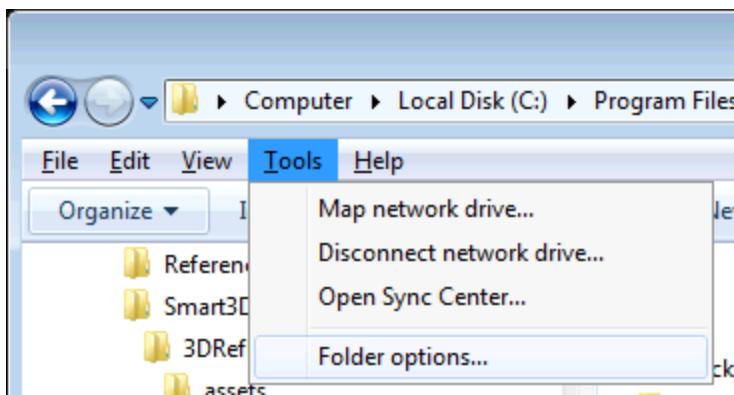
5. Using **Windows Explorer** navigate to directory where **SharedContent** folder is located.

Example: C:\Program Files (x86)\Smart3D\3DRefData\SharedContent

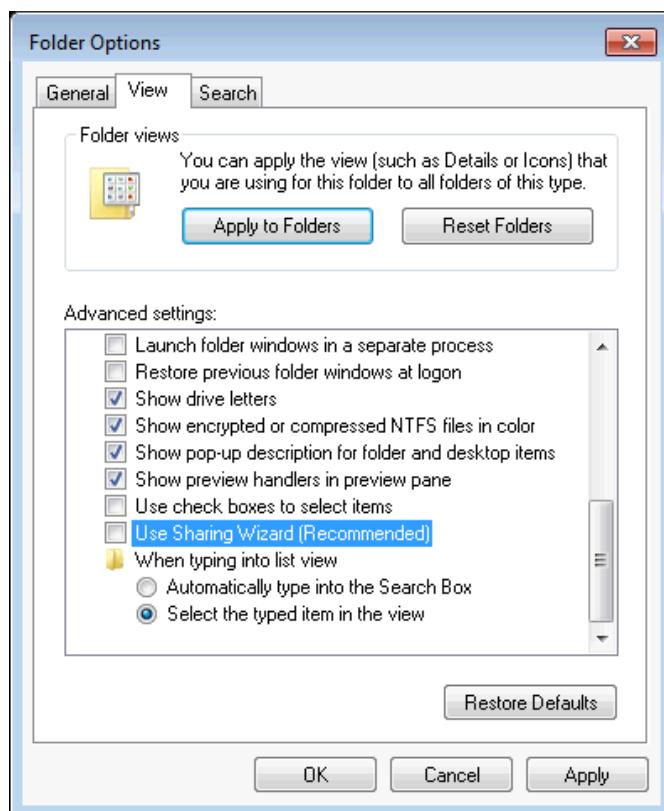


6. From **Tools** menu in Explorer window, select **Folder Options**.

Note: Press the ALT key to make the menu bar appear.

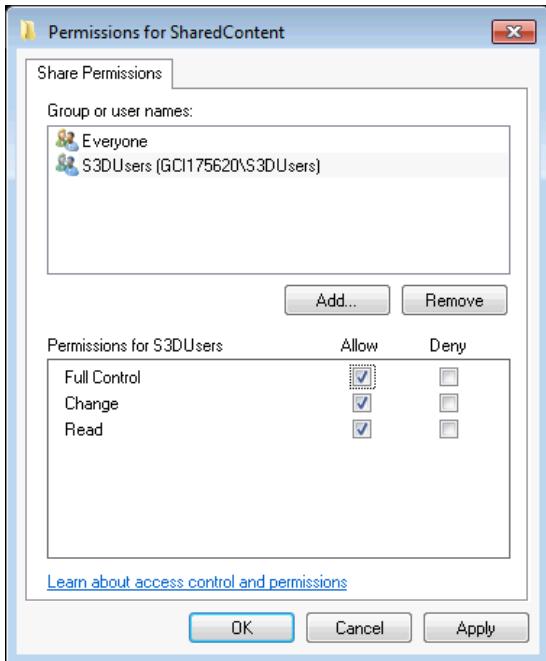


7. On the **View** tab, ensure **Use Sharing Wizard** option is **unchecked**.



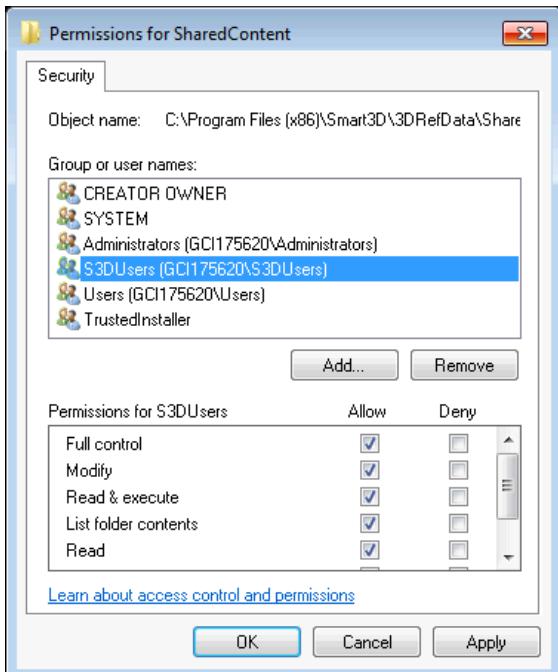
8. Click **OK**.
9. Right mouse click on the **SharedContent** folder, then select **Properties**;
10. Select the **Sharing** tab then click **Advanced Sharing**. Click **Share this folder** option; then click **Permissions**.

11. Add permissions such that **S3DUsers** group (created on Lab1) have **Full Control** access.



12. Click **OK** until returned to SharedContent folder **Properties** page

13. Go to **Security** tab and modify security permissions to add **S3DUsers** group with **Full Control**.



14. Click **OK** then **Close**.

LAB 2: Create new site, catalog and plant

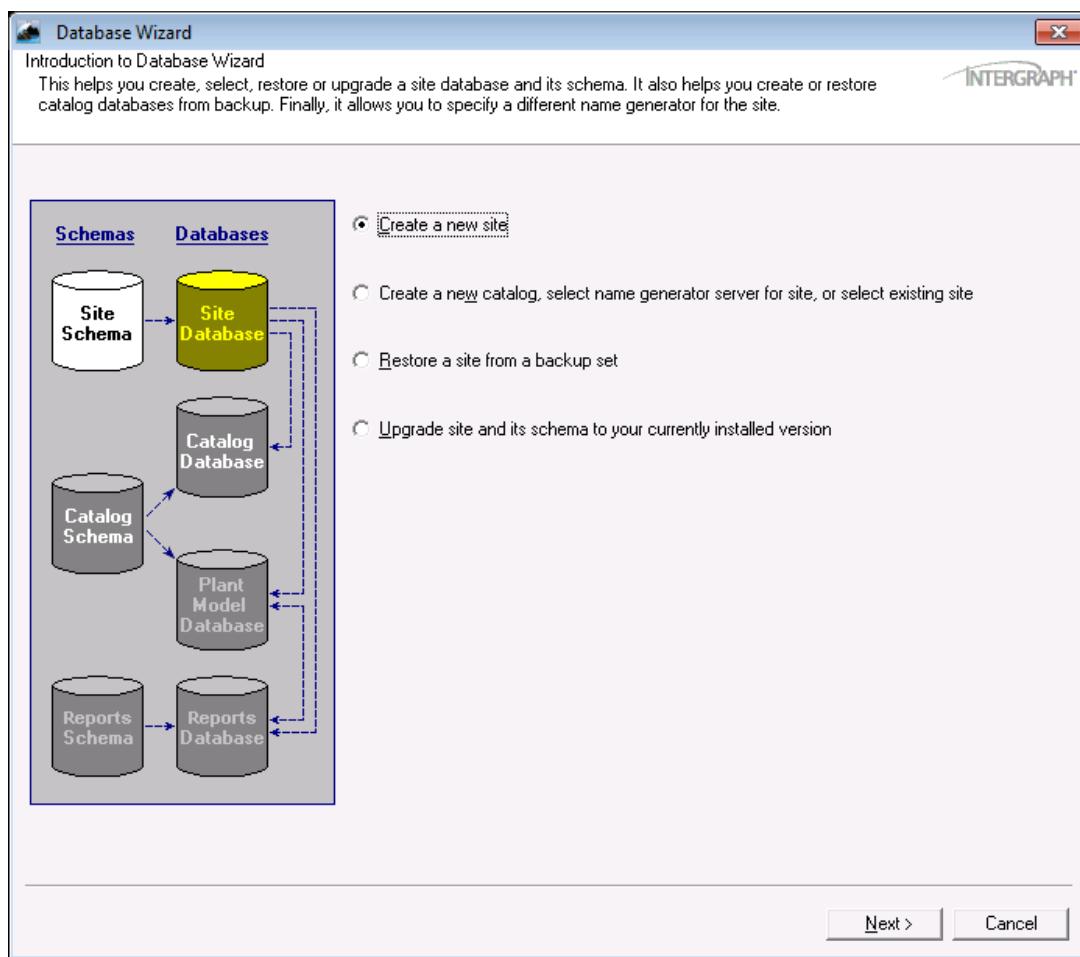
Objectives

After completing this lab, you will be able to:

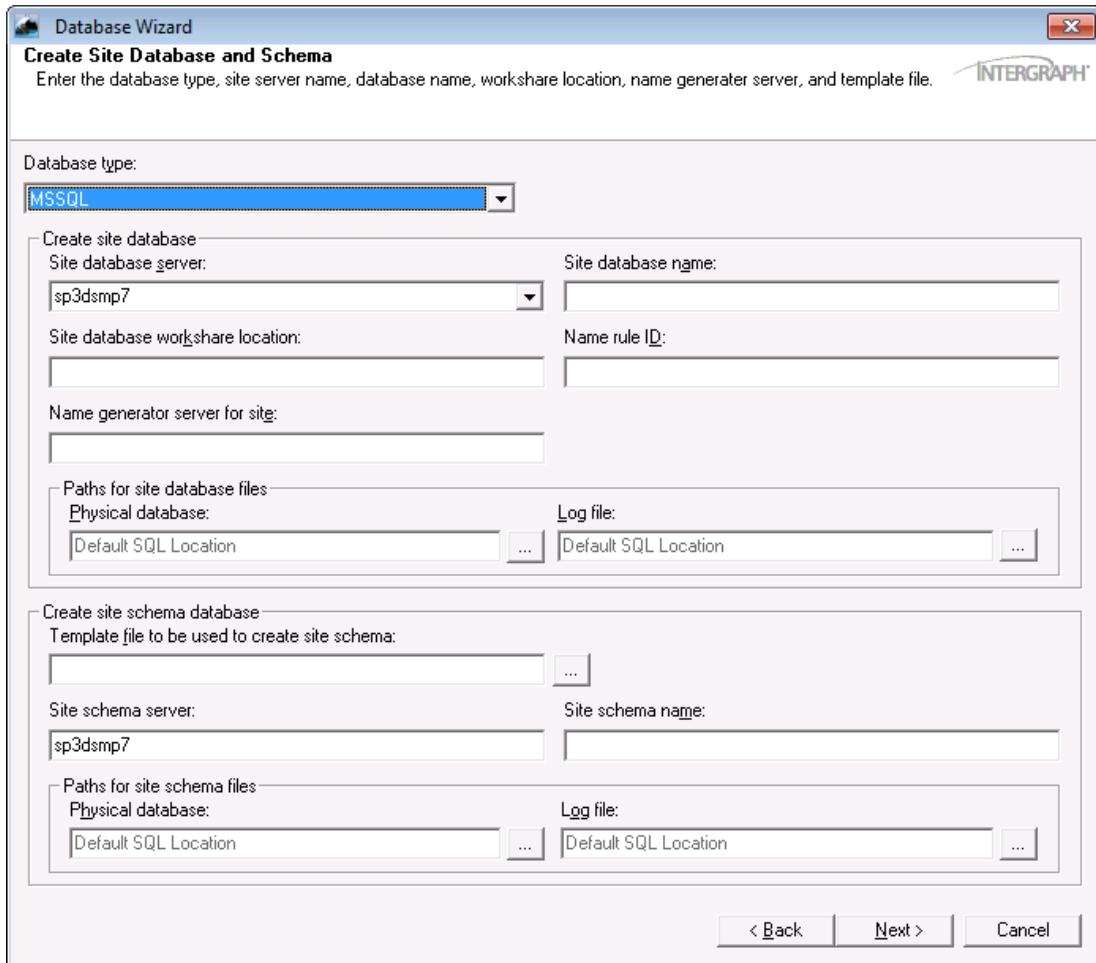
- Create a new site for a Smart 3D project.
- Create a new Catalog inside the site created above using the delivered database template.
- Create a new Plant in the site created above from Project Management

Create new site and catalog databases

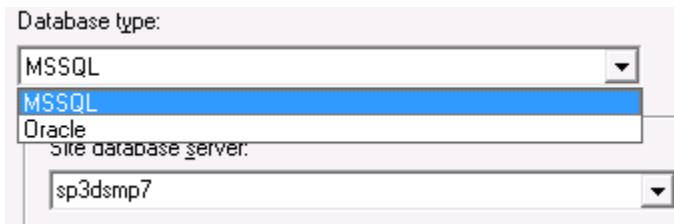
1. Start **Database Wizard** following Start → All Programs → Intergraph Smart 3D → Database Tools → Database Wizard



2. Select the option **Create a new site**. Click **Next**.

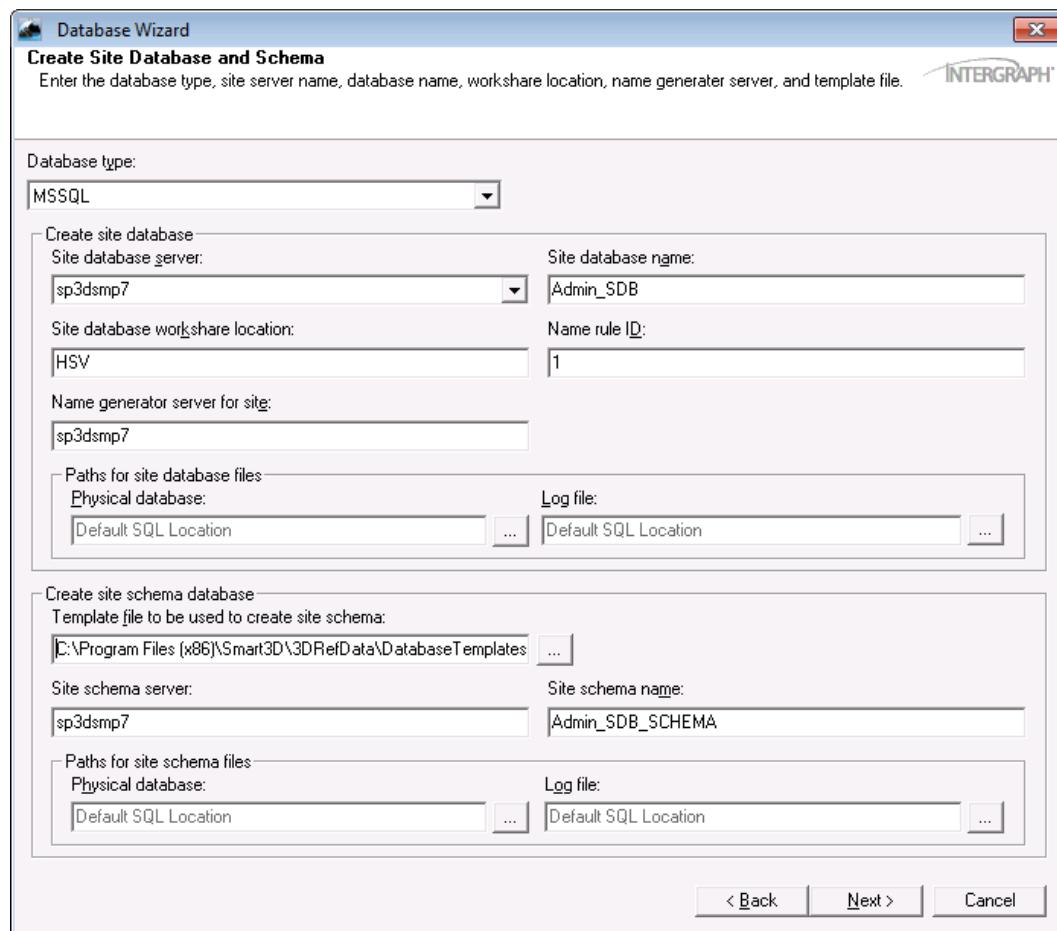


3. Select **Database type** as appropriate for your classroom setup (MSSQL/Oracle)



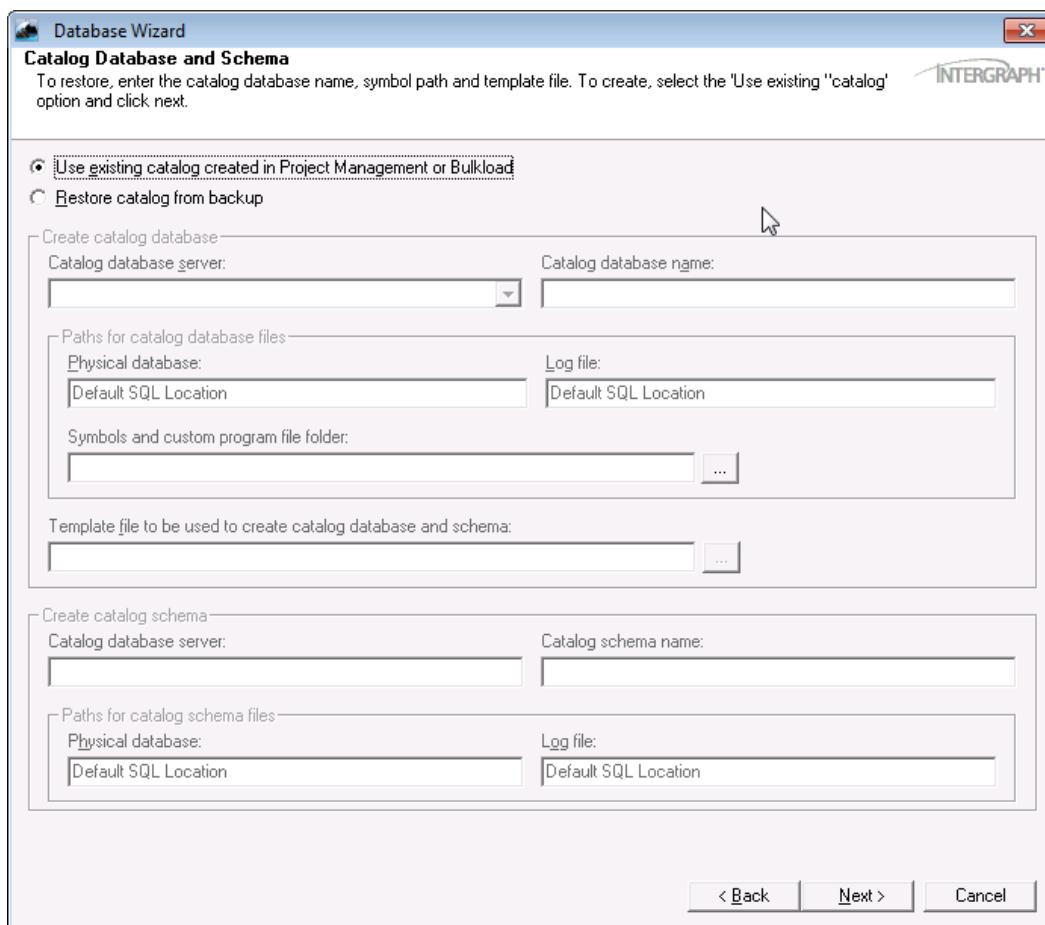
4. From the **Site database server** drop down list, select your server name (which will be your machine name when working in stand-alone) for site database server.
5. Name the site **Admin_SDB**

6. Enter **HSV** (or any other alphanumeric string) as **Site database workshare location**
7. Type **1** as **Name rule ID**
8. Type in a **Name generator server for site**. This identifies the machine where the Name Generator Service (NGS) COM+ application have been installed. In a stand-alone setup this will be the machine name of the computer you are working on.
9. Click “...” in the option **Template file to be used to create site schema**, select [Reference Data Install Directory]\Database Templates\MaterialHandling\AppRepos.dat
i.e.: C:\Program Files
(x86)\Smart3D\3DRefData\DatabaseTemplates\MaterialHandling\Apprepos.dat
(AppRepos.dmp if Oracle)



Note: Screenshot above is assuming an MSSQL configuration, principal difference with an Oracle configuration is the “Template file to be used to create site schema” path. For an MSSQL project, the path for the Apprepos.dat template is as it would be when read from the Server machine (direct path, not UNC). For Oracle, UNC path must be used.

10. Click **Next**.



11. Select **Restore catalog from backup**

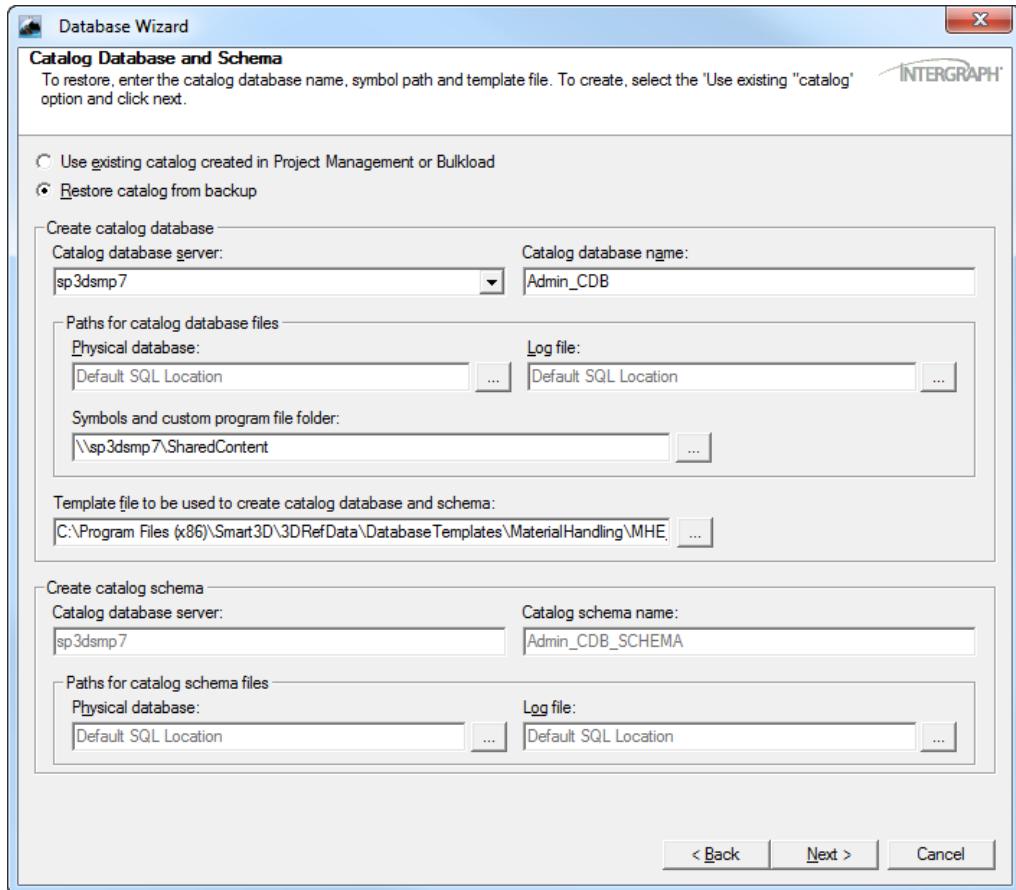
12. Select server name for **Catalog database server**

13. Name the catalog **Admin_CDB**

14. Provide the UNC path for the SharedContent folder.

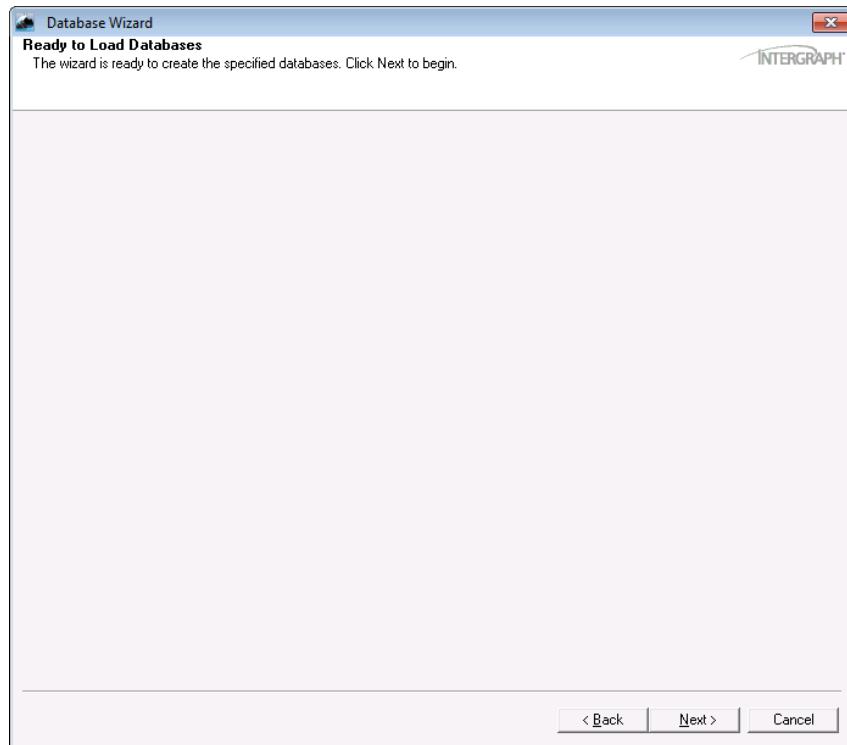
Type in <\\servername\\SharedContent> \\servername is the name of the computer where the Smart 3D Reference Data software was installed. In a standalone configuration you may use the local path [Reference Data Install Directory] \\SharedContent

15. Click “...” in the option **Template file to be used to create catalog database and schema**, select [Reference Data Install Directory]\\DatabaseTemplates\\MaterialHandling\\CatalogDB.dat i.e.: C:\\Program Files (x86)\\Smart3D\\3DRefData\\DatabaseTemplates\\MaterialHandling\\CatalogDB.dat (CatalogDB.dmp if Oracle)

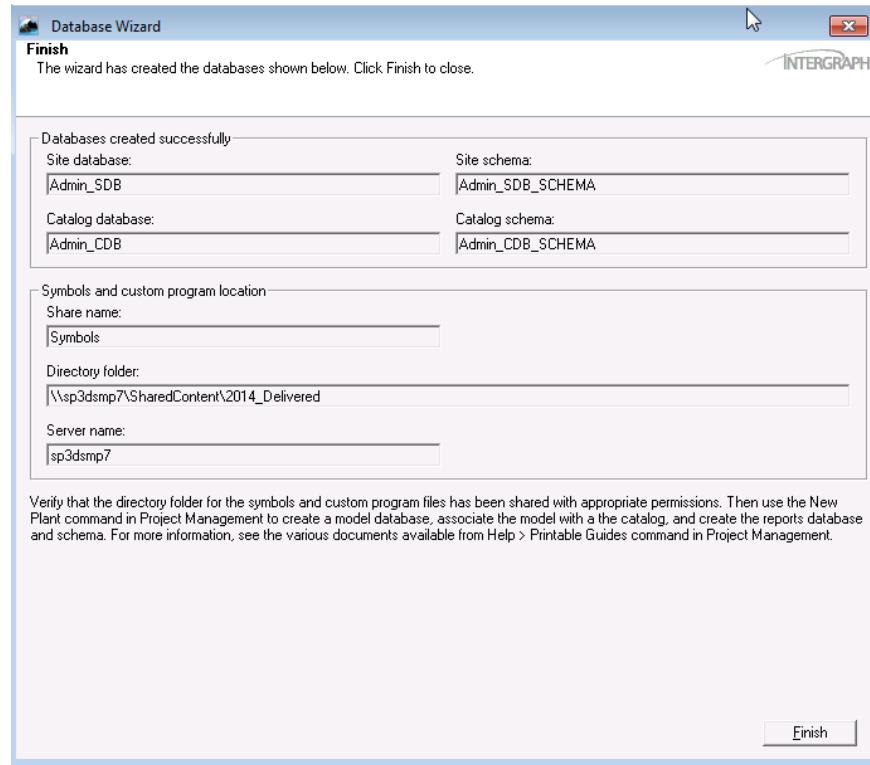


Note: Screenshot above is assuming an MSSQL configuration, principal difference with an Oracle configuration is the “Template file to be used to create catalog database and schema” path. For an MSSQL project, the path for the CatalogDB.dat template is as it would be when read from the Server machine (direct path, not UNC). For Oracle, UNC path must be used.

16. Click **Next**.



17. Click **Next**



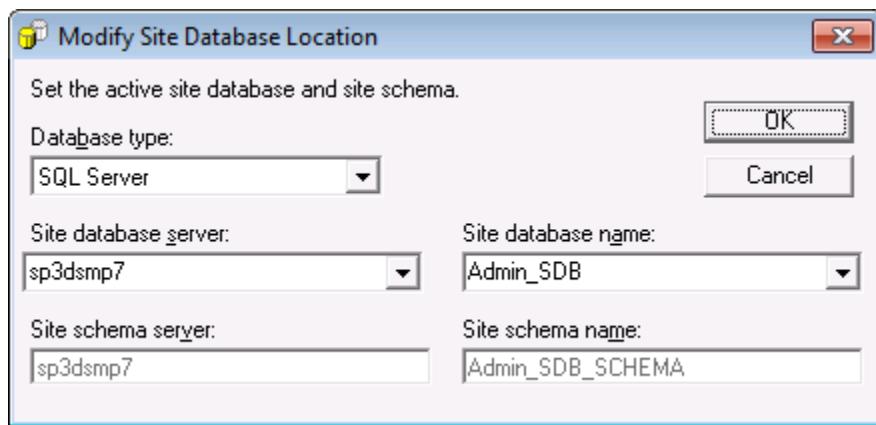
18. After process is complete, click **Finish**
19. Review log file DbwRestoredXXXXX.log on your temp folder. You may type %temp% in the address bar of Windows Explorer for quick access.
20. Note: the last 5 characters of the restore log file name will change depending upon different databases being restored.

```
DbwRestoredB032C - Notepad
File Edit Format View Help
Started restoring the database: Admin_CDB - 10/21/2013 11:07:24 AM
10 percent processed.
20 percent processed.
30 percent processed.
40 percent processed.
50 percent processed.
60 percent processed.
70 percent processed.
80 percent processed.
90 percent processed.
100 percent processed.
Processed 47088 pages for database 'Admin_CDB', file 'catalogdb' on file 1.
Processed 3 pages for database 'Admin_CDB', file 'catalogdb_log' on file 1.
Changed database context to 'master'.
Restore is complete.10/21/2013 11:07:33 AM
started restoring the database: Admin_CDB_SCHEMA - 10/21/2013 11:07:33 AM
10 percent processed.
20 percent processed.
30 percent processed.
41 percent processed.
50 percent processed.
60 percent processed.
70 percent processed.
81 percent processed.
90 percent processed.
100 percent processed.
Processed 11848 pages for database 'Admin_CDB_SCHEMA', file 'APPREPOS' on file 2.
Processed 3 pages for database 'Admin_CDB_SCHEMA', file 'APPREPOS_log' on file 2.
Changed database context to 'master'.
Restore is complete.10/21/2013 11:07:39 AM
```

Note: Depicted log file will be different for Oracle database configurations.

Verify new site creation

21. Start **Modify Database and Schema Location** following Start → All Programs → Intergraph Smart 3D → Database Tools → Modify Database and Schema Location
22. The form will display location of the Site and Site_Schema databases:

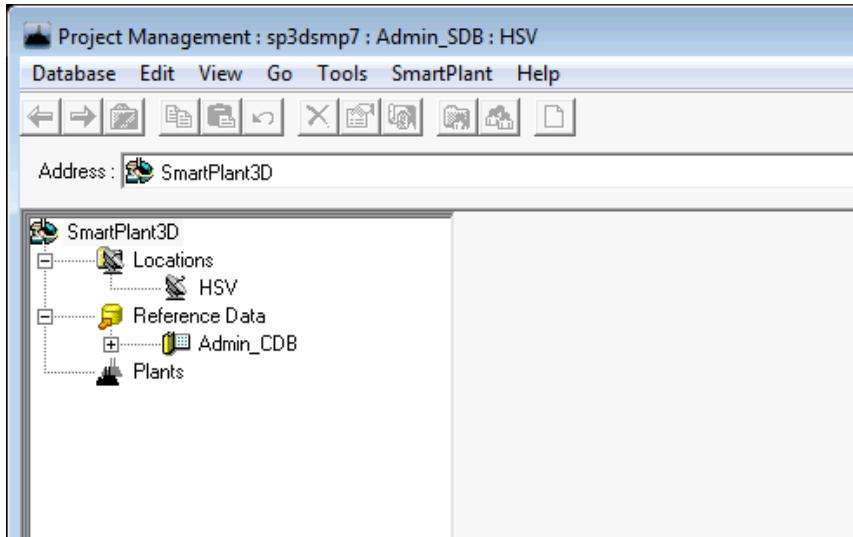


Note: This connection information can be manually edited on Smart 3D workstations to allow for connection to this Site database and the Plants that it will contain.

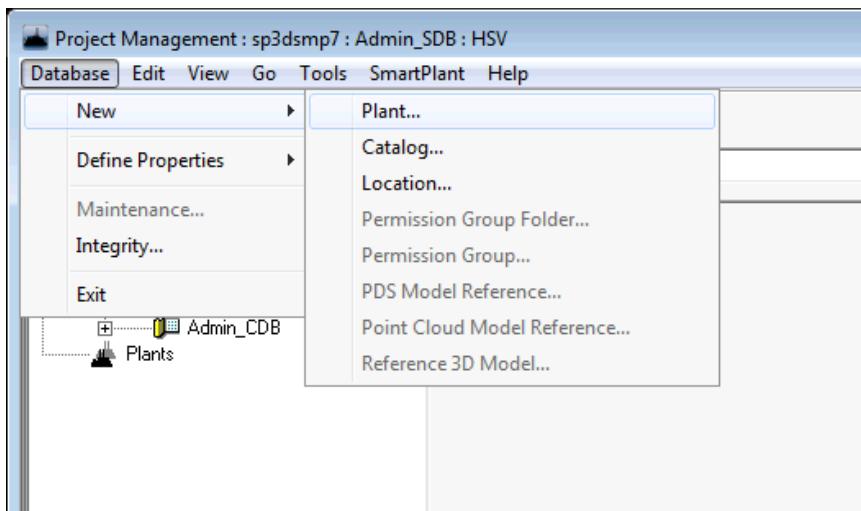
23. Click **OK**

Create new plant

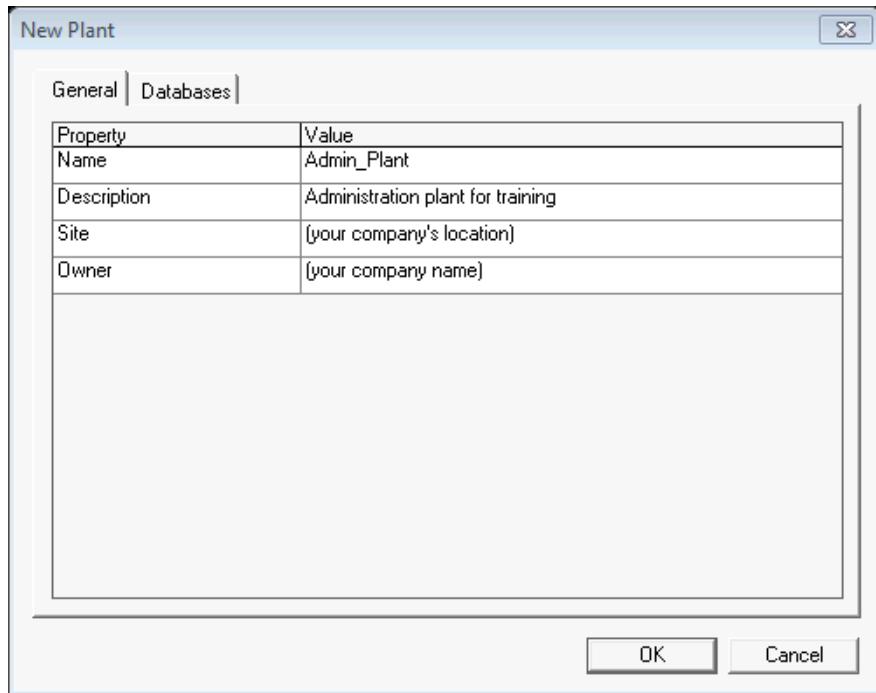
24. Enter **Project Management** following Start → All Programs → Intergraph Smart 3D → Project Management



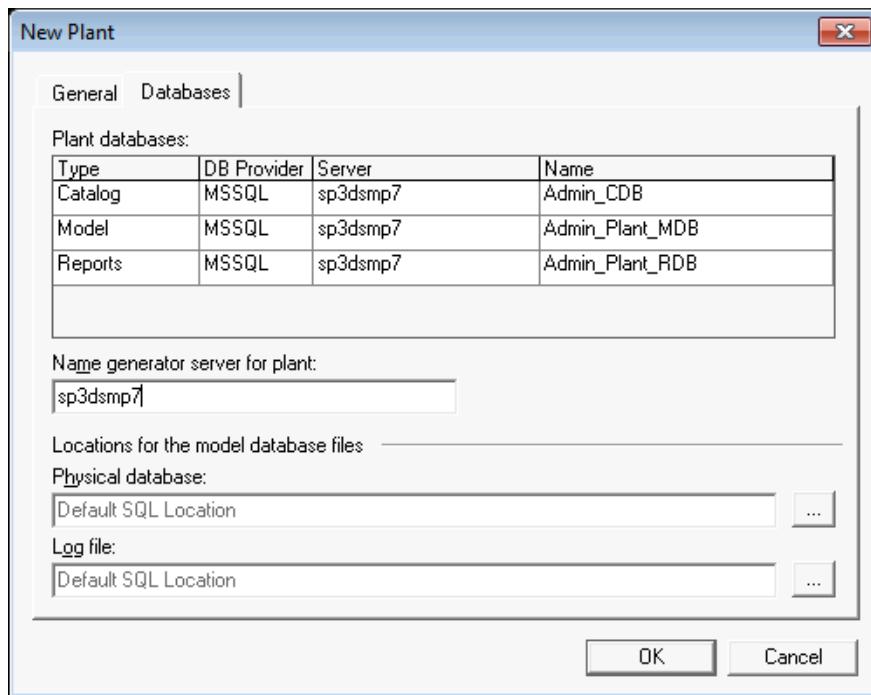
25. From **Database** menu, select **New→Plant...**



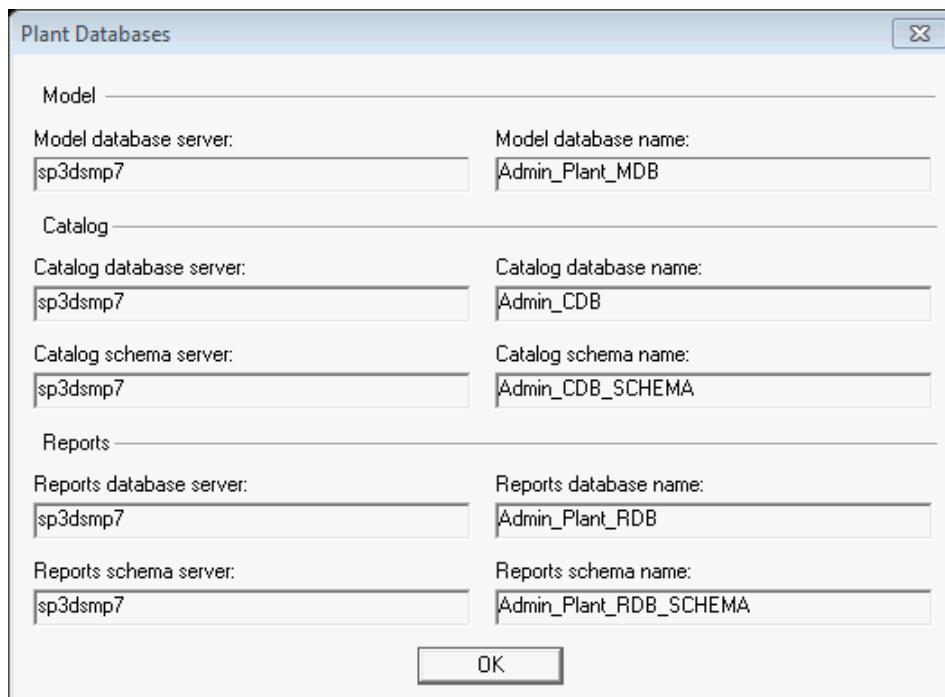
26. Fill in the **General** tab of the **New Plant** dialog according to next image.



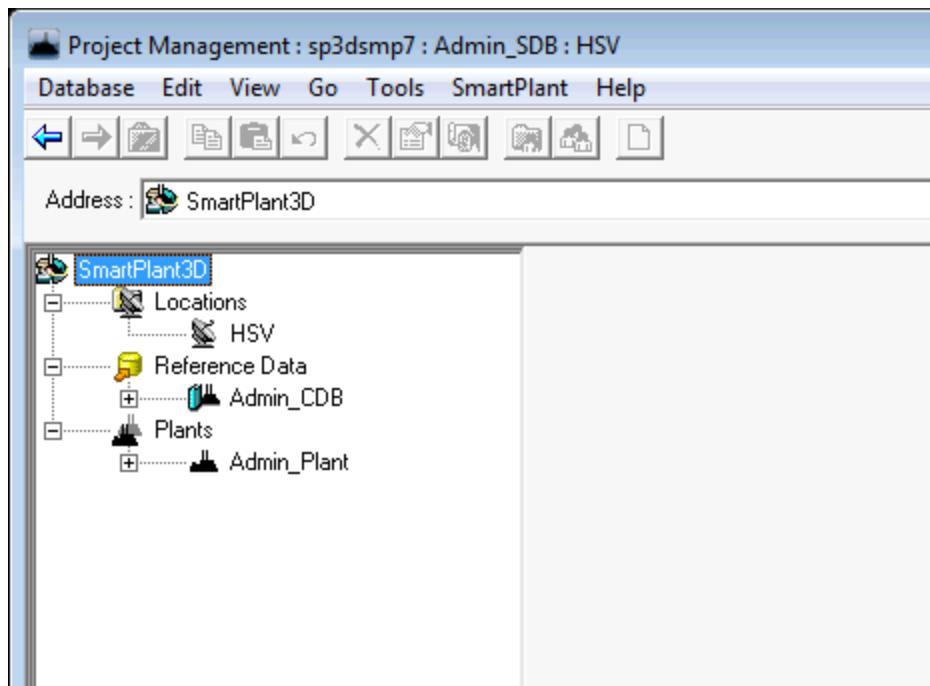
27. Complete **Databases** tab as follows. Complete each row to provide information for Catalog, Model, and Reports databases. Remember to identify **Name Generator** machine as it was previously done for Site Database on the Database Wizard form.



28. Click **OK** to create the plant and then review results when completed.



29. Review the **Project Management** hierarchy and observe the change in color and shape for the Catalog icon. This is the result of the Catalog being associated to at least one Plant; before, it was unassigned.



LAB 3: Create permission groups and assign permissions

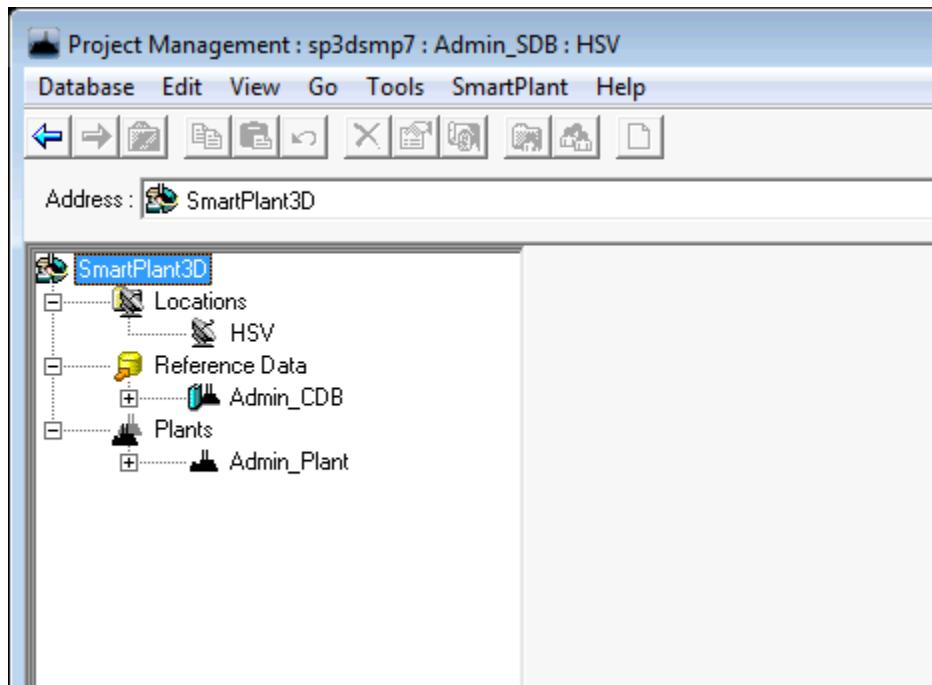
Objectives

After completing this lab, you will be able to:

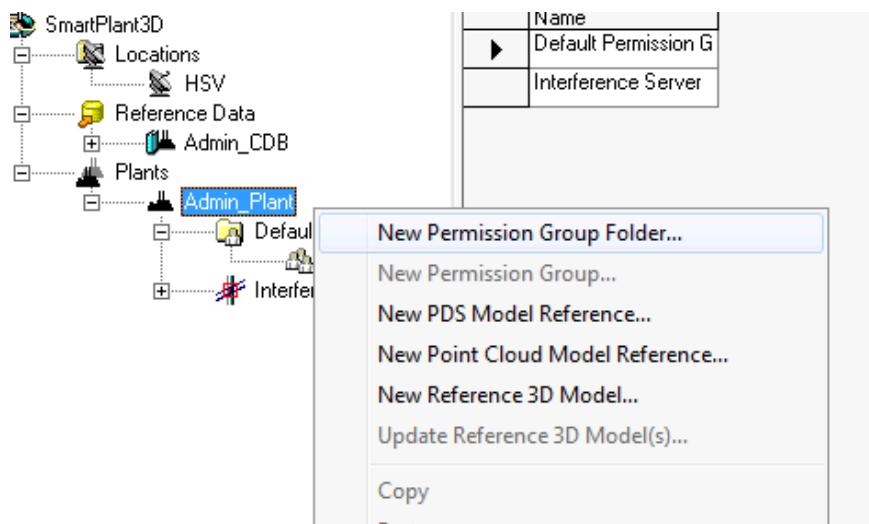
- Create permission groups and assign permissions to Smart 3D Catalog and Plant in Project Management.
- Assign permissions to the Symbols folder for various Smart 3D users.

Create Permission Groups

15. If required, enter **Project Management** following Start → All Programs → Intergraph Smart 3D → Project Management



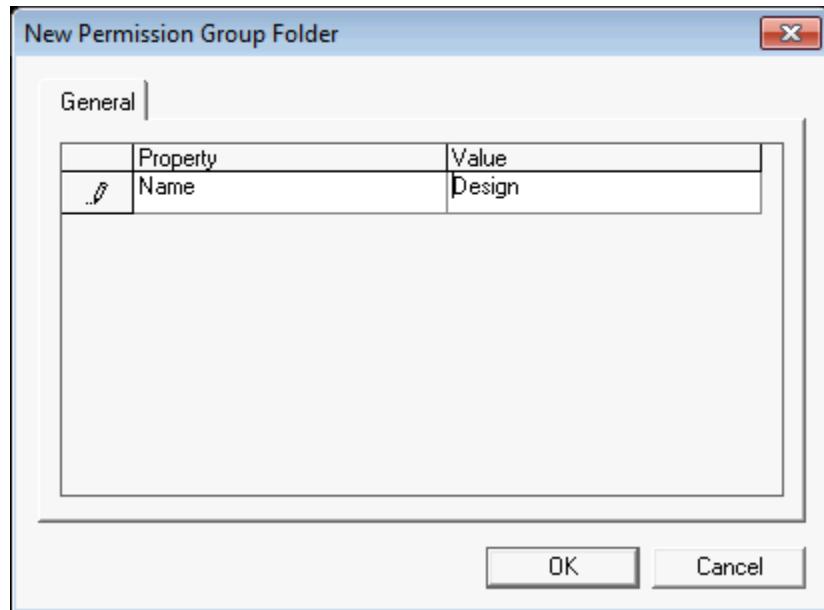
16. Right-click on **Admin_Plant** and select **New Permission Group Folder...**



Note: You may also access this functionality by clicking on the “New permission group folder” icon, located on the ribbon bar.

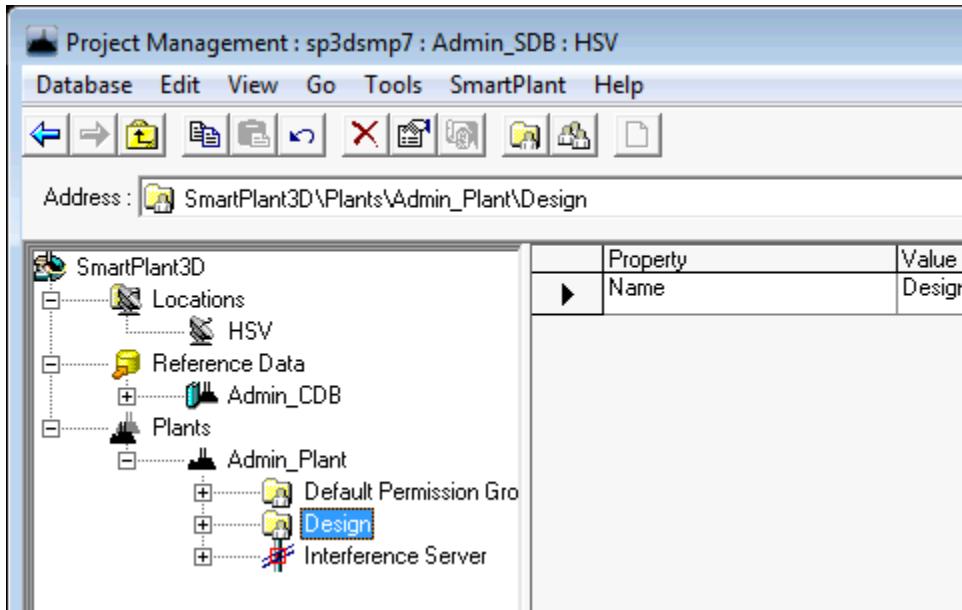


17. Name the folder Design



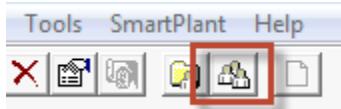
18. Expand the Plant hierarchy by clicking on the + box to the left of Admin_Plant.

19. Select the folder **Design**

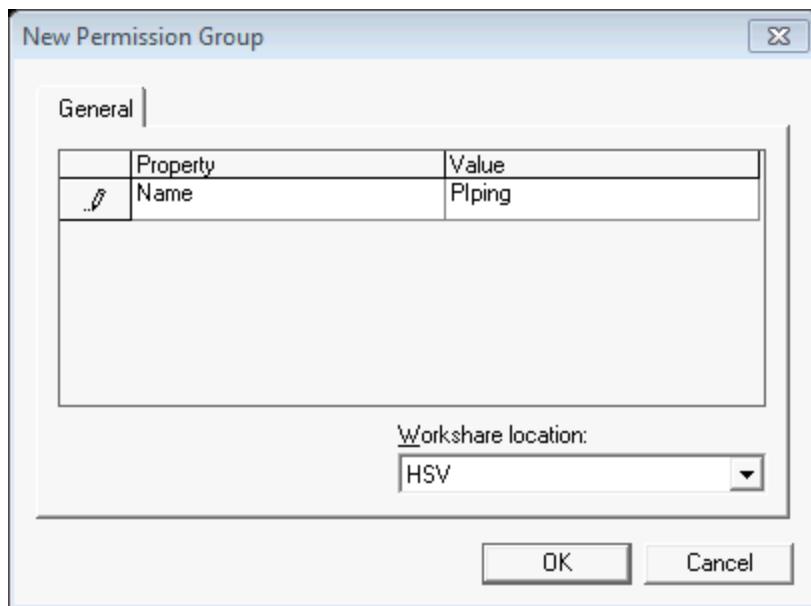


20. Right-click on **Design** and select **New Permission Group...**

Note: You may also access this functionality by clicking on the “New permission group” icon, located on the ribbon bar.

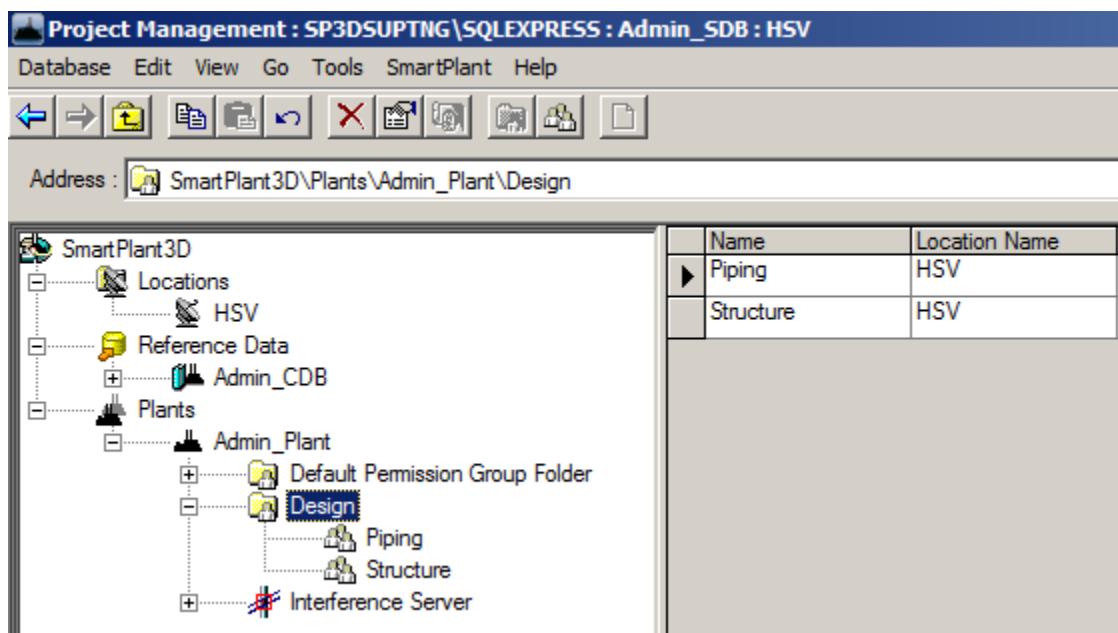


21. Name the group '**Piping**'

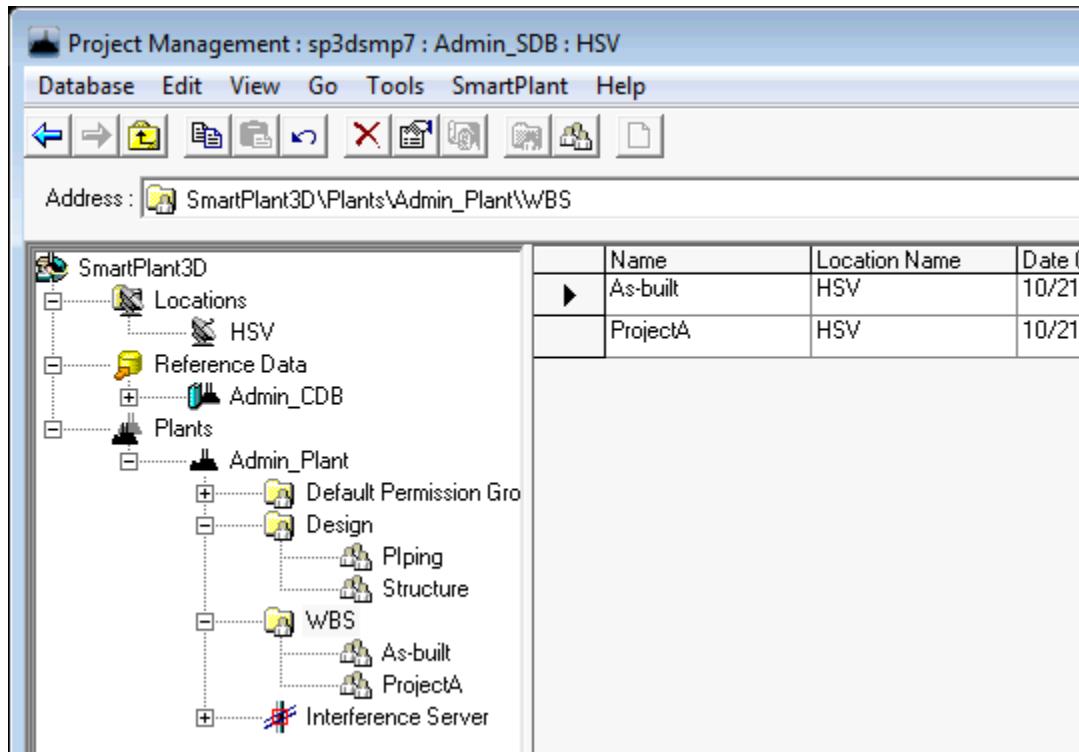


22. Click **OK**.

23. Create another permission group and name it **Structure**

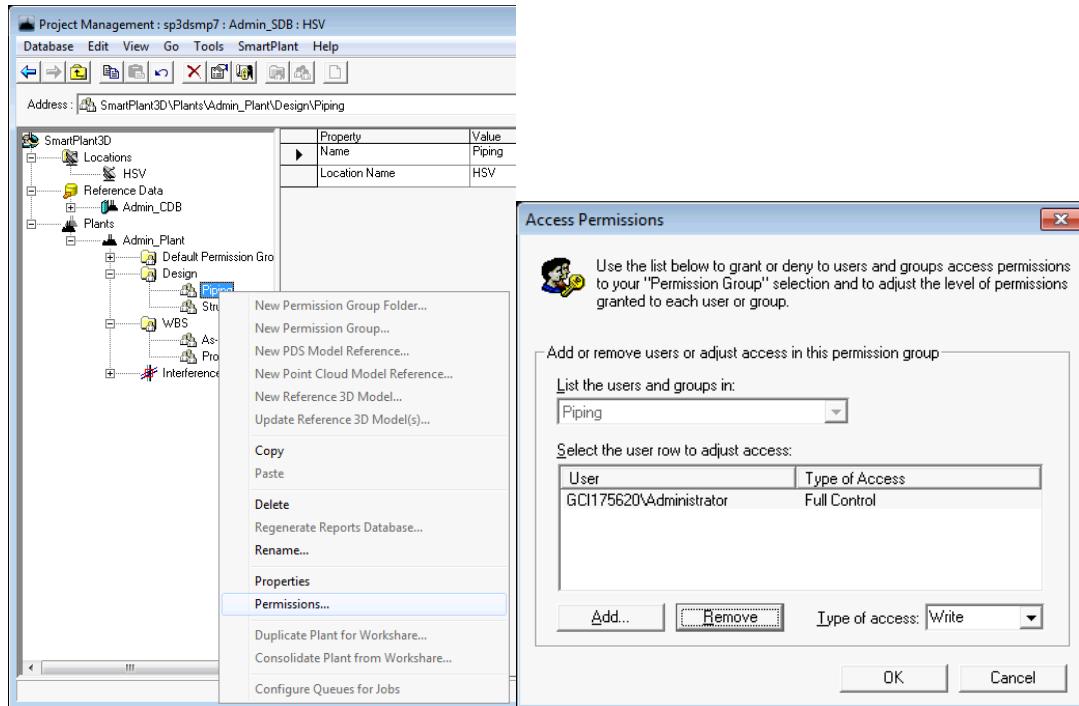


24. Similarly, create the following hierarchy of permission group folder **WBS** and permission groups
As-Built and **ProjectA**

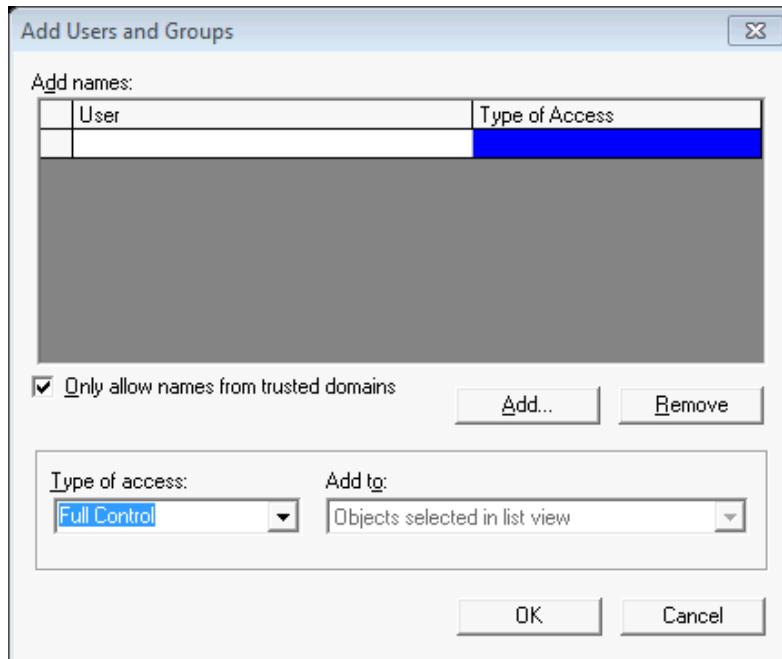


Assign permissions in Project Management

25. Select permission group **Piping**
26. Right-click and select Permissions



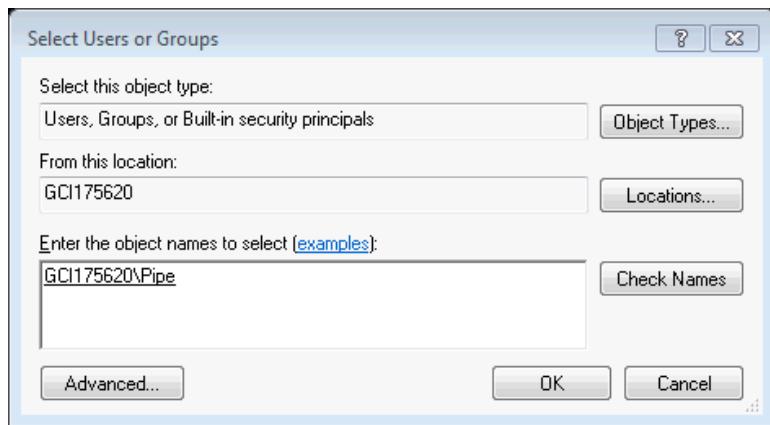
27. Click **Add...** button



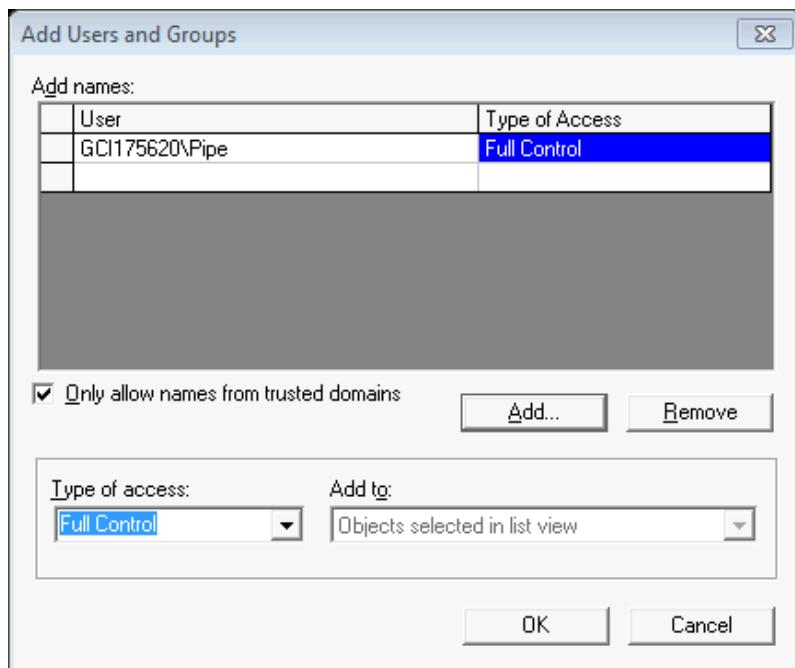
Note: This form can be operated in two modes determined by the checkbox “Only allow names from trusted domains”. If you want the form to verify the existence of the user or group on Active Directory, leave the check box selected. If you want to add the user or group without domain

verification, leave the box unchecked. Make this decision before keying in user names in the User block. An example of when to uncheck this box while working in a non Global Workshare Configuration would be to pre-assign permissions to users of a contractor company to which the project will be given and where there is no communication or trust with the contractor's company Active Directory.

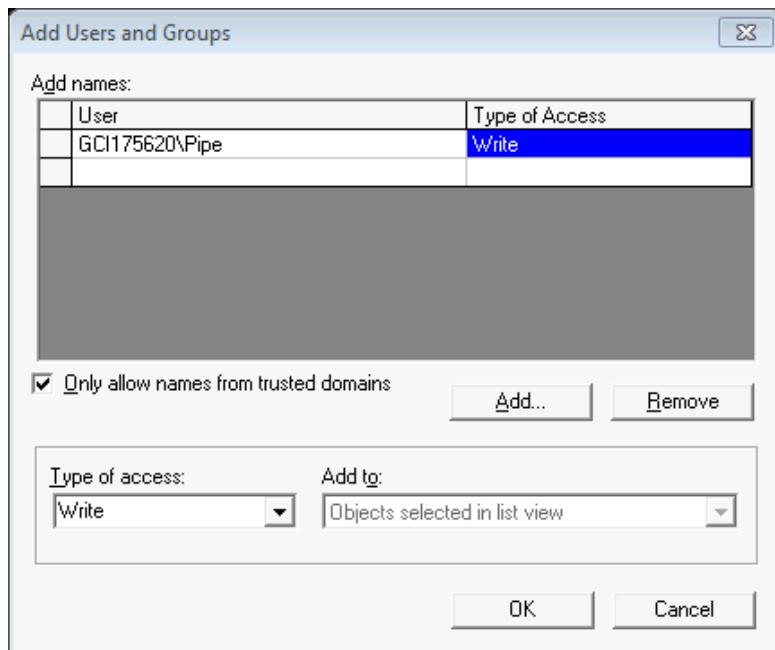
28. Click **Add...** button
29. Use the standard user/group form for Windows to identify by domain\name the user or group you wish to add. In our case we will be selecting the group **Pipe** from the local computer.



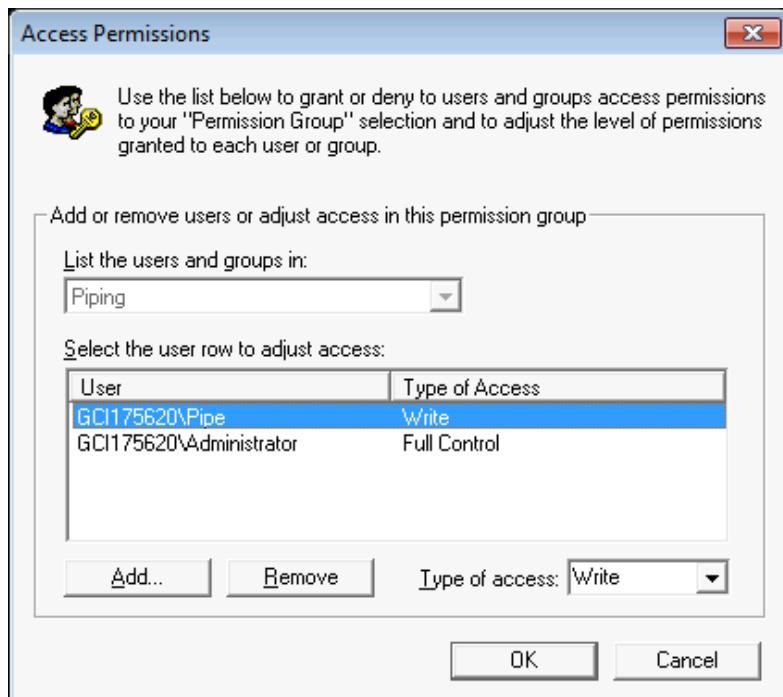
30. Click **OK**.



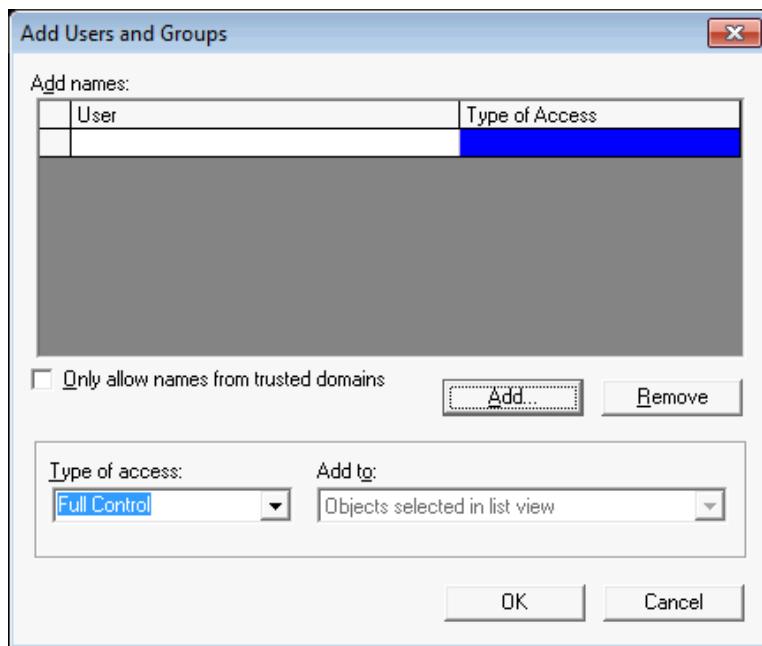
31. Expand **Type of access** drop down list to change permission as **Write** access.



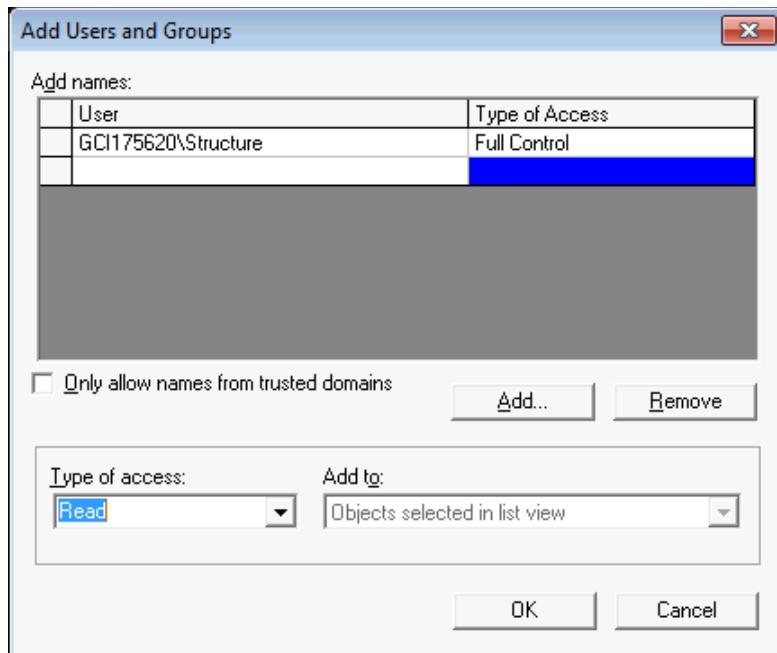
32. Click **OK** and review the Access Permissions form.



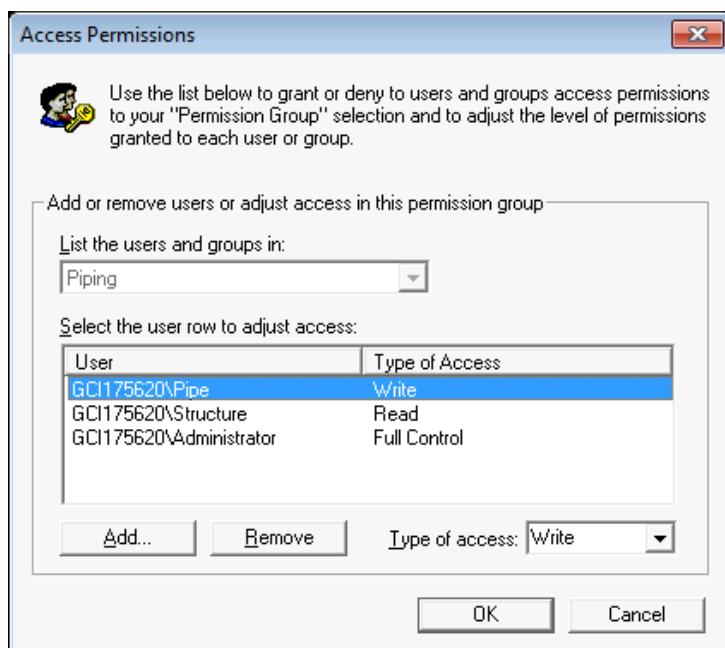
33. Click **Add...** button to return to the **Add Users and Groups** form. This time a user will be added without verifying its existence on the domain or Active Directory.
34. Uncheck the box Only allow names from trusted domains



35. In **User** field, type in the **Structure** Windows local group in the form of Domain\User; for this example, that would be sp3dsuptng\Structure, adjust accordingly for your case.
36. Set Type of Access to Read.

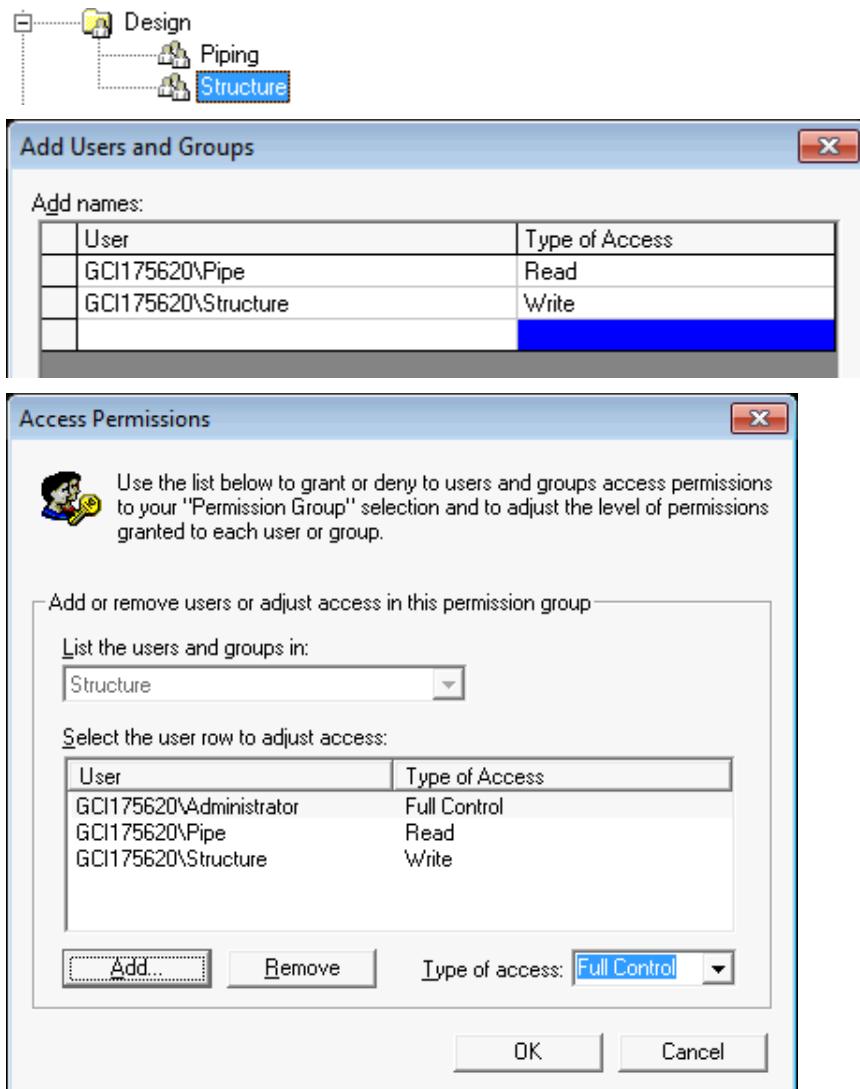


37. Click **OK**.
38. Review Access Permissions form.



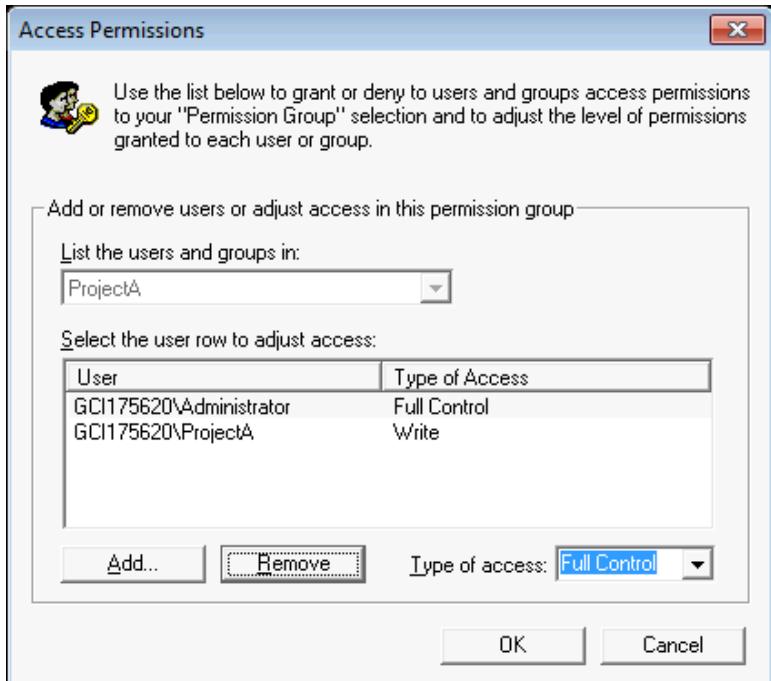
39. Click **OK**

40. Select the Permission Group **Structure**, go to **add users** and choose the option your prefer (domain verification on/off) and assign **Write** to 'Structure' and **Read** to 'Pipe' Windows groups



41. Click **OK**

42. Select permission group **ProjectA**, and assign **Write** permissions to the windows user group 'ProjectA'



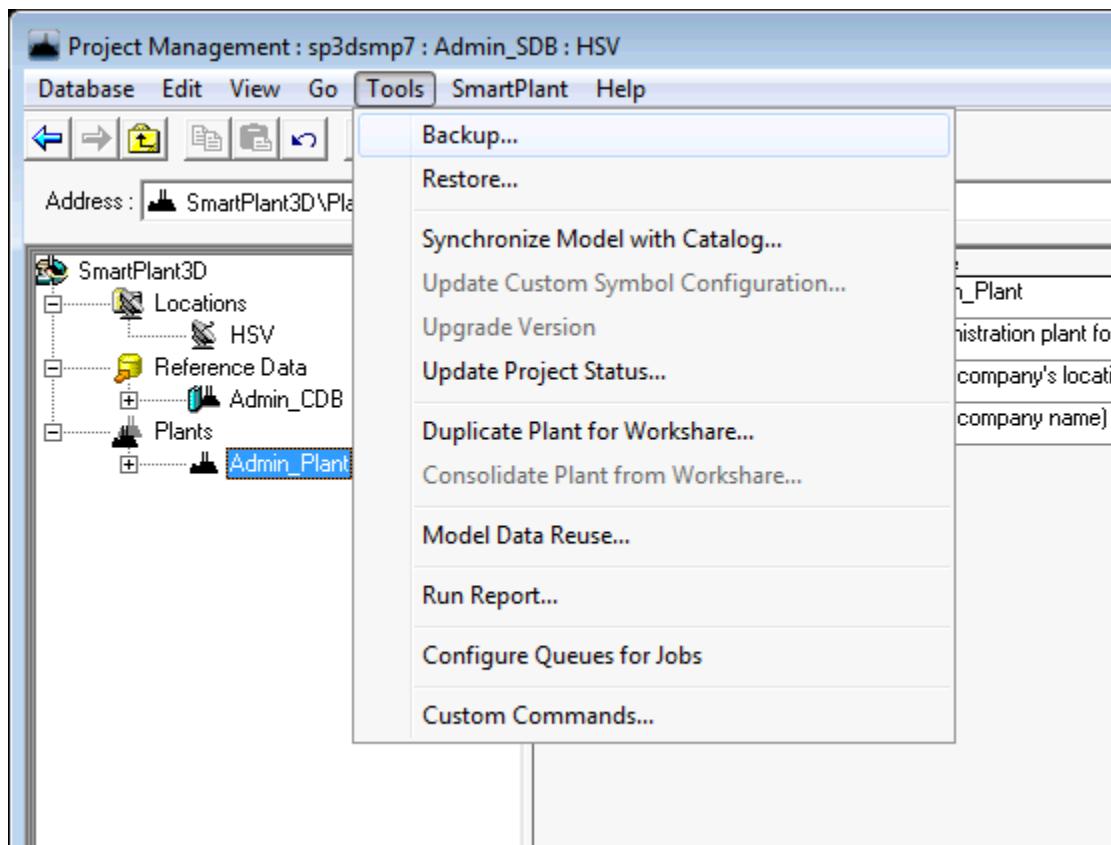
43. Click **OK**

LAB 4: Simple Backup

Objectives

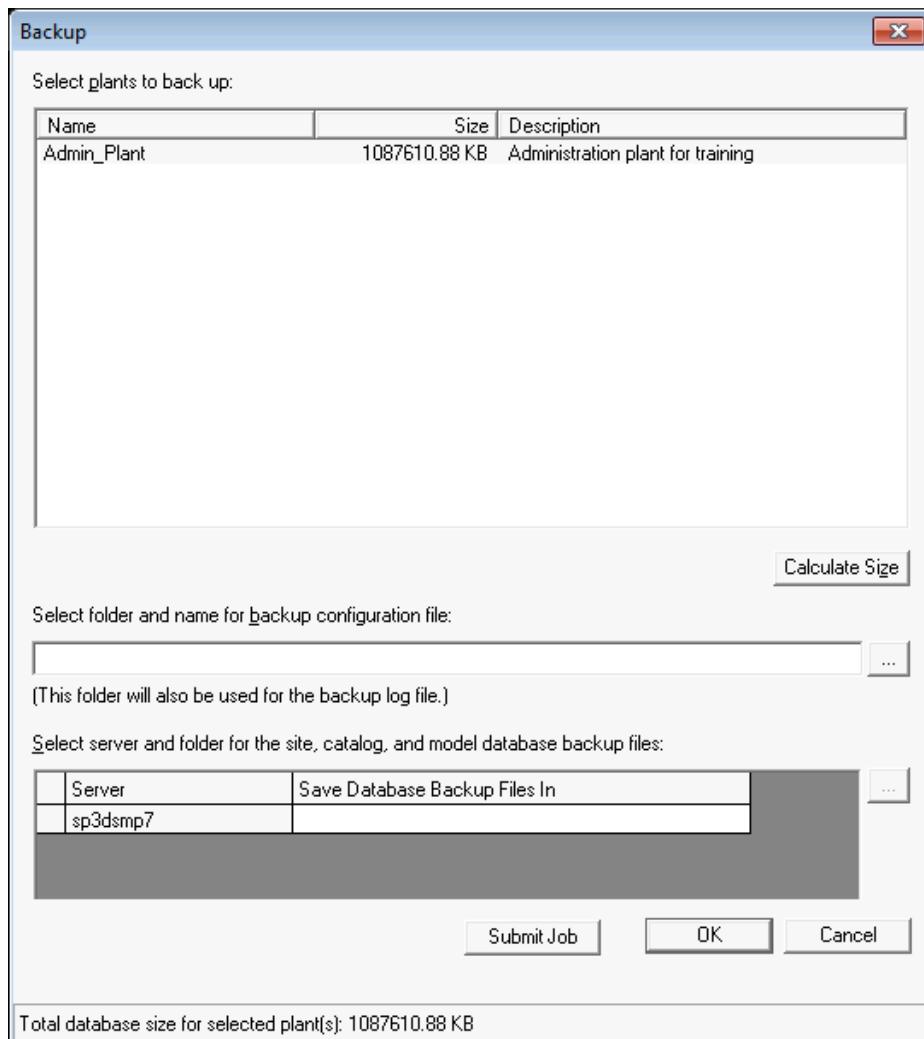
After completing this lab, you will be able to:

- Create backup of the Site, Catalog and Model from Project Management.
1. Start **Project Management** if not already open
 2. From the **Tools** menu, select **Backup**.

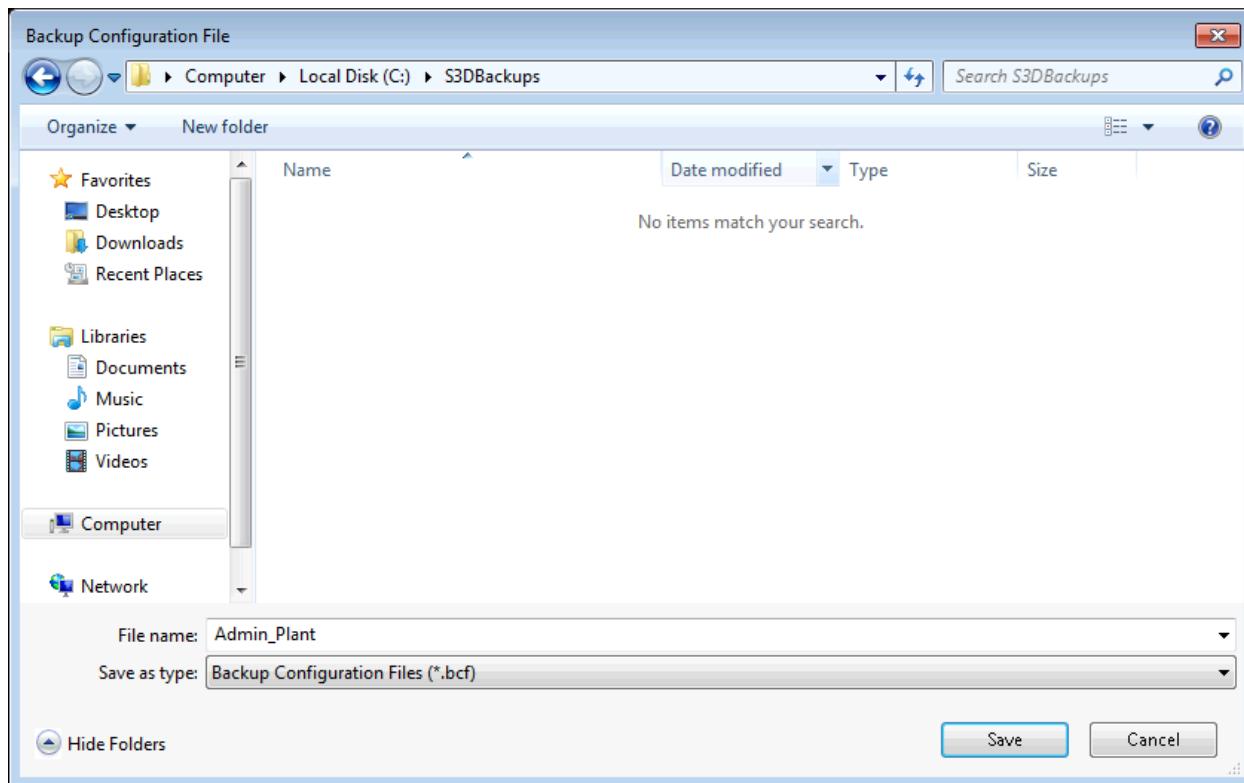


3. In the Backup form, use **Calculate Size** button to determine the size of the backup:

Note: For Oracle based projects, this calculation can take several minutes.

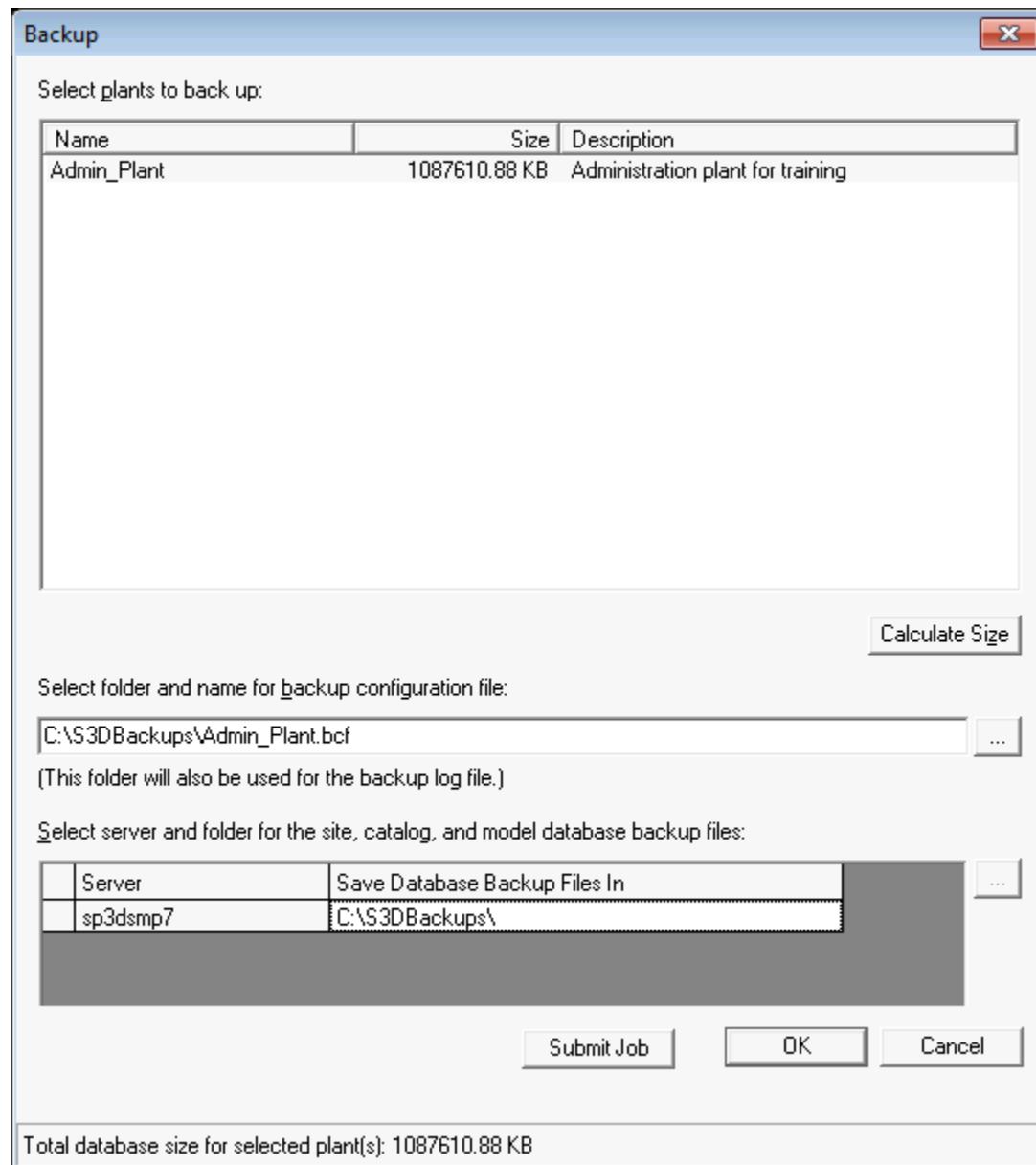


4. Click button '...' on **Select folder and name for backup configuration file** field; create a folder on a drive that has sufficient space to hold the backup. Name the folder **S3DBackups**

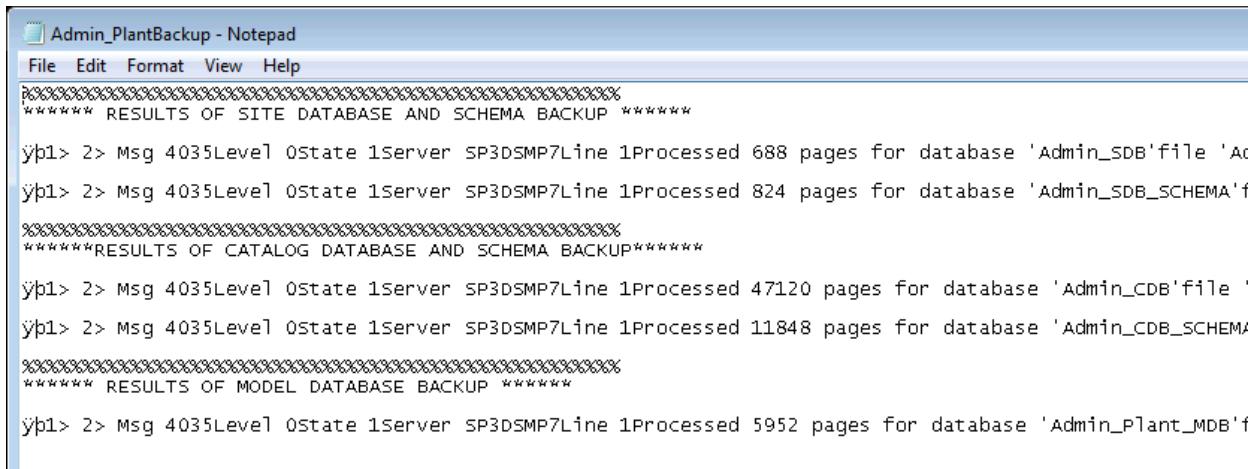


5. Click **Save**.
6. Return to **Backup** form and use browse button on **Select server and folder for the site, catalog and model...** option to determine a location to store database file backups. If possible, try to place the .bcf file and the database files together during the backup procedure.

Note: For Oracle based projects you must specify a folder that is shared (UNC path).



7. Click **OK** and allow the backup to complete.
8. Review **Backup log report** (errors will appear in the backup log file if there is insufficient disk space)



```
Admin_PlantBackup - Notepad
File Edit Format View Help
***** RESULTS OF SITE DATABASE AND SCHEMA BACKUP *****
yb1> 2> Msg 4035Level 0State 1Server SP3DSMP7Line 1Processed 688 pages for database 'Admin_SDB' file 'Ad
yb1> 2> Msg 4035Level 0State 1Server SP3DSMP7Line 1Processed 824 pages for database 'Admin_SDB_SCHEMA' f
*****RESULTS OF CATALOG DATABASE AND SCHEMA BACKUP*****
yb1> 2> Msg 4035Level 0State 1Server SP3DSMP7Line 1Processed 47120 pages for database 'Admin_CDB' file 'A
yb1> 2> Msg 4035Level 0State 1Server SP3DSMP7Line 1Processed 11848 pages for database 'Admin_CDB_SCHEMA'
***** RESULTS OF MODEL DATABASE BACKUP *****
yb1> 2> Msg 4035Level 0State 1Server SP3DSMP7Line 1Processed 5952 pages for database 'Admin_Plant_MDB' f
```

9. **Close** log file.
10. Click **X** button on top right, or **Cancel** button on the Backup form to return to **Project Management**.

Note: For Oracle based projects, the backup log file will look different than the screenshot above.

LAB 5: Restoring a Plant Database (Option 1).

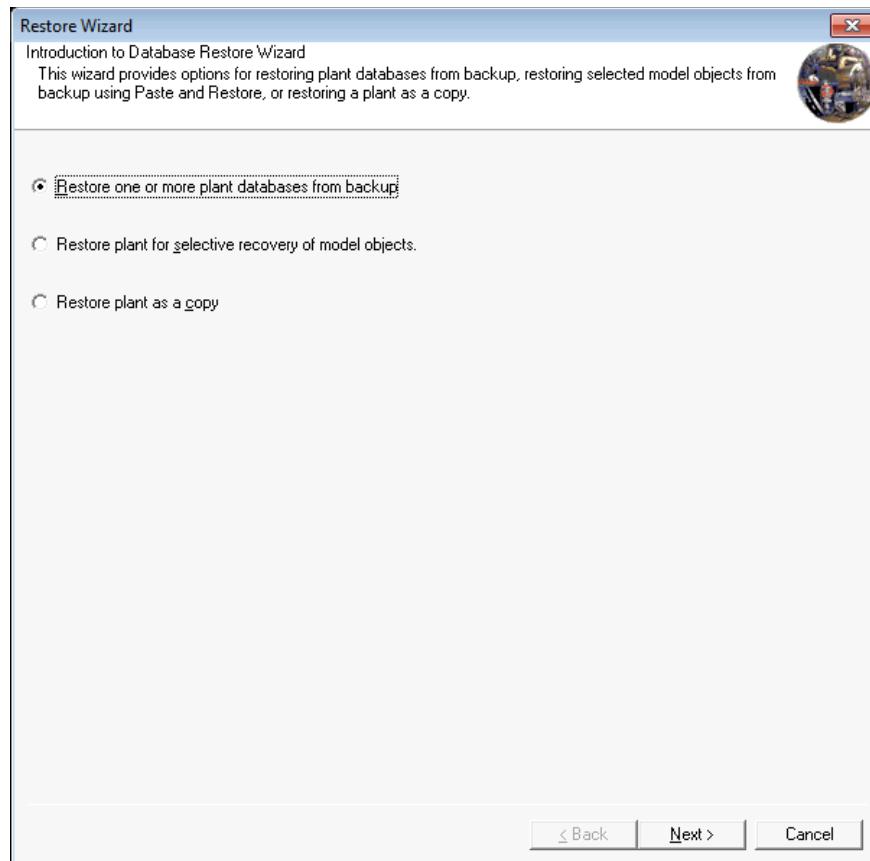
Objectives

After completing this lab, you will be able to:

- Restore plant from backup using “Restore one or more plant databases from backup” option from Project Management.

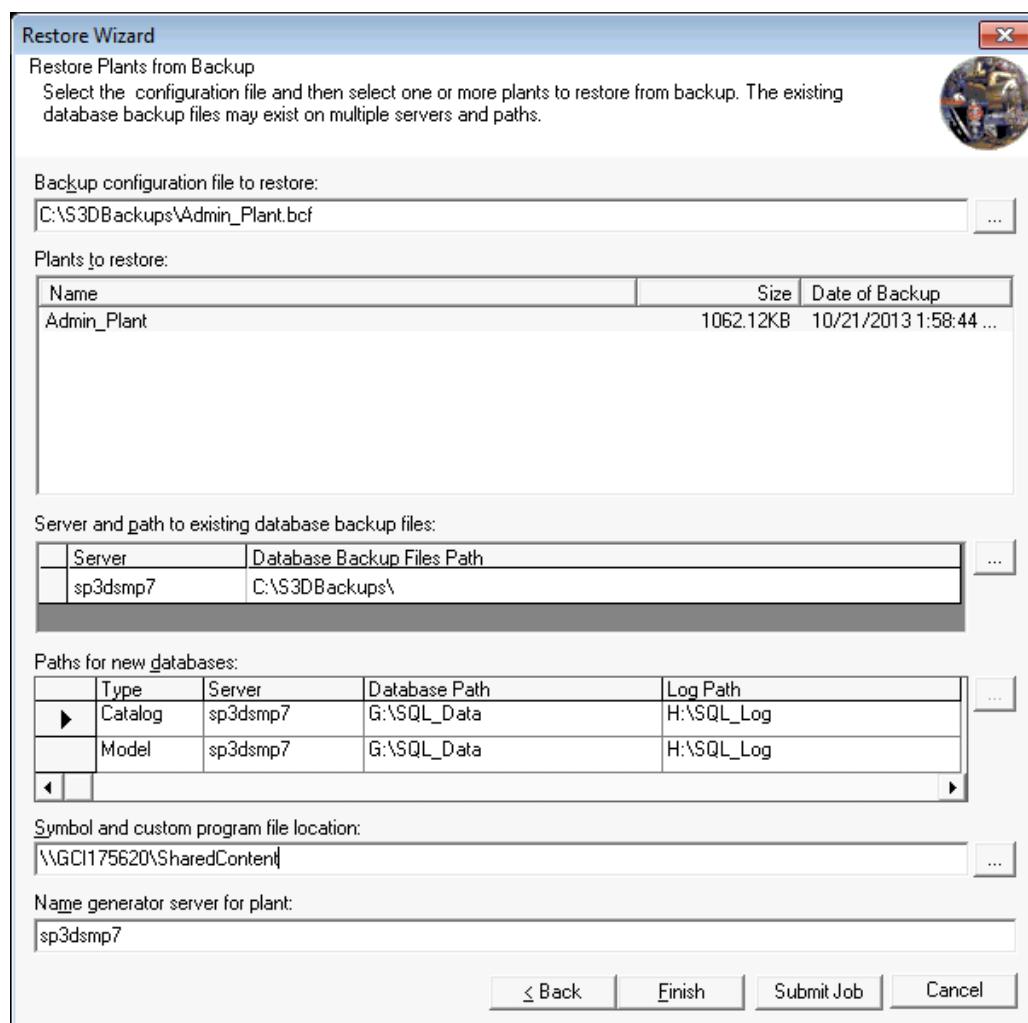
Note: Option 1 is “Restore one or more plant databases from backup” The intent of this command is to restore a Plant that already exists (or has pointers) in the current Site Database. This would generally happen when the production model has a need to be rolled back to a previous date or, immediately after restoring a backup of the Site Database onto a new server. In the latter case, only the pointer in the Site would be present and we would want to follow that action by restoring the Model and Catalog onto that server as well.

1. Start **Project Management** if not already open
2. From **Tools** menu select **Restore...**



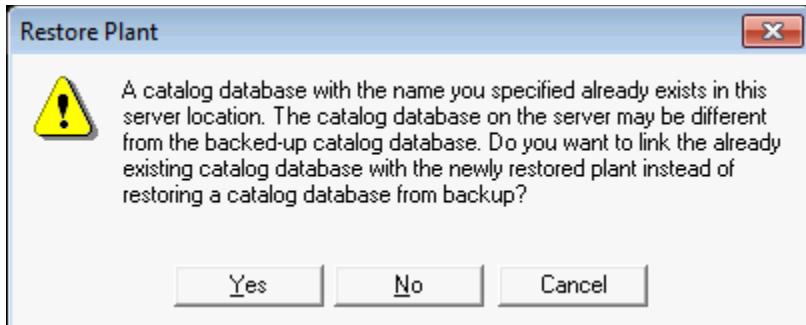
3. Choose option **Restore one or more plant databases from backup**. This will restore OVER THE EXISTING plant database and it will only work if plant already exists in the Site and Site_Schema databases (plant must be listed under Plants node in Project Management hierarchy).
4. Click **Next**
5. Complete the form as depicted below by identifying the backup configuration file (*.bcf), Backup file path, Catalog and Model names/locations, and Symbols share path:

Note: For Oracle based projects, 'Database Backup Files Path' must be a shared location.

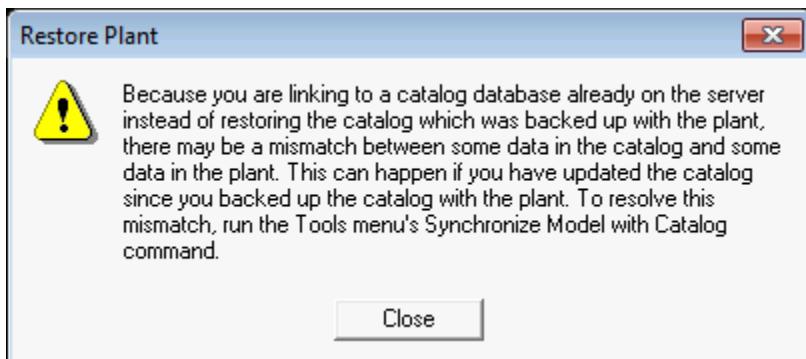


6. Click **Finish**.

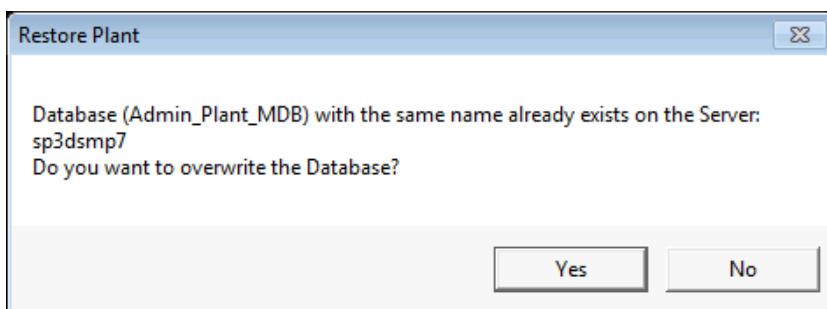
7. Because Catalog database already exists on the server, you have two options in this restore mode. You can either leave the existing Catalog in place (linking it) or overwrite it from the backup. Because there have not been any changes to the Catalog, the logical choice would be to select yes and leave the existing Catalog intact.



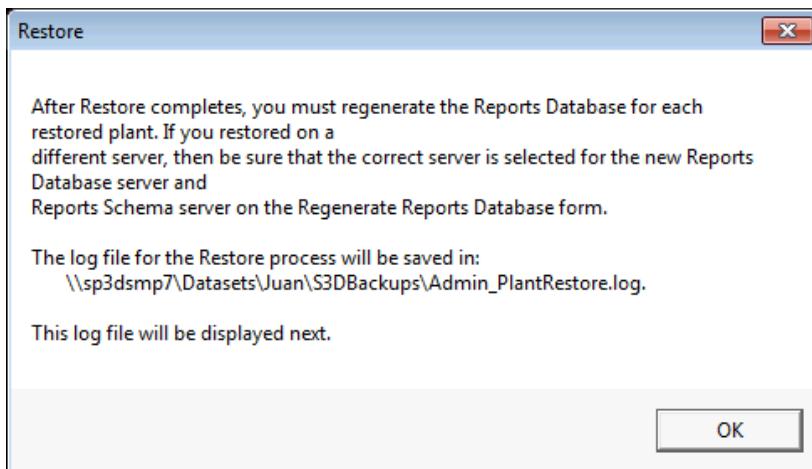
8. Click **Yes**
9. An additional warning message will be displayed.



10. Click **Close** button (we will not be required to run Synchronization at this time because the Catalog have not changed).
11. An Additional confirmation form will be displayed because you are overwriting the Model Database:



12. Click **Yes**
13. When the restore is complete, Click **OK** and review the log file. Because we only restored the model, the log file will only contain information regarding the model restoration and not the catalog. Click **Close** on the Restore form to return to **Project Management**.



14. **Repeat** the process described in steps 1-13 but this time, choose to restore over the Catalog Database.

LAB 6: Restoring a Plant Database (Option 2)

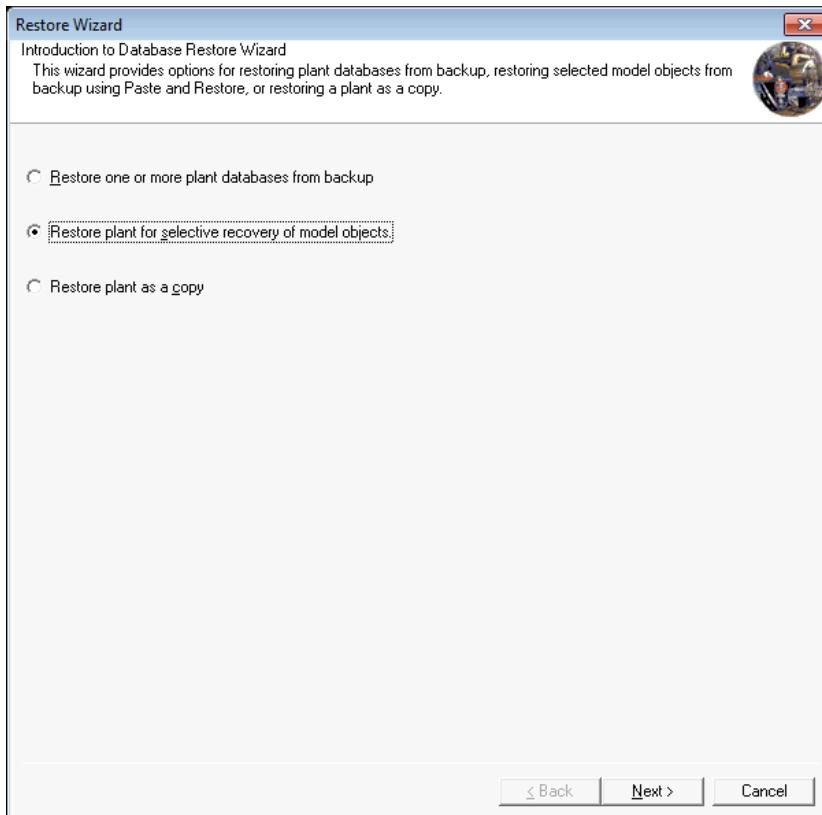
Objectives

After completing this lab, you will be able to:

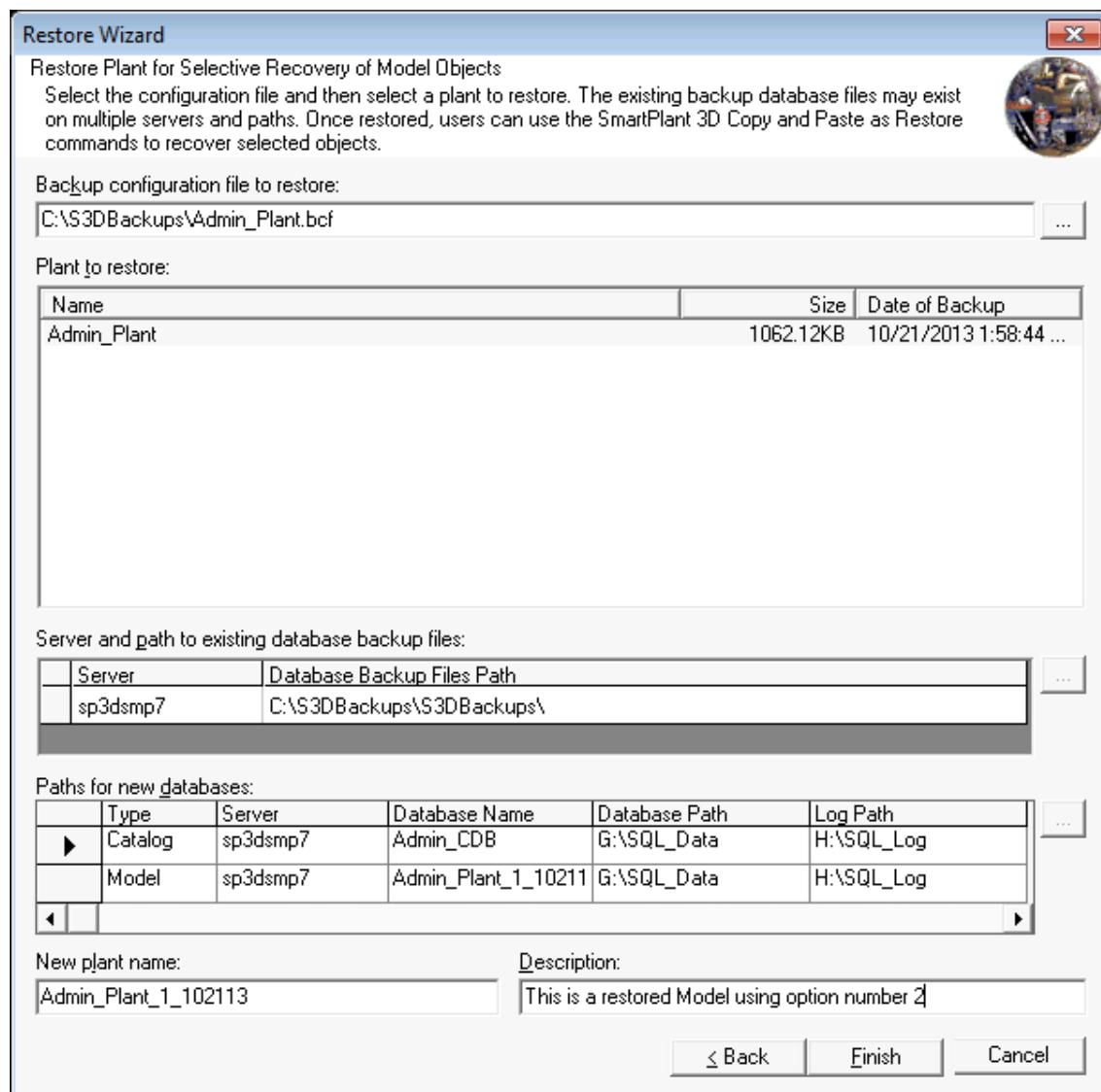
- Restore plant from backup using “Restore plant for selective recovery of model objects” option from Project Management.

Note: Restore Option 2 is “Restore plant for selective recovery of model objects” The intent with this command is to restore a Model database into a Site database where a current version of the model already exists. The restored Model (which would represent old data) would exist in the Site database in parallel to the current Model and would share the same Catalog. Users could then open two sessions, one pointed to the restored Model and one pointed to the current Model, and select items from the restored model to Copy and then “Paste/Restore” into the current model. Doing this type of workflow allows for selective recovery of work from previous versions of the same model.

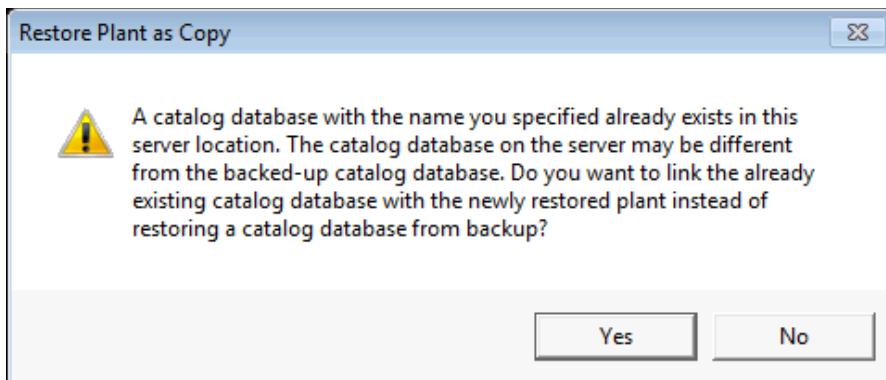
1. Start **Project Management** if not already open
2. From **Tools** menu select **Restore...**



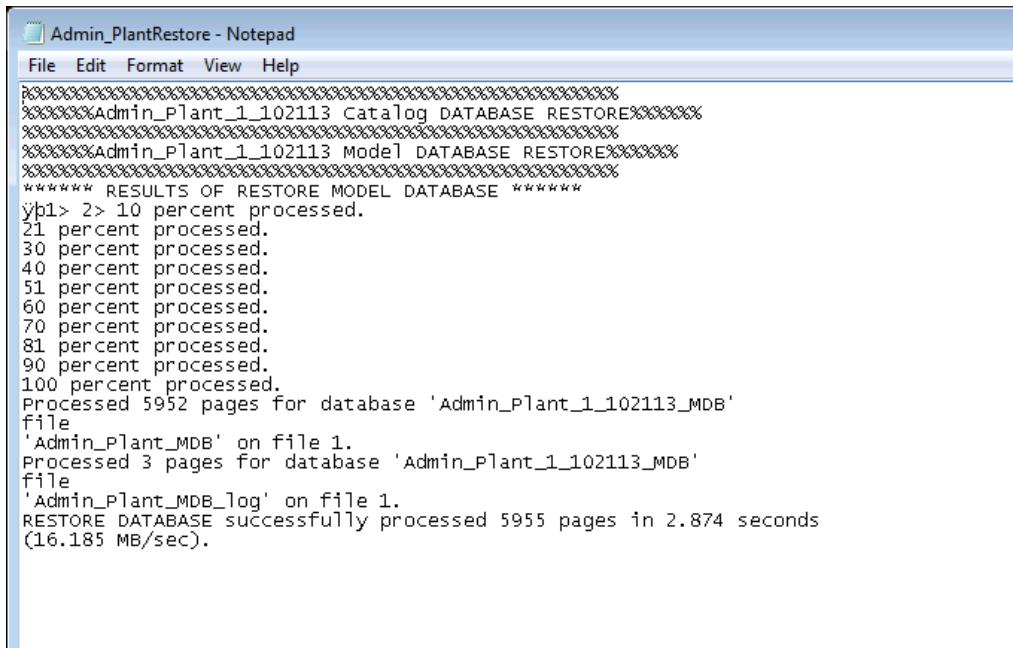
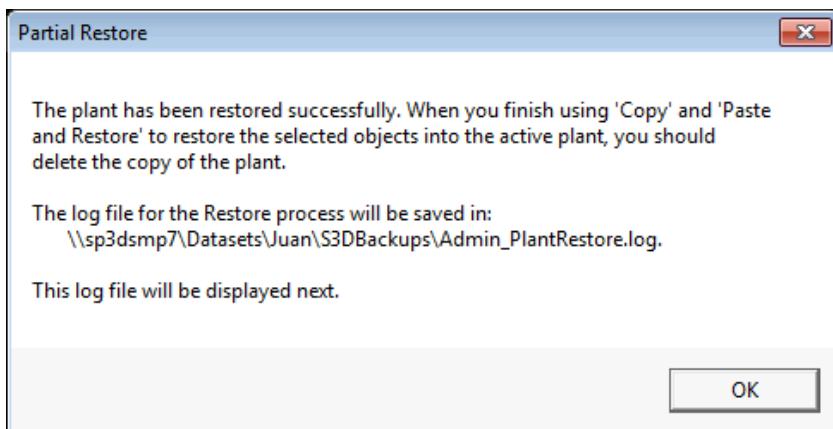
3. Select option **Restore plant for selective recovery of model objects**
4. Click **Next**
5. Complete the form as depicted below by identifying the backup configuration file (*.bcf), Backup file path and Catalog and Model names/location.



6. Note that New plant name would contain current date (10-21-2013 in the screenshot above).
Provide a description that is meaningful to you.
7. Click **Finish**
8. Indicate that you would like to link to the existing Catalog by selecting **Yes**



9. Click **OK**. Once again, you may want to review the restore log file:



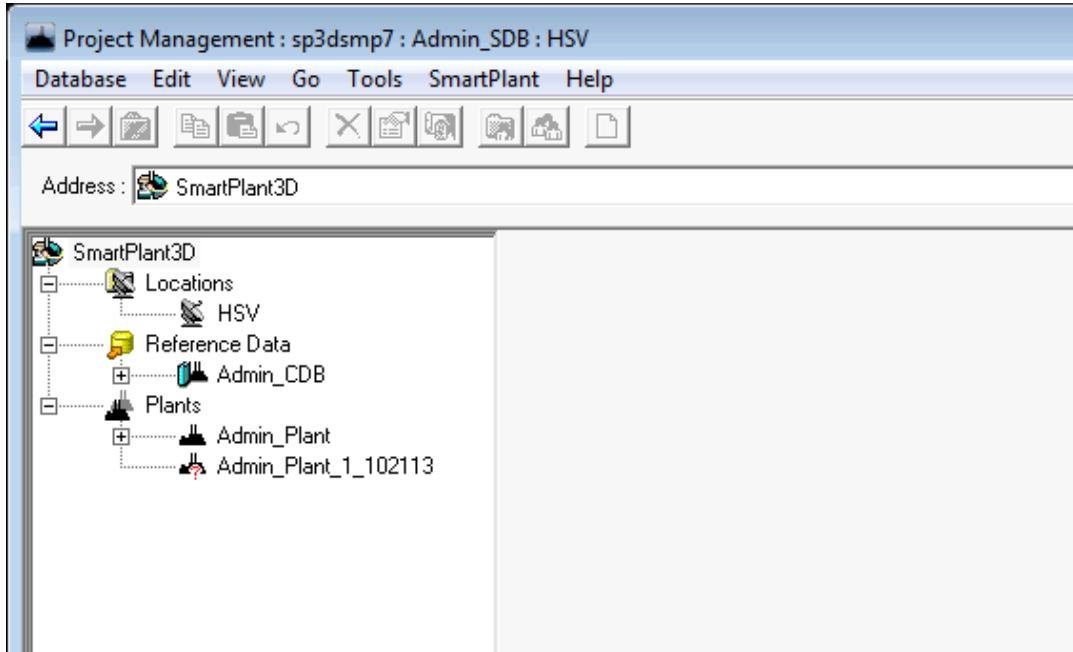
Admin_PlantRestore - Notepad

File Edit Format View Help

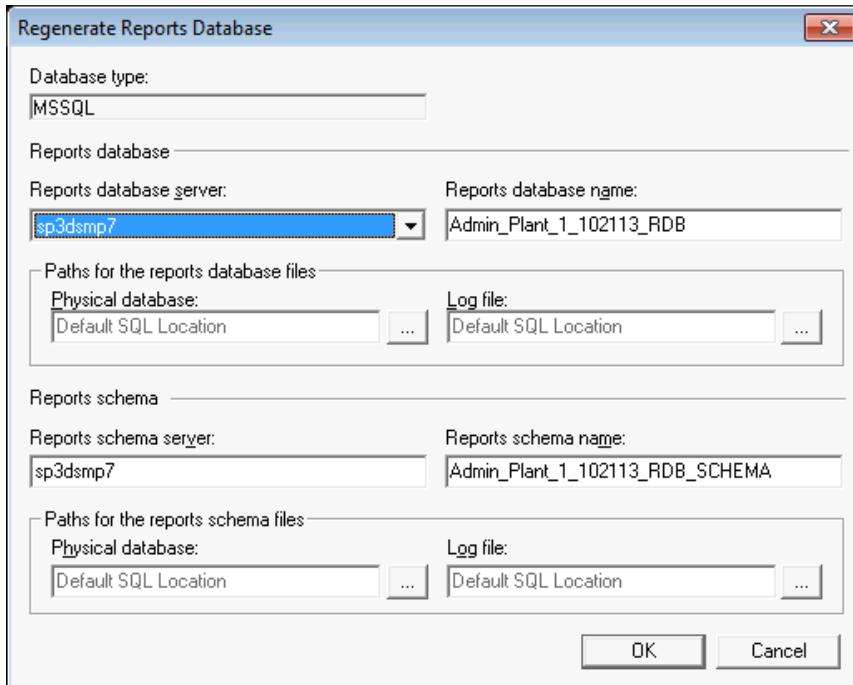
```
XXXXXXXXXXXXAdmin_Plant_1_102113 Catalog DATABASE RESTOREXXXXXX
XXXXXXXXXXXXAdmin_Plant_1_102113 Model DATABASE RESTOREXXXXXX
***** RESULTS OF RESTORE MODEL DATABASE *****
yb1> 2> 10 percent processed.
21 percent processed.
30 percent processed.
40 percent processed.
51 percent processed.
60 percent processed.
70 percent processed.
81 percent processed.
90 percent processed.
100 percent processed.
Processed 5952 pages for database 'Admin_Plant_1_102113_MDB'
file
'Admin_Plant_MDB' on file 1.
Processed 3 pages for database 'Admin_Plant_1_102113_MDB'
file
'Admin_Plant_MDB_log' on file 1.
RESTORE DATABASE successfully processed 5955 pages in 2.874 seconds
(16.185 MB/sec).
```

Note: For Oracle based projects, the restore log file will look different than the screenshot above.

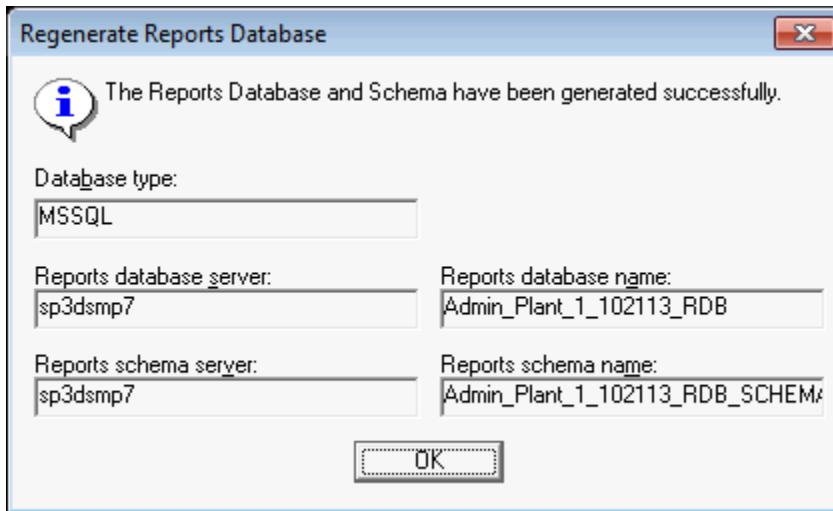
10. **Close** Restore Wizard form.
11. Review **Project Management Tree** and observe that there now exists two plants that share the same Catalog



12. **Right mouse click** on the newly restored plant and select **Regenerate Report database**



13. Click **OK** and allow reports databases to be re-created.



14. Click **OK** to dismiss dialog box

15. Typically, you would follow this type of operation by restricting access to permission groups in the restored Plant. As an exercise, use the skills you have learned to set user access to read for all groups and users except yourself on the Restored Plant.

16. The database can now be used for recovery of objects operations, had this been a live project.

Note: The workflow to recover objects from a previous backup of the plant may involve one of two methods; first there is “Copy/Paste Restore” procedure between two sessions, or the use of Model Data Reuse command found in Project Management.

LAB 7: Restoring a Plant Database (Option 3)

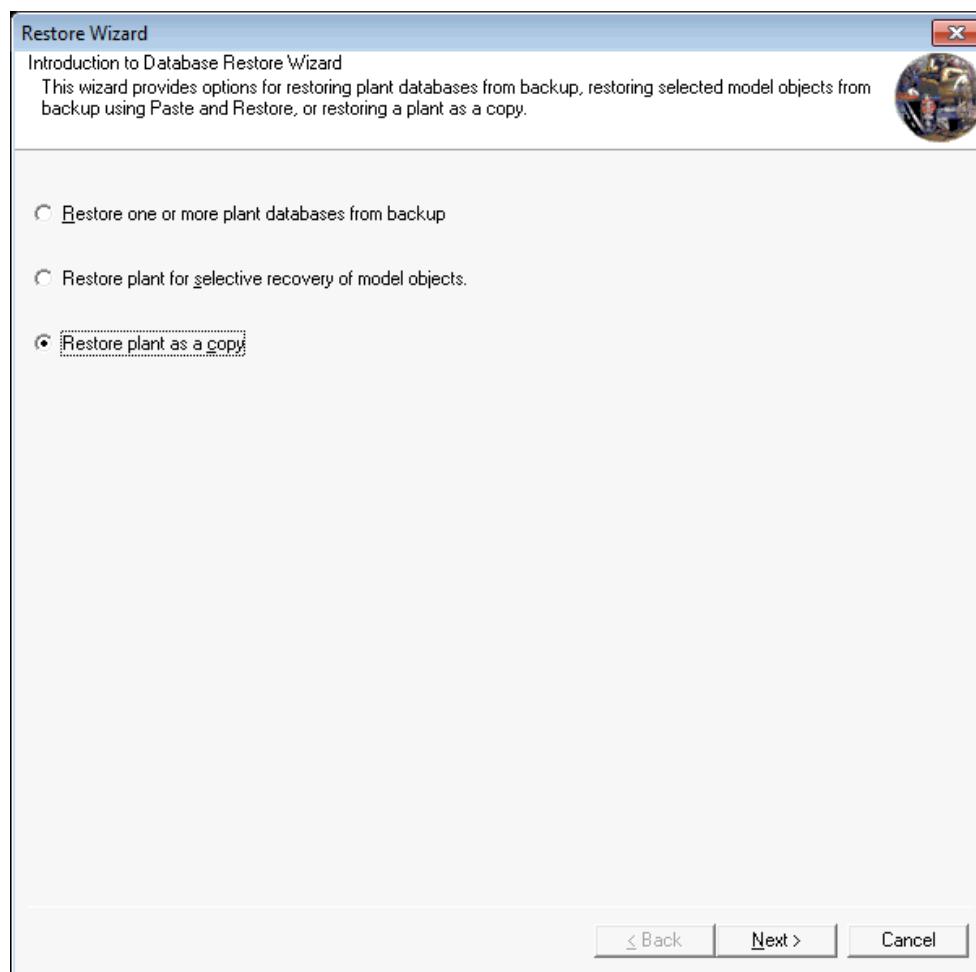
Objectives

After completing this lab, you will be able to:

- Restore plant from backup using “Restore plant as a copy” option from Project Management.

Note: Option 3 is represented by the restore option “Restore plant as a copy”. This method is generally used to restore a plant that does not exist in the current Site database set, or to duplicate a Plant (by use of a backup) in the same Site database set. Unlike restore option 1, Option 3 does not require an instance of the same Plant to exist in the Site database.

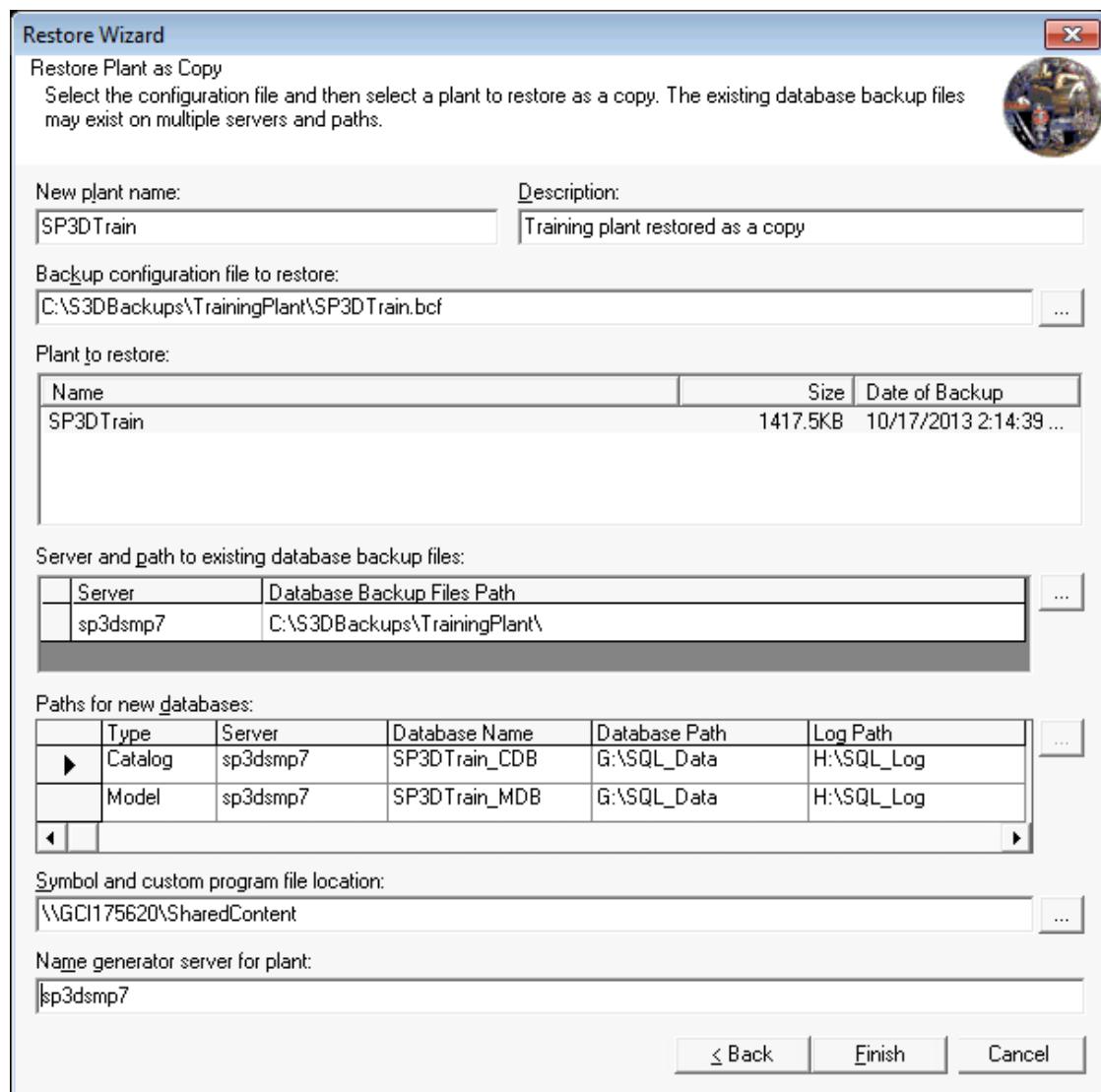
1. Start **Project Management** if not already open
2. From the **Tools→Restore** command select the third option as captured below:



3. Click **Next**

Note: Your instructor will provide you location of training plant, *.bcf and backup files before you continue on to step 4.

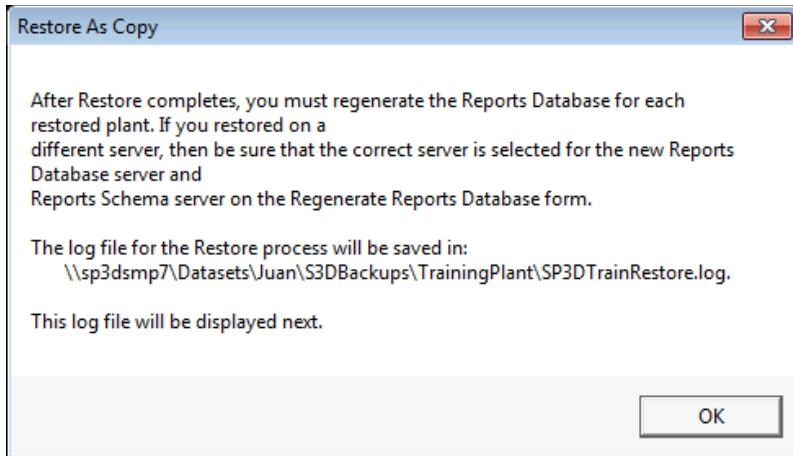
4. The form works much the same way as it has before for restore option 1 and option 2. Complete the form as depicted below by keying in a New plant name, locating the .bcf and backup files; choosing the Catalog name, and the Model name.



5. Click **Finish**.

Note: You will not be prompted to link to existing catalog database (as this is a separate unique catalog) and you will not be prompted to restore over an existing model (as one does not yet exist on server).

6. When databases have been restored, click **OK**



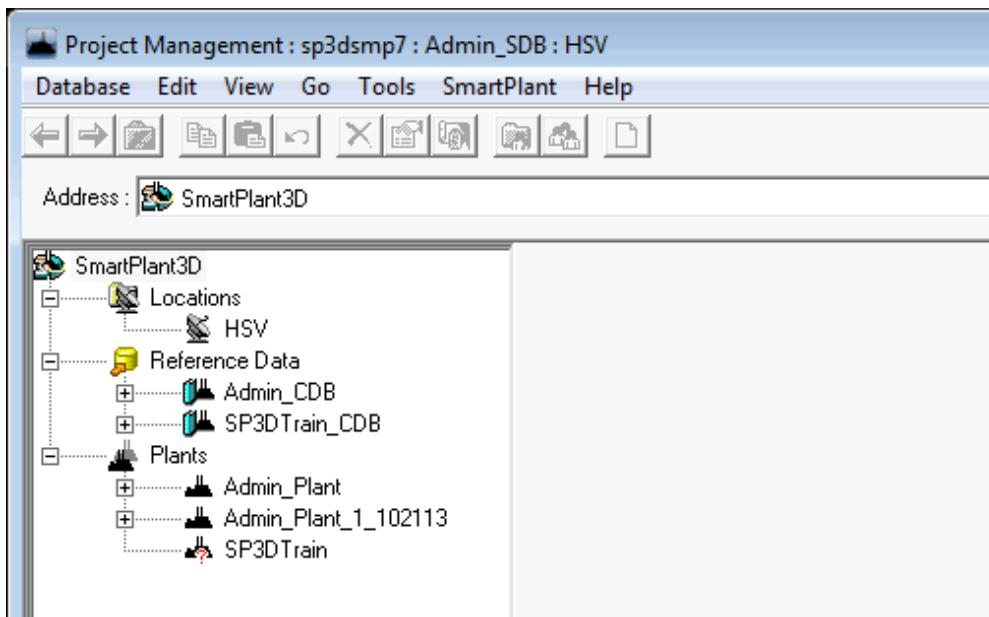
7. **Review** log file to verify restore operation's integrity.

```
SP3DTrainRestore - Notepad
File Edit Format View Help

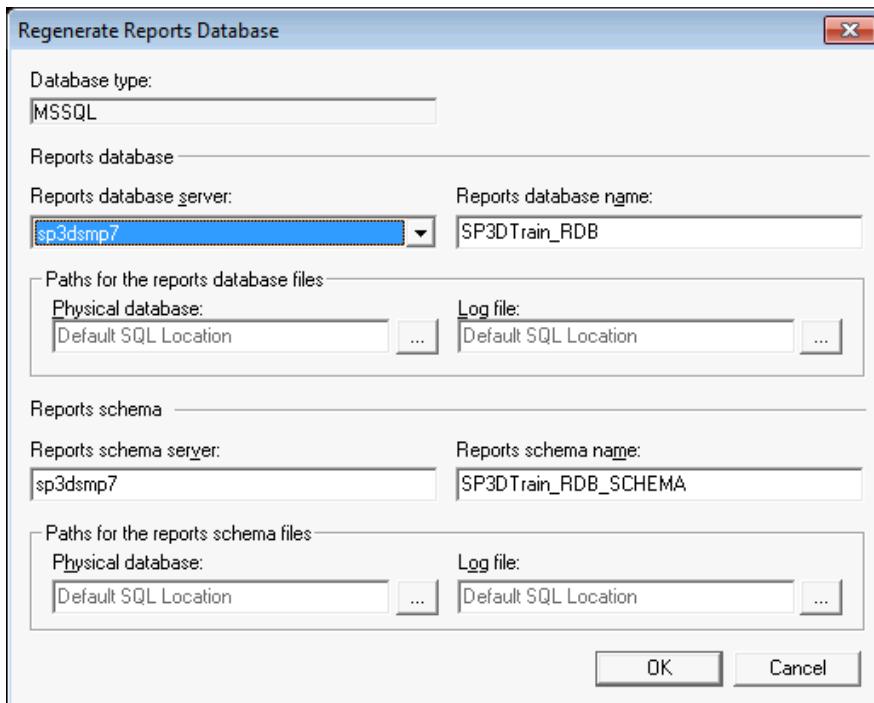
%%%%% SP3DTrain Catalog DATABASE RESTORE%%%%%
%%%%% RESULTS OF RESTORE CATALOG DATABASE AND SCHEMA. *****
yb1> 2> 3> 10 percent processed.
20 percent processed.
30 percent processed.
40 percent processed.
50 percent processed.
60 percent processed.
70 percent processed.
80 percent processed.
90 percent processed.
100 percent processed.
Processed 71136 pages for database 'SP3DTrain_CDB'
file 'catalogedb'
on file 1.
Processed 1 pages for database 'SP3DTrain_CDB'
file 'catalogedb_log'
on file 1.
RESTORE DATABASE successfully processed 71137 pages in 7.170 seconds
(77.511 MB/sec).
10 percent processed.
20 percent processed.
30 percent processed.
40 percent processed.]
50 percent processed.
60 percent processed.
70 percent processed.
80 percent processed.
90 percent processed.
100 percent processed.
Processed 14088 pages for database 'SP3DTrain_CDB_SCHEMA'
file
'APPREPOS' on file 2.
Processed 1 pages for database 'SP3DTrain_CDB_SCHEMA'
file
'APPREPOS_log' on file 2.
RESTORE DATABASE successfully processed 14089 pages in 3.235 seconds
(34.024 MB/sec).

%%%%% SP3DTrain Model DATABASE RESTORE%%%%%
%%%%% RESULTS OF RESTORE MODEL DATABASE *****
yb1> 2> 10 percent processed.
20 percent processed.
30 percent processed.
```

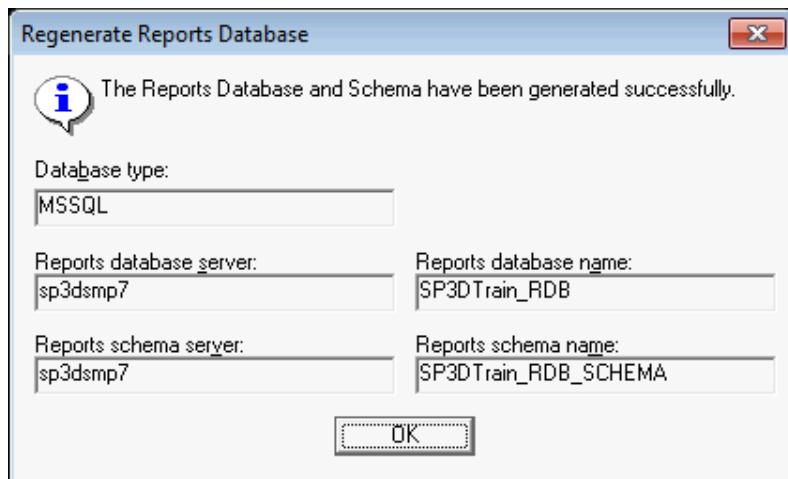
8. **Close** restore form when completed.
9. Note there are two catalogs and three plants. The question mark next to SP3DTrain plant is an indication that Reports databases have not been regenerated.



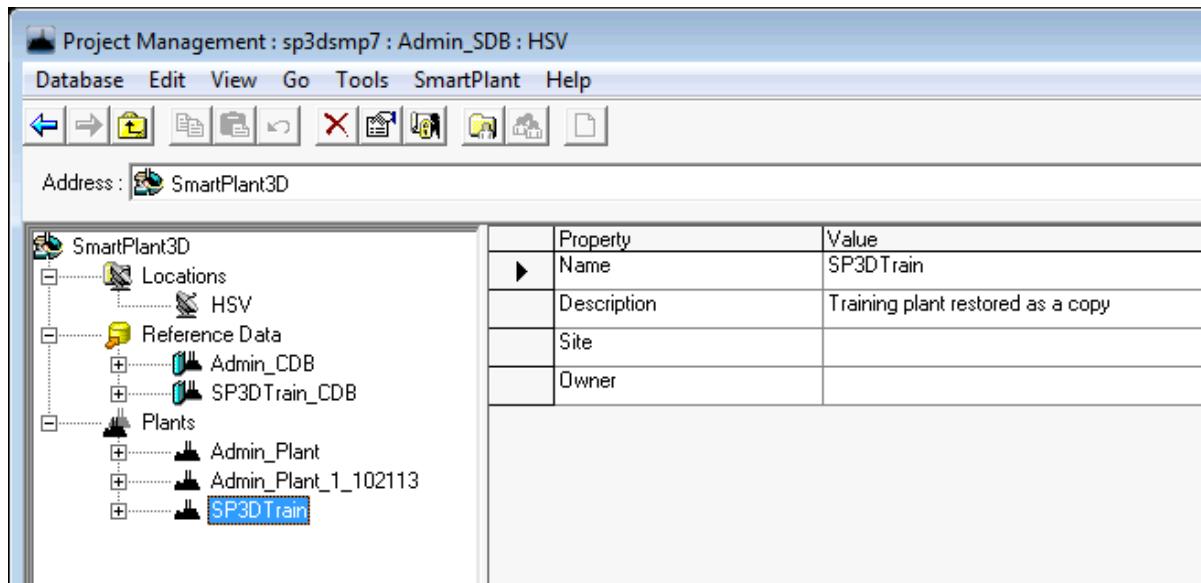
10. Right mouse click on SP3DTrain plant and select **Regenerate Reports Databases**.



11. Click **OK**.



12. Click **OK**.

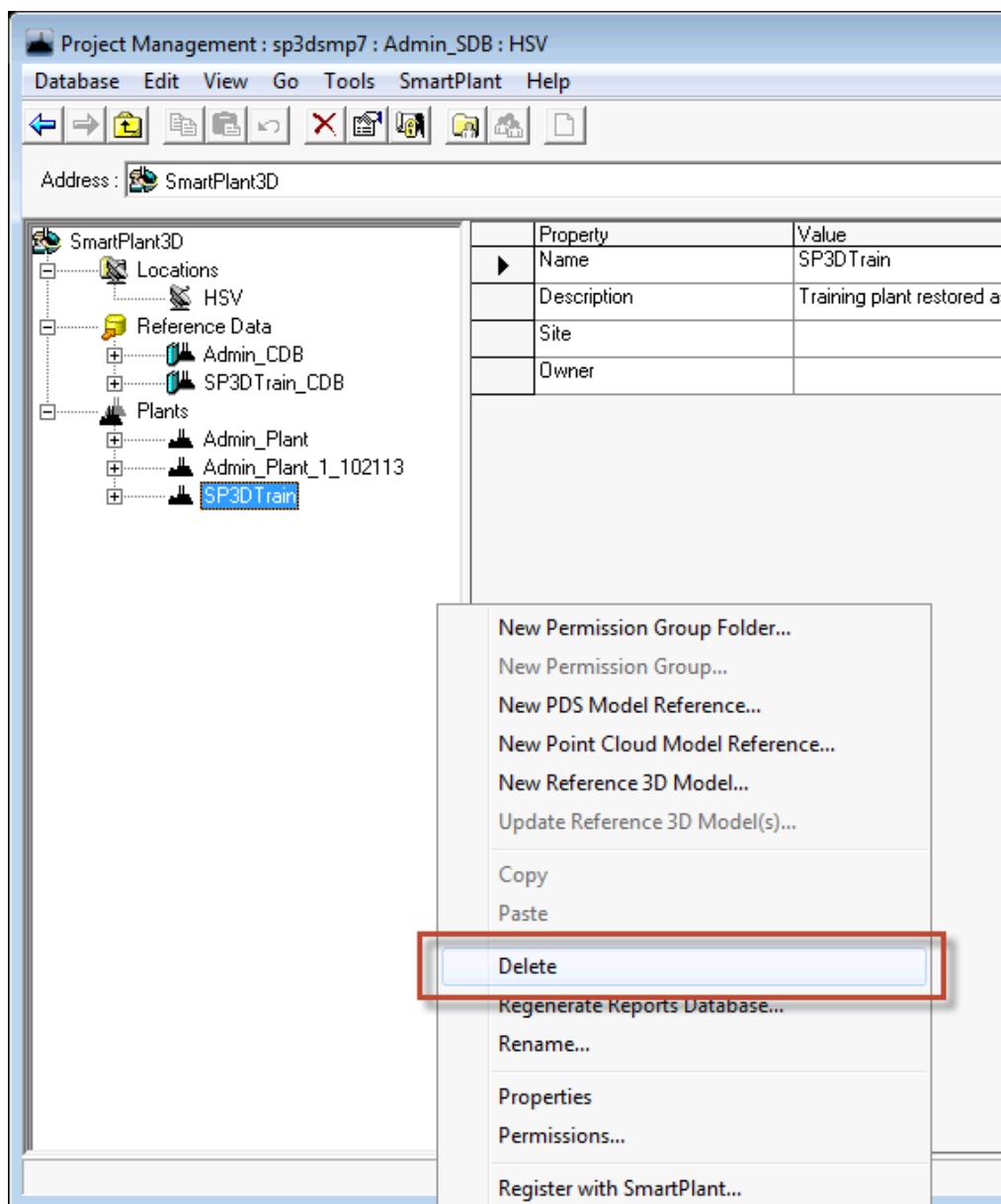


LAB 8: Deleting a Plant

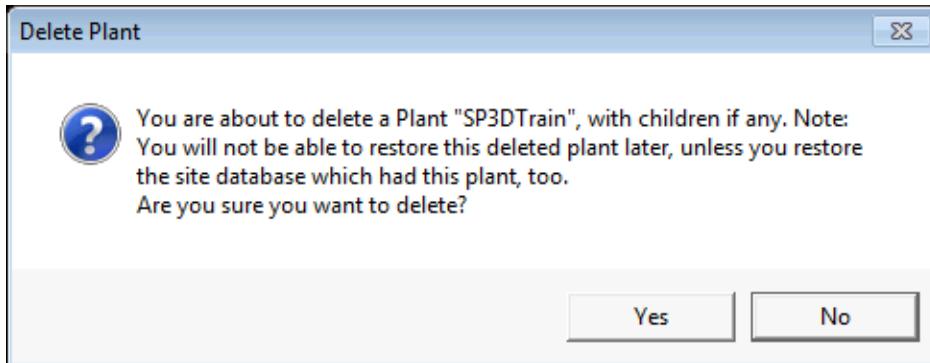
Objectives

After completing this lab, you will be able to:

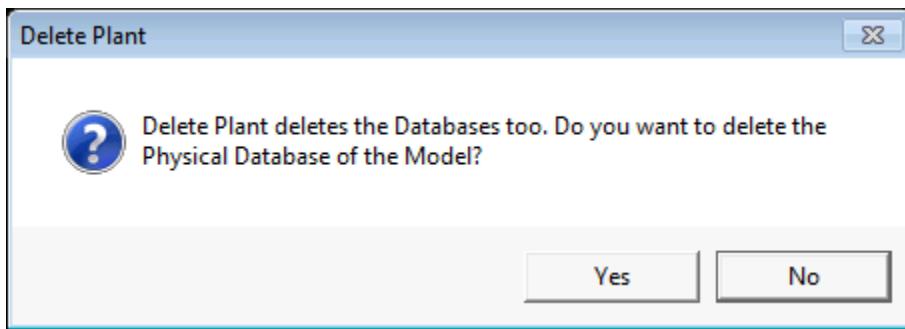
- Delete an existing plant from Project Management.
1. Start **Project Management** if not already open
 2. Right mouse click on **SP3DTrain** plant and select **Delete**.



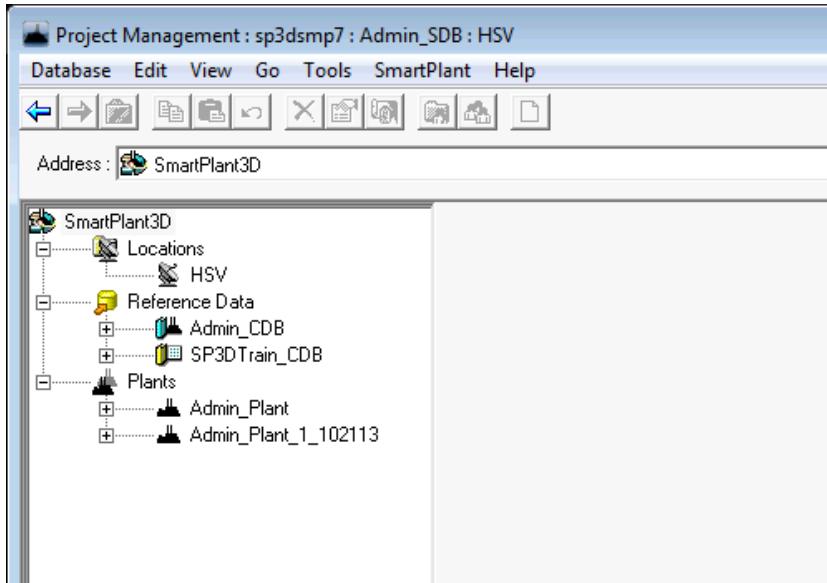
3. Deleting the plant will effectively remove its pointer from the Site database. Click **Yes**



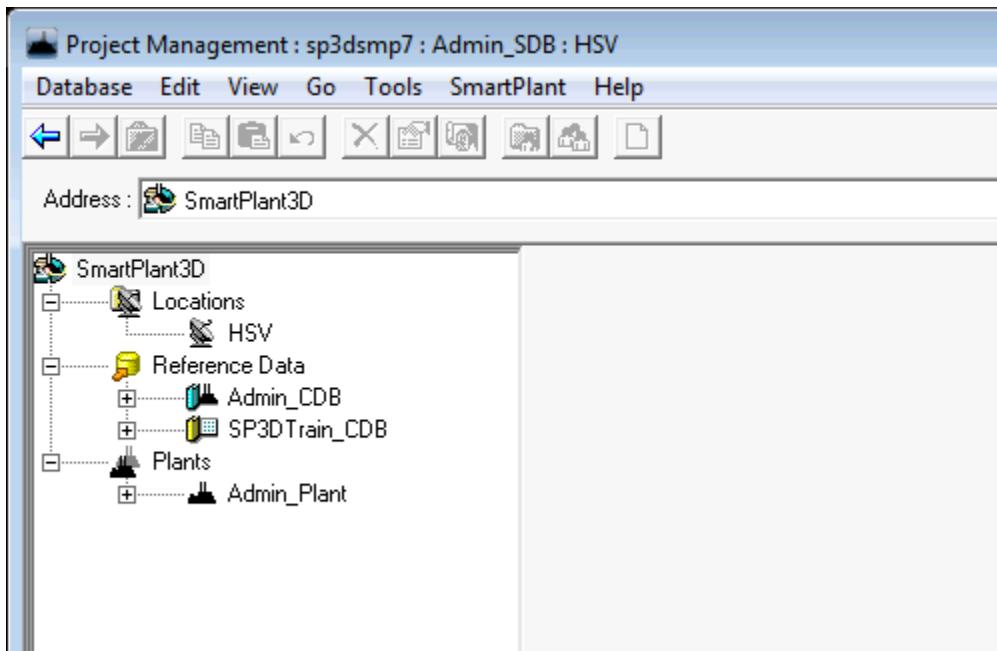
4. Select **Yes** on next form to delete physical database files, this allows to release hard drive space on database server:



5. Note the Plant has been removed from the hierarchy but Catalog still remains.



6. Delete the plant that was restored using option “Restore plant for selective recovery of model objects.



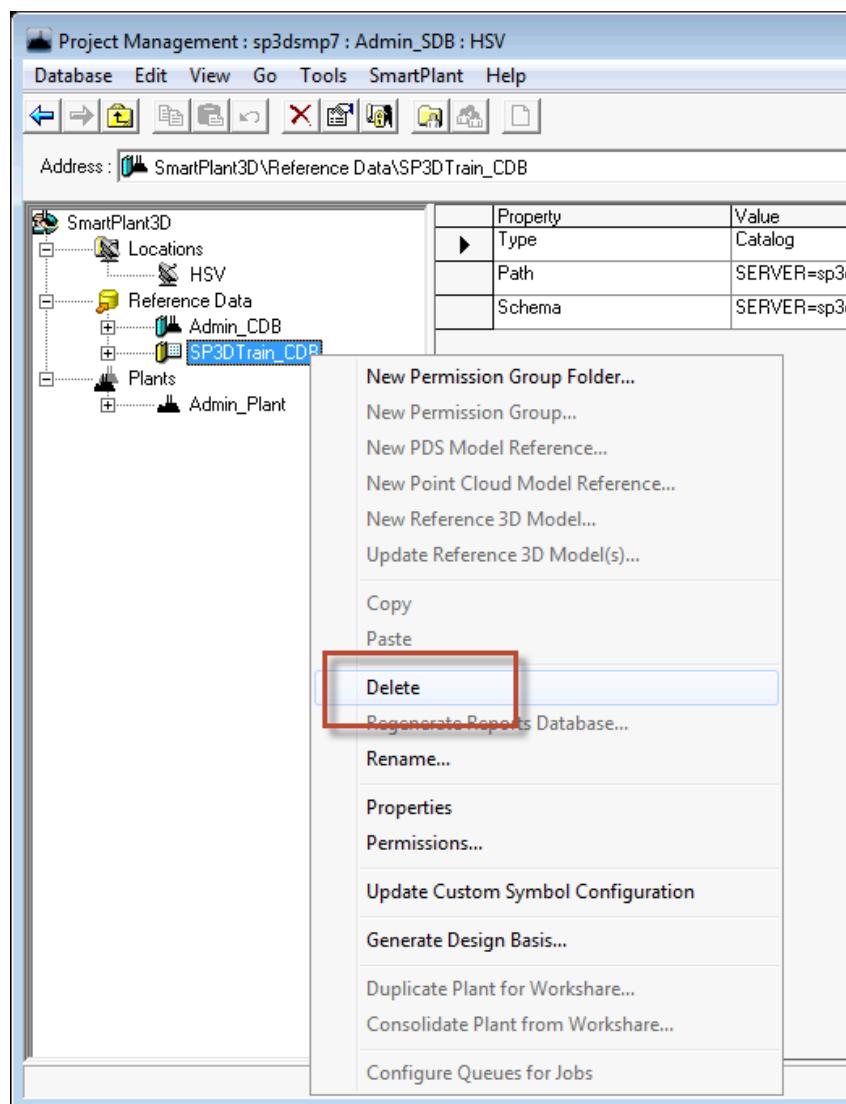
Note: SP3DTrain_CDB database still remains; possible actions for it include deletion as it is no longer associated to any plant, or it can be reused with a new plant by running Database → New → Plant... command.

LAB 9: Deleting a Catalog

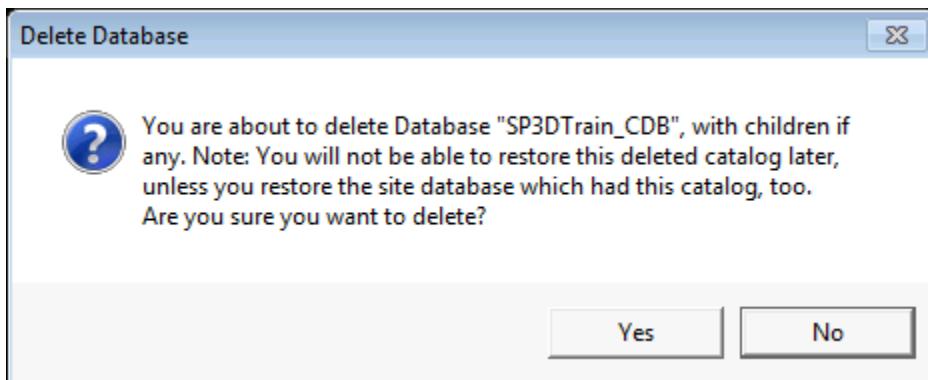
Objectives

After completing this lab, you will be able to:

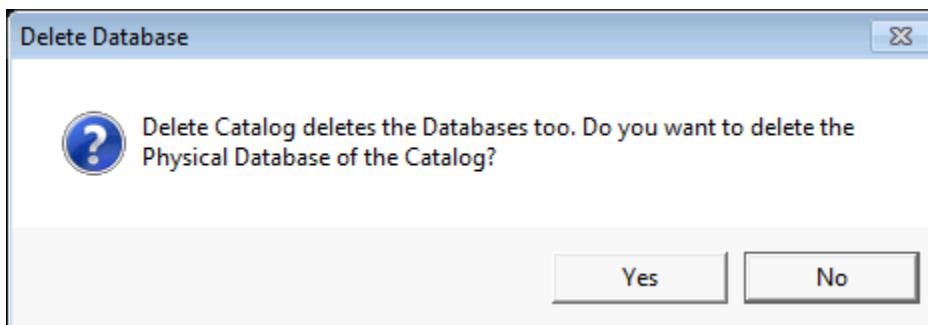
- Delete an existing catalog from Project Management.
1. Catalog databases can only be deleted if there are no plants associated to them. Catalogs ready for deletion can be recognized by a yellow mini book icon in Project Management hierarchy.



2. Right click on **SP3DTrain_CDB** Catalog and select **Delete**



3. As with deleting plants, the software will prompt for confirmation, select **Yes**



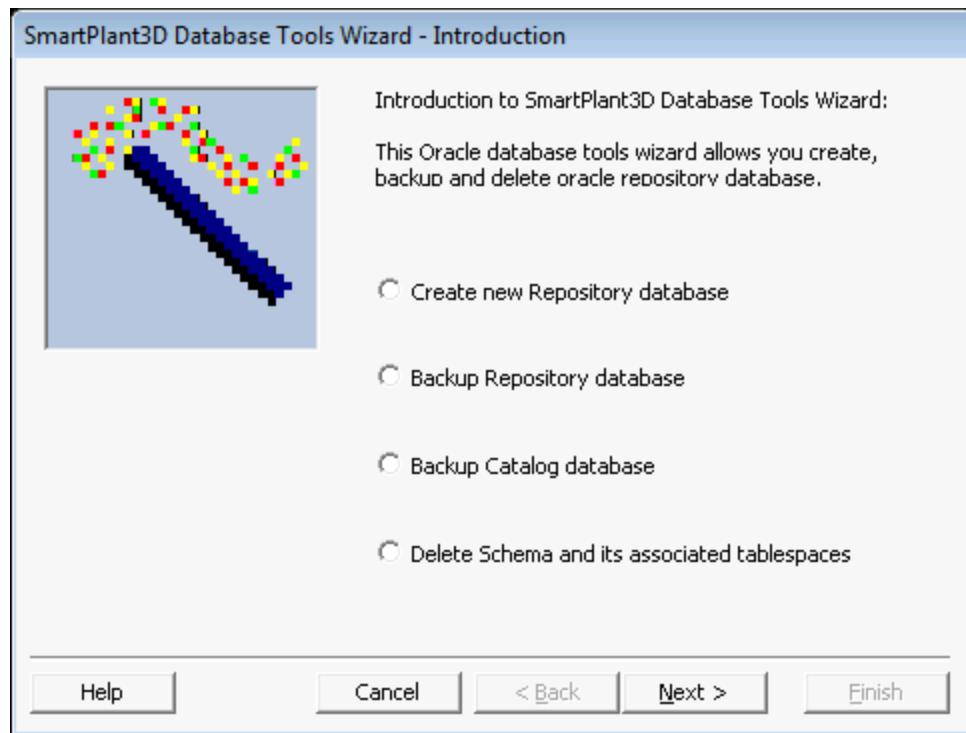
4. Select **Yes**.
5. Try to delete the Catalog database named **Admin_CDB** and note the results.

Note for Oracle based projects:

When you delete an Oracle plant in Project Management task, the software may not delete all of the associated database objects (user, tablespace and schema). To delete schema information after deleting an Oracle plant, you must use the Oracle Database Tools Wizard for SmartPlant 3D.

The Oracle Database Tools Wizard for SmartPlant 3D is delivered to [Product Directory]\ProjectMgmt\Tools\Bin\SP3DOracleDBToolsWizard.exe.

- Open the Oracle Database Tools Wizard for SmartPlant 3D
- On the Introduction page, select Delete Schema databases and associated tablespaces, and then click Next
- Select the schemas to delete and click Finish.



Note: This process may take some time to complete (approximately from 5 to 10 minutes per database), depending on the quantity of databases to process and performance/load factors of the server. The Wizard window may at some time, look like it is hanged, do not kill it and wait for it to complete (It'll return to normal with a message announcing completion).

LAB 10: New Catalog Command

Objectives

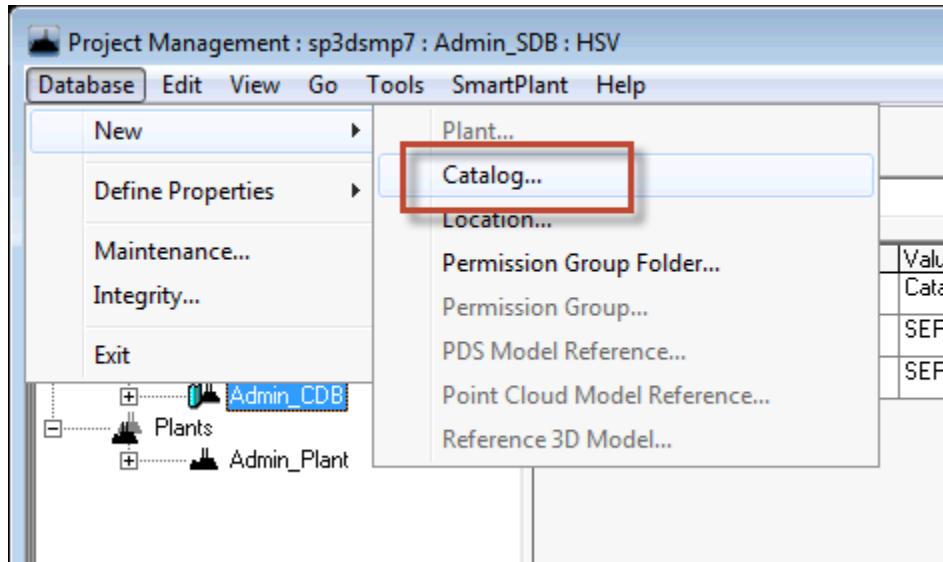
After completing this lab, you will be able to:

- Create a new Catalog from within Project Management.

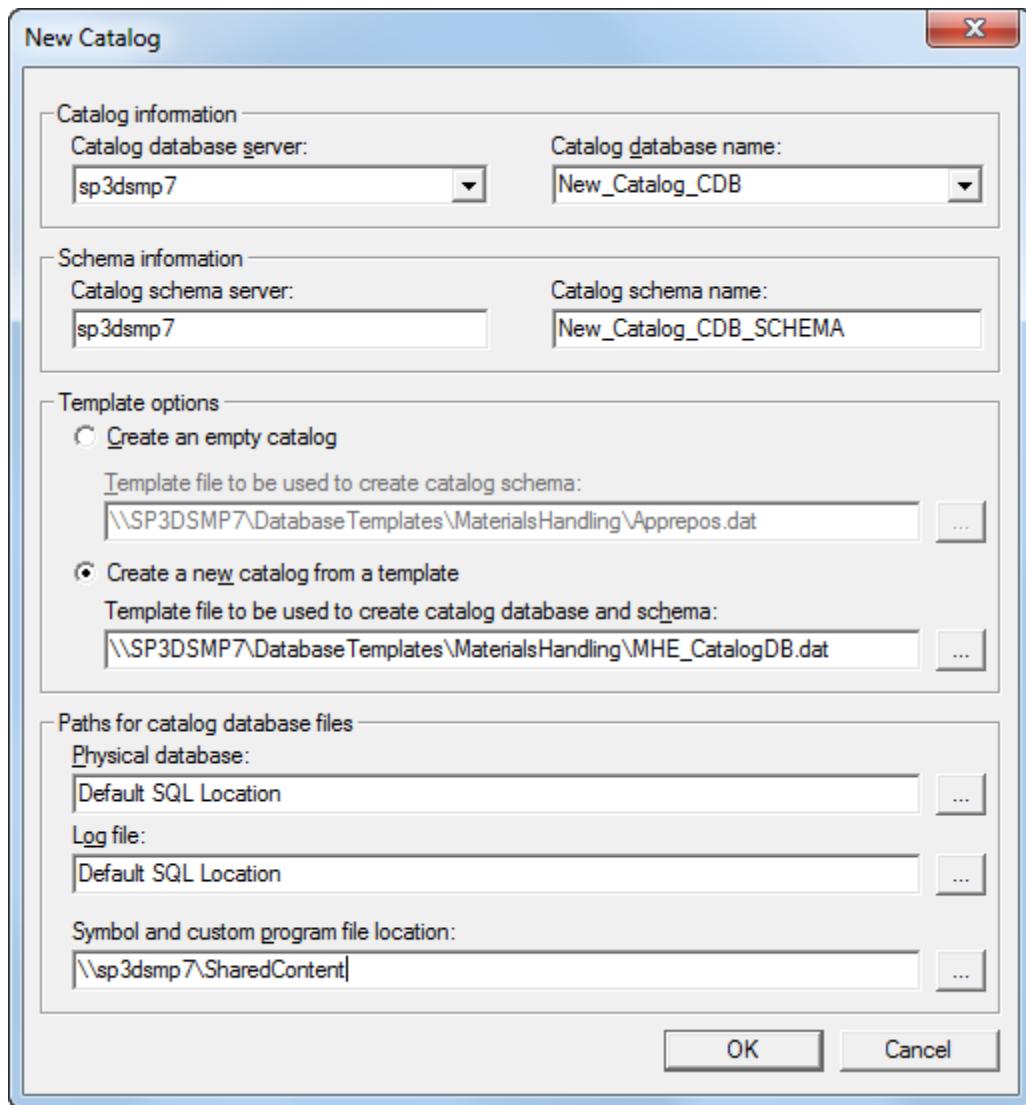
Notes: The new catalog command allows you to create a new empty catalog without performing a restore command. You will then be able to bulkload to this database at will, but you cannot use the catalog task to change anything in it unless you also make a Plant based off of the newly created catalog.

In a Global Workshare configuration, this command is only available for use at the Host location.

1. Open **Project Management**, click in the **Reference Data** node and navigate to the **Database > New > Catalog** command.

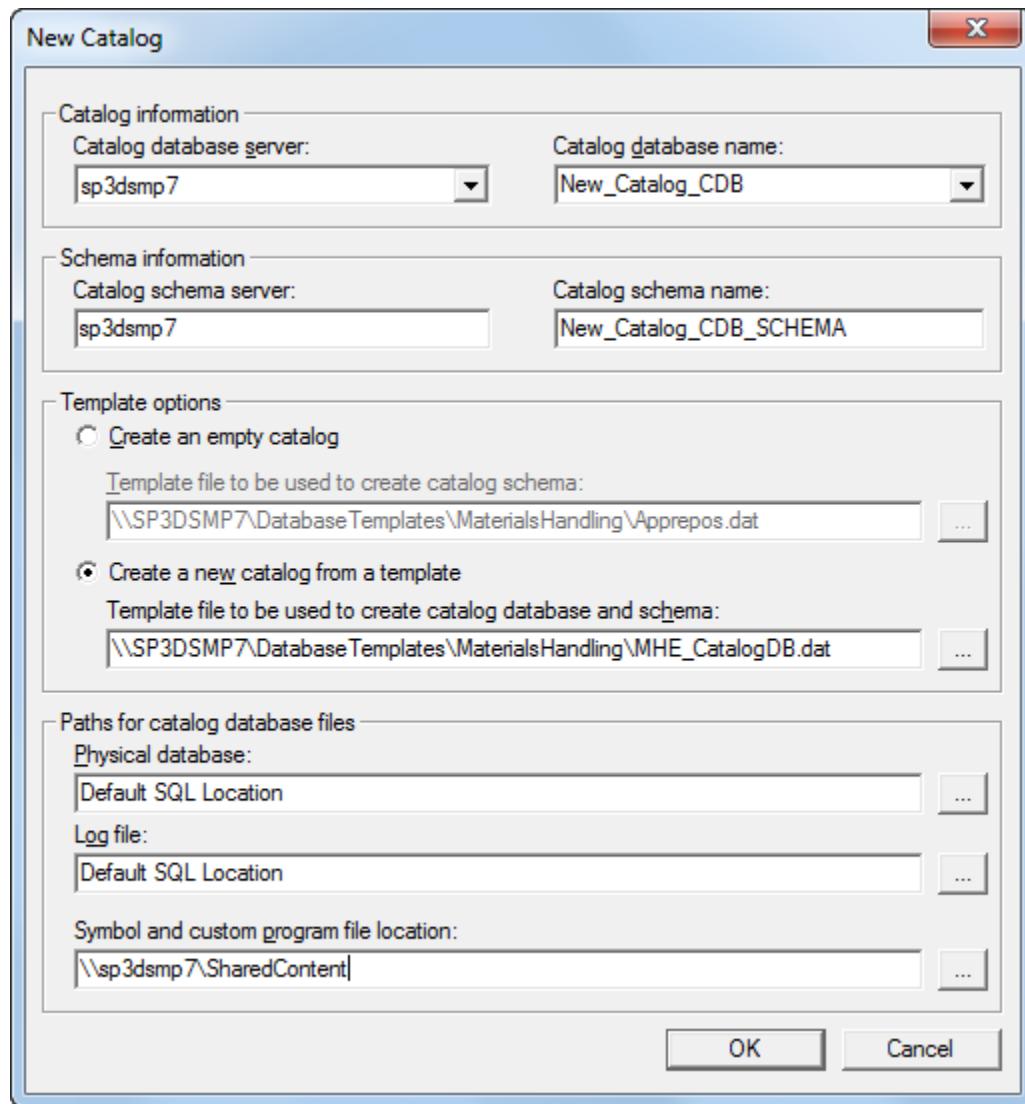


2. The **New Catalog** form will appear. Select the server where the catalog will be restored on:



Note that some information may be filled in for you if possible. If Apprepos.dat template is not at the suggested location, or you wish to use another custom starting template, you can specify it in the template options section.

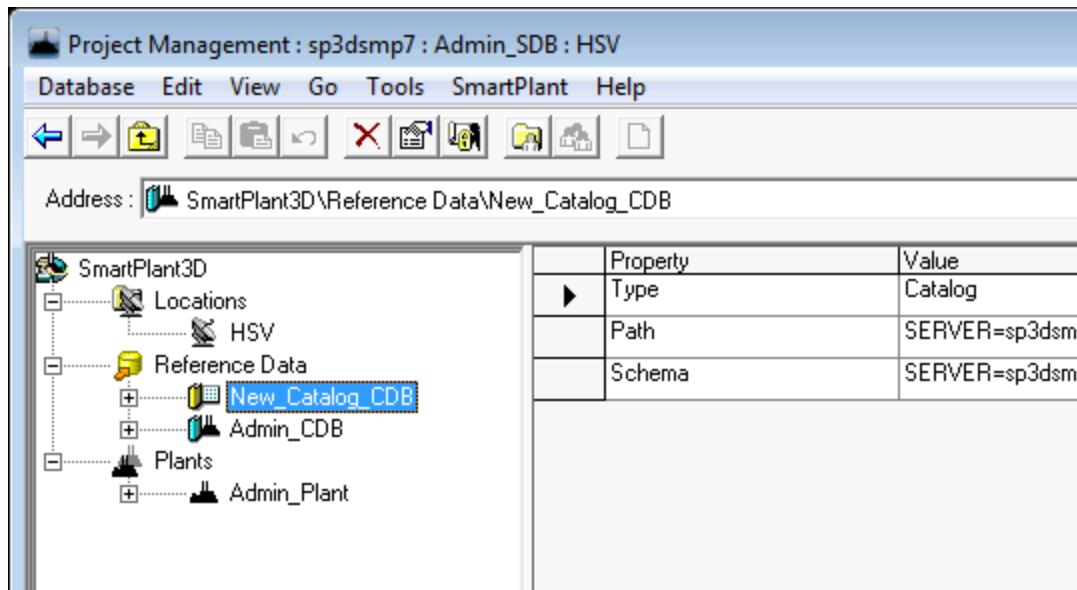
3. From **Catalog database server** list, select or make sure the proper database server is selected.
4. From **Catalog database name** drop-down list, select <new database>, and then type over as new name **New_Catalog_CDB**.
5. **Select option Create a new catalog from a template** and locate CatalogDB.dat (CatalogDB.dmp if Oracle) template, also type in the symbols folder path.



- When the form has been completed, click **OK**

Note: Apprepos.dat is the template you would use to create an empty Catalog; an empty Catalog is defined as a catalog database that contains all of the necessary tables, stored procedures, views, objects and so on, but does not contain any modeling data, such as part data or specifications. Only use this template with the first option.

- Project Management hierarchy should resemble the following

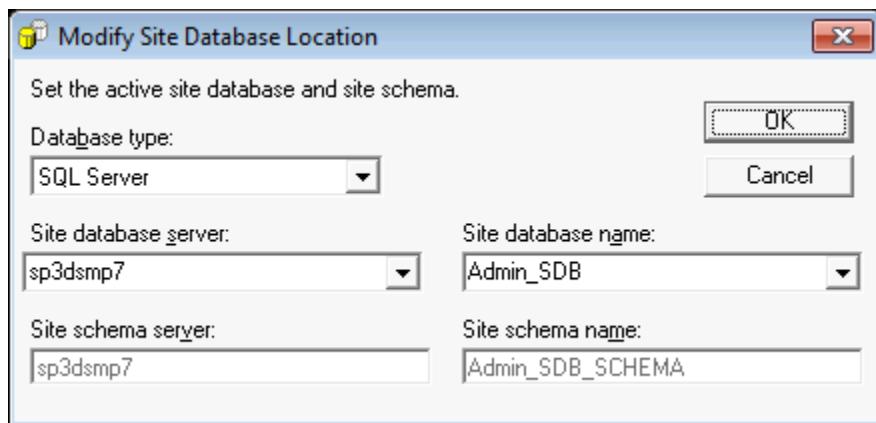


LAB 11: Manual Creation of System Hierarchy

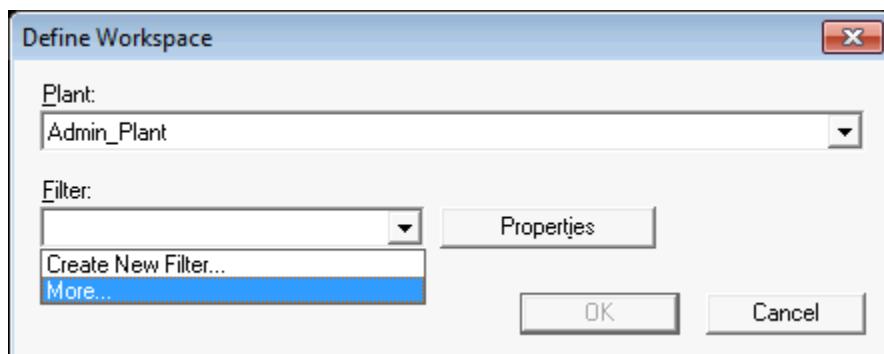
Objectives

After completing this lab, you will be able to:

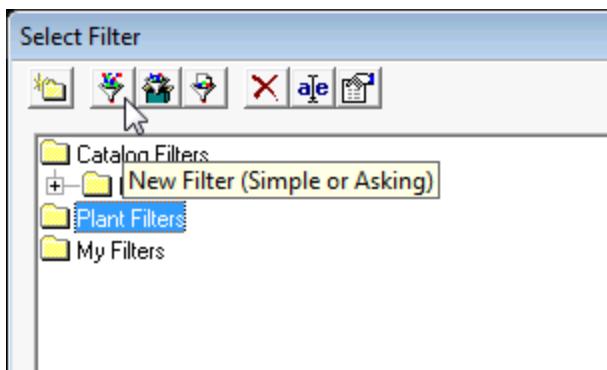
- Create a systems hierarchy in a new plant from the Systems and Specifications task.
1. Set site database to **Admin_SDB** using Modify Site Database Location utility following Start > All Programs > Intergraph Smart 3D > Database Tools >**Modify Database And Schema Location**



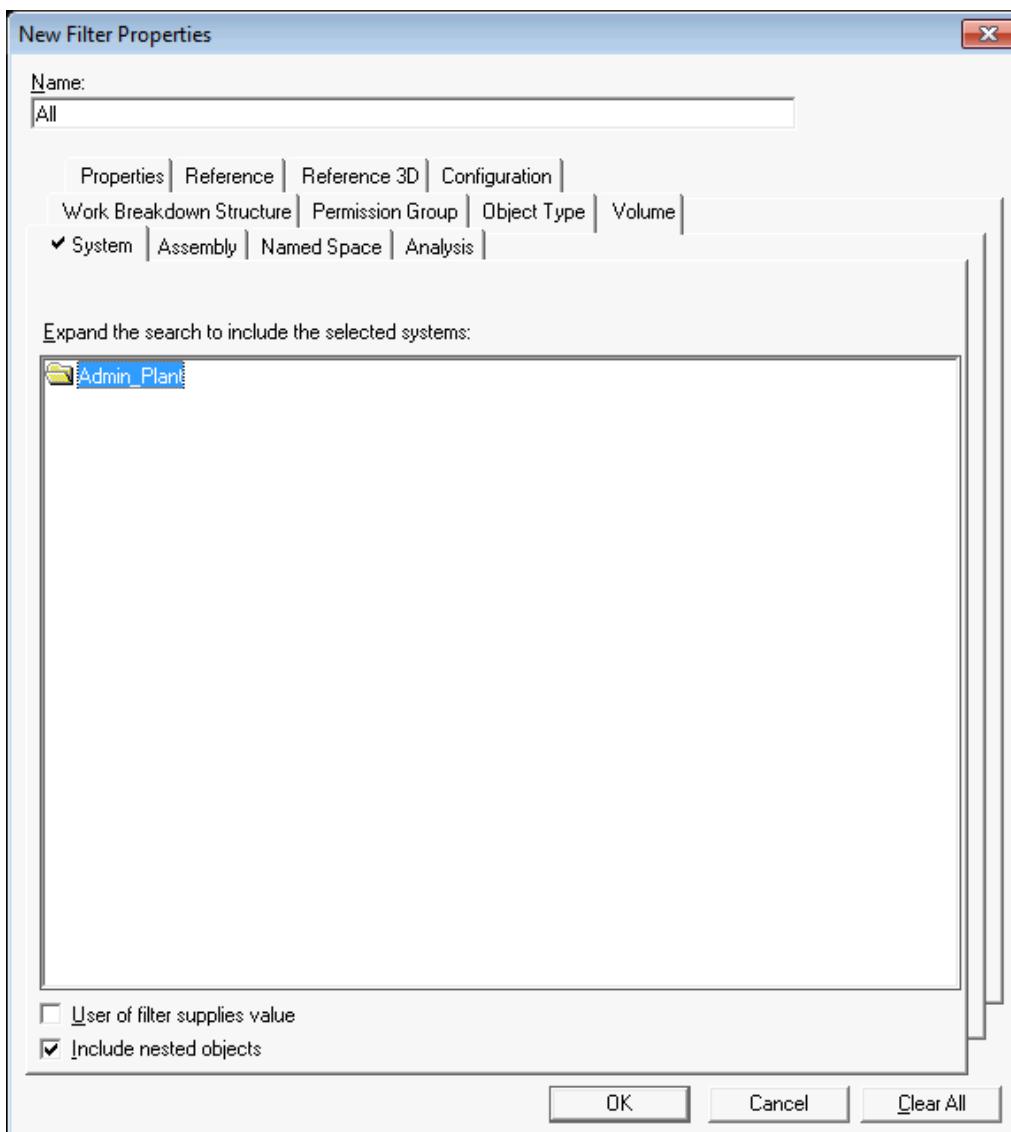
2. Open **Smart 3D**, when prompted, select either English or Metric units **template**
3. Go to **File > Define Workspace**
4. From the plant drop down list, select **Admin_plant** and on the filter drop down list click **More...** to create a filter.



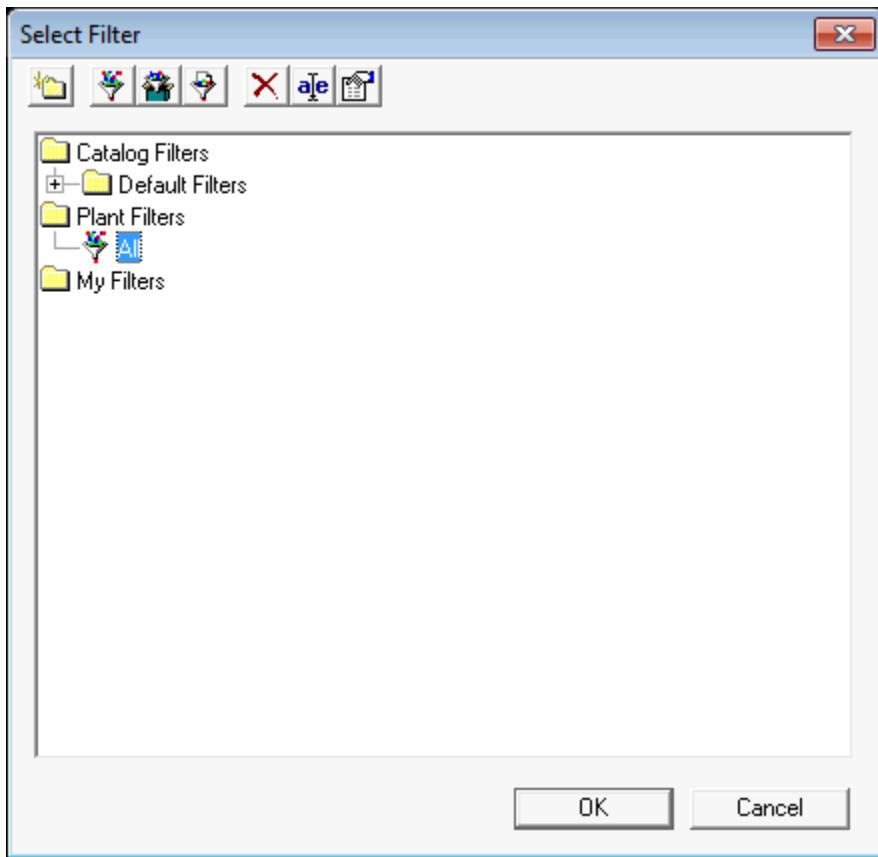
5. Highlight **Plant Filters** node and click **New Filter** button at the top of the form



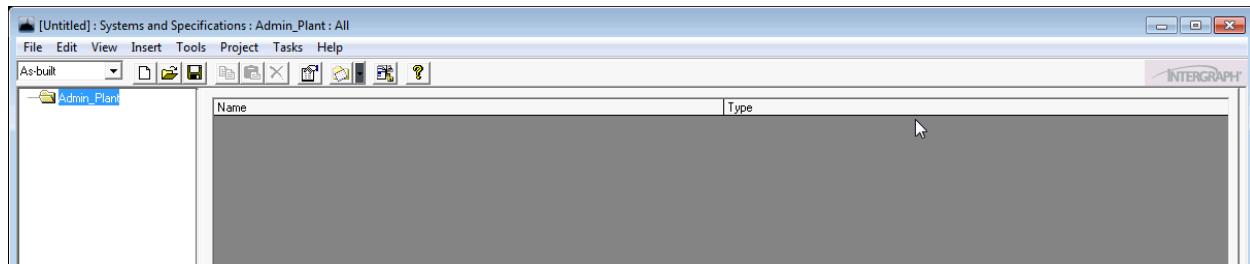
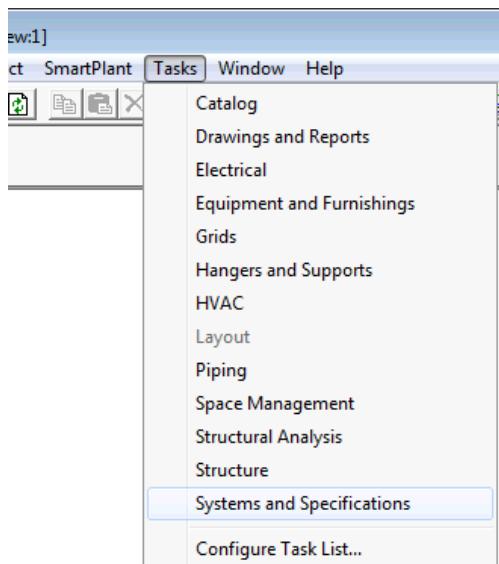
6. In the form that opens up, type **All** as filter name
7. In **System** tab, highlight **Admin_Pant**, and click **OK** to the form



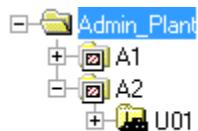
8. Select the newly created filter **All** and click **OK**



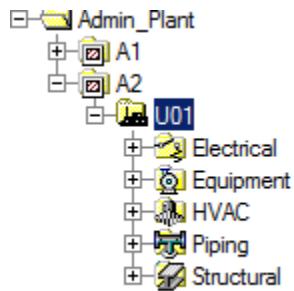
9. Click **OK** on Define Workspace form.
10. Go to menu **Tasks > Systems and Specifications**



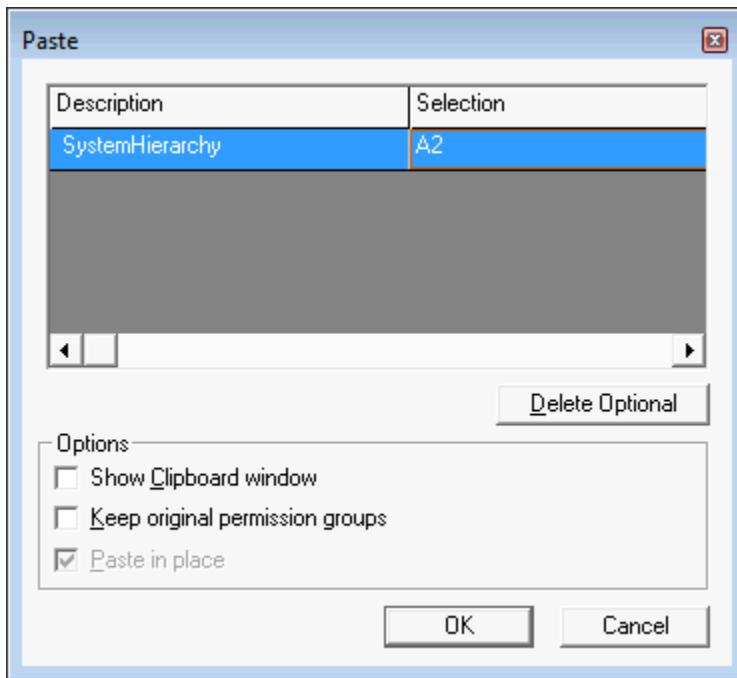
11. Right click on **Admin_Plant** root level and select **New System >New Area System**
12. Name the new area **A1**
13. Right click **Admin_Plant** root level and select **New System > New Area System**
14. Name the new area **A2**
15. Right click on area **A2** and select **New System > New Unit System** to create unit **U01**



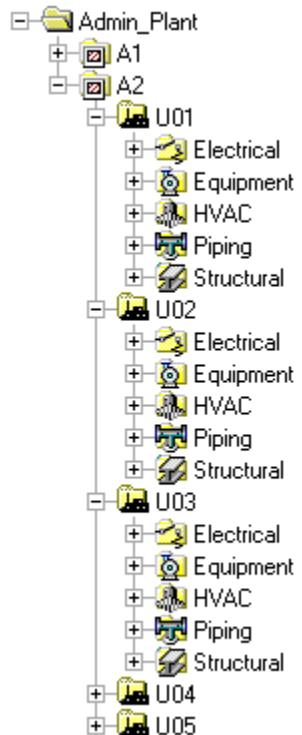
16. Right click on unit **U01** and select **New System > New Electrical System** click **OK** on the form.
Use properties page dialog to rename the new system to **Electrical**
17. Likewise create the following **systems** in U01:



18. Right click on **Structural** system and select **Properties**
19. On the **Configuration** tab set **Permission Group = Structure**, click **OK**
20. Assign **Piping** system to its own permission group.
21. Right click on unit **U01** and select **Select Nested**
22. From the main menu select **Edit > Copy** (not from right click)
23. Right click on **A2** and select **Paste**. Ensure Paste dialog shows A2 under Selection



24. Select option **Keep original permission groups** and click **OK**
25. Rename the new unit from **U01(2)** to **U02**.
26. Repeat the unit Paste and rename procedure to create **units U03 – U05**



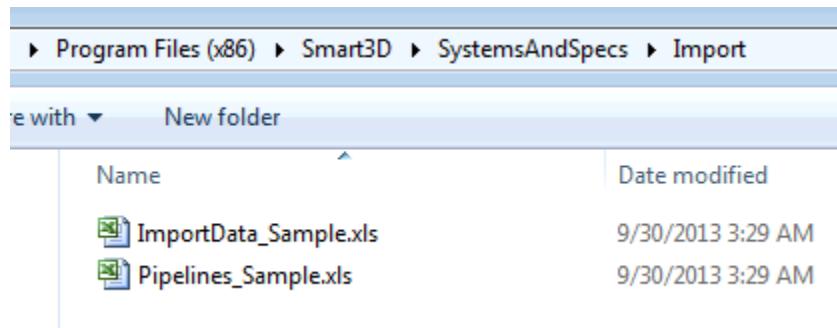
LAB 12: Import Creation of System Hierarchy

Objectives

After completing this lab, you will be able to:

- Create a systems hierarchy in a new plant using an Excel spreadsheet.
1. Copy the sample system import workbook **ImportData_Sample.xls** from the delivery location to a different folder.

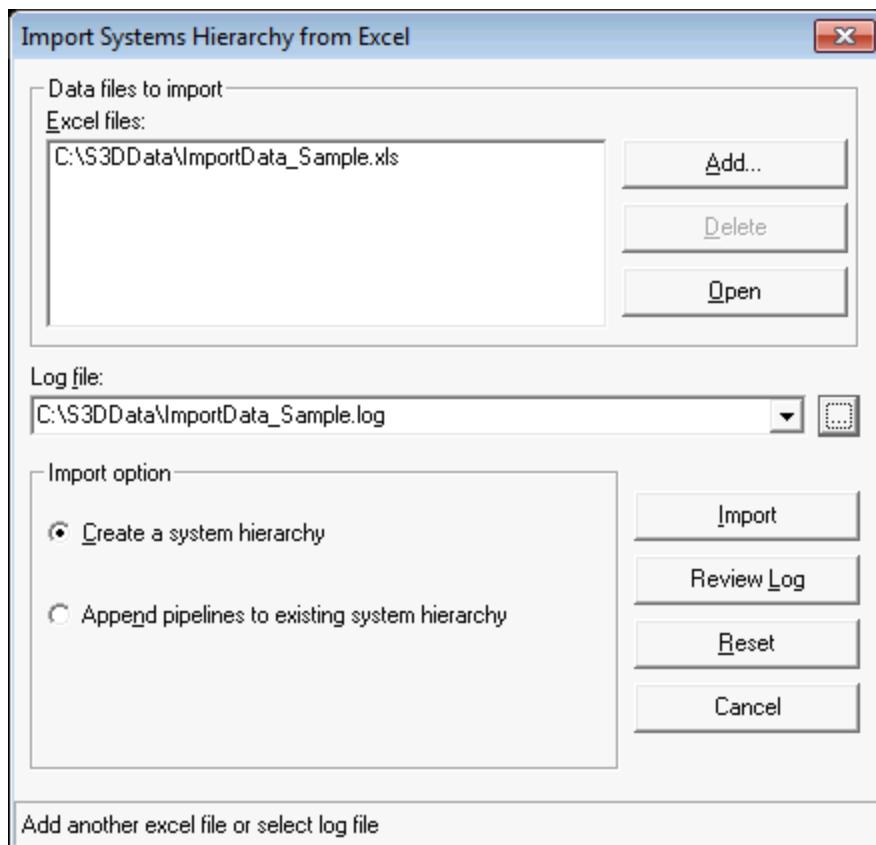
Note: The software delivers two sample Excel files, ImportData_Sample.xls and Pipelines_Sample.xls to [Product Directory]\SystemsAndSpecs\Import as part of default client setup.



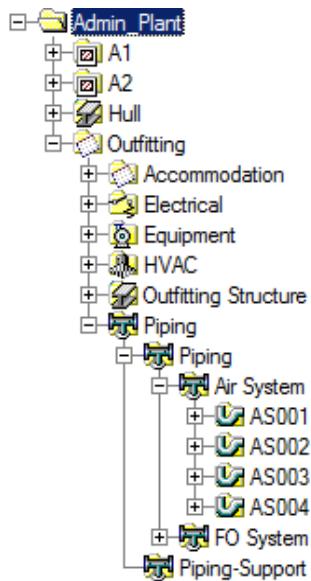
2. **Open** workbook **ImportData_Sample.xls** then go to worksheet **SYSTEM_HIERARCHY**
3. Edit system names in this workbook to values that might better meet needs at your company. At a minimum, delete systems that may not apply to your industry.
4. In Air System worksheet note the pipeline systems already defined (AS001, AS002...)
5. **Save** the workbook and **close** Excel

Note: This is not a Bulkload workbook, so there's no need for A/M/D modifier on column A.

6. Open **Smart 3D** if not already open.
7. Define a workspace and select **All** filter created in a previous lab practice.
8. Go to **Systems and Specifications** task and select **Tools > Import Systems Hierarchy from Excel**



9. Click **Add** and locate the folder where **ImportData_Sample.xls** workbook was saved.
10. Accept default option **Create a system hierarchy** option and proceed to click **Import**
11. Close Import dialog box when command has finished (see status bar of the form).
12. Review system hierarchy. The new systems should appear in their assigned position. Piping system named Air System should be populated with 4 pipelines ready to use:



13. Use system properties dialog to review system ownership (permission group) and correct as needed. This ownership was defined by the active permission group in use during import command execution (drop down in the top left corner).

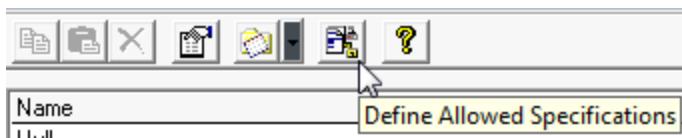
Note: The example hierarchy included in ImportData_Sample.xls workbook was created for a Marine type of project; Hull and Outfitting are marine terms, but this should not affect applicability with Smart 3D in Plant mode.

LAB 13: Assign Specifications to Systems

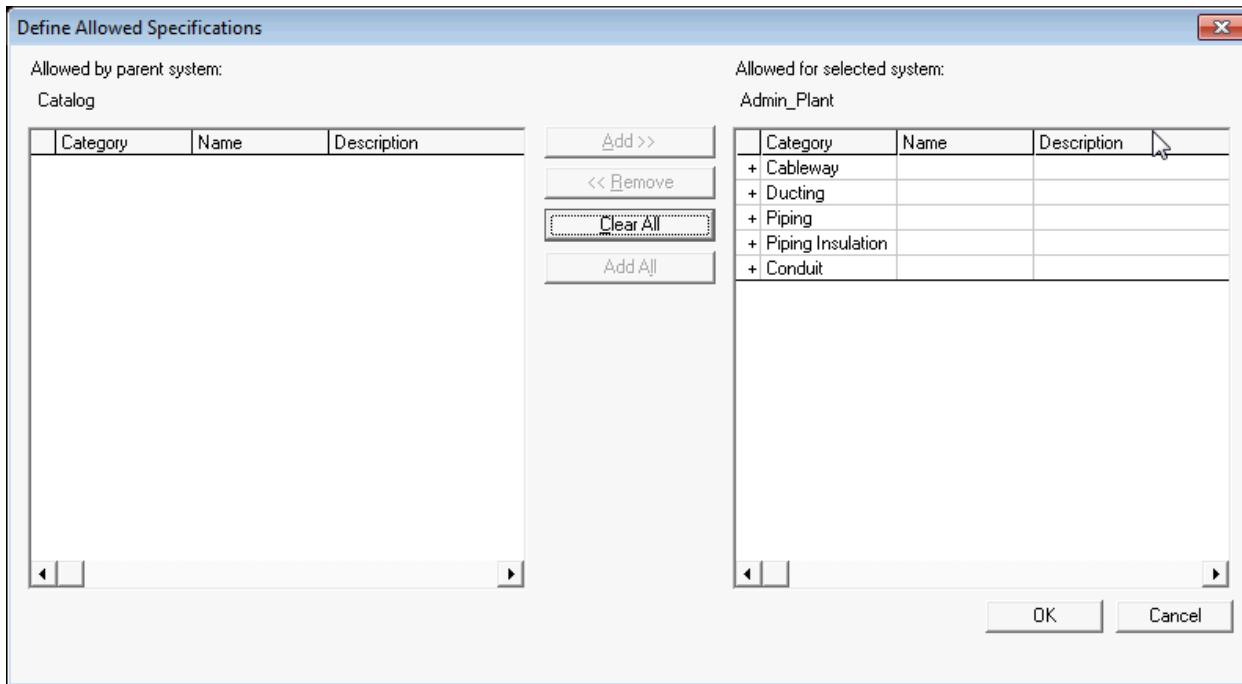
Objectives

After completing this lab, you will be able to:

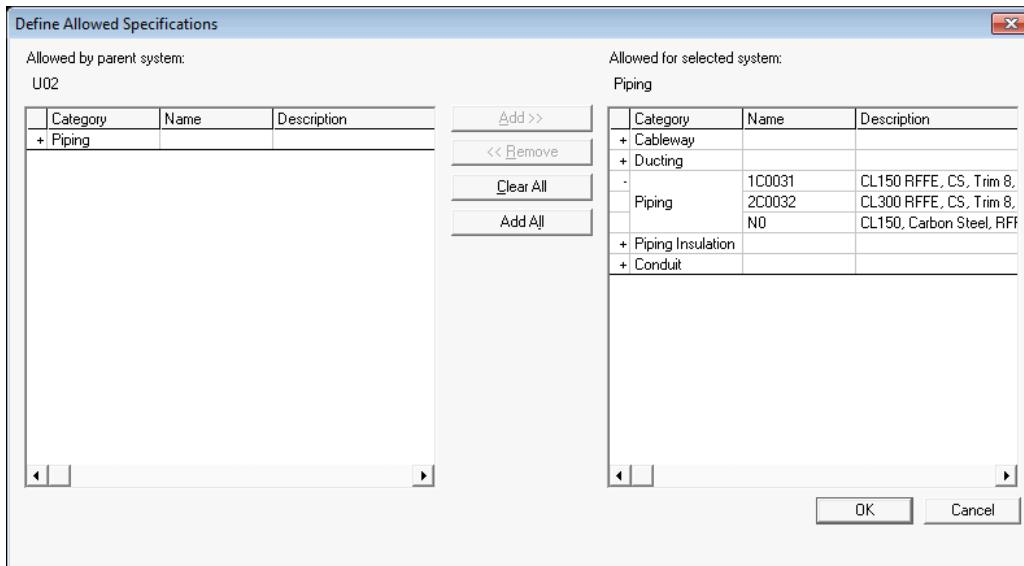
- Designate allowed specifications for multiple disciplines in the plant.
1. Open **Smart 3D** if not already open.
 2. Define a workspace and select the **All** filter created in a previous lab practice.
 3. Go to **Systems and Specifications** task
 4. Click on the root level of the plant, e.g. **Admin_Plant**
 5. Select **Define Allowed Specifications** button to the left of Help button (question mark)



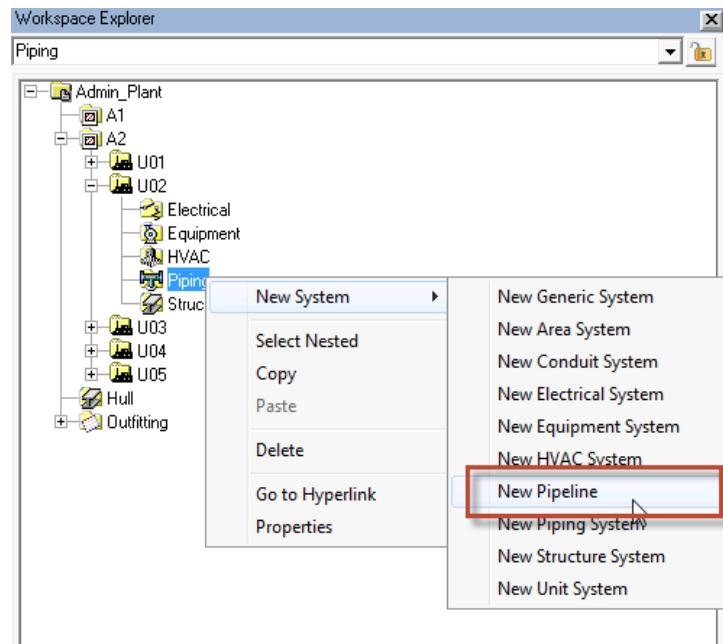
6. Allow all specifications/All disciplines at the root level and click **OK**



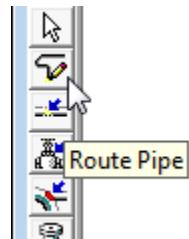
7. Expand **A2 > U02 >** and select the **Piping** system, use Define Allowed Specifications command to restrict (<<Remove) the use of piping specifications to only show N0, 1C0031 and 2C0032 for this piping system folder.



8. Go to unit **U01 > Piping** and use the same command to restrict (<<Remove) the use of piping specs to only show 1C0101, 1S3984 and 4C0033 for this piping system.
9. Perform this procedure on the **Electrical** system on **U03** and leave only Cws-0 and CB-S1-L6-12B Cableway specs.
10. Go to one of the Pipeline systems created by import from Excel (AS001, AS002, AS003, etc) and attempt to restrict the usage to piping specs 1C0031 and 2C0032, note what happens.
11. Switch to **Piping** task and set the **locate filter** to **ALL** (top left corner). Create a new **pipeline system** from the workspace explorer under **Piping** system of unit **U02** as shown in the figure below.

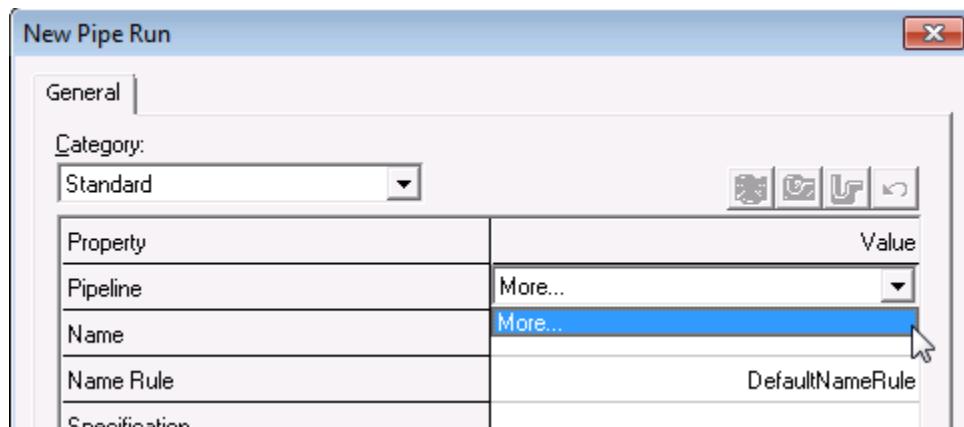


12. Start route pipe command from the task toolbar on the left and wait for the new pipe run form.

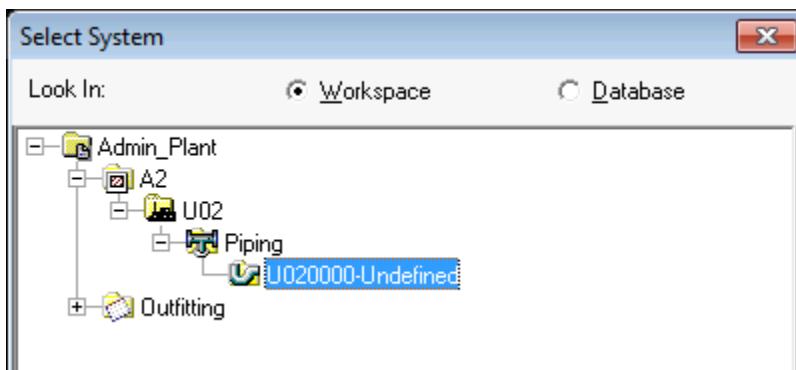


13. Click on any point in the screen, the **New Pipe Run** form will display.

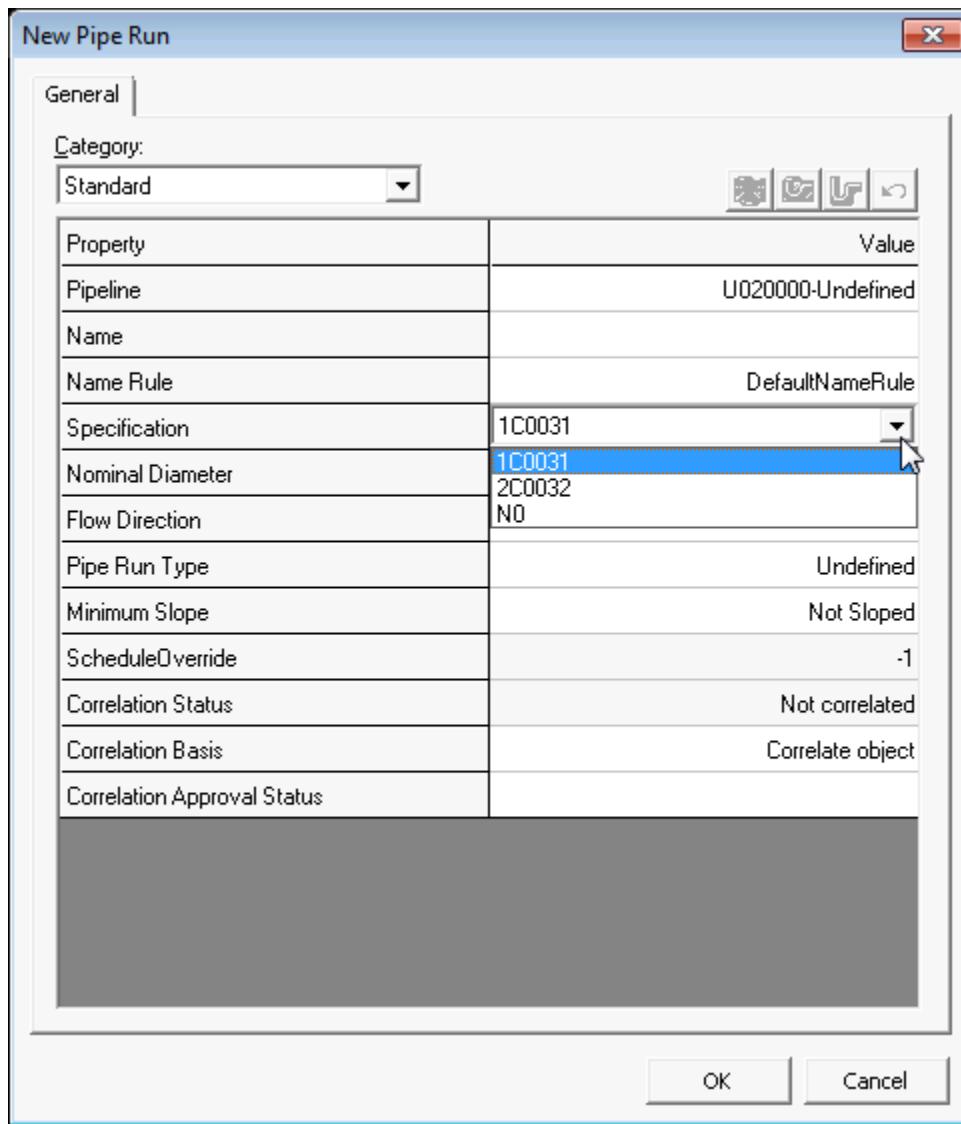
14. Click in the **Pipeline** field, it will turn into a drop down list, select **More**



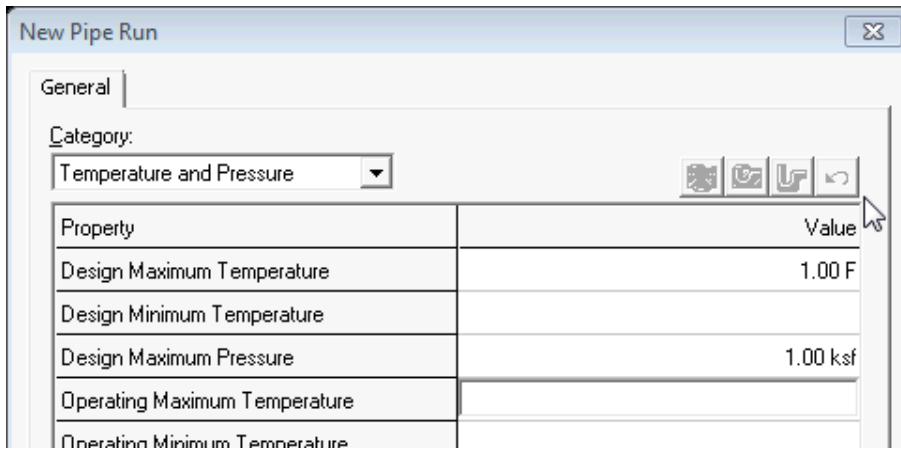
15. In the **Select System** dialog that opens, expand the hierarchy to locate and select the recently created Pipeline, it should be located under **Admin_Plant > A2 > U02 > Piping**



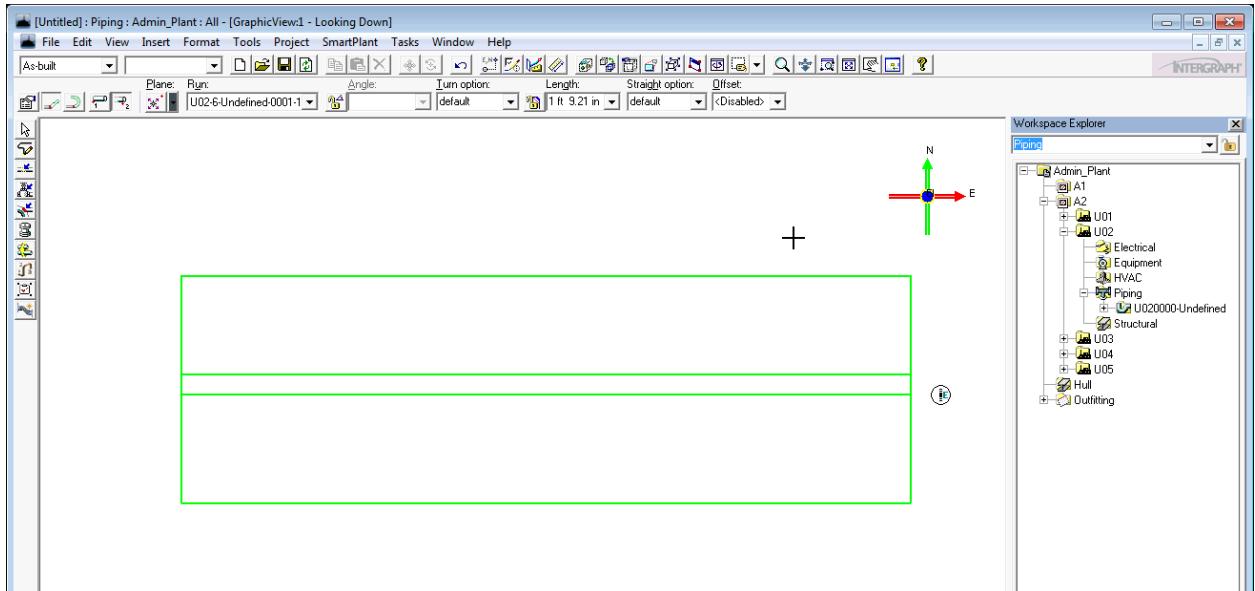
16. Click **OK**
17. Back in the **New Pipe Run** form, notice that you should only have available for use the three specifications previously allowed in the Systems and Specifications task.



18. To route the pipe, select specification **1C0031**, **6** in Nominal Diameter, switch to the **Temperature and Pressure** option in the Category drop down list and type value **1** for **Design Maximum Temperature** and **1** for **Design Maximum Pressure**; click **OK** in the form.



19. Wait for the preview of the pipe to display, then click a second time after it has been stretched over the screen when ready to place it.



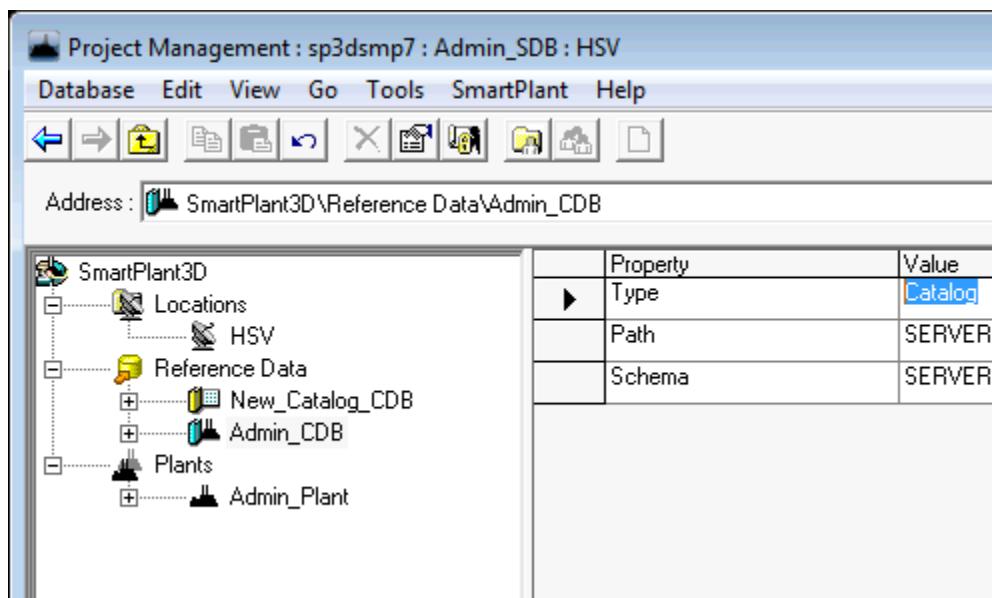
20. Right click terminates the command.

LAB 14: Restore as copy Training Plant

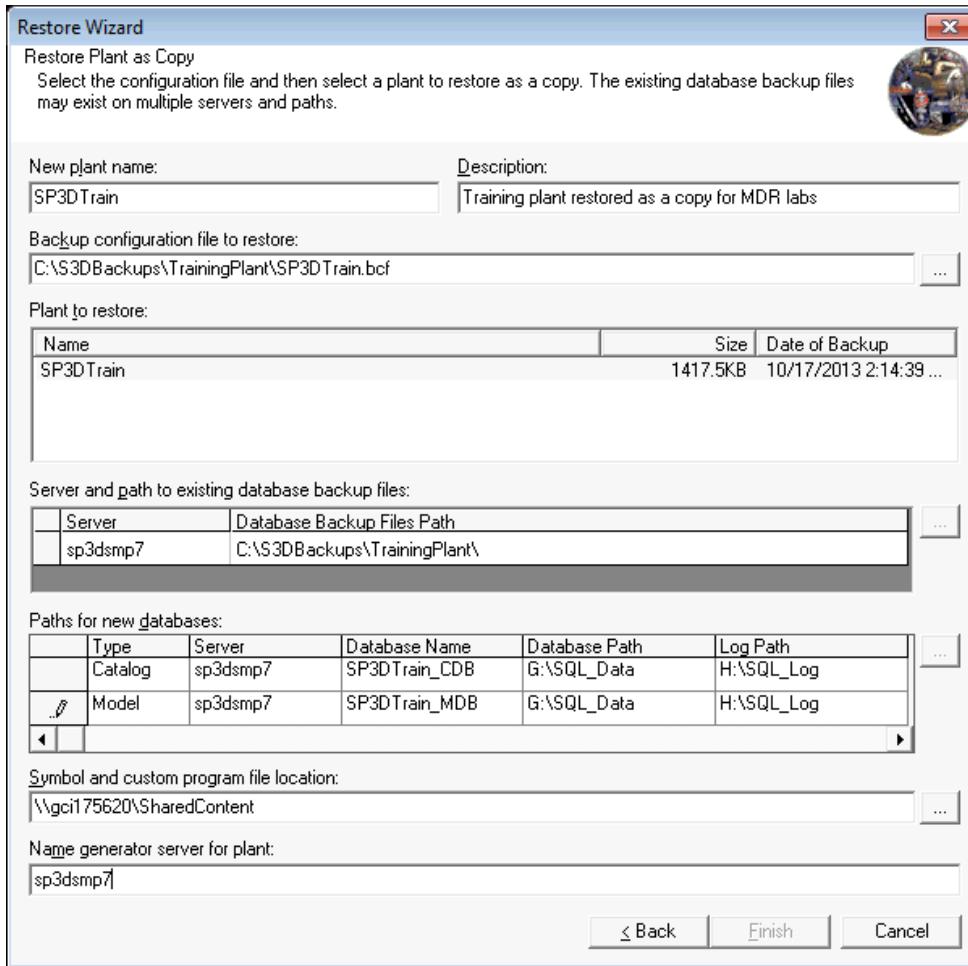
Objectives

After completing this lab, you will be able to:

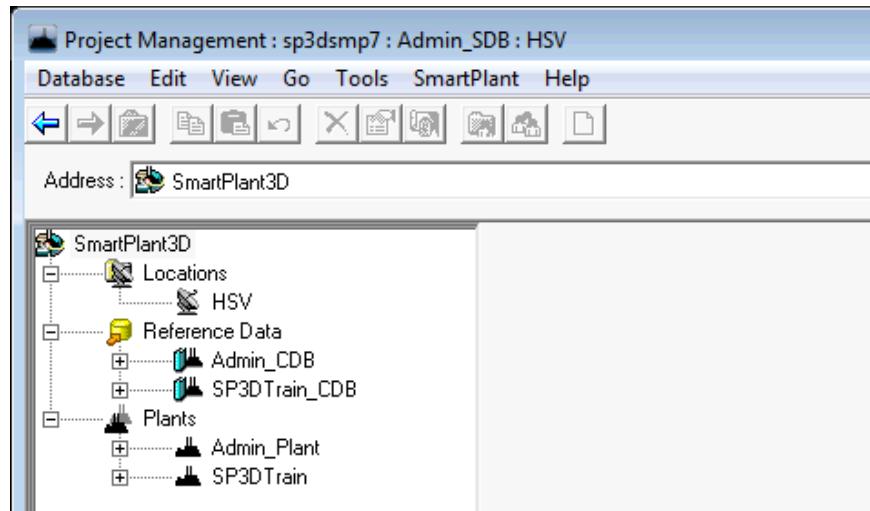
- Restore a copy of the training plant that will be used for Model Data Reuse practice.
1. Start Project Management.



2. Use **Restore plant as a Copy** command (restore option 3) that was covered earlier. Locate the training plant backup and fill the form to complete restoration process; when restoration finishes, regenerate reports databases.



3. When done, Project Management should resemble the following:



Note: You may delete catalog database named **New_Catalog_CDB** if desired as it will not be needed anymore.

LAB 15: Workspace Simplification by Role

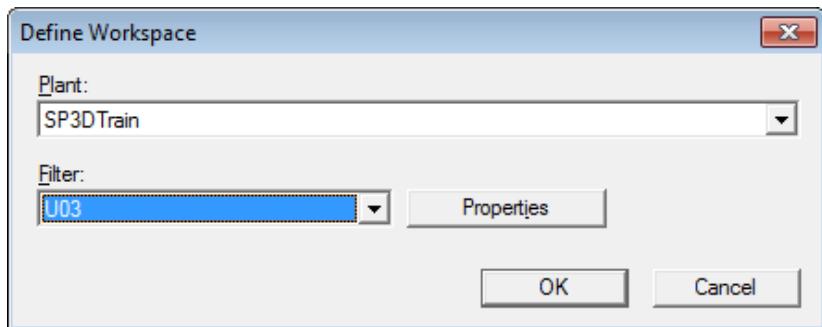
Objective

By the end of this session, you will be able to:

- Exclude certain object types based on a user's role

Overview

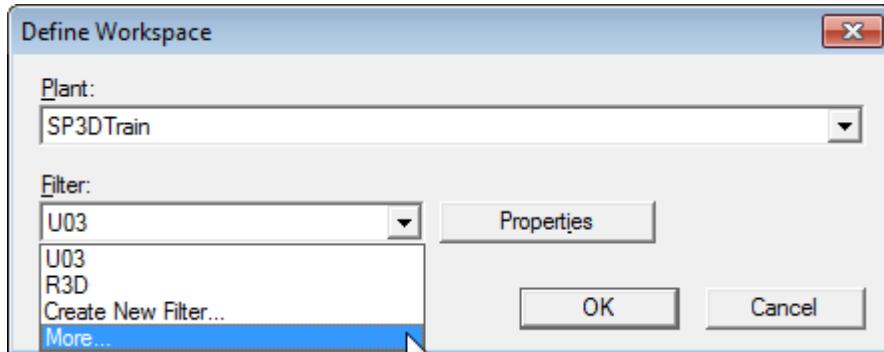
Define Workspace supports the use of user-defined roles to further refine the filtering of objects displayed in the workspace. In the model, this will help to simplify the workspace by excluding objects that are not related to your role.



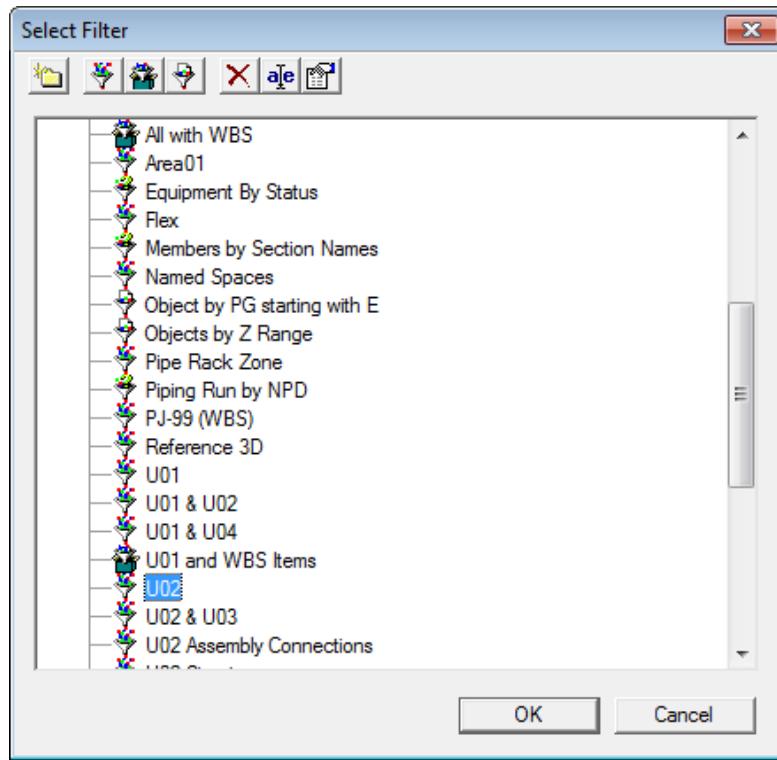
With the option of user-defined roles, you will see a new field labeled **Role**. This new option allows you to exclude objects that are not important to your task. For example, if I am a piping designer and I select the **Piping Designer (Aboveground)** role, it will exclude structural objects other than parts. If I'm a structural designer, selecting the **Structural Designer** role will exclude piping objects other than parts. By excluding these objects from the workspace, a user will see a noticeable reduction in the number of objects brought into the session and the time it takes to complete workspace definition time.

Steps

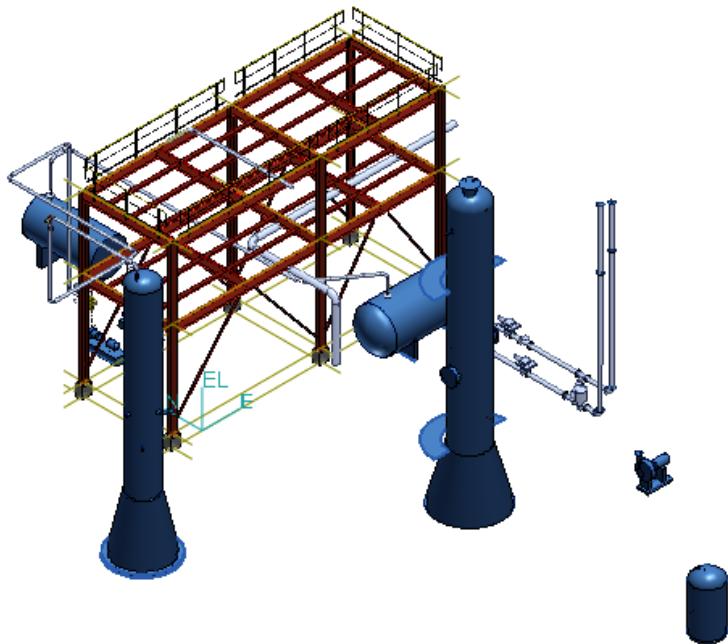
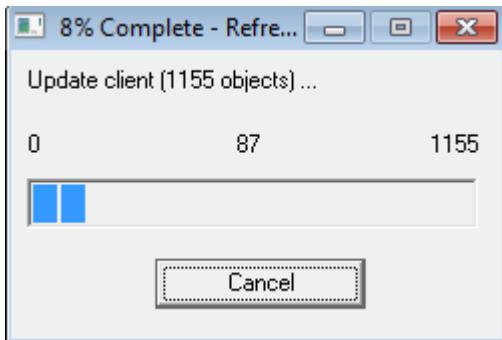
1. Open a **Smart 3D** session
2. Click the **File** menu and select the **Define Workspace...** command
3. In the **Filter**, select the **More...** option.



4. From the **Training Filters**, select **U02** and click **OK** on both dialog boxes to start the workspace definition.



5. This filter will add about 1155 objects to the workspace



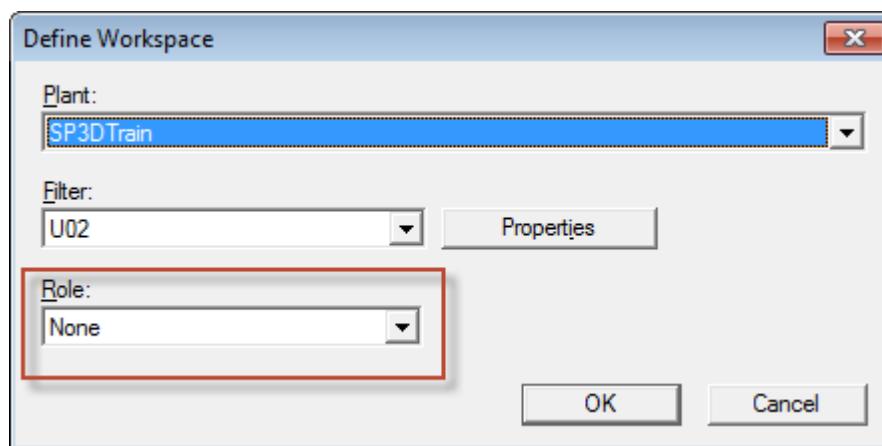
6. From a Windows Explorer window, go to **\server\SharedContent\Xml** directory.
7. Locate the file name **OptimizationForRole - Plant Sample.xml**.

	IgnoreChildlessValues.xml	9/30/2013 3:18 AM	XML Document	1 KB
	MapClassIdToLevelDisciplines.txt	9/30/2013 3:18 AM	Text Document	8 KB
	OptimizationForRole - Marine Sample.xml	9/30/2013 3:18 AM	XML Document	8 KB
	OptimizationForRole - Plant Sample.xml	9/30/2013 3:18 AM	XML Document	21 KB
	P3DCOMPONENT.xml	9/30/2013 3:18 AM	XML Document	12,367 KB
	PDSComponent.xml	9/30/2013 3:18 AM	XML Document	7,095 KB

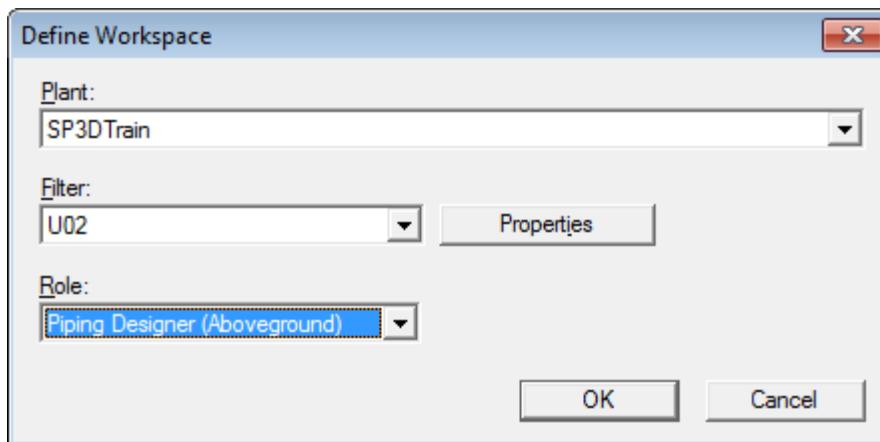
8. Rename to **OptimizationForRole.xml**

IgnoreChildlessValues.xml	9/30/2013 3:18 AM	XML Document	1 KB
MapClassIdToLevelDisciplines.txt	9/30/2013 3:18 AM	Text Document	8 KB
OptimizationForRole - Marine Sample.xml	9/30/2013 3:18 AM	XML Document	8 KB
OptimizationForRole.xml	9/30/2013 3:18 AM	XML Document	21 KB
P3DComponent.xml	9/30/2013 3:18 AM	XML Document	12,367 KB
PDSComponent.xml	9/30/2013 3:18 AM	XML Document	7,095 KB
SP3DBatchQueues.xml	9/30/2013 3:18 AM	XML Document	1 KB

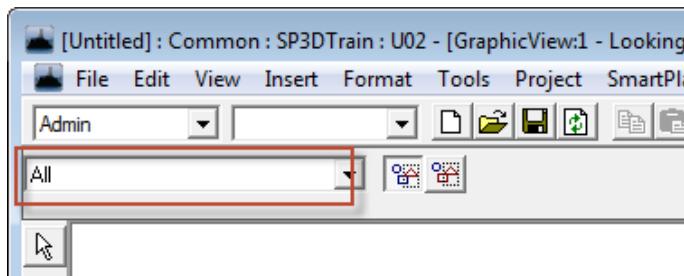
9. Within **Smart 3D**, go back to **File > Define Workspace...** Select filter **U02** from the Training Filters as before. Notice the ability to select a **role**.



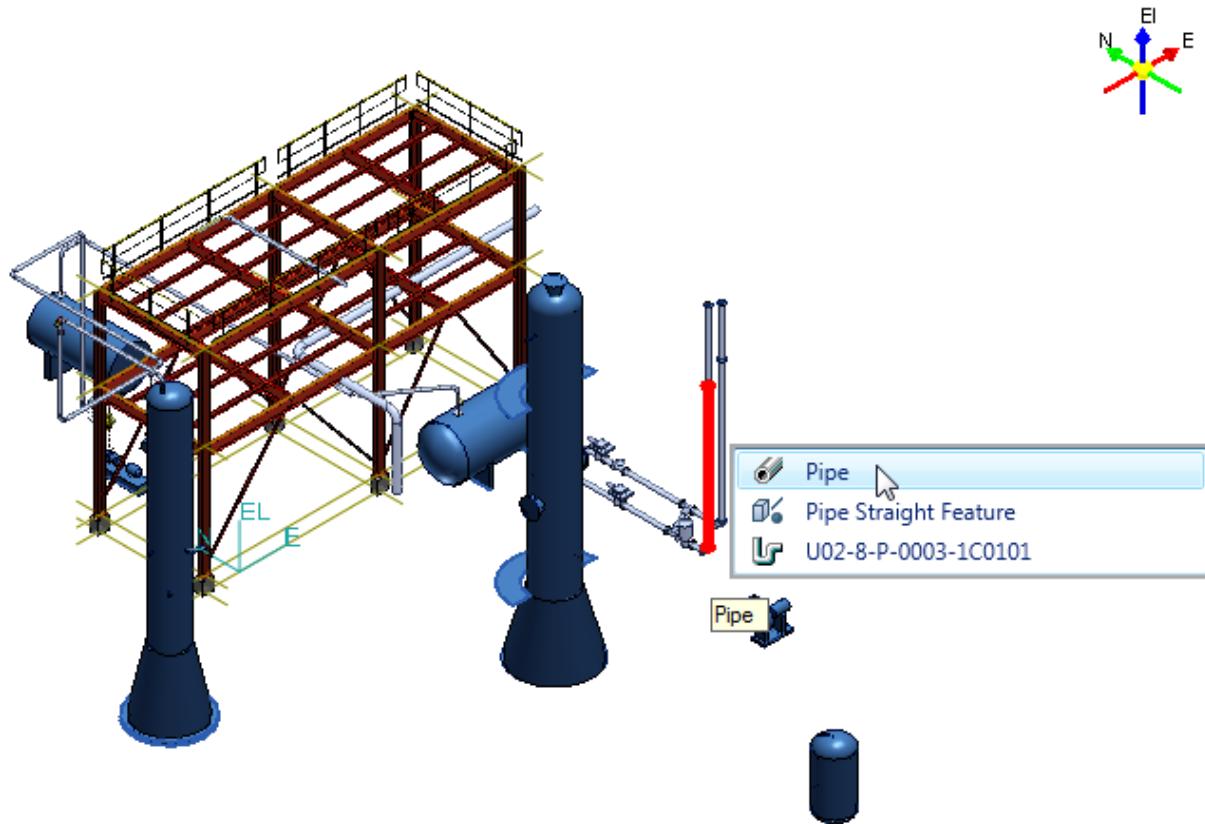
10. In the **Role** field, select **Piping Designer (Aboveground)** and click **OK**. The number of objects loaded into the workspace goes down by about 491.



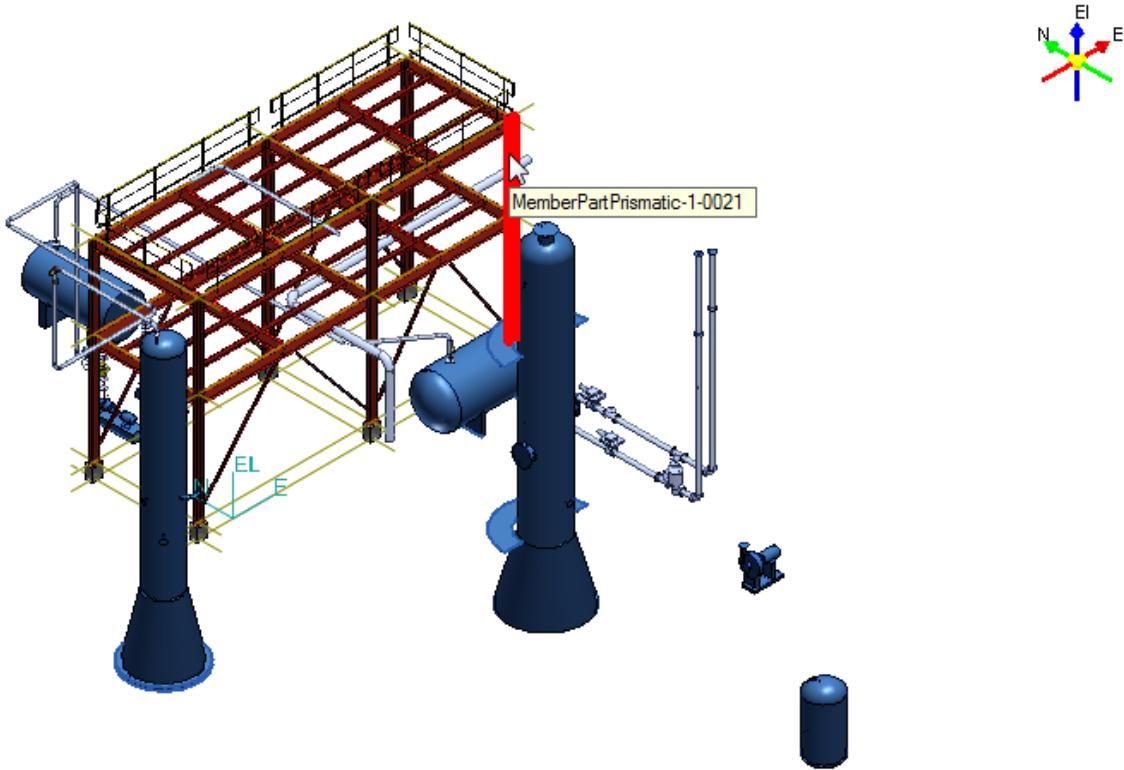
11. Set the **Locate Filter** to All.



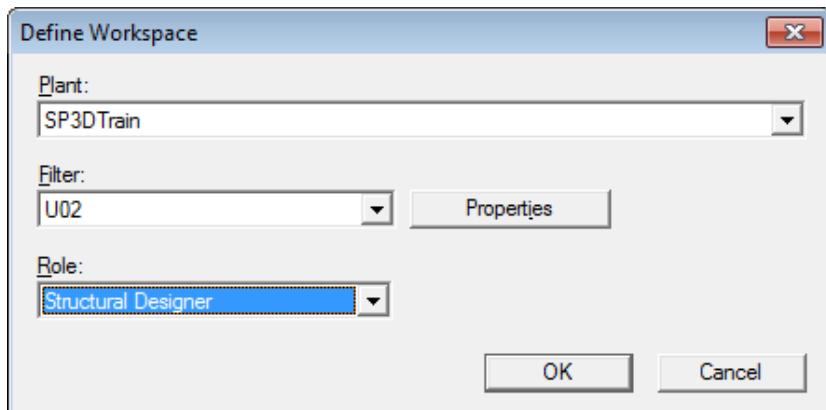
12. **Hover** your mouse over a piping object and wait for the quick pick to appear. Notice that different piping objects, such as parts, features, runs, etc are available for selection.



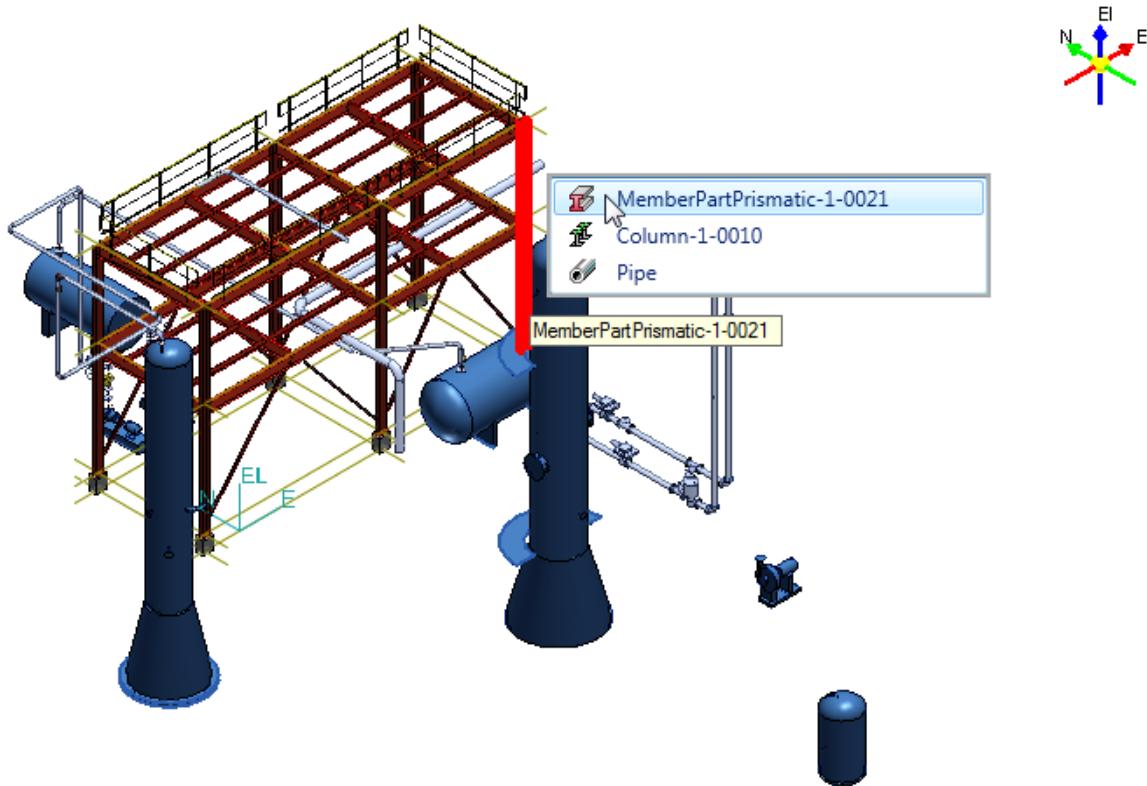
13. By selecting the **Piping Designer (Aboveground)**, you will not see a quick pick for certain objects such as structure. You can verify this by hovering your mouse over a structure member and notice that the only object available is the member part.



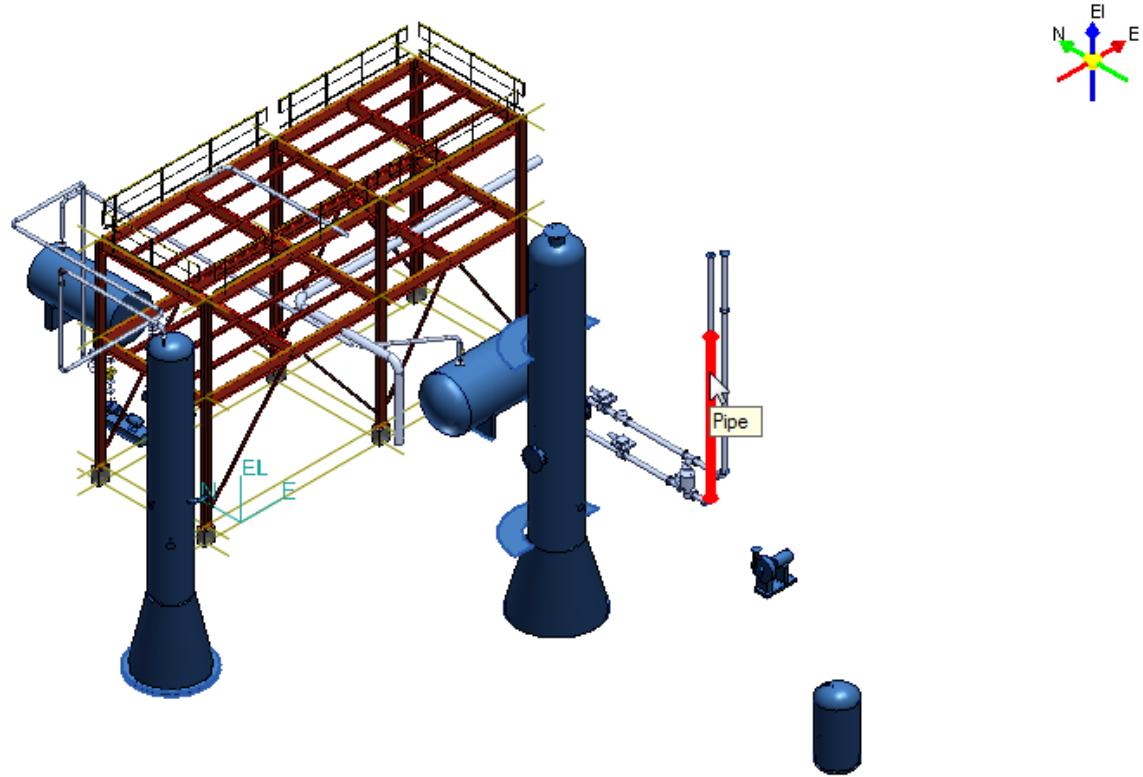
14. Go back to **File > Define Workspace...** Change **role** to **Structural Designer** to load the objects into the workspace. There are about 645 objects that are loaded.



15. **Hover** the mouse over a structural beam and notice the **Quick Pick** list for that structural object is available.



16. Select a piping feature and notice that the only object available is a piping part



17. Exit Smart 3D.

LAB 16: Set Default Color Configuration for Fluid Code

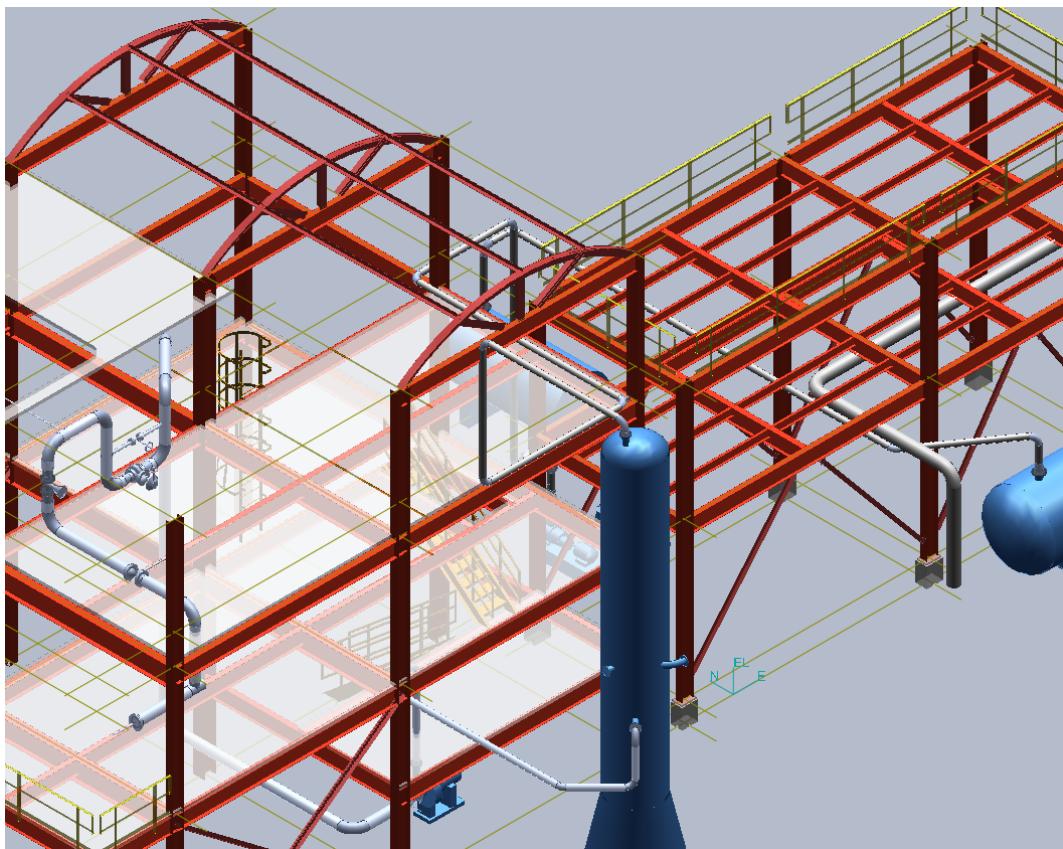
Objective:

By the end of the session you will be able to:

- Import Default Color configuration
- Set Default Color Configuration for Piping Objects based on Fluid Code
- Export Default Color Configuration

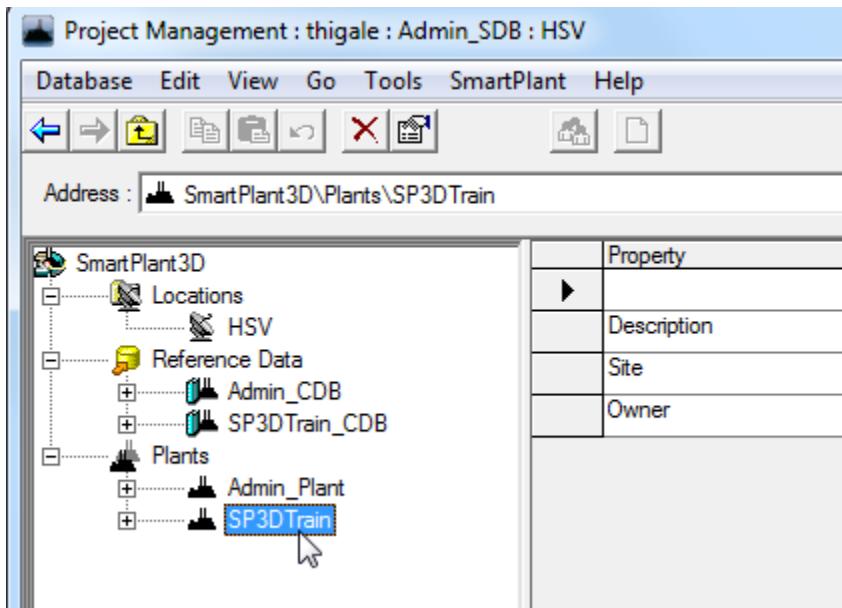
Import Default Color Settings:

1. Open a new **Smart 3D** session and define your workspace with objects from **Plant Filters > Training Filters > U02 & U03**.
2. Check the color of Piping objects.

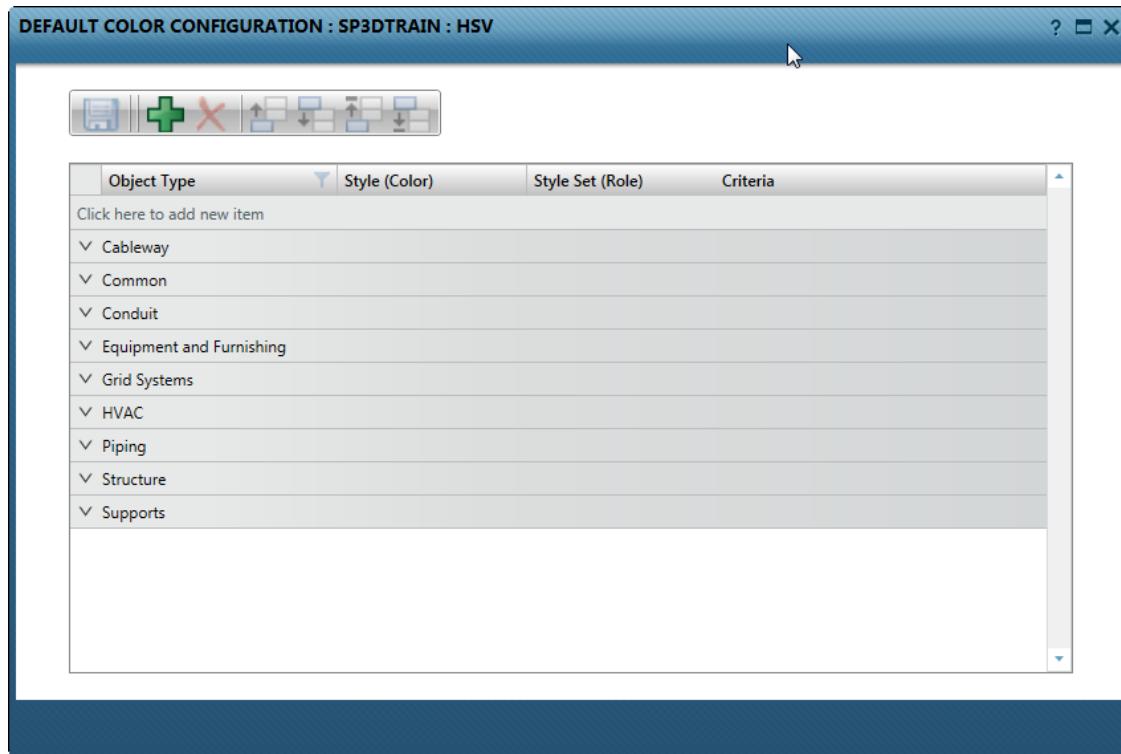


3. Open **Project Management**

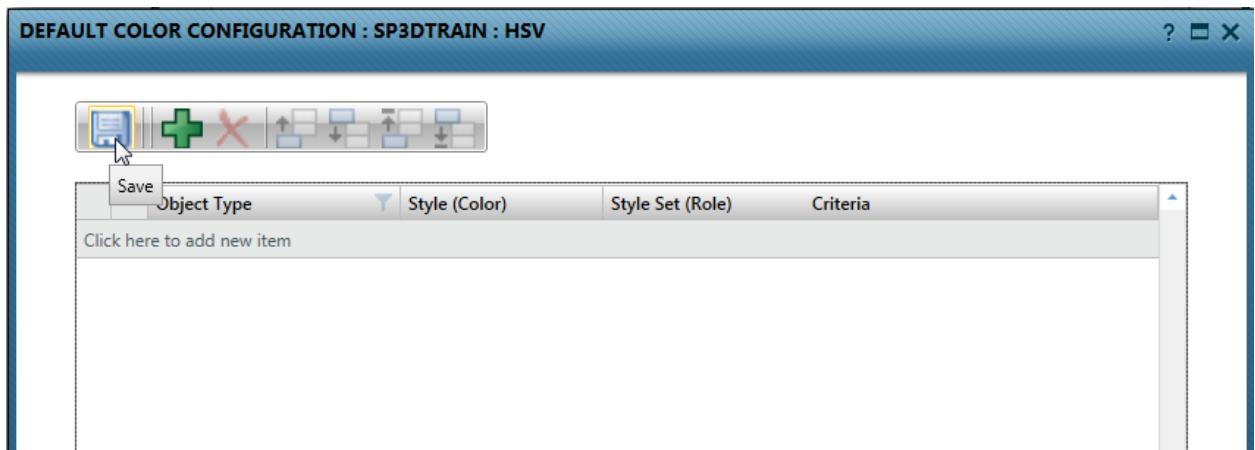
4. Select the root of **SP3DTrain** from Plants hierarchy



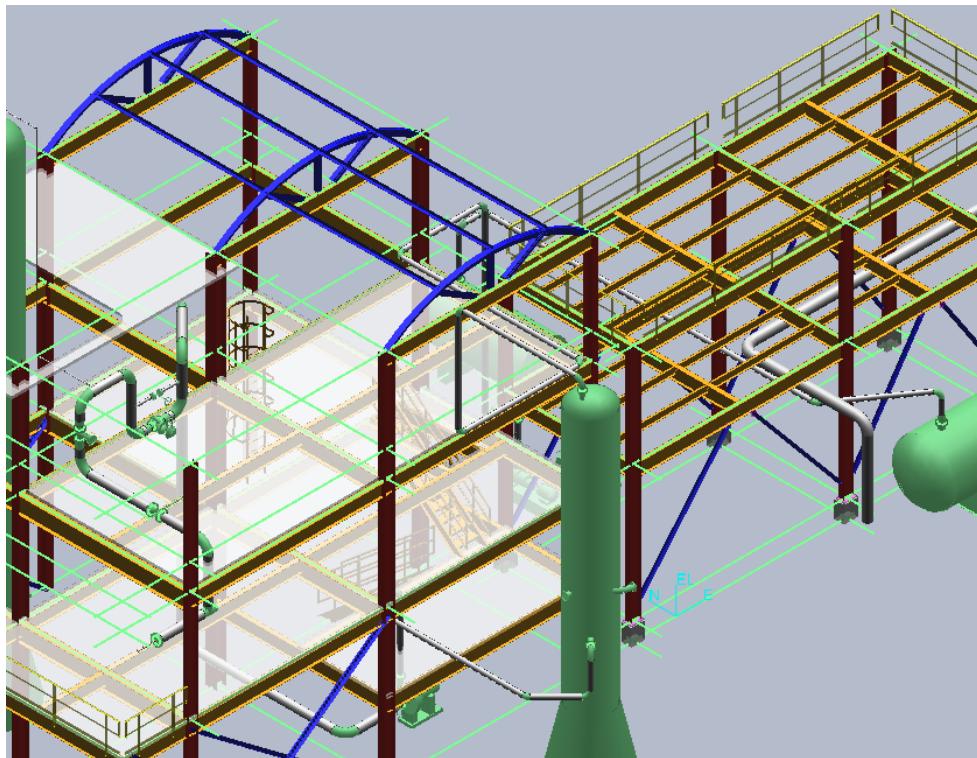
5. Go to **Tools > Project Settings > Configure Default Colors**



6. In **DEFAULT COLOR CONFIGURATION** window click on the first row and press **Ctrl+A** to select all rows.
7. Click on **Delete** command to delete all the colors used on SP3DTrain plant.
8. Click on **Save** command to save changes done on the plant and close window.

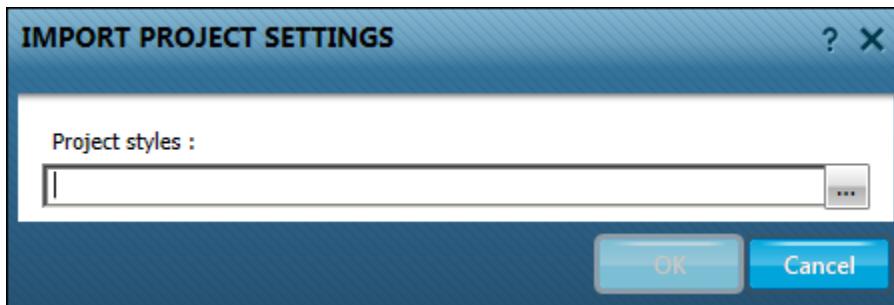


9. Open a new **Smart 3D** session and define your workspace with objects from **Plant Filters > Training Filters > U02 & U03**.
10. Check the color represented by all objects.



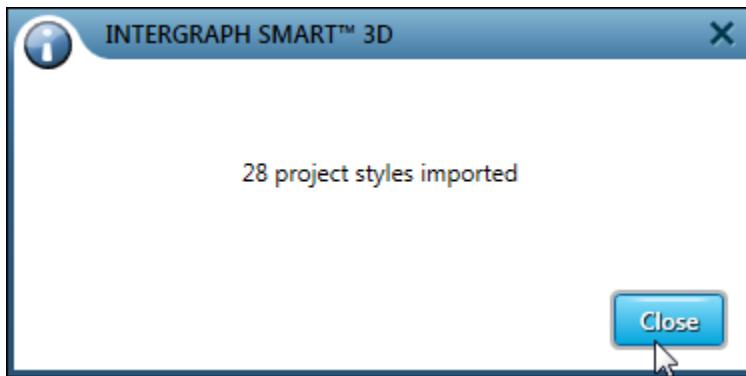
11. Open **Project Management** if already not opened.

12. Select **SP3DTrain** plant and Go to **Tools > Project Settings > Import...**

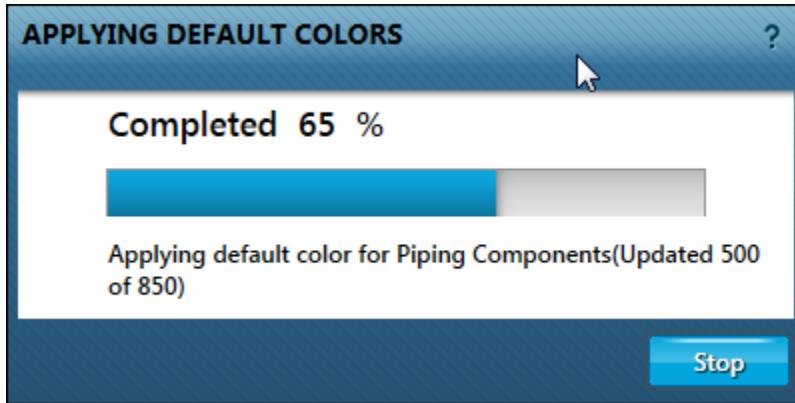


13. Select DefaultSymbologyRules_Plant.xml file using Browse on **IMPORT PROJECT SETTINGS** dialog and click **OK**

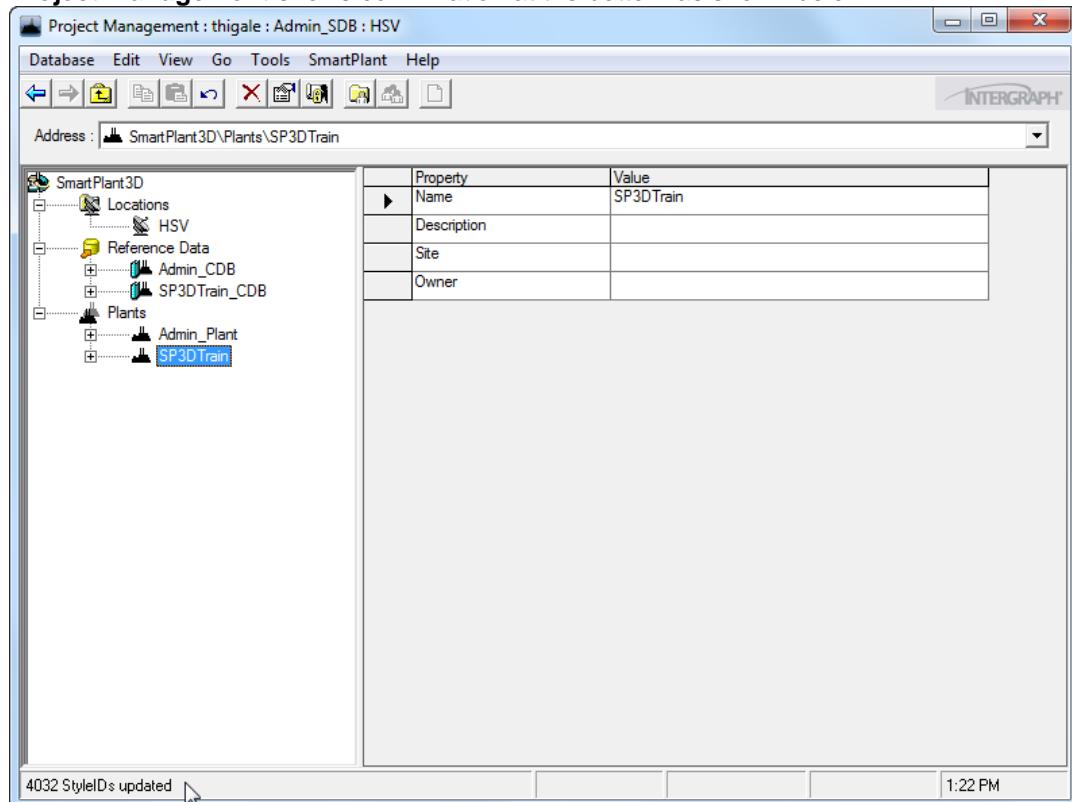
Note: The command is expecting the text and XML file to be present at the same path.
Review imported rules under the Configure Default Colors section. Default Colors XML and TXT file are delivered in SharedContent folder.
(\\ServerName\\SharedContent\\Xml\\DefaultSymbologyRules_Plant.XML)



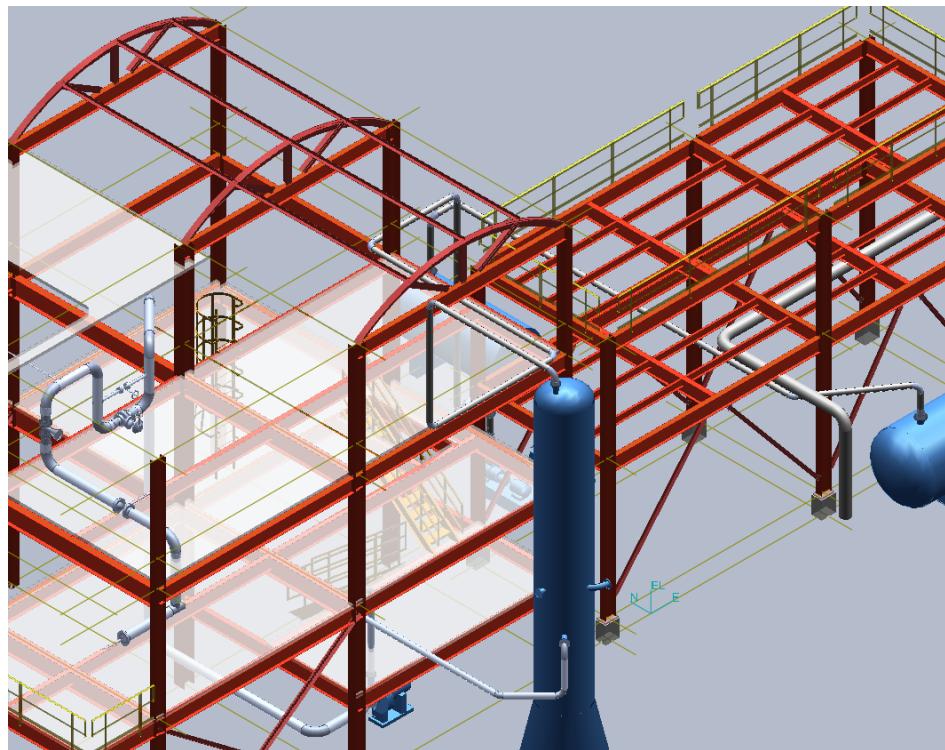
14. Select SP3DTrain plant root and go to **Tools > Project Settings > Apply Default Colors**



15. Project Management shows confirmation at the bottom as shown below:

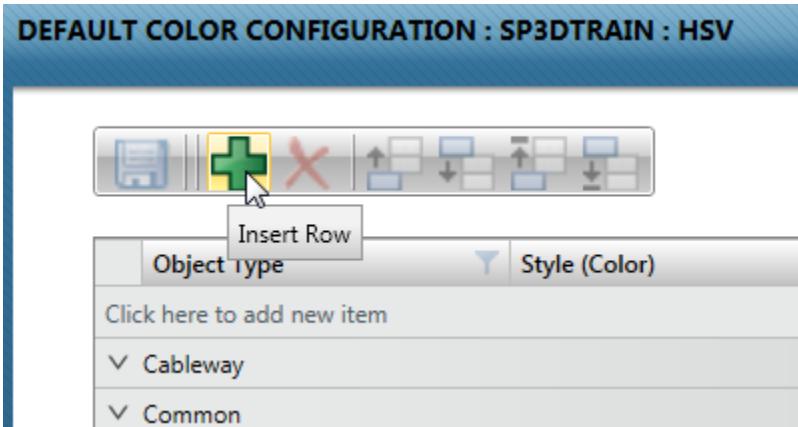


16. Open a new Smart 3D session and define your workspace with objects from **Plant Filters > Training Filters > U02 & U03**. Check the color changes on objects after Import.

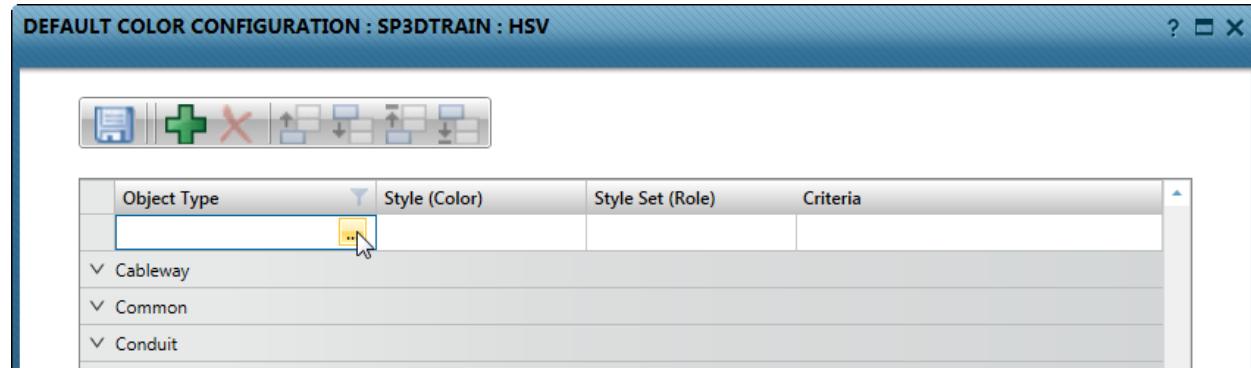


Set Default Color for Fluid Code:

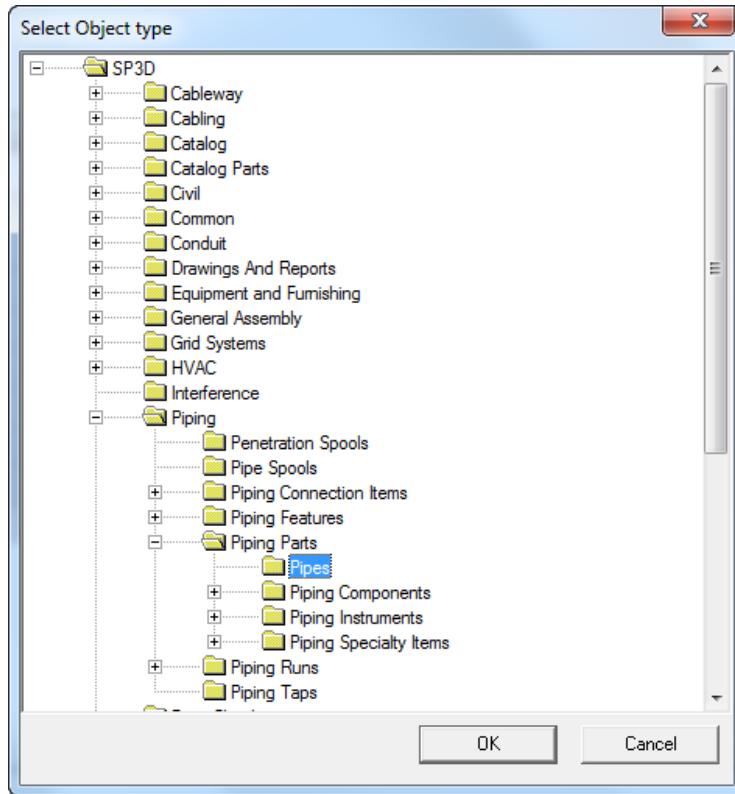
1. In **DEFAULT COLOR CONFIGURATION** window, click on **Insert Row** command to add new rule.



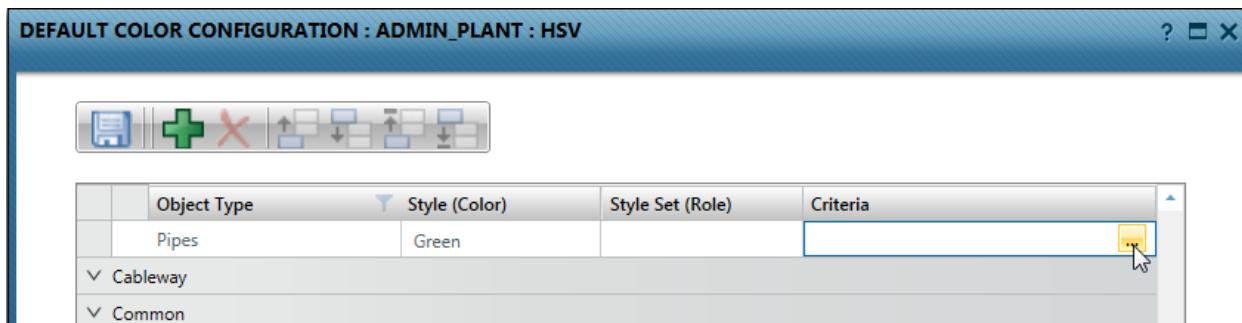
2. Click the **Object Type** field to obtain access to the object type hierarchy.



3. Select **Piping > Piping Parts > Pipes** as object type.

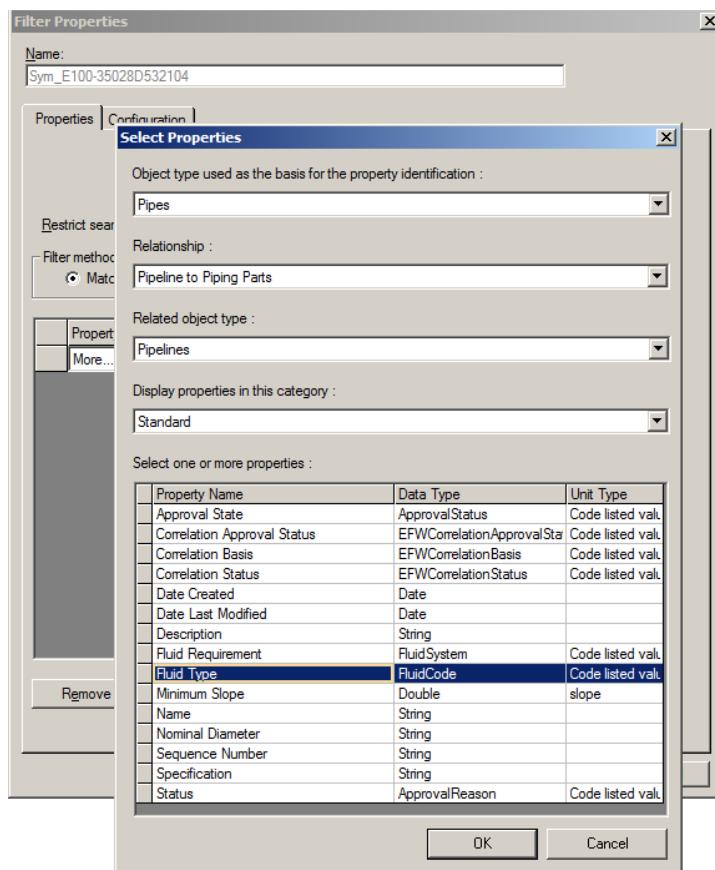


4. Select **Green** color using Drop down list under **Style (Color)**
5. Click on the **Criteria** field. Criteria allows the user to define a filter to select certain objects. In this case we will use the 'Fluid Code' as the criteria. In the next few steps you will create a filter based on the Fluid Code.

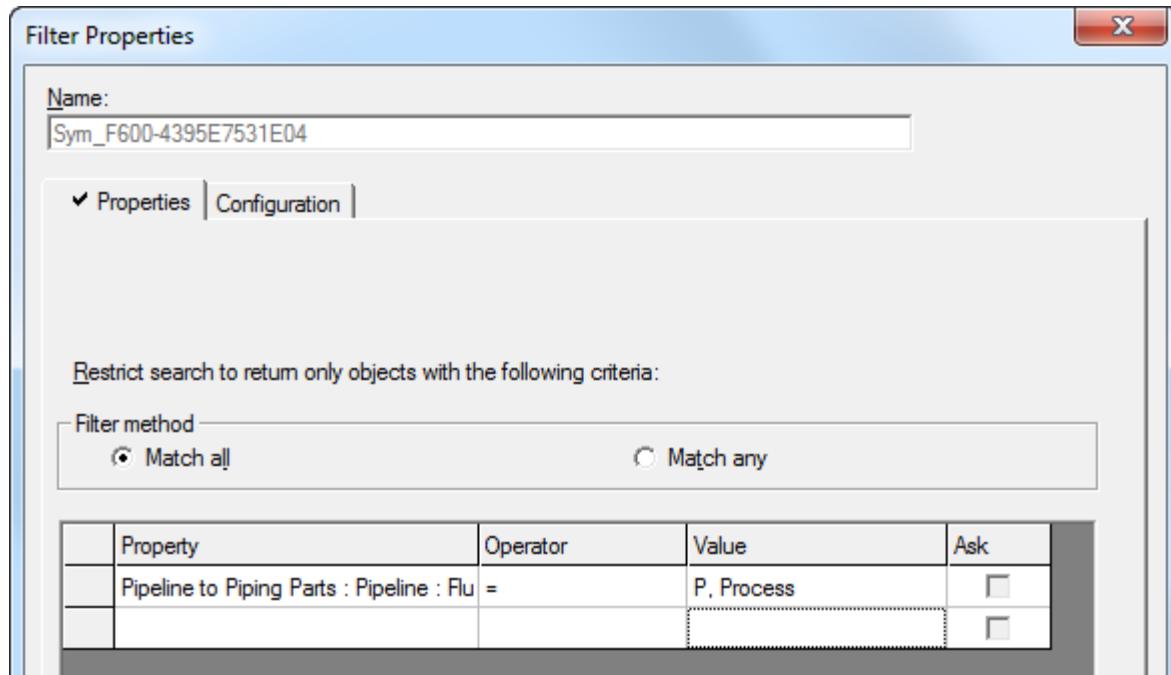


6. Use the following criteria as guidance to define the property filter:

- Object Type used as the basis for property identification = **Piping > Piping Parts > Pipes**
- Relationship = **Pipeline to Piping Parts**
- Related object type = **Systems > Pipelines**
- Display properties in this category = **Standard**
- Fluid Type**



7. Click **OK**, select the **=** operator and **P, Process** as the value, click **OK**



- ## 8. **Save** the changes in the **Default Color Configuration** window



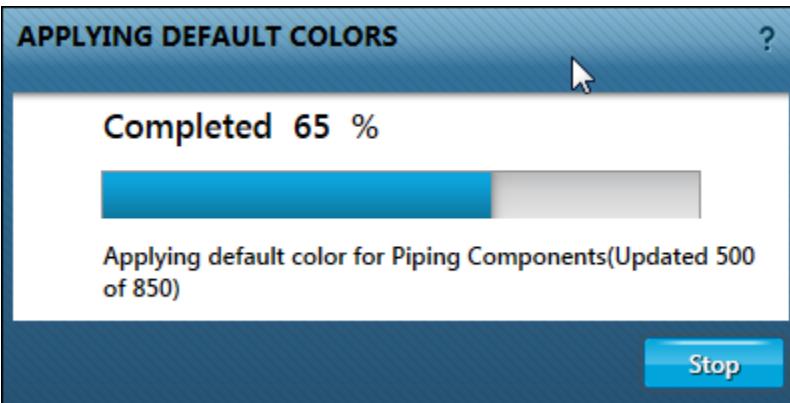
9. To see the new rule added in the proper section Re-open **DEFAULT COLOR CONFIGURATION** window selecting **Tools > Project Settings > Configure Default Colors** on the root level of **SP3DTrain** plant.
 10. Expand Piping section and observe that there are two rules for Pipes.

+ Piping Components	CLR_Piping_Component:	Default
+ Piping Instruments	CLR_Piping_Instruments	Default
+ Piping Specialty Items	CLR_Piping_Component:	Default
+ Pipes	CLR_Pipes	Default
+ Piping Welds	CLR_Piping_Welds	Default
+ Piping Clamps	CLR_Piping_Component:	Default
+ Pipes	Green	Default
		FluidCode = P;

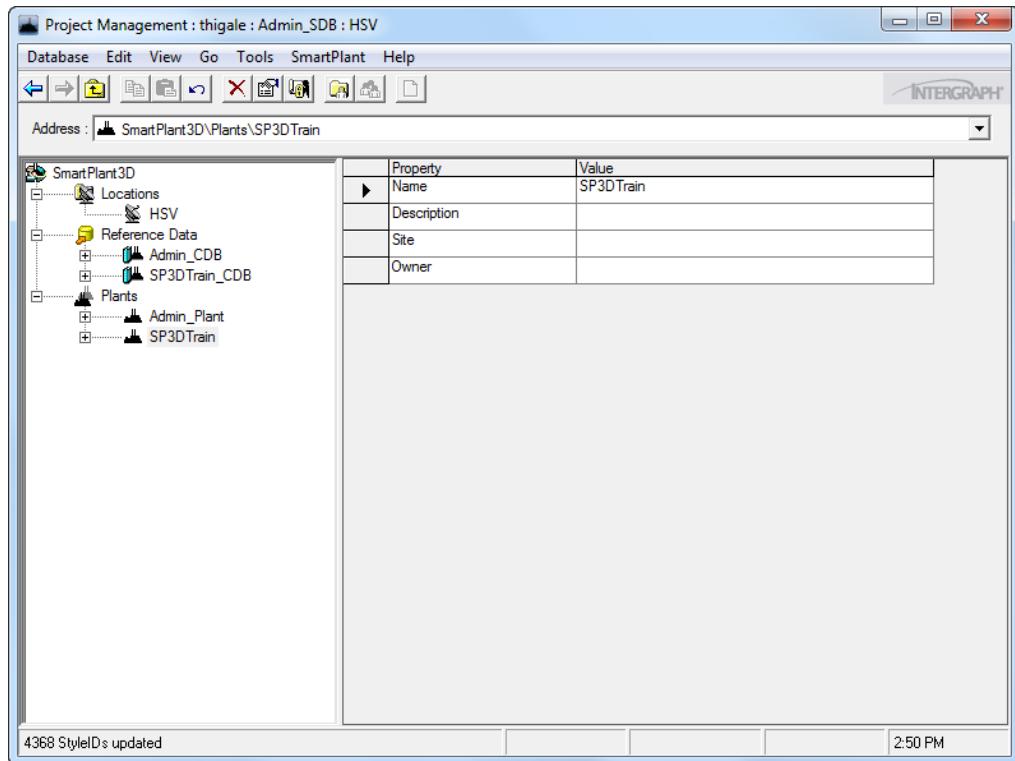
11. Highlight new rule created for **FluidCode=P;**
12. Click on **Move up** command until new rule moves one row up to the Default Pipes rule and click on **Save** command to save changes.

+ Piping Components	CLR_Piping_Component:	Default
+ Piping Instruments	CLR_Piping_Instruments	Default
+ Piping Specialty Items	CLR_Piping_Component:	Default
+ Pipes	Green	Default
+ Pipes	CLR_Pipes	Default
+ Piping Welds	CLR_Piping_Welds	Default
+ Piping Clamps	CLR_Piping_Component:	Default

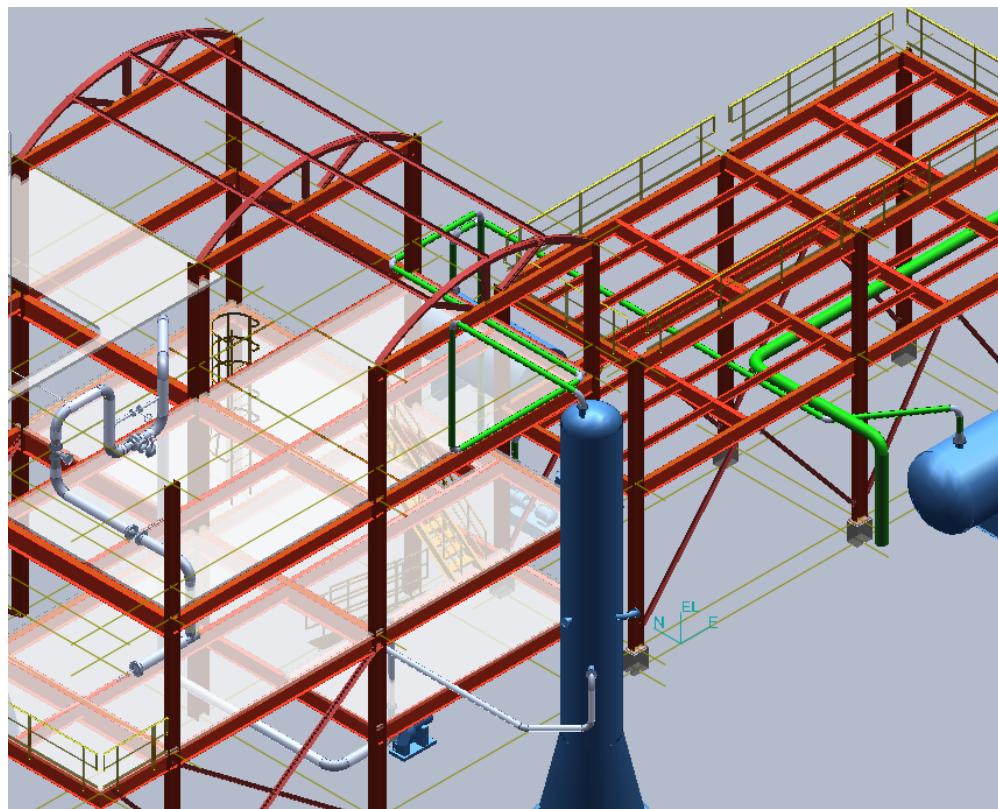
13. Select SP3DTrain plant root and go to **Tools > Project Settings > Apply Default Colors**



14. **Project Management** shows confirmation at the bottom as shown below:

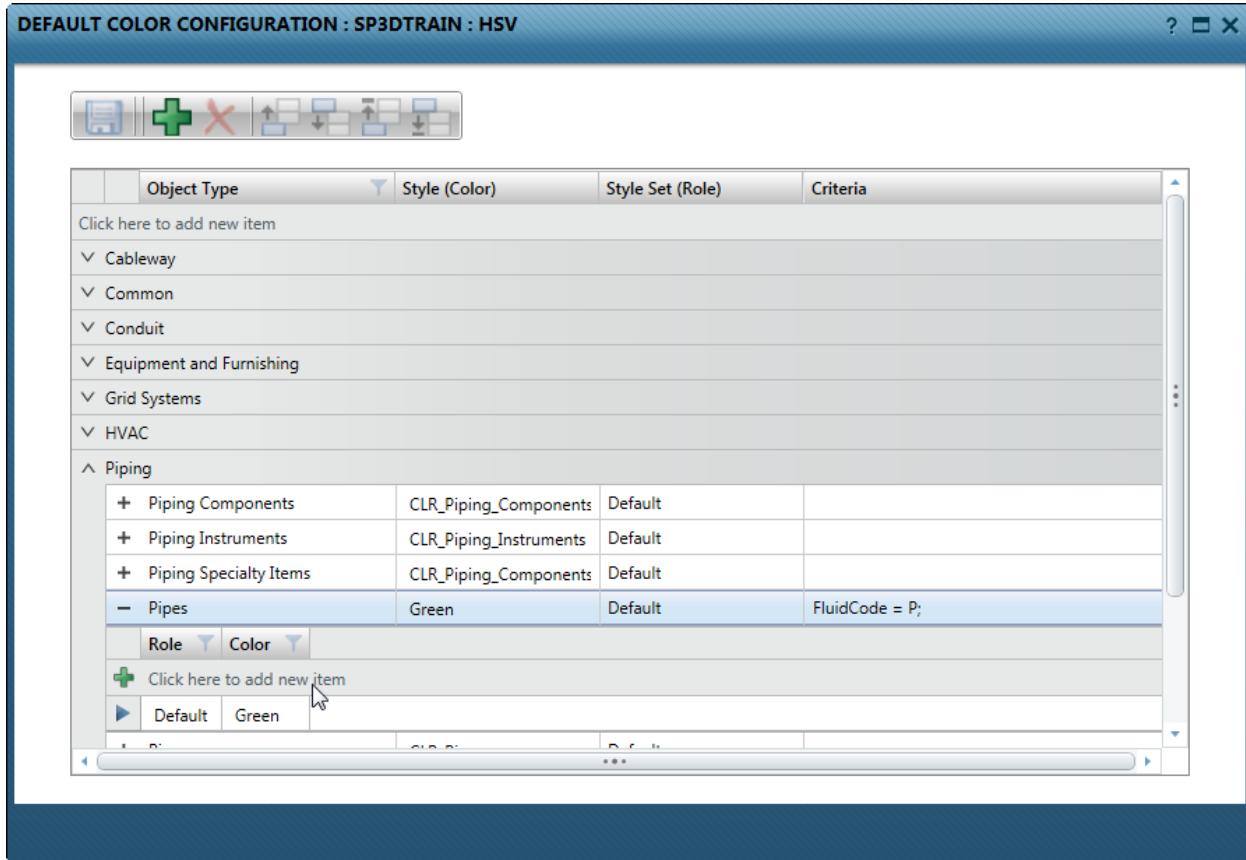


15. Open a new **Smart 3D** session and define your workspace with objects from **Plant Filters > Training Filters > U02 & U03**. Check the color they are represented with.



Set Default Color based on specific Role:

1. Open **Project Management**
2. Go to **Tools > Project Settings > Configure Default Colors**
3. Expand the **Piping** discipline and expand the **Pipes** rule created in earlier section.



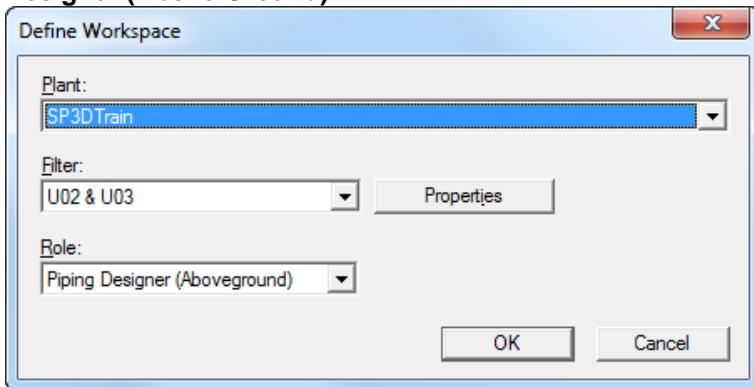
4. Select the option **Click here to add new item**
5. From the dropdown list, choose **Piping (aboveground) Role** and color **Yellow**

Pipes		Green	Default	FluidCode = P;
Role	Color			
Piping(Aboveground)	Yellow			
Default	Green			
Pipes		CLR_Pipes	Default	

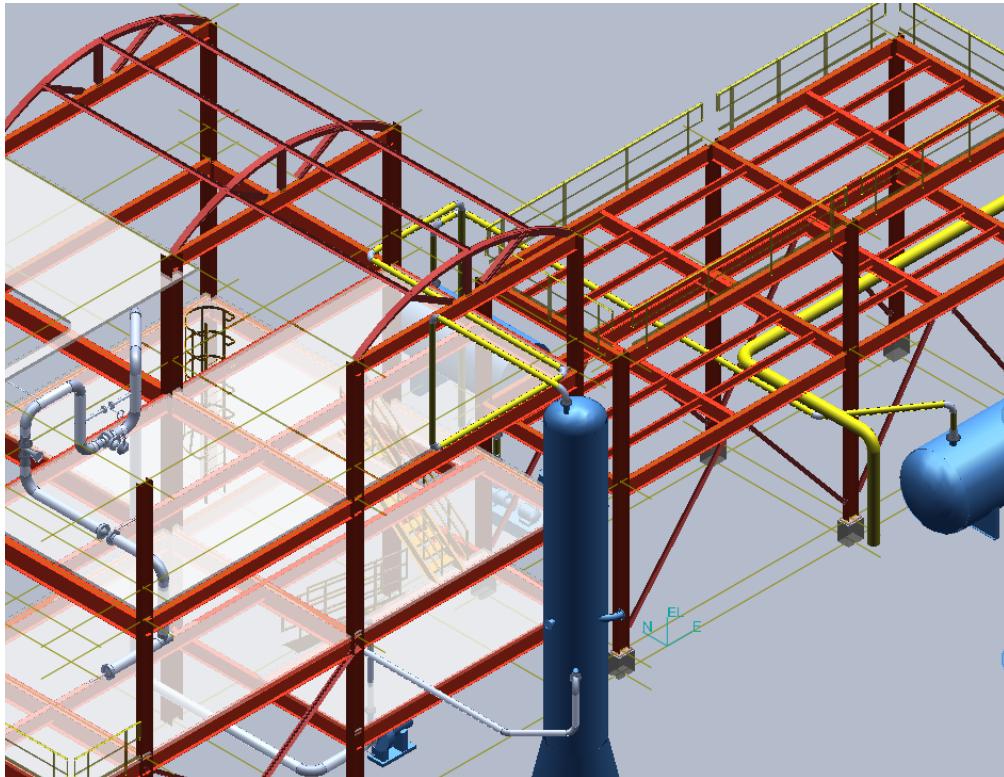
6. Click on the next field or hit the **Enter** key to finish creating the Role assignment.

+ Piping Specialty Items	CLR_Piping_Components	Default	
- Pipes	Green	Default	FluidCode = P;

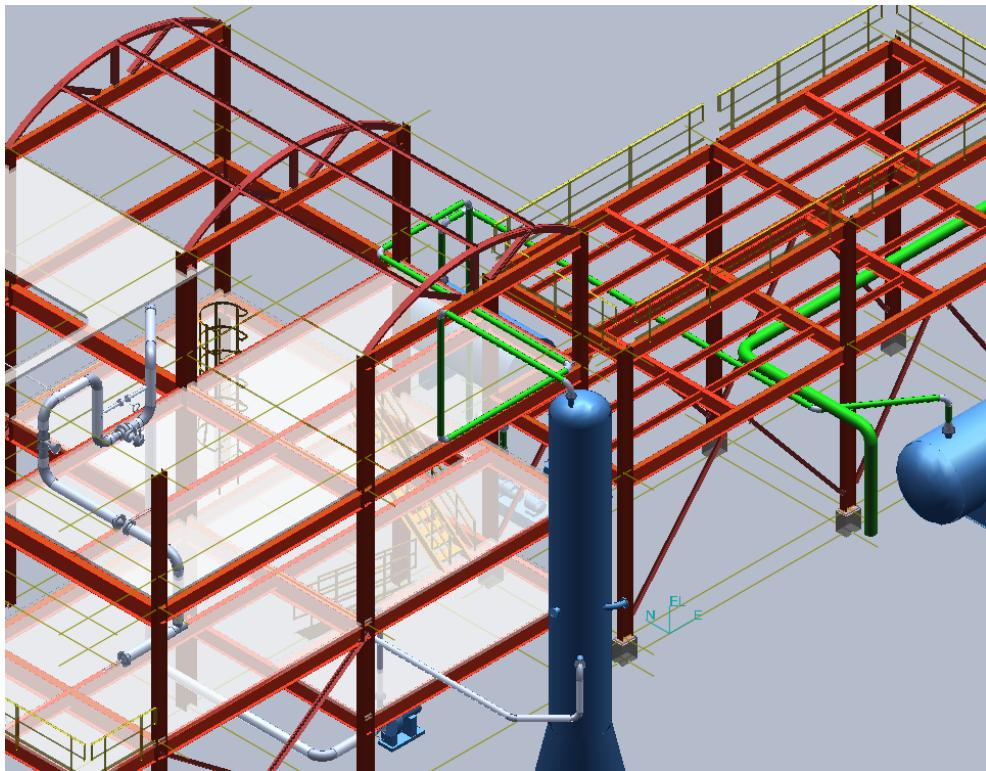
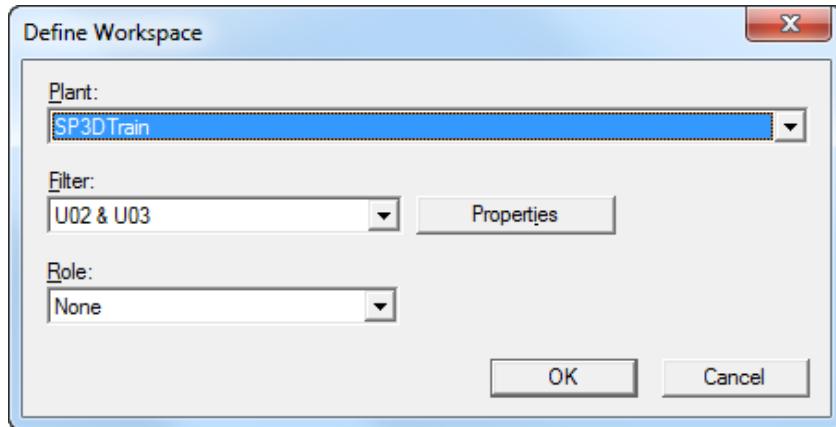
7. Click on **Save** command to save the changes.
8. Open a new session, use the filter from **Training Filters > U02 & U03** and role as **Piping Designer (Above Ground)**



9. Check the color of Piping parts with Process

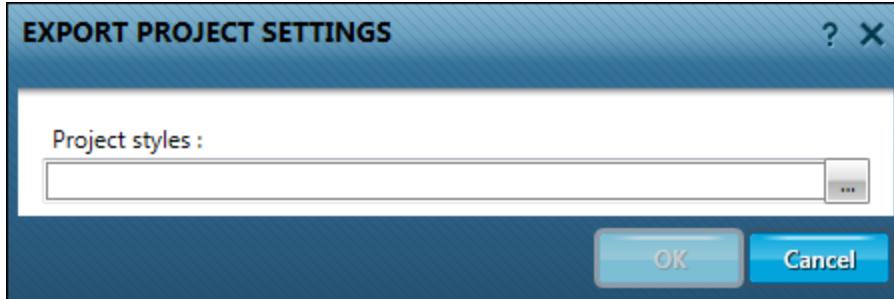


10. Open a **new session**, use the filter from **Training Filters > U02 & U03** and role as **None**.

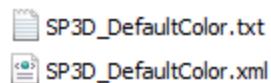


Export Default Color Settings:

1. Open **Project Management**
2. Select **SP3DTrain** plant
3. Go to **Tools > Project Settings > Export**



4. Provide a path and name for the output of the files, then click **OK**
5. The generated files are comprised of a text and an XML file. Both files are required during the import operation.



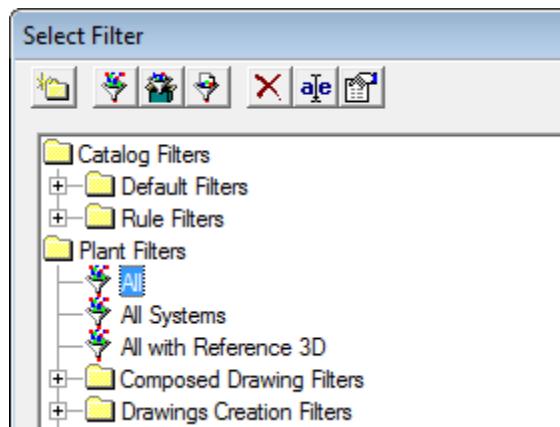
Note: The software expects the files to be in the same folder during the **Import Project Settings** operation.

LAB 17: Prepare the session for Model Data Reuse command

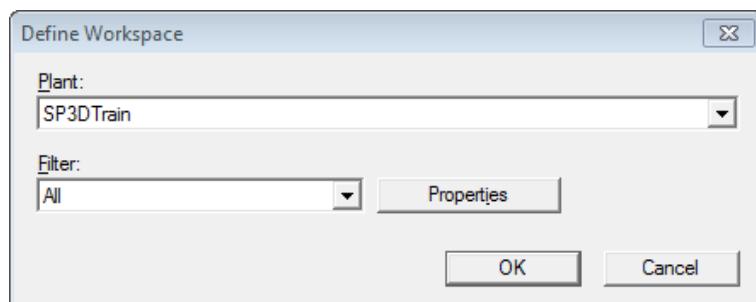
Objectives

After completing this lab, you will be able to:

- Create a session file and prepare the environment with system nodes that will be used with Model Data Reuse command.
1. Open **Smart 3D** if not already open
 2. Select **English** or **Metric** units template
 3. **Define a Workspace** on plant **SP3DTrain** and use the **All** filter located under **Plant Filters** node.



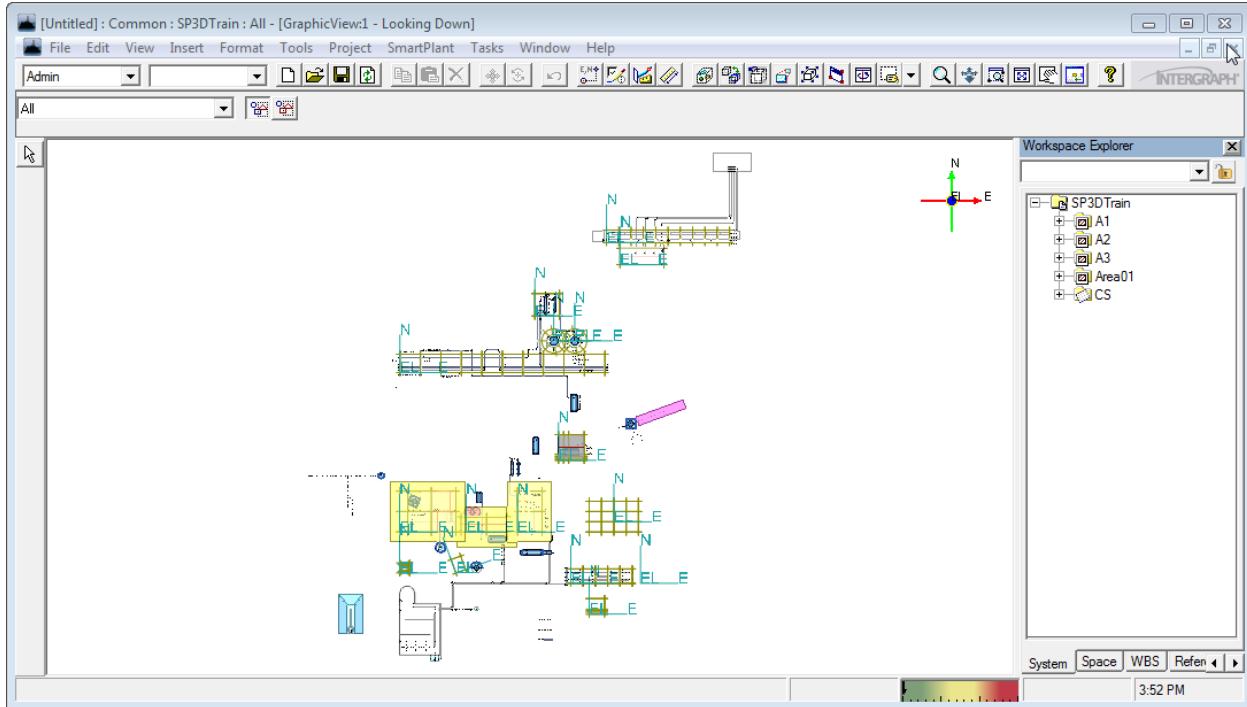
4. Click **OK** to define workspace



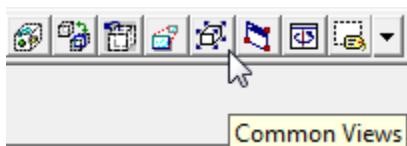
5. **Maximize** the window and click **Fit** view command



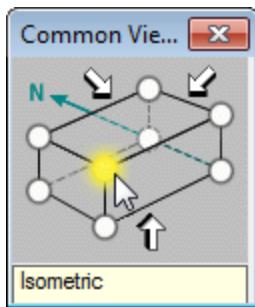
6. The entire plant is displayed

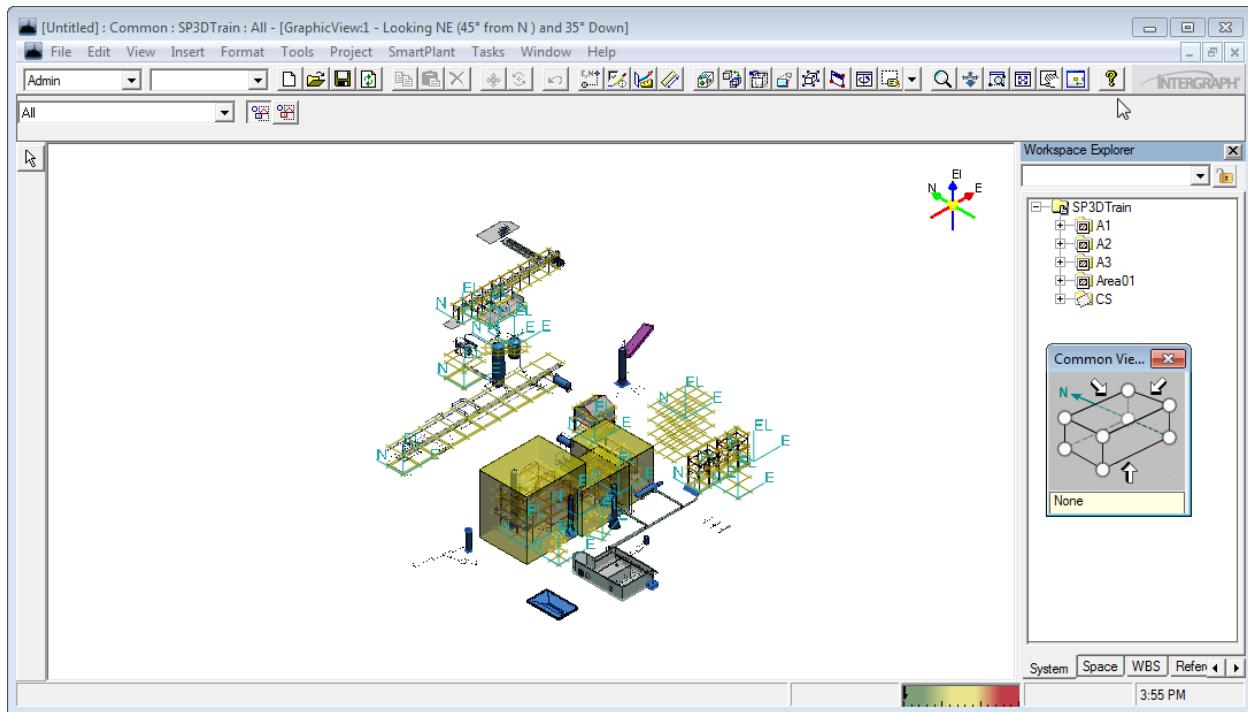


7. Select **Common Views** command from the ribbon bar (top right)

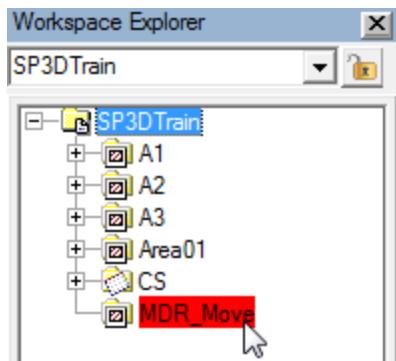


8. Select Isometric view (select dot w/mouse) and re-fit the view





9. Create a new **Area system** under plant root called **MDR_Move**



10. **Exit** Smart 3D and **Save** session file to desktop, when prompted name the session as
S3DTraining_All

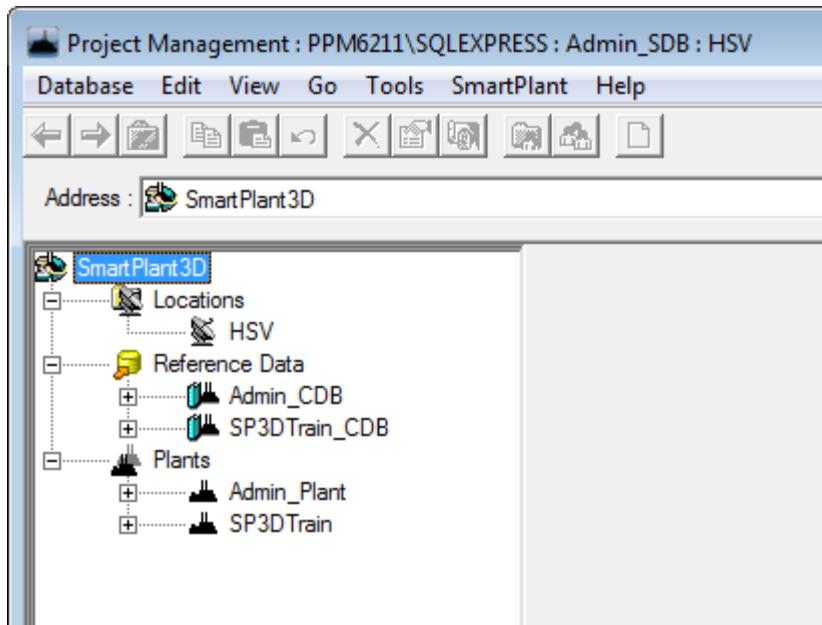
LAB 18: Model Data Reuse Copy – Move in Existing Plant

Objectives

After completing this lab, you will be able to:

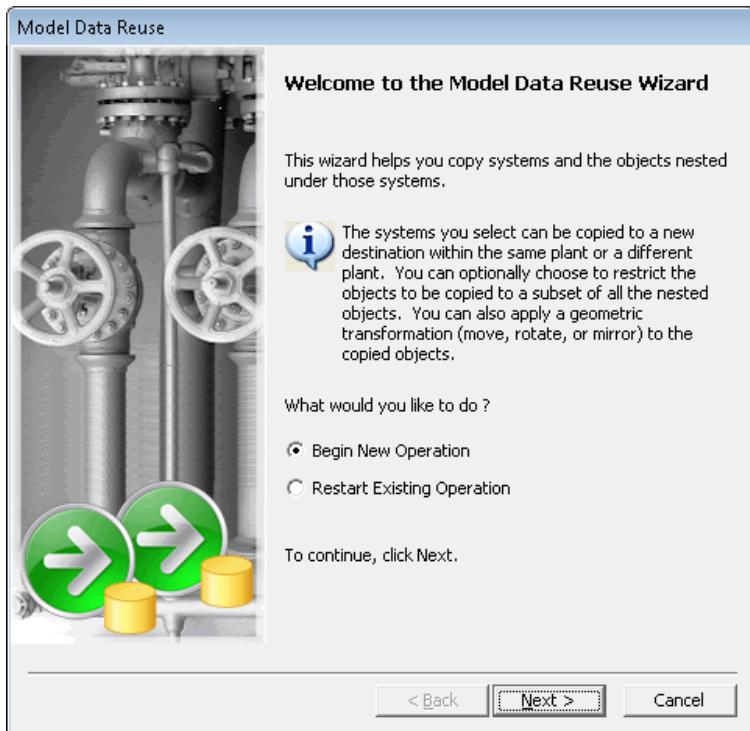
- Use Model Data Reuse command from Project management to copy objects by using the predefined Filter within the plant.
- Map permissions between the original and copied objects in the model.

1. Open **Project Management** if not already open

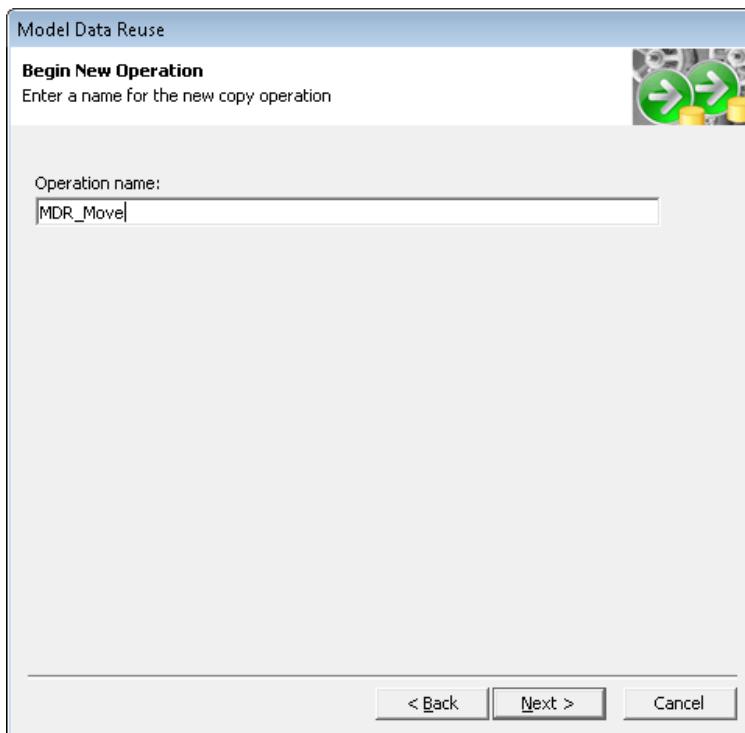


Note: There are two plants in the Site, SP3DTrain contains the model objects that will be used for this practice, Admin_Plant is an empty plant that will be used to copy objects across plants.

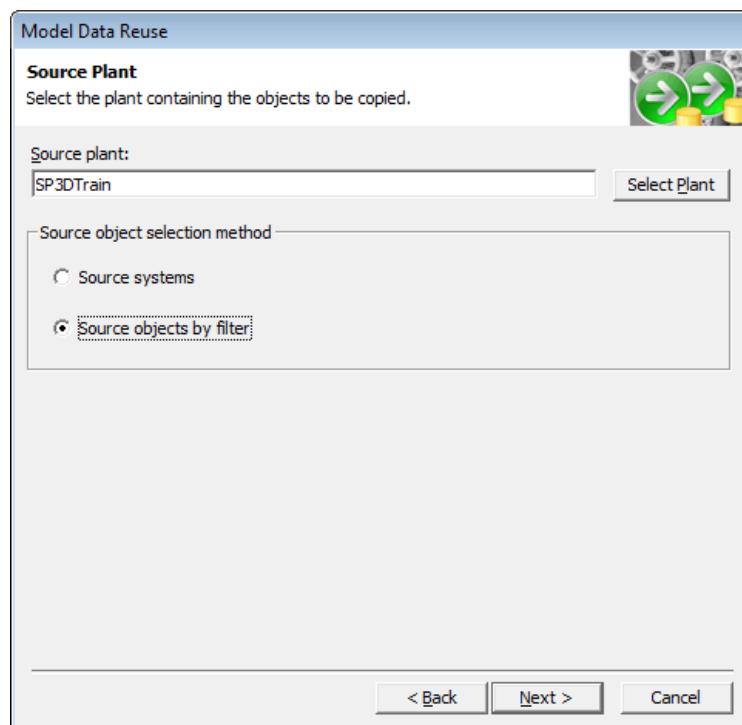
2. Start **Model Data Reuse** command from menu **Tools > Model Data Reuse...**



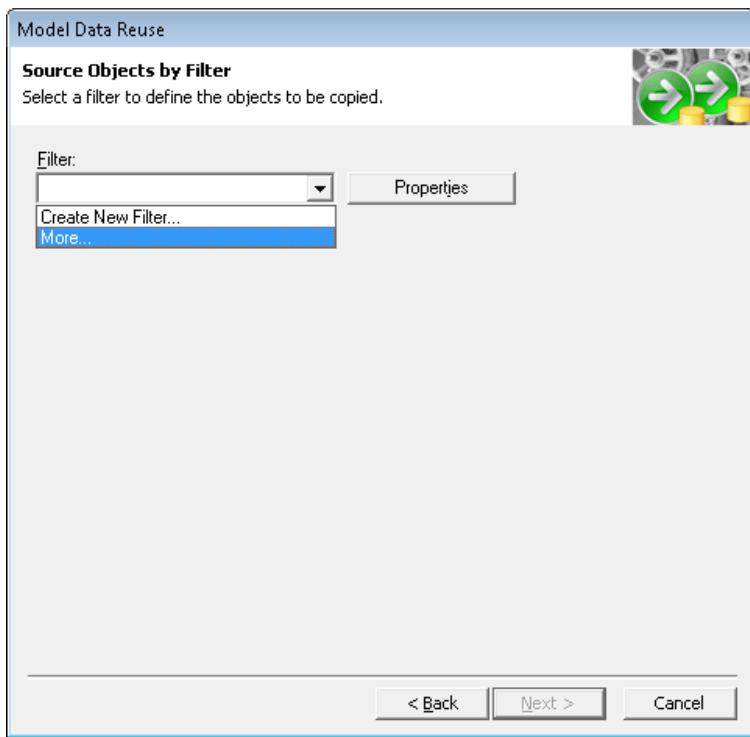
3. Select **Begin New Operation** and click **Next**



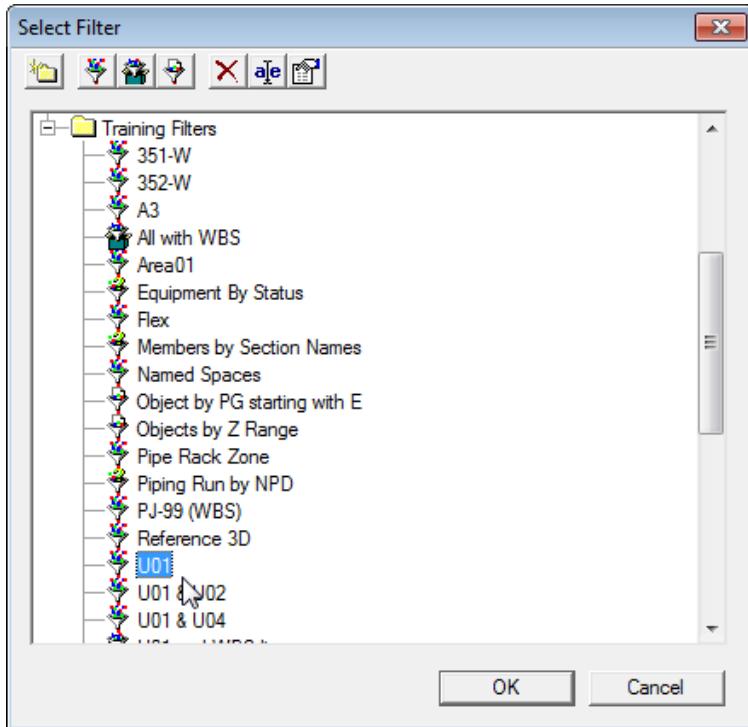
4. Name the operation **MDR_Move** and Click **Next**
5. In the new page, click **Select Plant** and choose SP3DTrain, this will be the source, or 'from' plant.
6. Set as selection method **Source Objects by Filter**



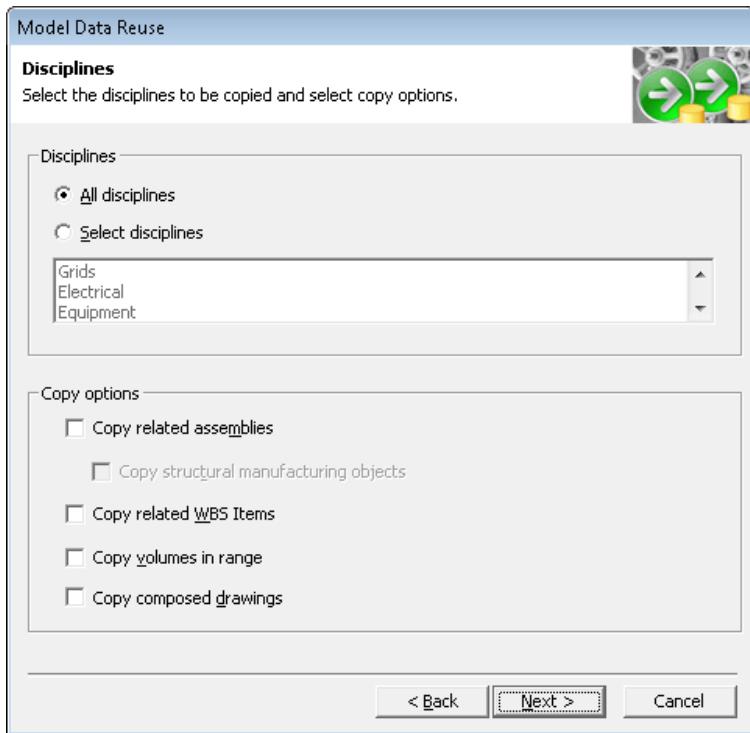
7. In the source objects by filter page, **expand** the drop down list, and select **More...**.



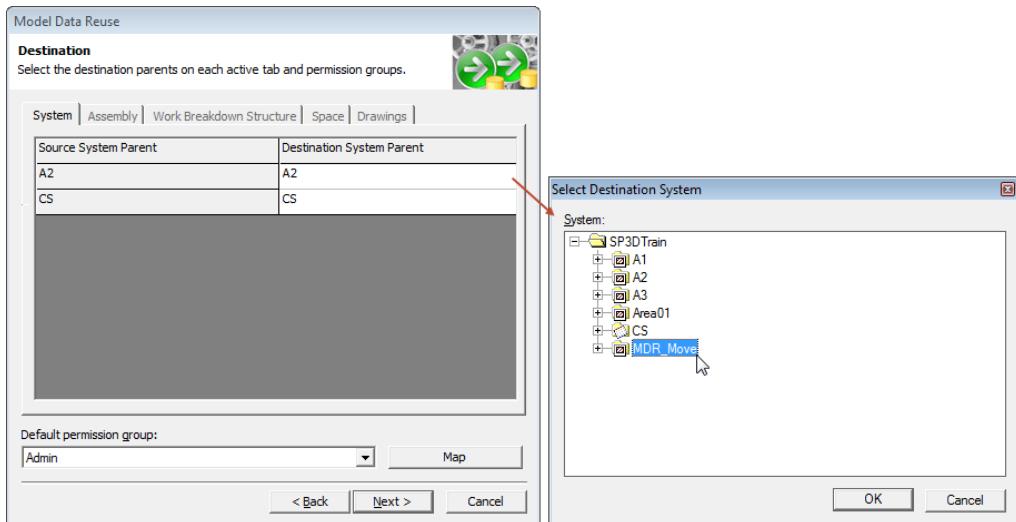
8. Select **U01** filter from **Training Filters** node.



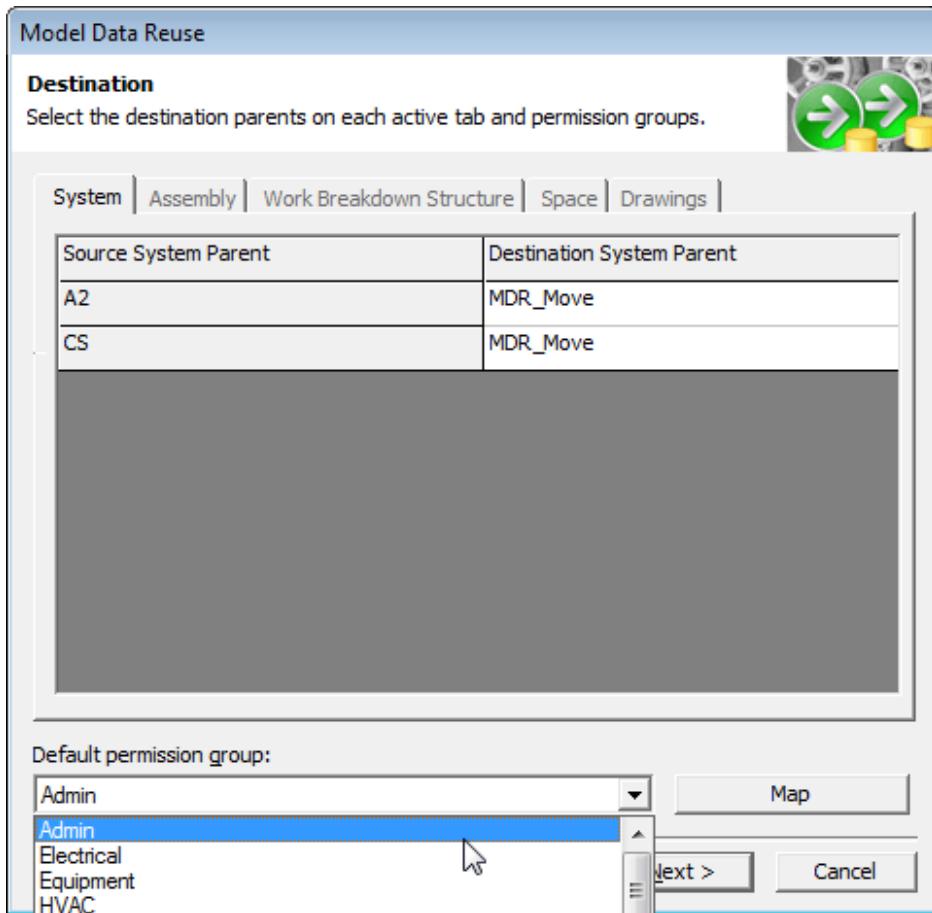
9. Click **OK**, then **Next**
10. In the Disciplines page, you may select either all or selected disciplines for object data to be copied as required. Toggle the radio button from **All disciplines** to **Select disciplines**, reselect **All disciplines** radio button. Click **Next**



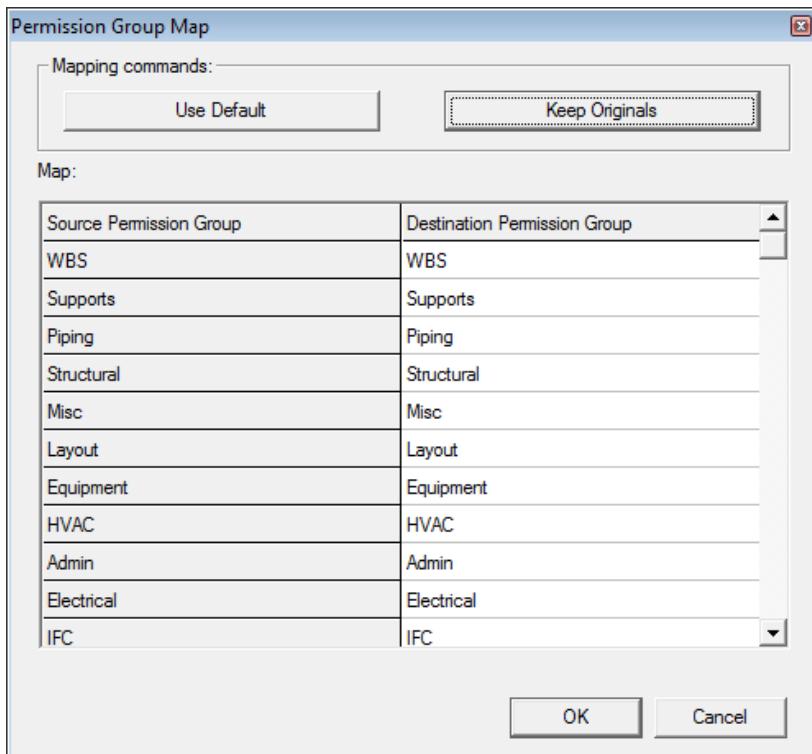
11. Next page displays the destination or 'to' plant and system(s) where the objects will be copied under. If chosen filter in previous step contains a common grandparent system, then mapping has to be done for one or few systems only in contrast to the mapping that has to be done for several objects that do not belong to a common parent system. Sub-nodes of source system(s) will be automatically created under new mapped system. Make sure destination plant is set as **SP3DTrain** then click **Next**.
12. Click the **browse** button in **Destination System Parent** field from source system **CS** to assign a new destination system. On **Select Destination System** form, select **MDR_Move** system and click **OK**.



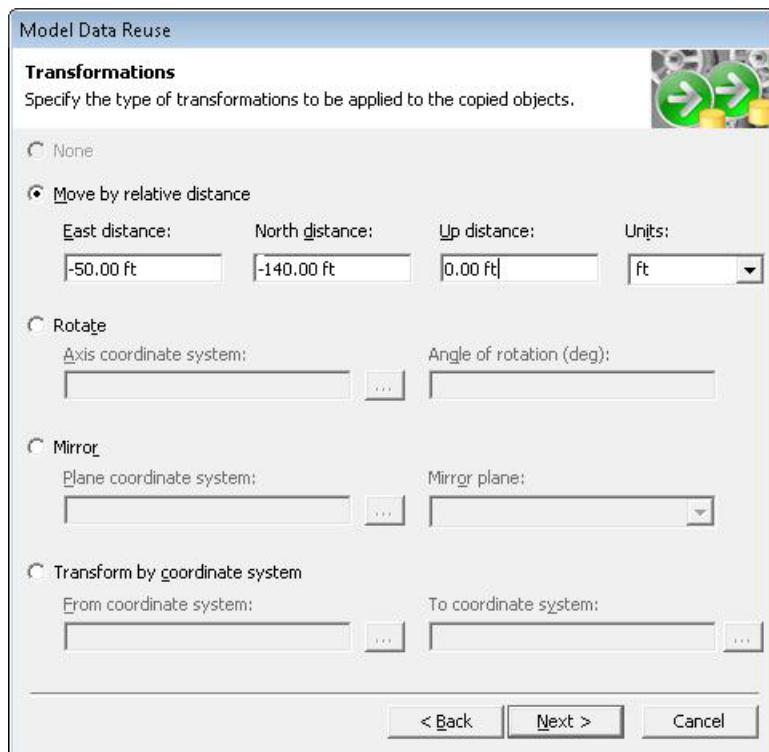
13. Repeat procedure to map **MDR_Move** to source system **A2**
14. Back in **Destination** systems page, expand **Default Permission Group** drop down list. The system performs a check and only allows the user to assign copied items to an existing Permission Group where privileges are sufficient. Maintain Admin group selection.



15. Select **Map** button. This form allows the user to map same or new permissions to copied objects based on availability of permission groups in destination plant. By default all objects will be assigned to default permission group which was ‘Admin’ per previous window selection. Since the copy operation is being performed within the plant, selecting **Keep Originals** option will let the software try automatic mapping of permission groups.

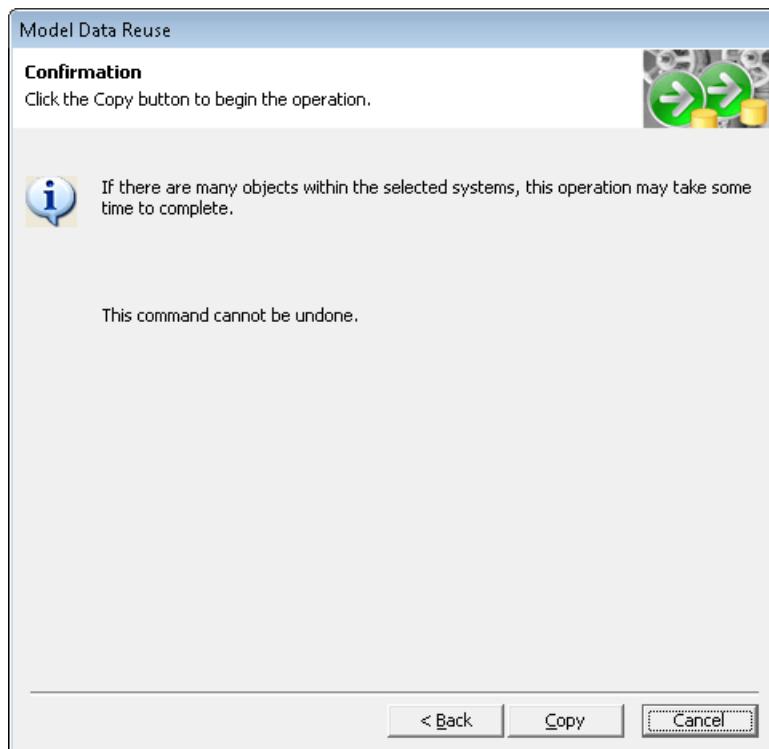


16. Click **OK** to dismiss **Permission Group Map** form
17. Select **Next** on the **Destination** page
18. Select **Move by relative distance** radio button (if not selected by default). Expand **Units** drop down list and select **ft** as default unit. Type in **-50** for **East** distance, **-140** for **North** distance and **0** ft for **Up** distance (equivalent to -50ft X, -140ft Y, 0ft Z).

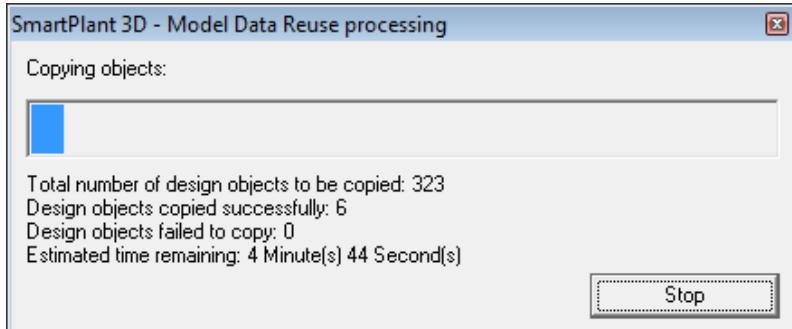


19. Click **Next**

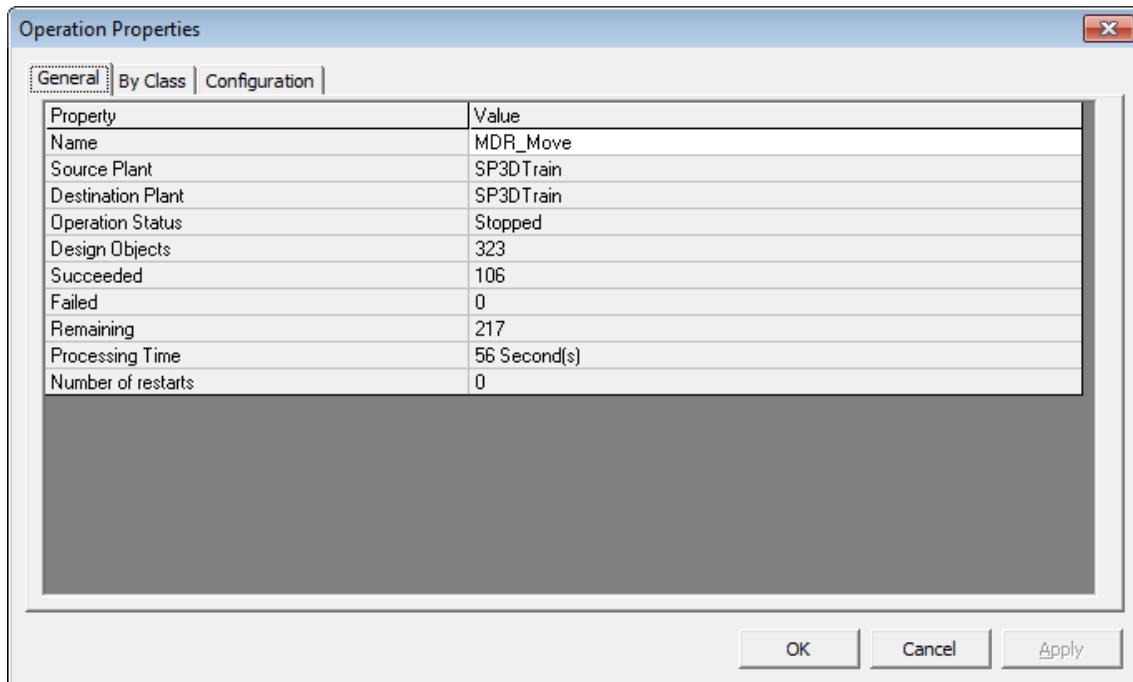
20. Click **Copy** on the confirmation screen



21. The system processes the command.



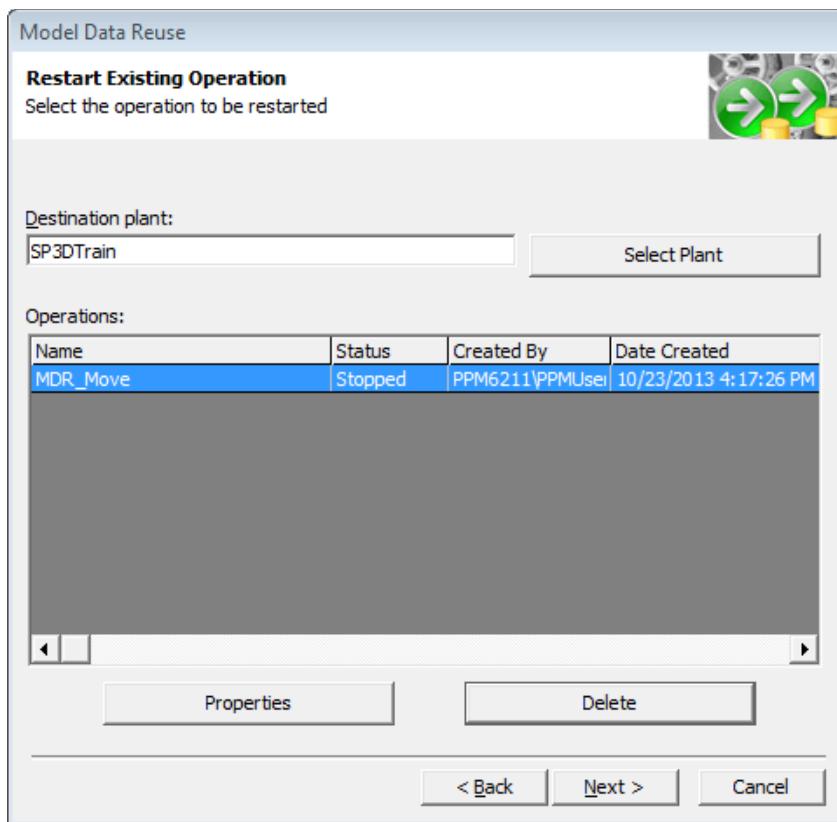
22. Notice now there is a **stop** radio button on the Model data reuse processing form. This allows the user to stop the operation if needed. **Stop the operation.** It does not matter when the operation is stopped just stop it before it completes.
23. Once the operation is stopped the **Operation Properties** dialog box appears. Review the information then Click **OK**.



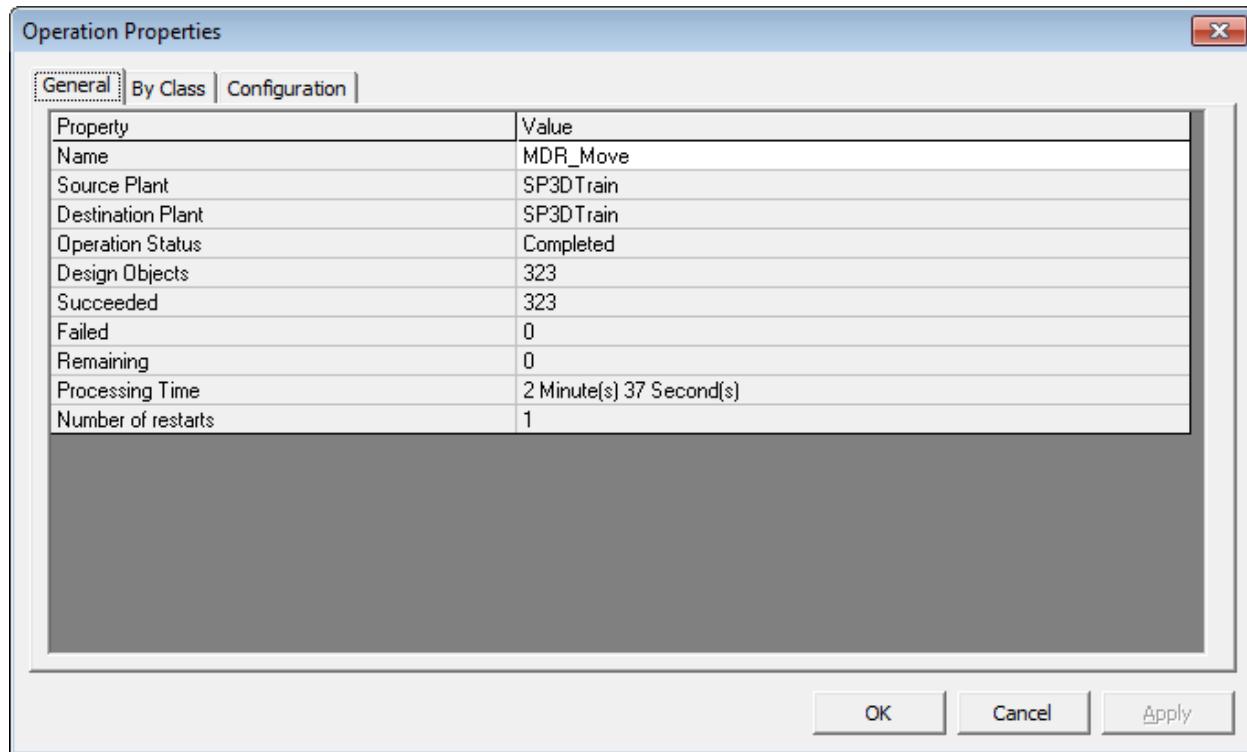
24. Start **Model Data Reuse** command again from **Tools > Model Data Reuse**
25. Select **Restart Existing Operation** and click **Next**.

Note: Notice the operation **MDR_Move** status is stopped because the user clicked stop on the progress button. There are four possible statuses: Stopped which indicates the process was terminated in an orderly way, Incomplete which indicates the process was terminated abnormally, In Progress which indicates the operation is in progress and Completed which indicates the operation was completed successfully.

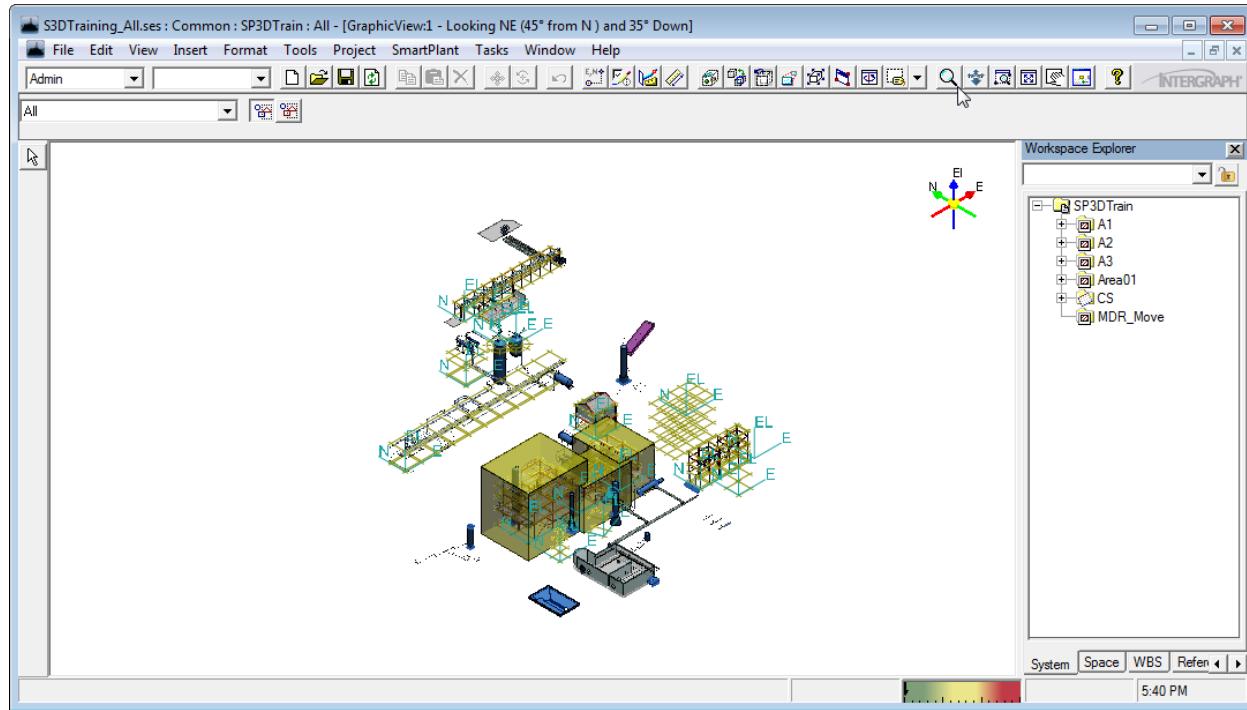
26. Select **MDR_Move** and click **Next**.



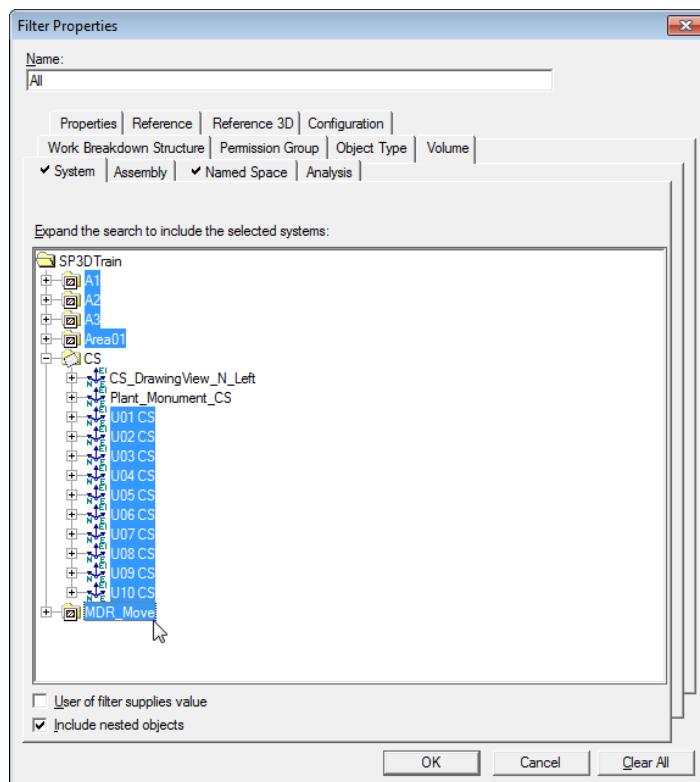
27. Click **Copy** on the confirmation page.
28. The operation should continue from where it left. Upon completion, the operation properties dialog box displays again with the results of the copy. Notice the status changes to **Completed**.



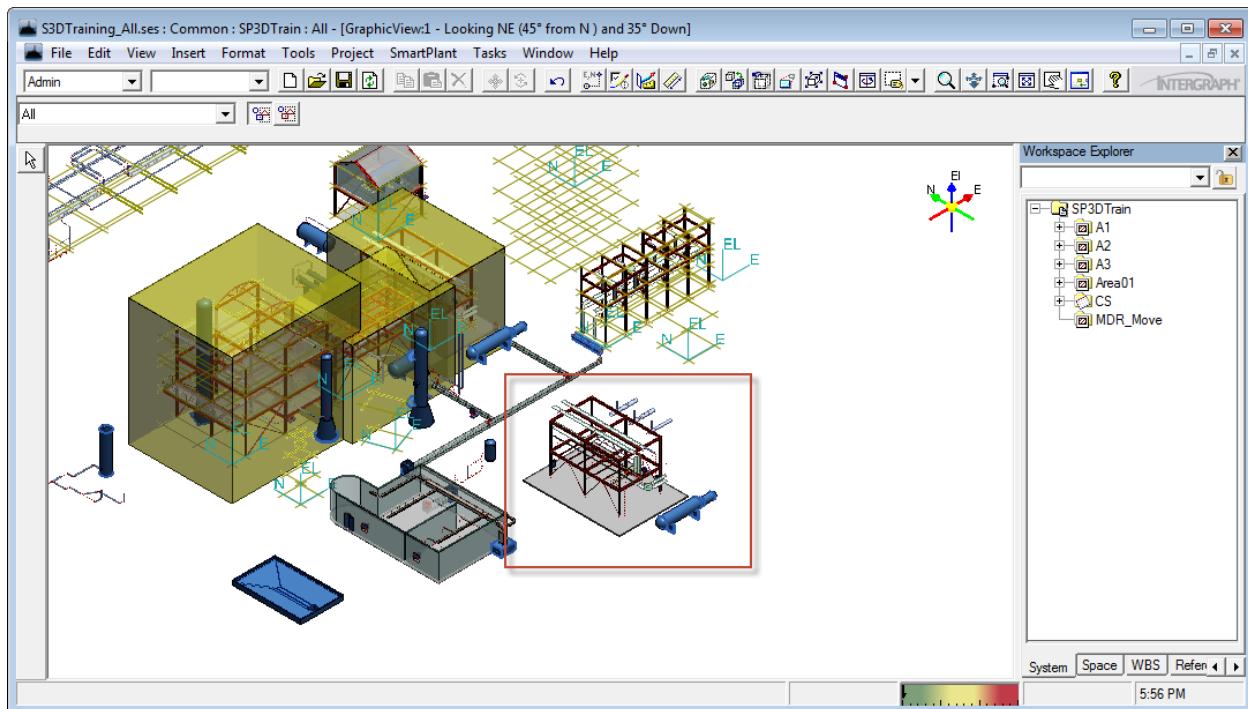
29. Review and click **OK**.
30. Close Project Management
31. The results of the copy-move operation can now be seen in the model.
32. **Open** session file named **S3DTraining_All** previously saved to desktop
33. Set view to Isometric (if not default) and fit view



34. To bring changes from the database, the **All** filter needs to be modified to include the system named **MDR_Move**. Click **File > Define Workspace**, then click the **Properties** button.
35. Hold down the **CTRL** key and select the **MDR_Move** system.



36. Click **OK**, then click **OK** in the define workspace form.
37. Adjust the view if necessary to locate the objects copied.



38. Exit Smart 3D when finished, save changes to session file.

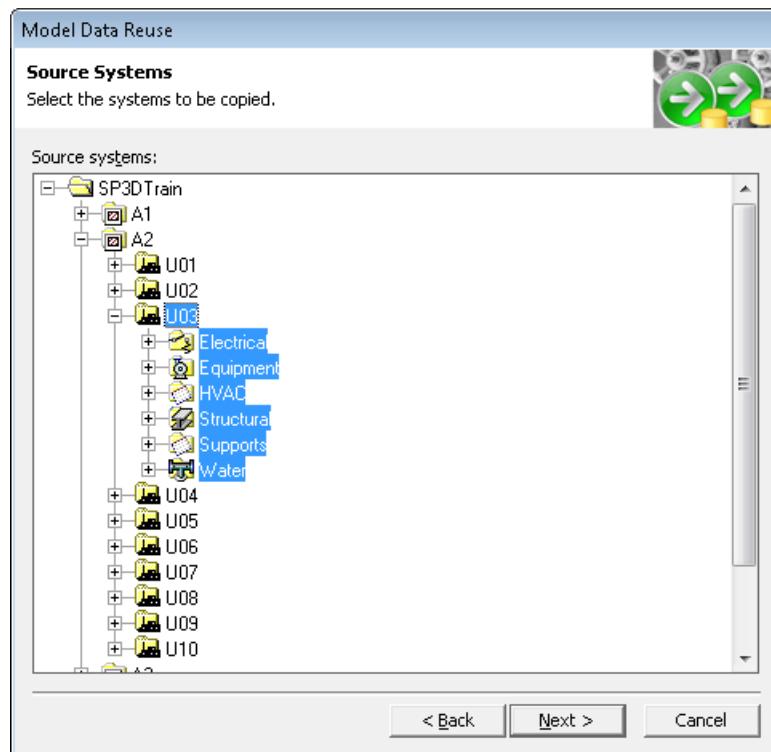
LAB 19: Model Data Reuse Copy – Rotate and Copy to New Plant

Objectives

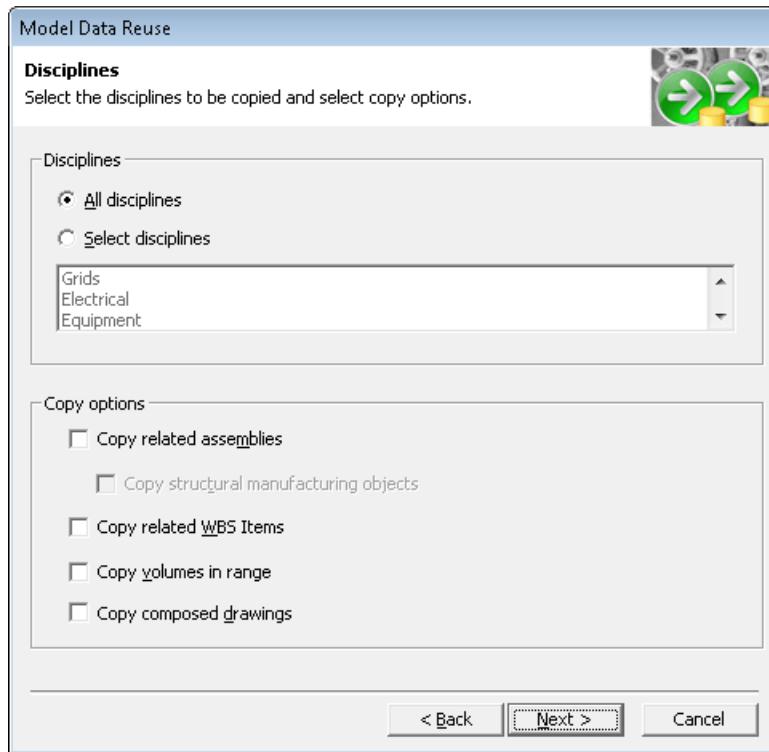
After completing this lab, you will be able to:

- Use Model Data Reuse command from Project management to copy objects between plants in the same site performing a rotate transformation.

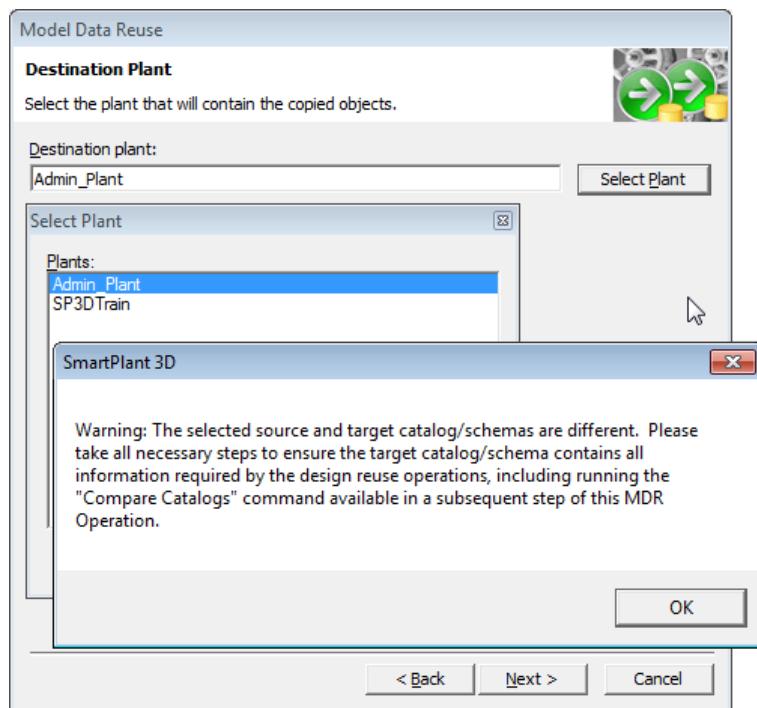
1. Open **Project Management** if not already open.
2. Open the **Model Data Reuse** wizard. Begin a new operation, provide as name **MDR_Move**
3. This time the source objects will be selected via **Source Systems**, select **SP3DTrain** as source plant and **U03** as source System



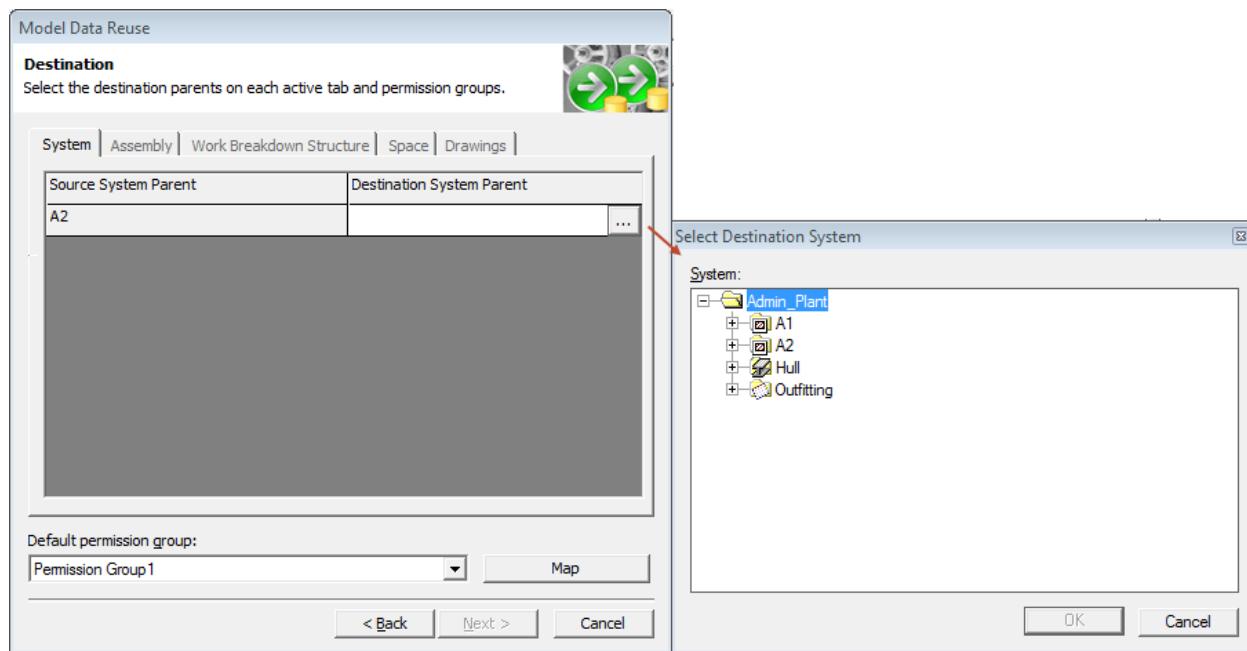
4. Click **Next**, Select **All disciplines** and click **Next**



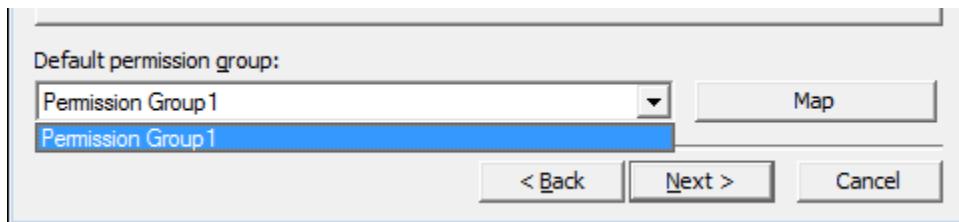
5. On **Destination Plant** page, select **Admin_Plant**.
6. The software warns about the possibility of Schemas not having same information, click **OK**



7. Click browse button to select destination system for copied objects, then select plant root as new system.



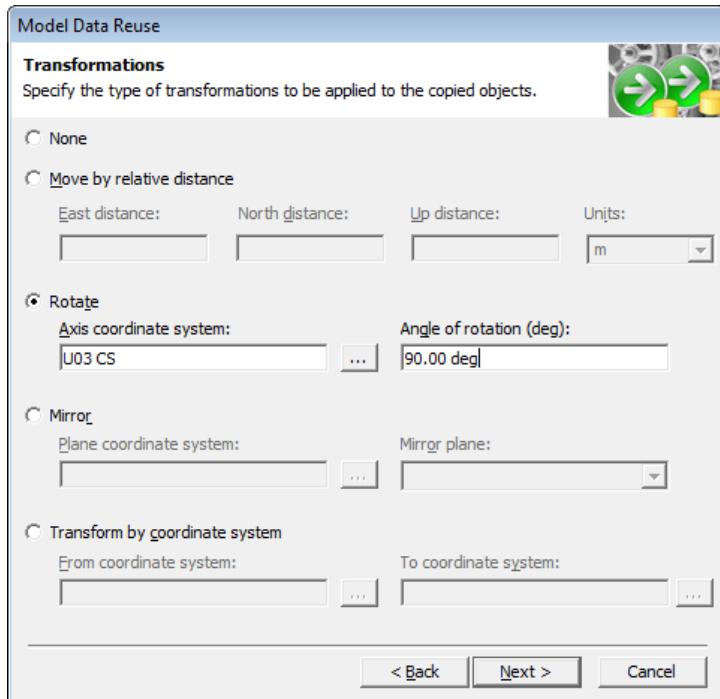
8. Set **default permission group** to Permission Group 1



Note the values in the “Default permission group:” drop down list have changed. The groups are defined per Plant.

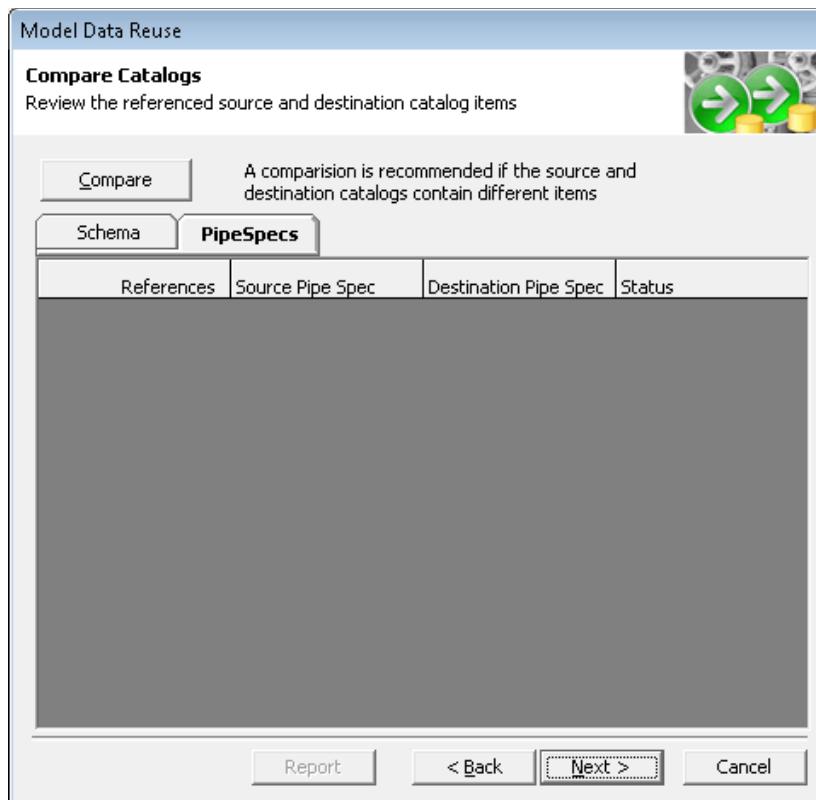
9. Click **Next**

10. Select **Rotate** radio button. Browse the **Axis coordinate system** and select **CS > U03 CS** system, type in **90 degrees** for the rotation angle.

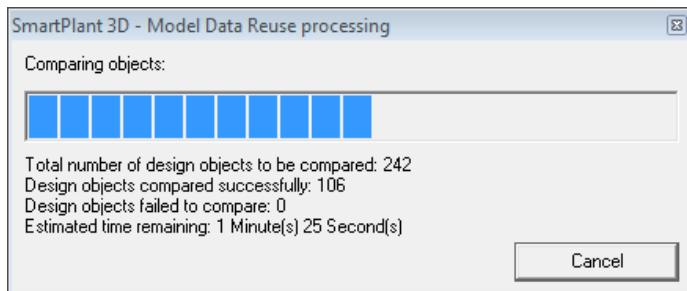


11. Click **Next**

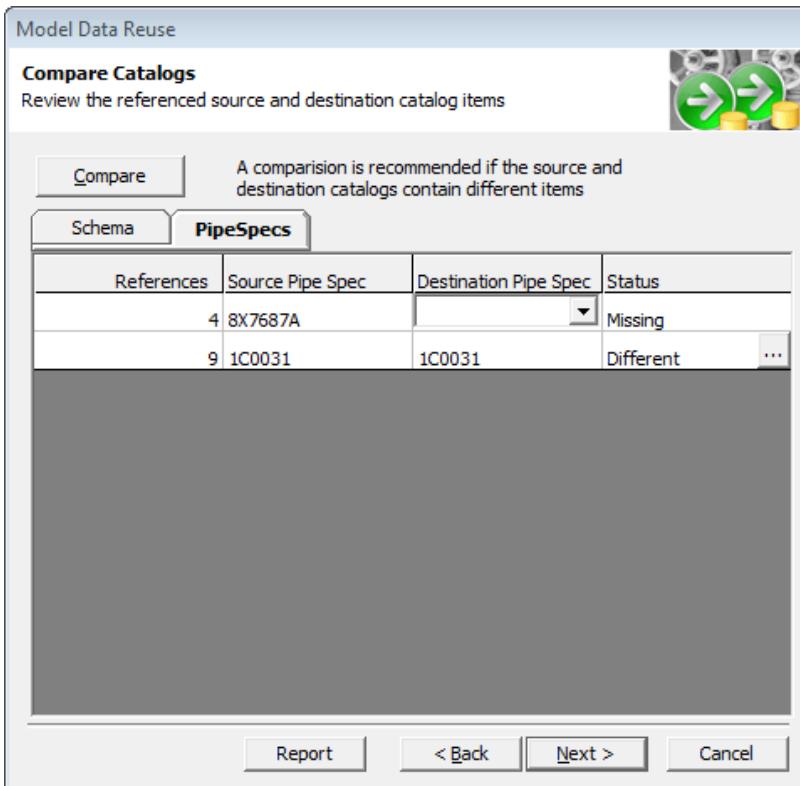
12. The new **Compare Catalogs** page appears. This will only be present when user is performing a copy across models that have different catalogs. It will compare the catalog schemas and the pipe specs in the select set chosen. Click the **Compare** button.



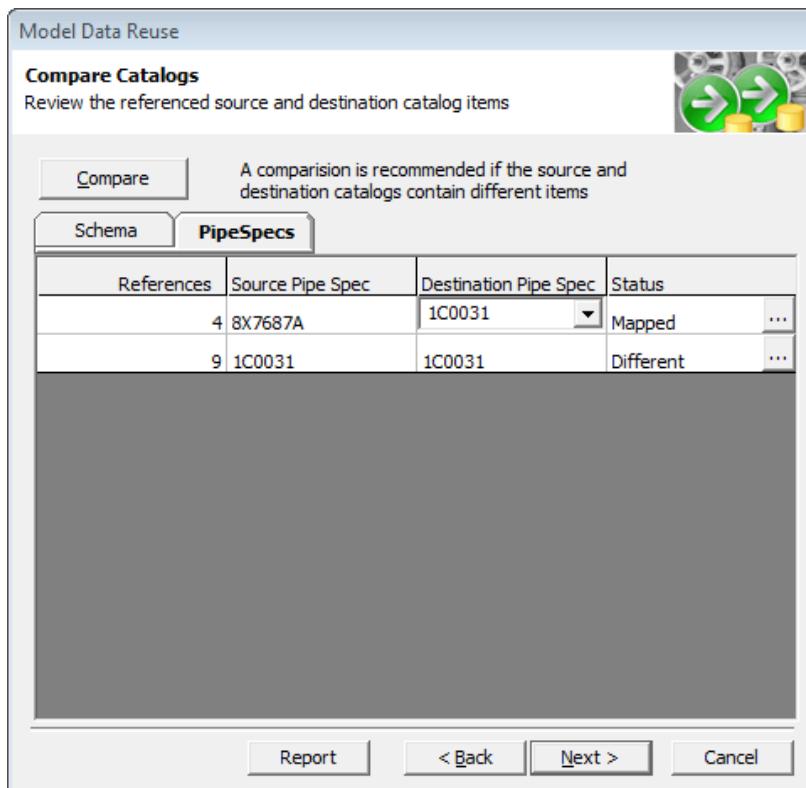
13. The system processes the command.



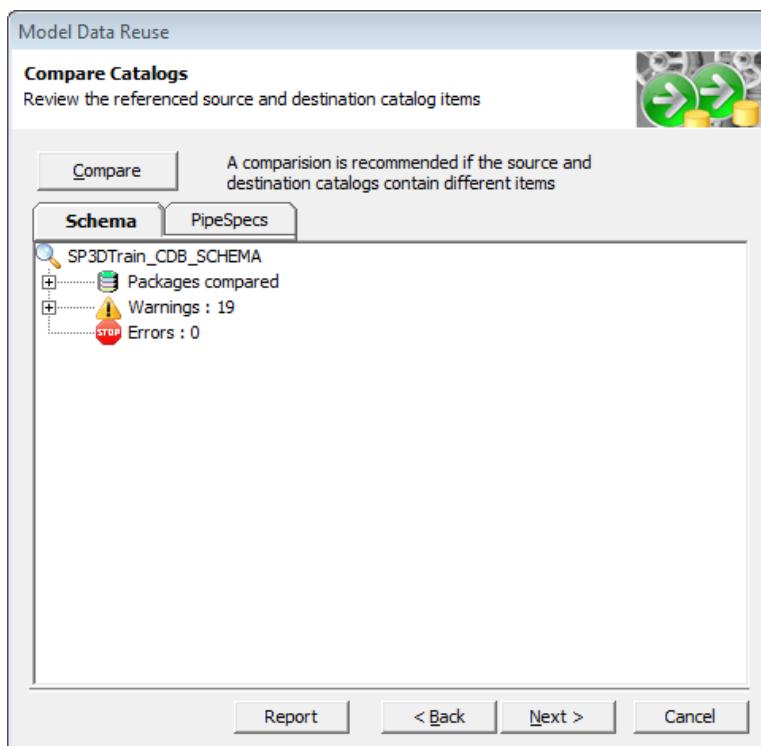
14. Once the compare process is finished select **Pipe Specs** Tab if not on by default. On the Pipe Specs Tab observe if there are any differences. Some objects were assigned to a piping specification in the source plant that do not exist in the destination plant. Additionally, data from same spec is missing from the destination catalog. To obtain a report of all the mismatching data, click on the browse button next to the entry for spec **1C0031** that is displaying status as Different.



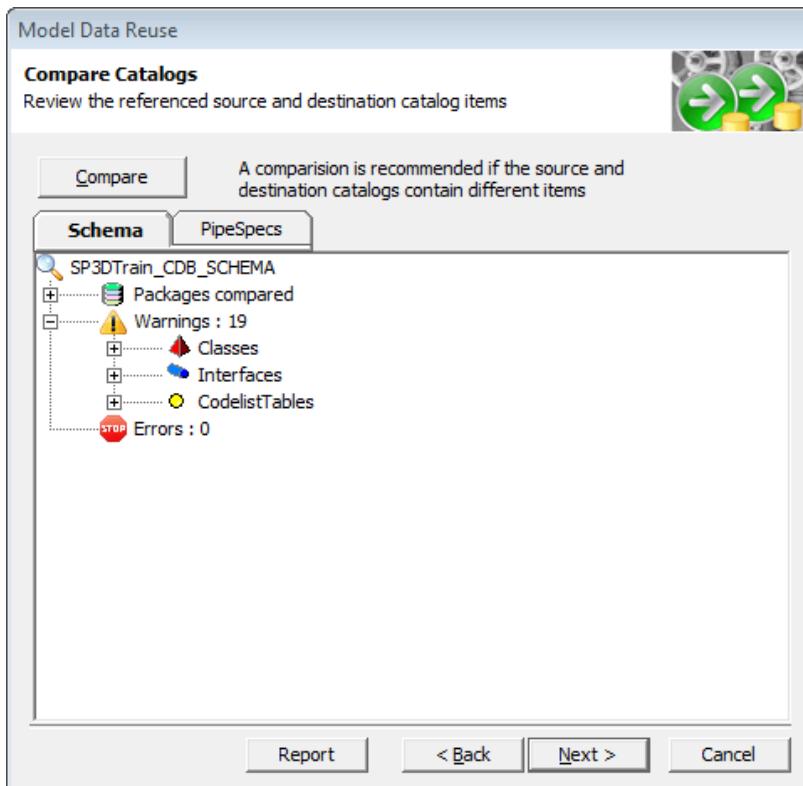
15. Select the specification **1C0031** under **Destination Pipe Spec** field in order to map the objects that were formerly assigned to specification 8X7687A.



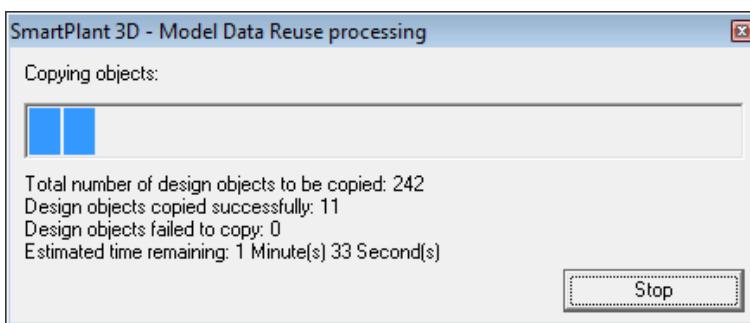
16. Select the **Schema** tab.



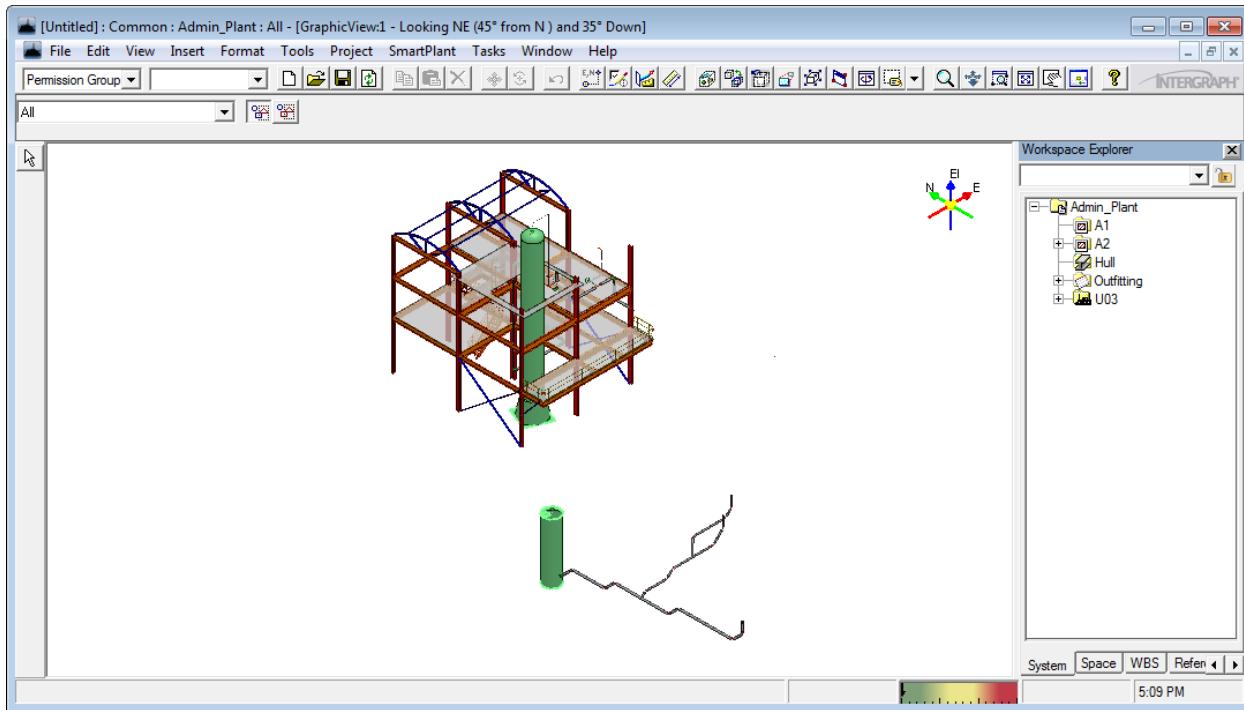
17. In this tab the results of the catalog schema comparison are displayed. Currently an Error is classified as a condition that will result in corrupt or lost data, everything else is a warning.
18. Expand **Warnings** node. Notice that Classes, Interfaces and Codelist Tables nodes are displayed. Depending on the warning the user receives, they can decide if they want to ignore or fix this issues prior to committing the MDR operation.



19. Click **Next**.
20. Click **Copy** on the confirmation screen.
21. The system processes the command.



22. Verify results then click **OK** to dismiss the MDR wizard. Review the MDR log file located in the temp folder. Type in the address bar of Windows Explorer "%temp%" for quick access to temporal files. The file name will have the format MDRXXXX.log
23. To view results of the copy – rotate operation, **open** a session file and **define a workspace** to bring objects of unit **U03** from **Admin_Plant**. You may also use the **All** filter if one exists.
24. **Fit** objects to window then select **Isometric** view.



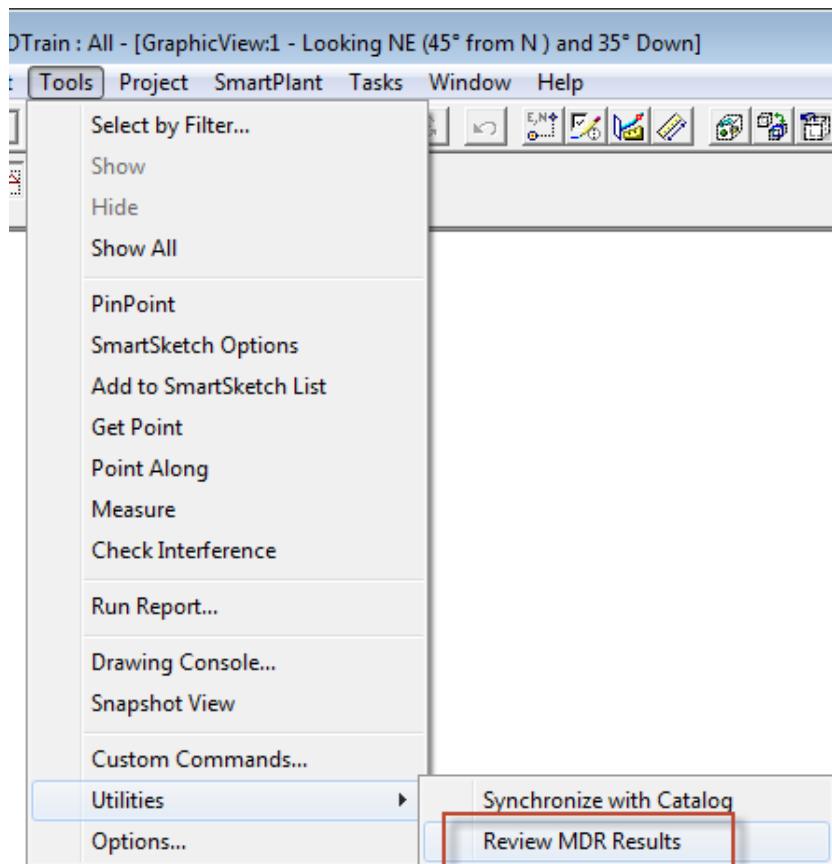
25. **Close** Smart 3D, **Save** the session.

LAB 20: Model Data Reuse troubleshooting

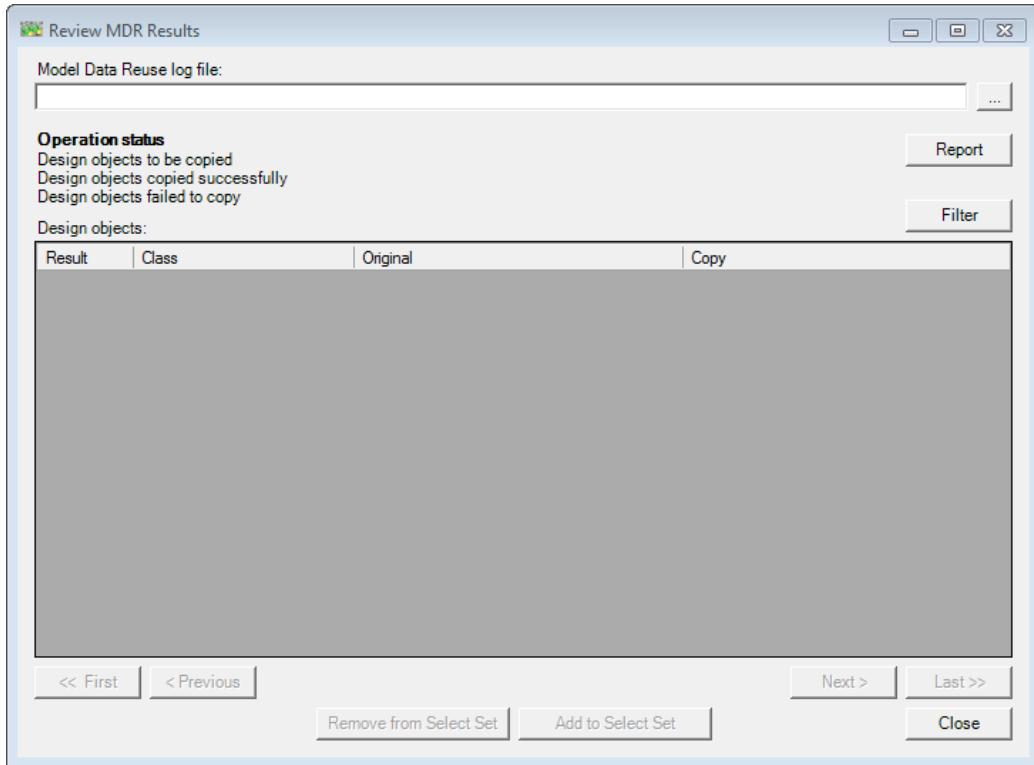
Objectives

After completing this lab, you will be able to:

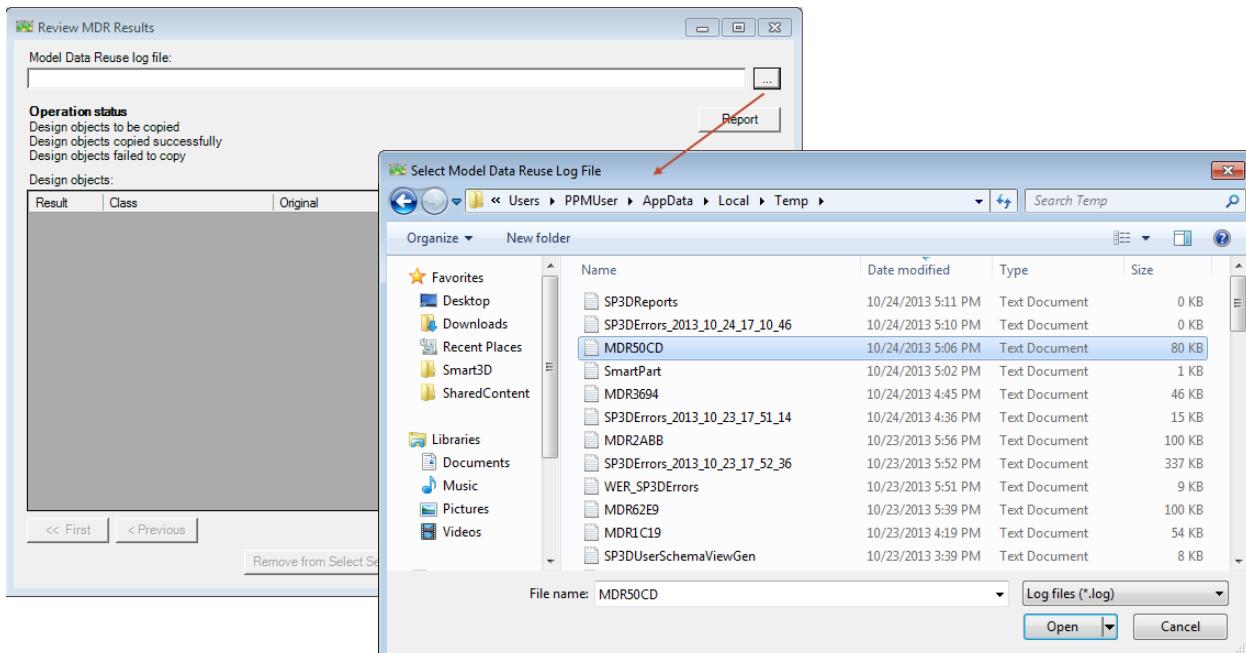
- Review results of the Model Data Reuse command for additional troubleshooting if certain objects failed to be copied.
1. Open source session file **S3DTraining_All.ses**
 2. Refresh the session.
 3. Go to **Tools > Utilities** menu, select **Review MDR Results** option.



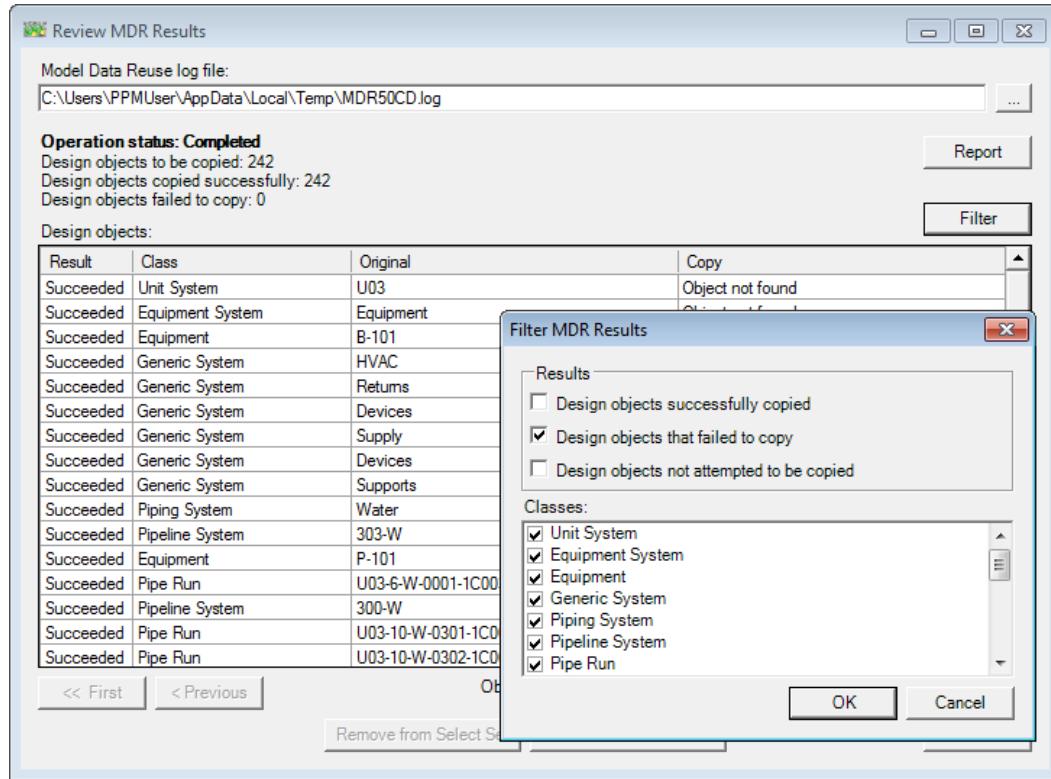
4. Review MDR results form is displayed.



- Click **browse** button to select the MDR log file of the last operation performed. A new log file is created every time the command runs. Log file names have the format MDRXXXX.log, if a log file cannot be quickly identified, the list can be sorted by date modified then select most recent MDR log file.

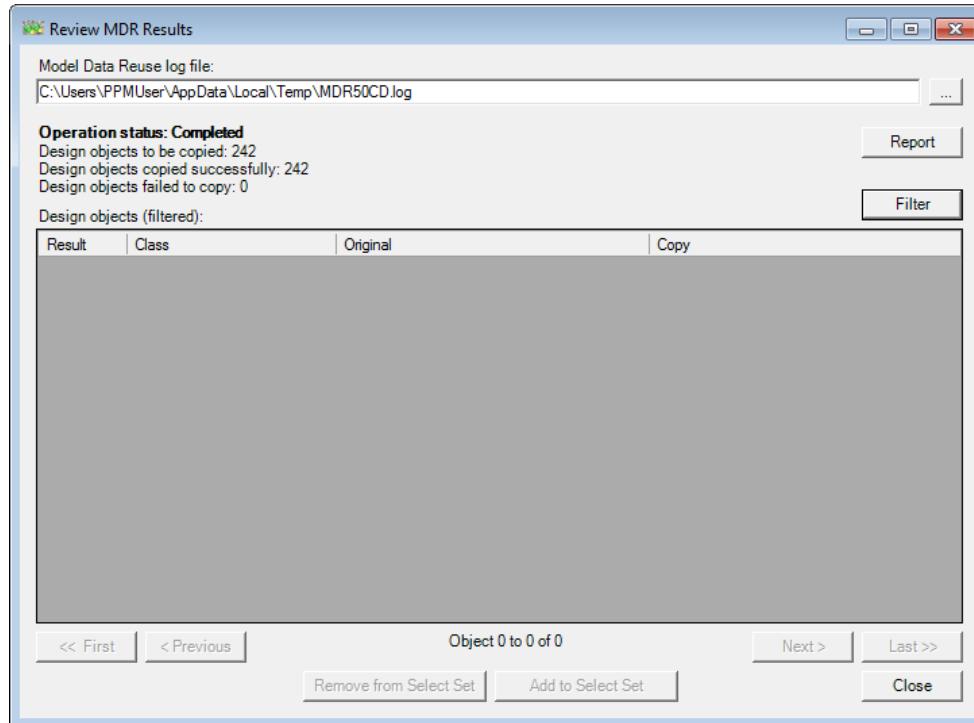


6. Click **Filter** button to expand filtering options for listed objects.
7. Check **Design objects that failed to copy** and disable the other two in order to verify that no objects failed to be copied.

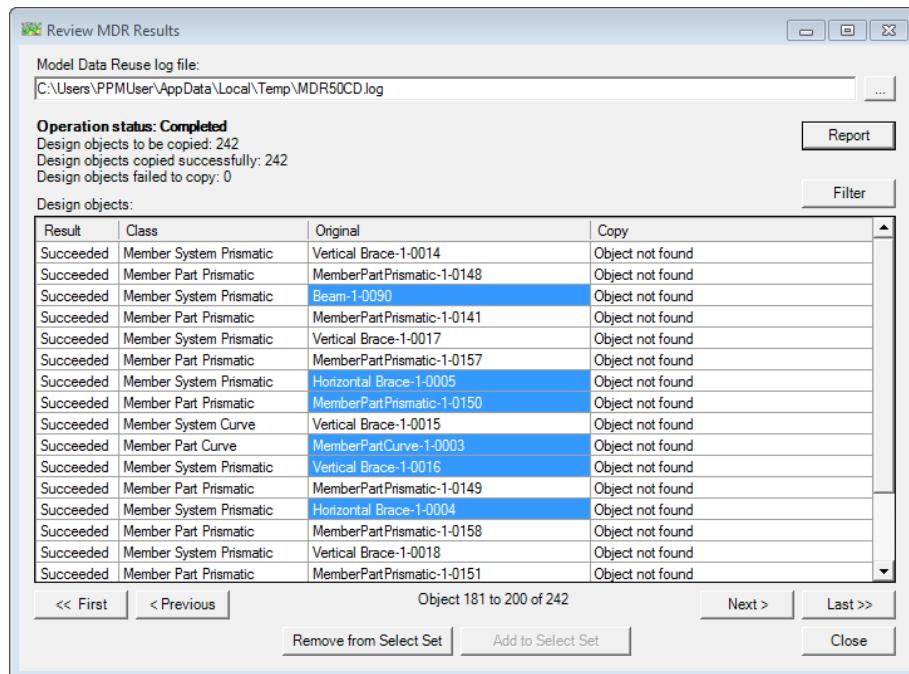


Note: The order of the records presented in the screenshots may not be the same when performing the practice.

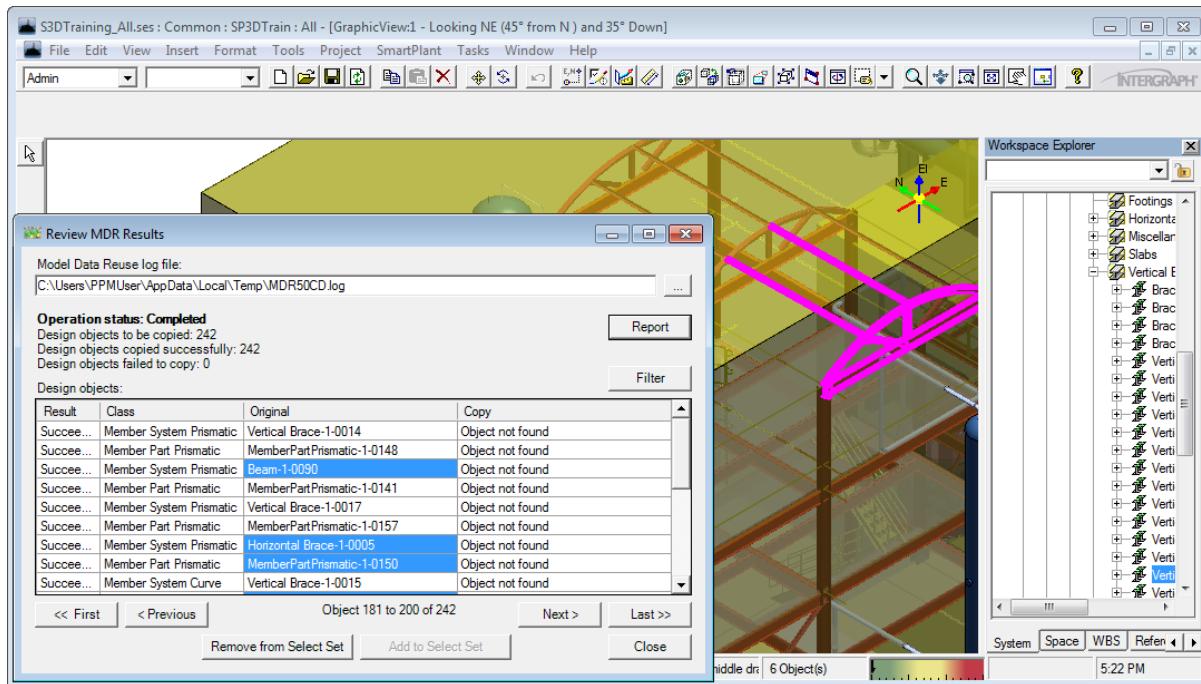
8. Click **OK**
9. The list is empty as no objects failed to be copied.



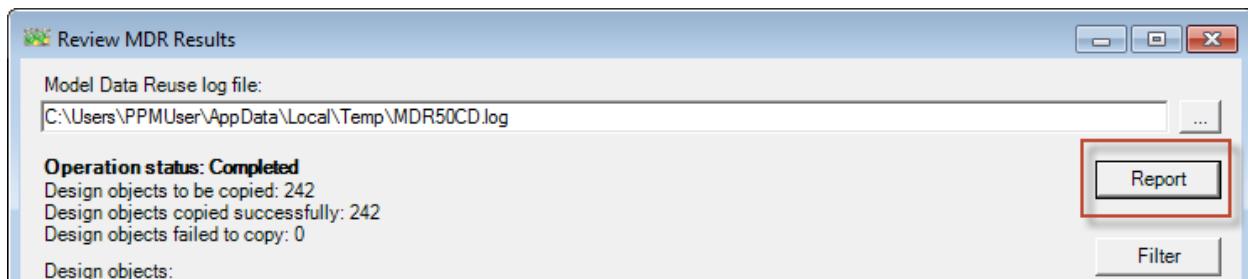
10. Click **Filter** button and check unselected checkboxes to bring all records again, click **OK** to finish the action.
11. Objects can be selected on the 'Original' column (meaning, they belong to source plant). **Select** a few objects from this list. (hold down CTRL key to multi select or SHIFT key for multiple selection at once), then click **Add to select set** button at the bottom of the form.



12. These objects are now selected and can be located in the session by using the **Fit** view command.



13. A report of the objects can be generated onto an Excel spreadsheet; this report will return additional data about the objects, including their OIDs.



Note: This report will be created in an Excel workbook.

14. Once objects that failed to copy have been identified, the user can evaluate their condition and integrity (Verify they are not in ToDo list or reported by Database Integrity). It can also be determined if it would be faster to use traditional method to copy/paste between sessions or remodeling of the destination plant.

15. **Close** Smart 3D.

LAB 21: Synchronize Model with Catalog and View Generation

Objectives

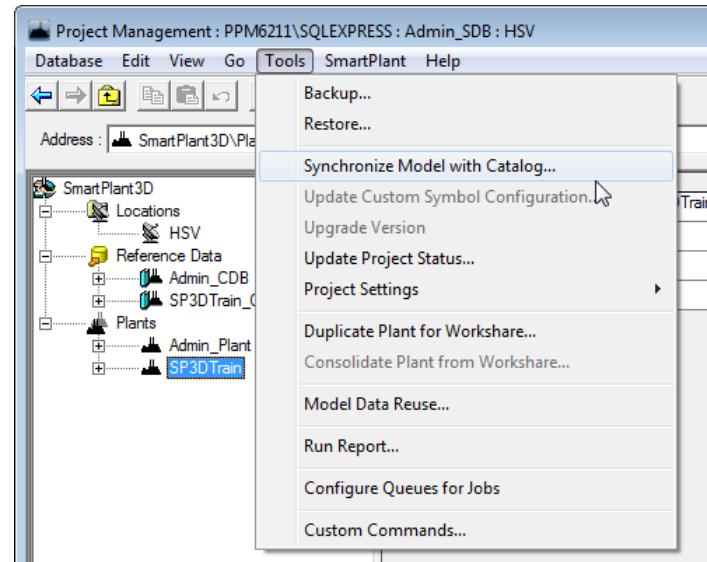
After completing this lab, you will be able to:

- Actively choose whether to synchronize the model with catalog or run the view generator on the model command, or both from within Project Management.

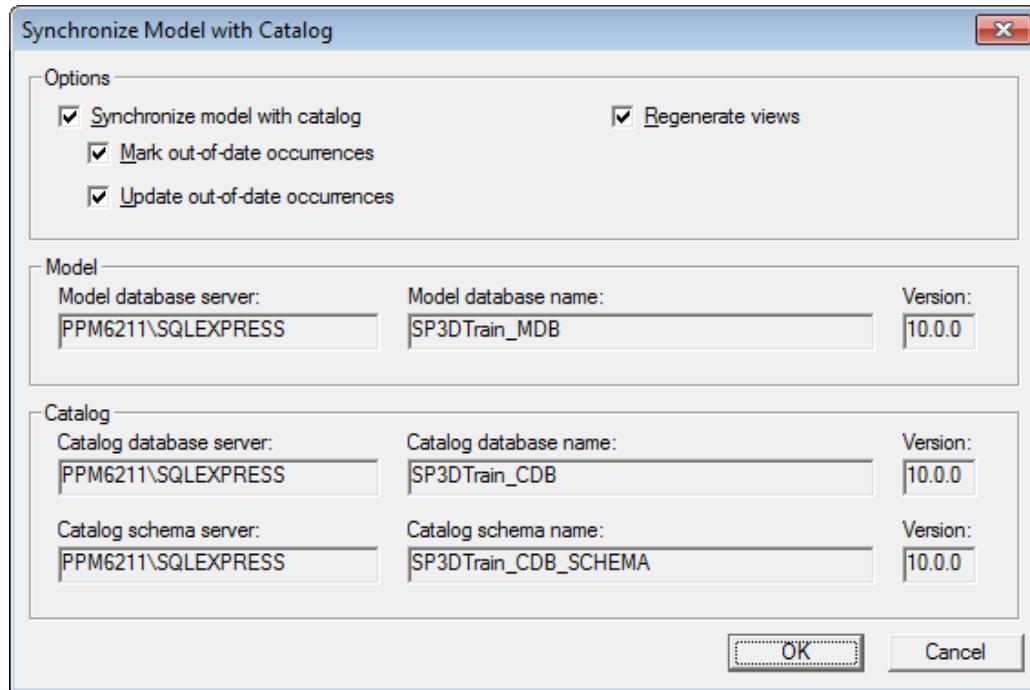
Notes: Let us play out the scenario that there are two plants (plant A and plant B) sharing the same catalog, this catalog has changed significantly since the last backup was taken for plant B. In this scenario we would perhaps run the synchronize model with catalog command on model B in the event it gets restored with the old backup. Synchronization will try to push down changes on the catalog and bring part definitions in line with the live/current database.

Likely, after the restore of this outdated model, you would then regenerate reports databases and would be presented with a message indicating that some views failed to generate, this is one indication of where you would use the view generator feature in this command.

- Start **Project Management**.
- Select the plant in the tree that you wish to Synchronize (**SP3DTrain**), then from the **Tools** menu select **Synchronize Model with Catalog**

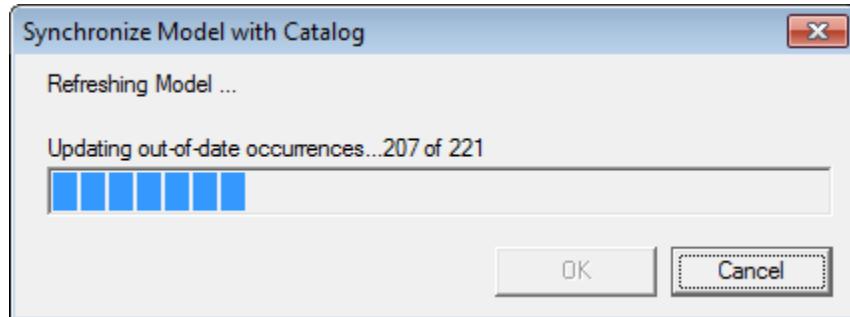


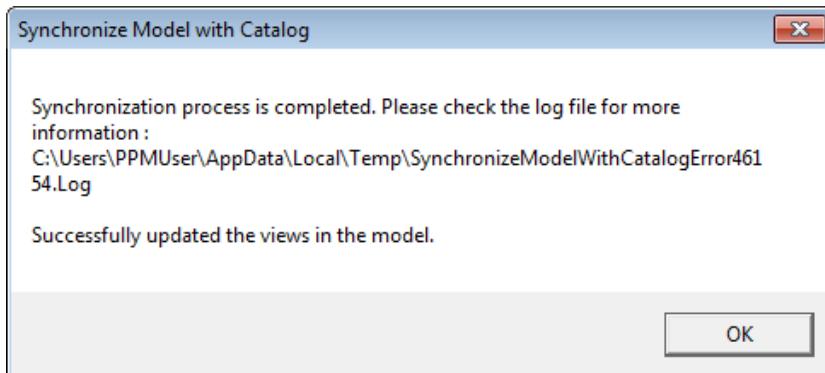
3. Note the existence of two check boxes:



Not all Catalog changes require a true Synchronization of the data but the following instances are an example of when to run it: perhaps an entirely new part class has been added to the Catalog that did not previously exist, or even a new Interface that was not there. The views associated with this data would probably be absent from this restored model, or perhaps columns on prior views would be different.

4. Leave all checkboxes checked on the Synchronize Model with Catalog form and allow the command to run to completion by clicking **OK**.
5. Click **OK**





6. Click **OK**, then **OK** to dismiss the second dialog box.

7. Open and review generated log file

Computer > Local Disk (C:) > Users > PPMUser > AppData > Local > Temp >

Name	Date modified	Type	Size
SynchronizeModelError46154	10/24/2013 5:40 PM	Text Document	510 KB
SNAGHTMLbb41dba	10/24/2013 5:40 PM	PNG image	13 KB
ViewGenerator14724	10/24/2013 5:34 PM	Microsoft SQL Ser...	7,586 KB
SNAGHTMLhad4h10	10/24/2013 5:33 PM	PNG image	0 KB

SynchronizeModelError46154 - Notepad

```
*****MODEL INFORMATION*****
DATE & TIME : 10/24/2013, 5:30:46 PM
PLANT/SHIP NAME : SP3DTTrain
MODEL DATABASE NAME : SP3DTTrain_MDB
MODEL DATABASE SERVER : PPM6211\SQLEXPRESS
CATALOG DATABASE NAME : SP3DTTrain_CDB
CATALOG DATABASE SERVER : PPM6211\SQLEXPRESS
CATALOG SCHEMA DATABASE NAME : SP3DTTrain_CDB_SCHEMA
CATALOG SCHEMA DATABASE SERVER : PPM6211\SQLEXPRESS
*****



Refreshing catalog... 10/24/2013 5:30:46 PM
|



ProcessCoreSiteObjects... begin. 10/24/2013 5:30:46 PM
```

8. Go to the end of the file for a summary of the errors reported

```
Checking for Name Rule updates...is completed. 10/24/2013 5:33:19 PM
```

```
Refreshing Model with catalog..] is completed. 10/24/2013 5:33:19 PM
```

```
Start Generating views...10/24/2013 5:33:19 PM
```

```
Finished Generating views...10/24/2013 5:39:39 PM
```

```
Exiting the command.
```

```
*****  
Error Summary  
*****
```

```
Synchronize Statistics:
```

Item Name	Count					
	Initial	Approved	Processed/ Out-of-date	Failed	Remaining	Deleted
site Proxies	695	-	12	0	-	0
Symbol Definitions	558	-	53	0	-	-
Proxy Stoppers	221	0	221	0	0	-
symbol updaters	28	0	28	0	0	-

Note: In a production or test environment you would then follow this action by regenerating reports databases.

LAB 22: Database Maintenance

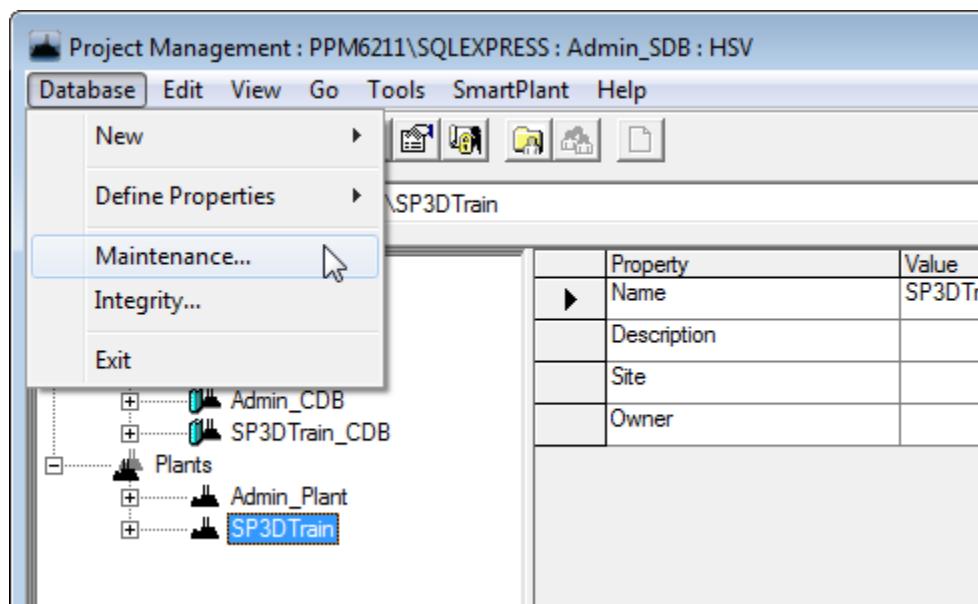
Objectives

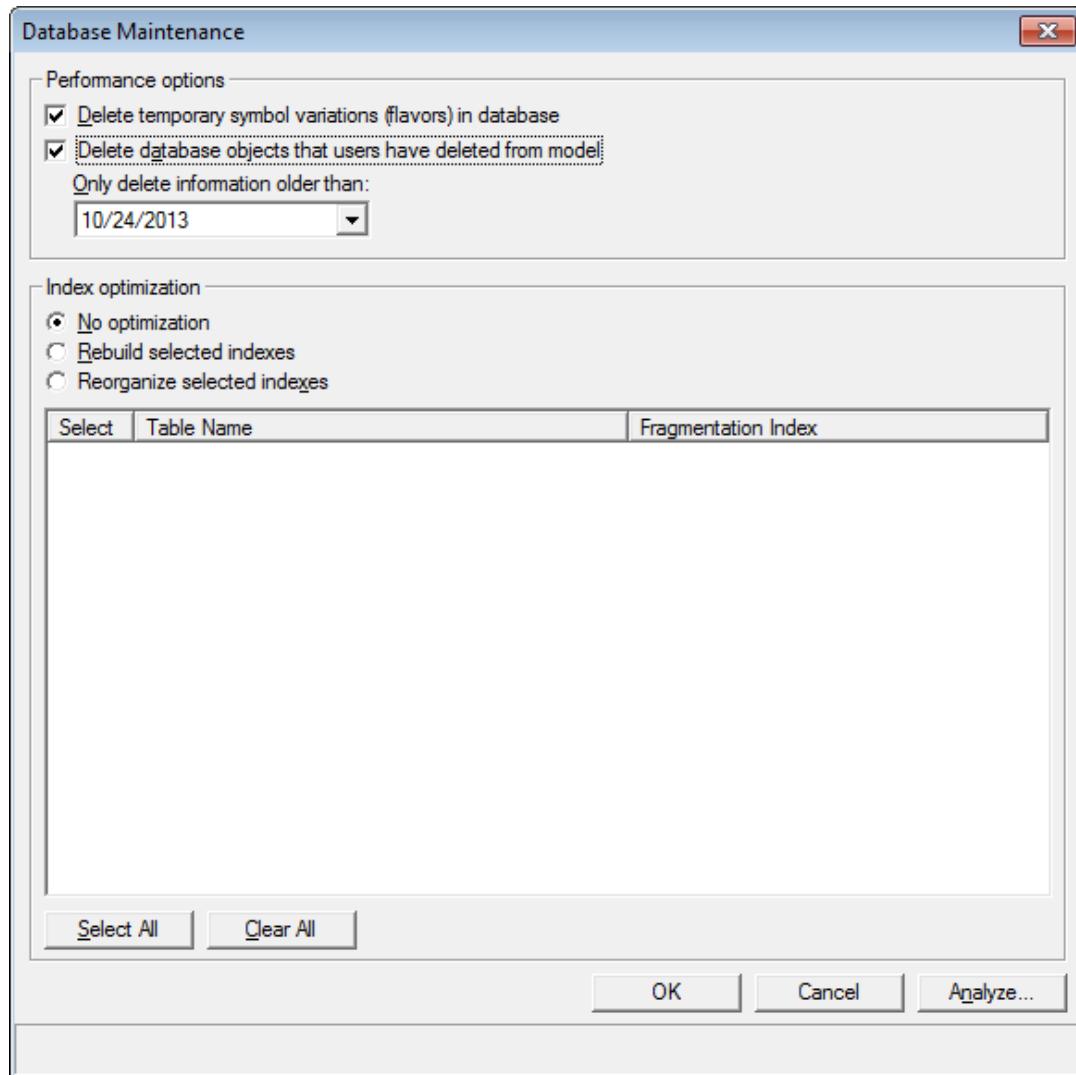
After completing this lab, you will be able to:

- Access Maintenance form to perform optimization tasks in the database.

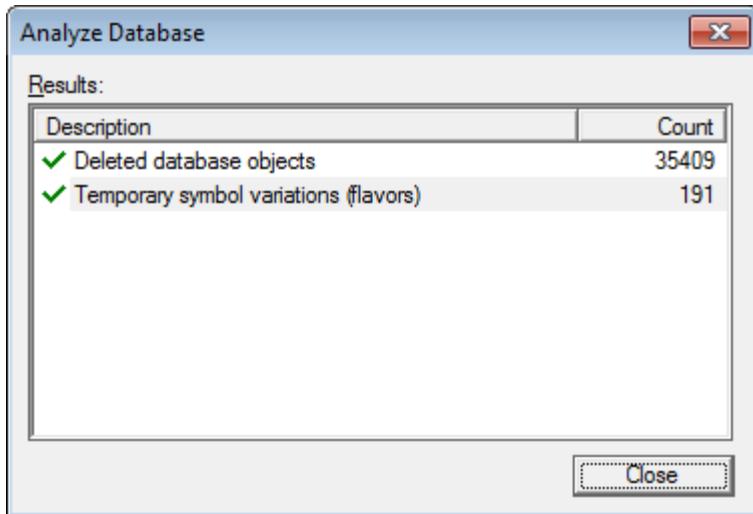
Note: This is a feature that allows users to purge temporary data and perform tasks such as optimizing indexes.

1. Start **Project Management**, select the plant or catalog you want to perform maintenance for, then select **Maintenance** from the **Database** menu

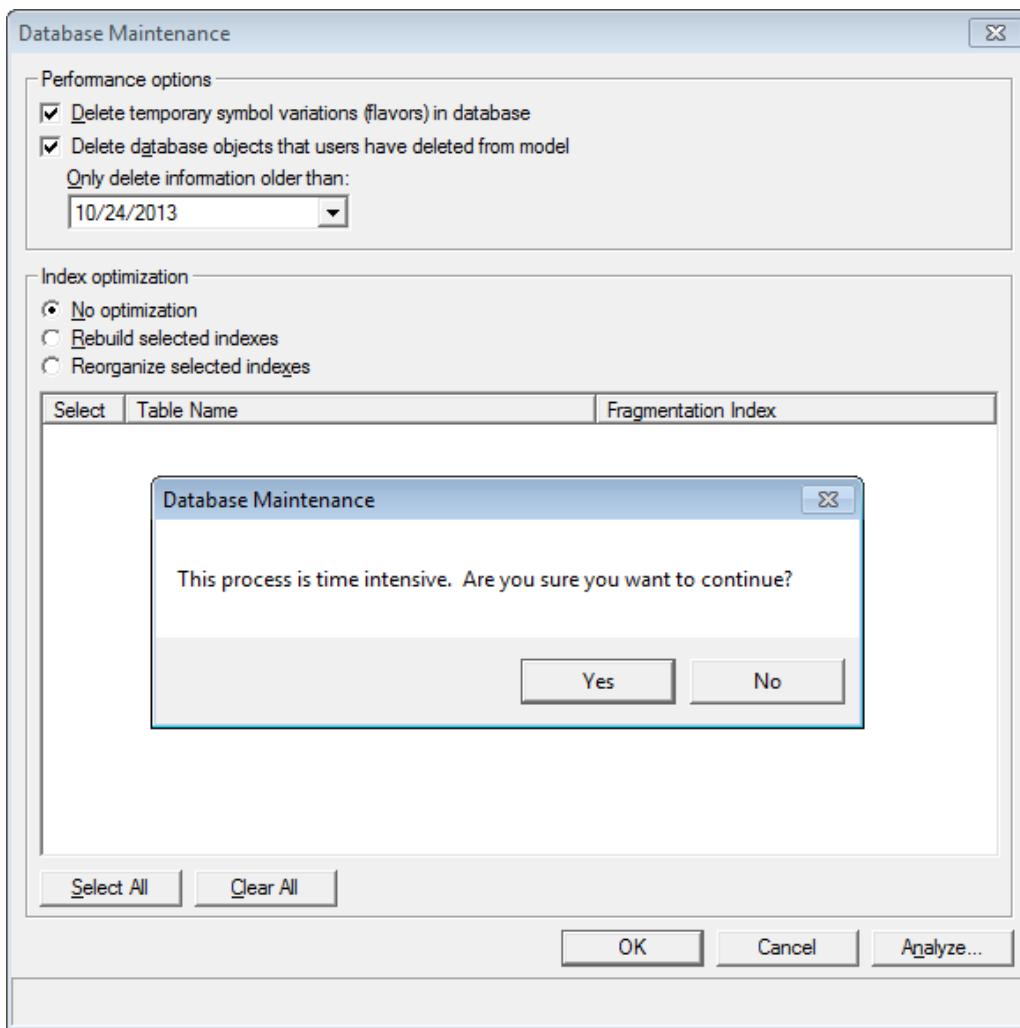




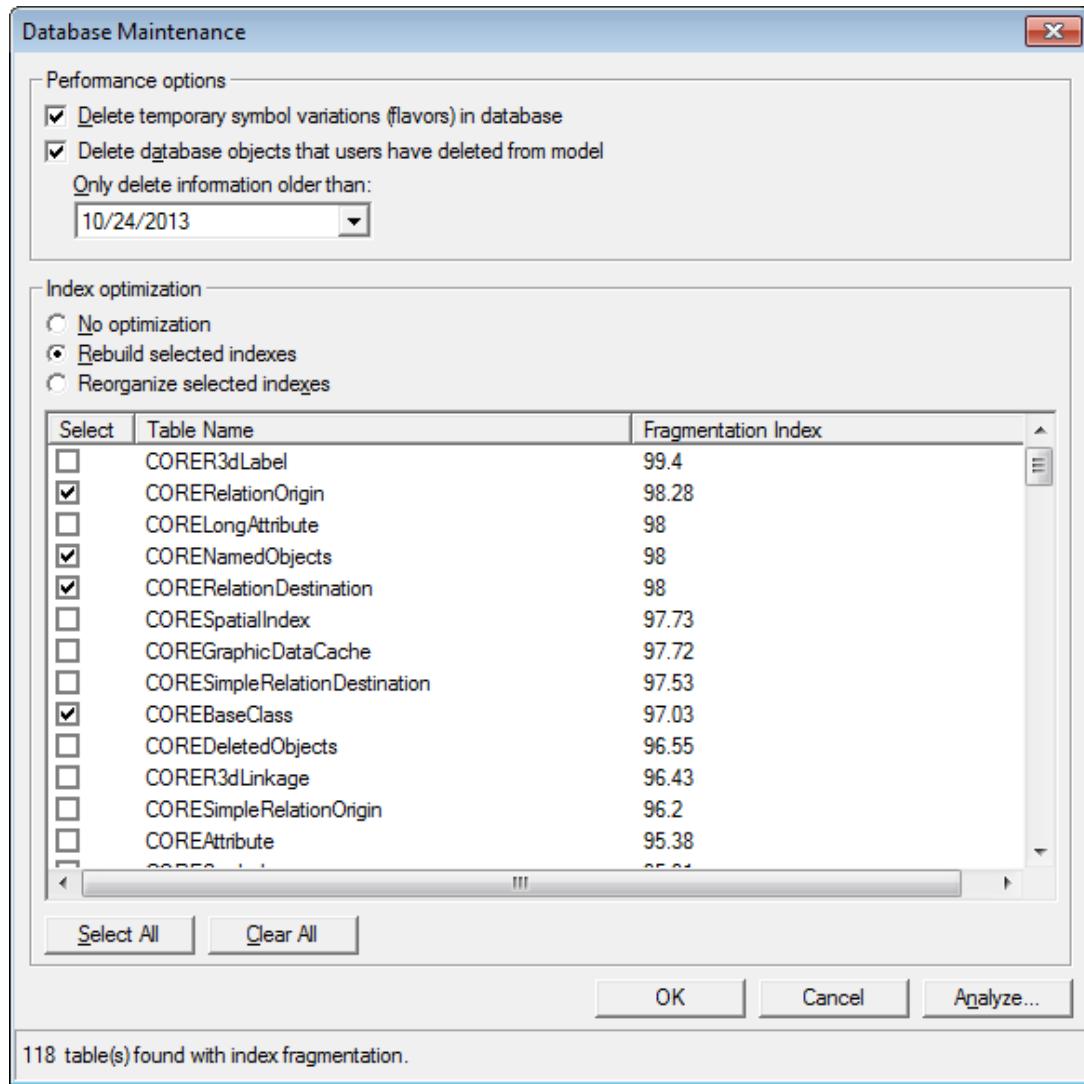
2. Place **checkboxes** in the first two options and then click **Analyze** button to understand the current need for the maintenance.



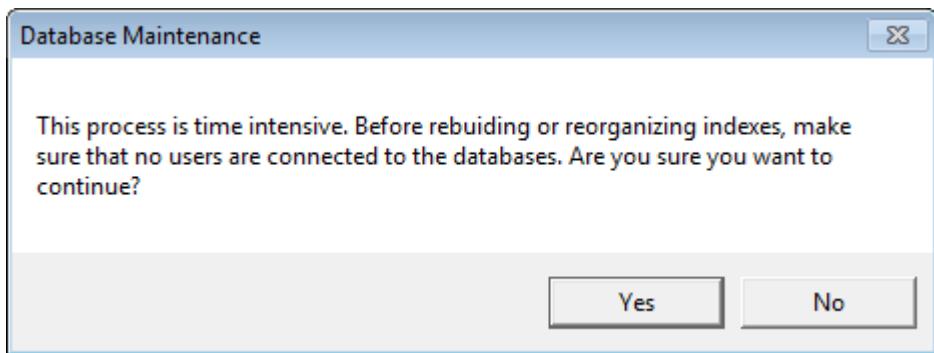
3. To perform these actions, **close** Analyze form and then click **OK** on database maintenance form.



4. Click **Yes**, thus acknowledging that it may take some time.
5. After this process has finished, go back to the **Database Maintenance** form and select **Rebuild selected indexes** option from the Index optimization section, it may take a few seconds to populate the list.



6. Select the four tables as depicted above, click **OK**.



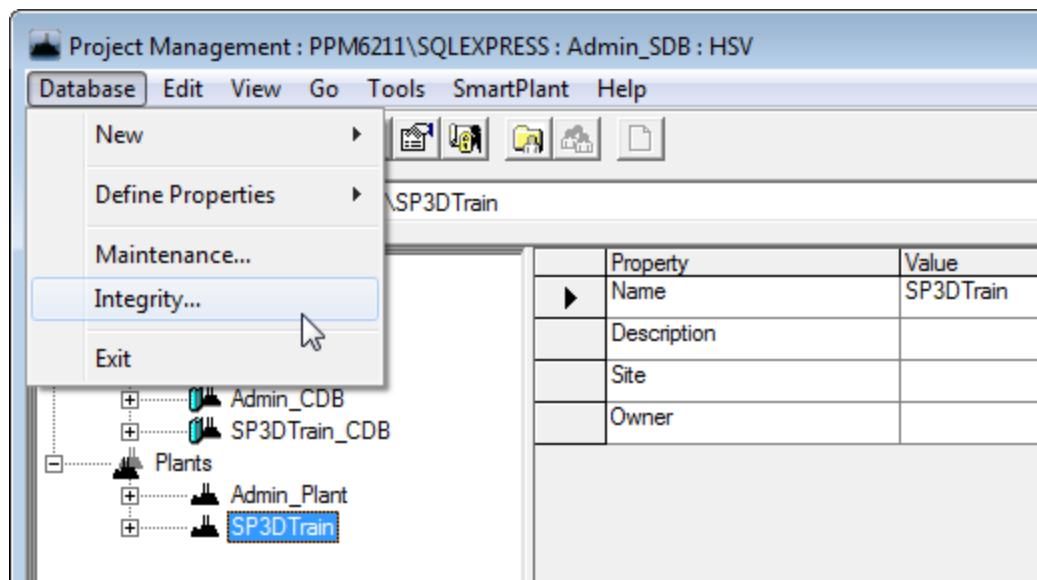
7. Note the warning message and then review the server to ensure that all users followed directions and disconnected.
8. Click **Yes** to let the command work.
9. Once the command has completed you can close the form by using X or Cancel button.

LAB 23: Database Integrity

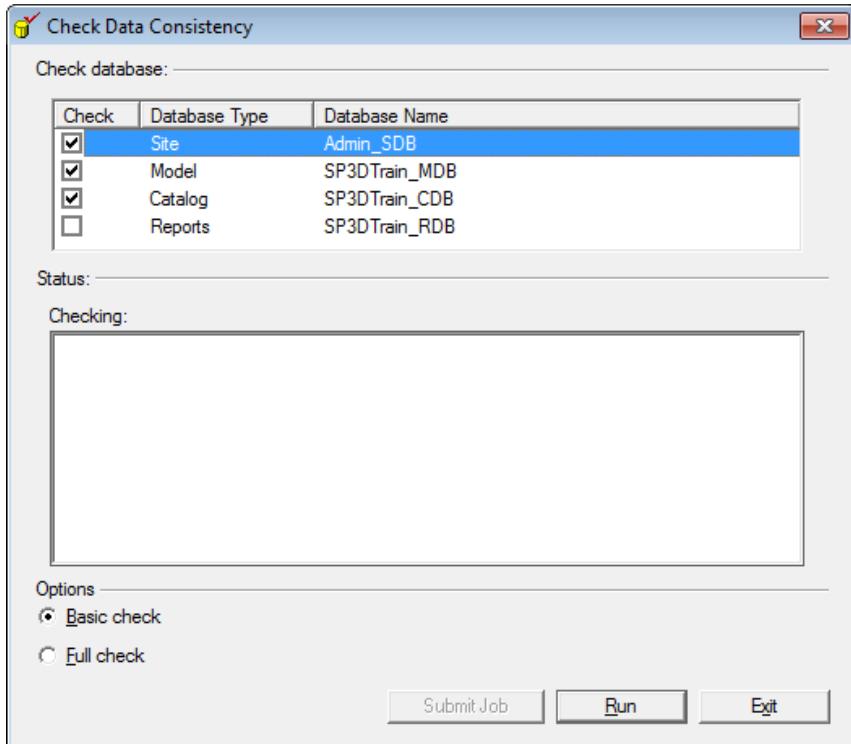
Objectives

After completing this lab, you will be able to:

- Run Database Integrity command to verify consistency of model objects and perform the clean action.
 - Run a report to find objects with Integrity issues.
 - Clean inconsistent objects detected by DBI by using a custom command delivered out of the box.
1. Open **Project Management** if not already open
 2. Select **SP3DTrain** plant, then select **Integrity** command from **Database** menu.



3. Select the database you wish to check for (check all three databases for this lab), choose **Basic** check, and then click **Run**.

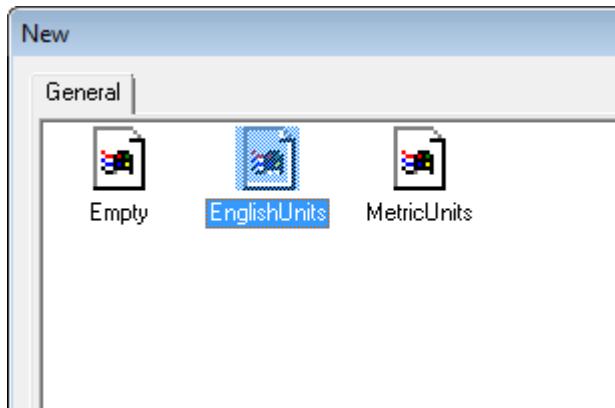


4. **Exit** the form when finished.
5. Open the temp folder by typing in the address bar of windows explorer %temp% and review the three error logs created for database integrity check. Make sure there were no catastrophic failures by looking for the word error or making sure the command completed successfully on each database.
6. A file called DbIntegrityCommandLine-*PlantName*.txt will be created on this same directory, it will contain the command line you would need to use if you wish to run Database Integrity on a batch script.

```
checkDataConsistency.exe -q -p MSSQL,MSSQL,MSSQL -s PPM6211\SQLEXPRESS,PPM6211\SQLEXPRESS,PPM6211\SQLEXPRESS
```

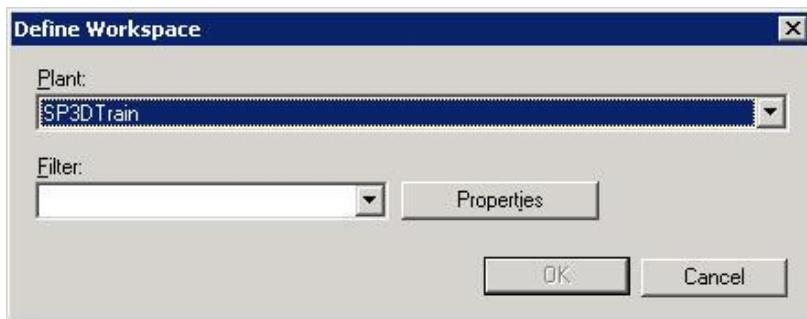
7. We will now run a report for Database Integrity entries. This report could be executed both before and after the Clean Custom Command is executed.

8. Start Smart 3D, select **EnglishUnits** session template:

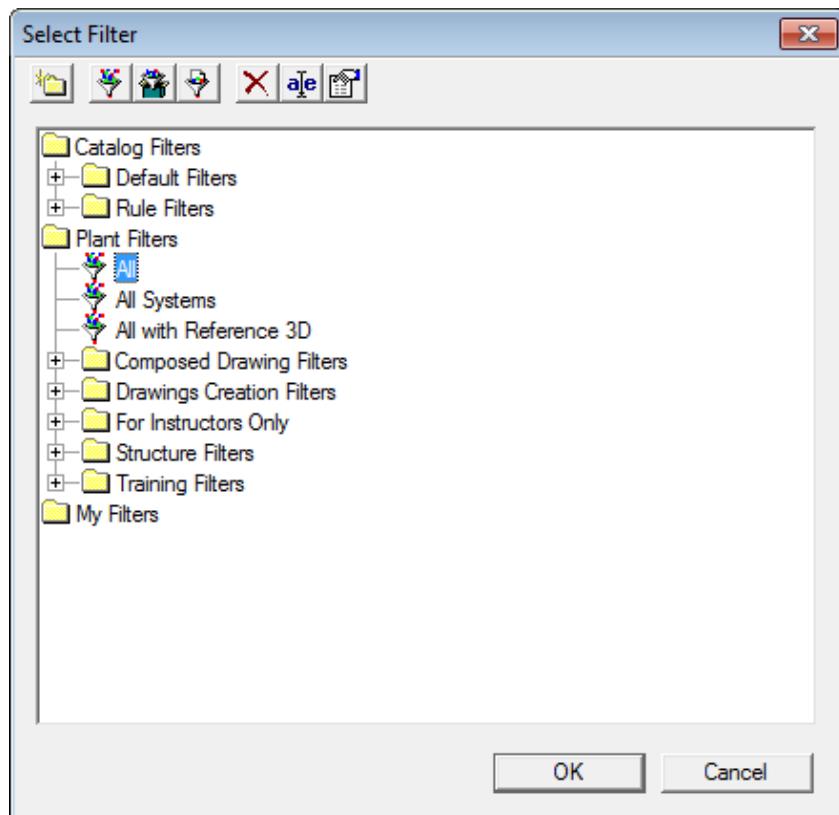


9. Click **OK**

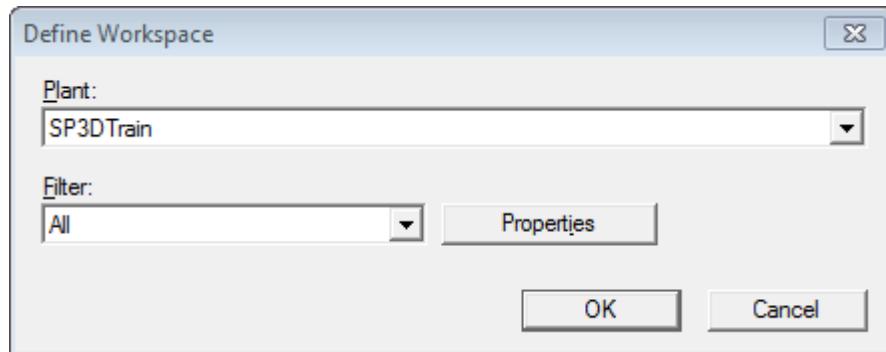
10. Use **File → Define Workspace** then select **SP3DTrain** plant:



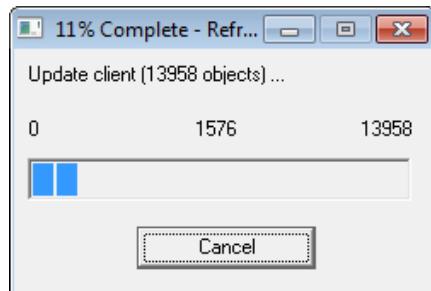
11. From the Filter drop down select **More** and then select **ALL** filter



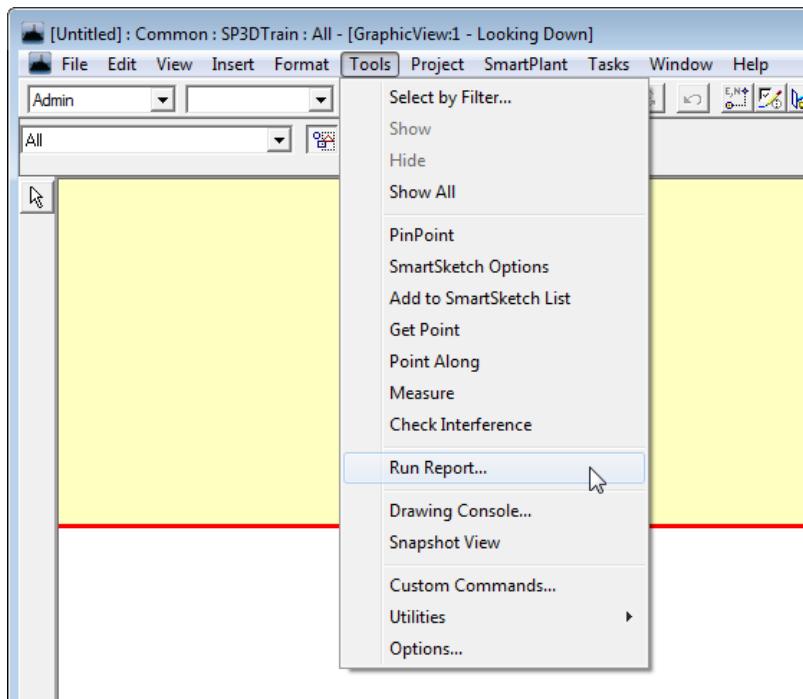
12. Click **OK**



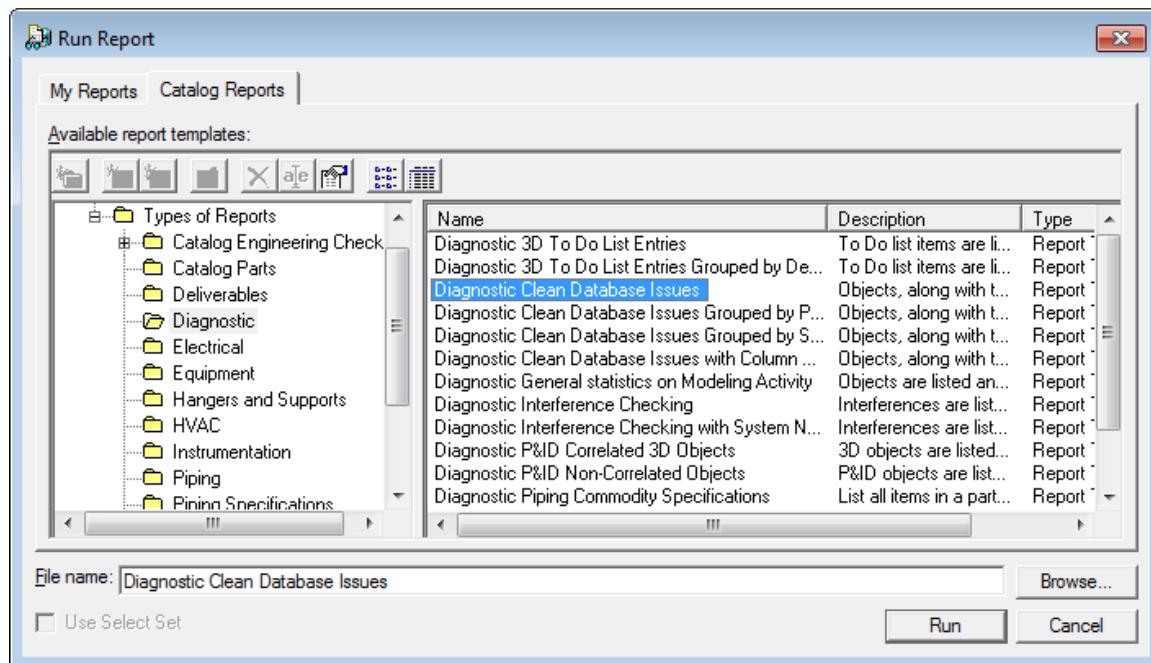
13. Click **OK** on Define Workspace form and allow Refresh to complete.



14. From the **Tools** menu select **Run Reports**.

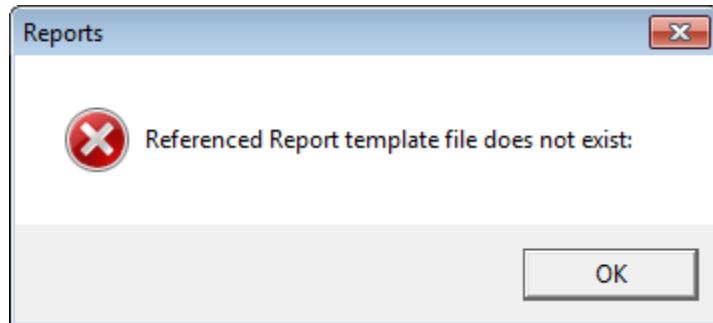


15. From the **Catalog Reports** tab, select report **Diagnostic Clean Database Issues** as depicted below and execute it. If there had been any problems found or fixed by the Integrity script then this report would reflect it.



16. Click **Run** button and an Excel workbook will appear containing results of the report.

Note: You may see the following dialog box if the security settings for Visual Basic projects have not been set in Excel (they are not by default).



Note: Follow these instructions to set Excel security settings for **Office 2010**.

- Open Excel
- Click the **office button** at top left margin of the window.
- Select **Excel Options** from the bottom
- Choose **TrustCenter** from the left menu, then **TrustCenter Settings...**
- Go to **Macro Settings** on the left, then check radio button **Enable all macros...**
- Check **Trust access to the VBA project object model** checkbox.
- Click **OK** on the two forms to dismiss, close Excel.

The screenshot shows an Excel spreadsheet titled "Diagnostic Clean Database Issues [Read-Only] [Compatibility Mode] - Microsoft Excel". The spreadsheet contains two main sections: a header section with user information and a detailed report section.

Header Section:

Plant Name:	SP3DTrain
User:	PPM6211\PPMUser

Report Section:

Section Headers:

- Section 1: Diagnostic Clean Database Issues
- Section 2: Note: In normal operation, this report should not return any value.

Table Headers:

Object							
Name (Or Class Name)	Data Store	State	OID	Date Created	Date Deleted	Application	Status
First Relations	In Todo List	Approval	Permission Group	Date Modified	Deleted by	Owner	Severity

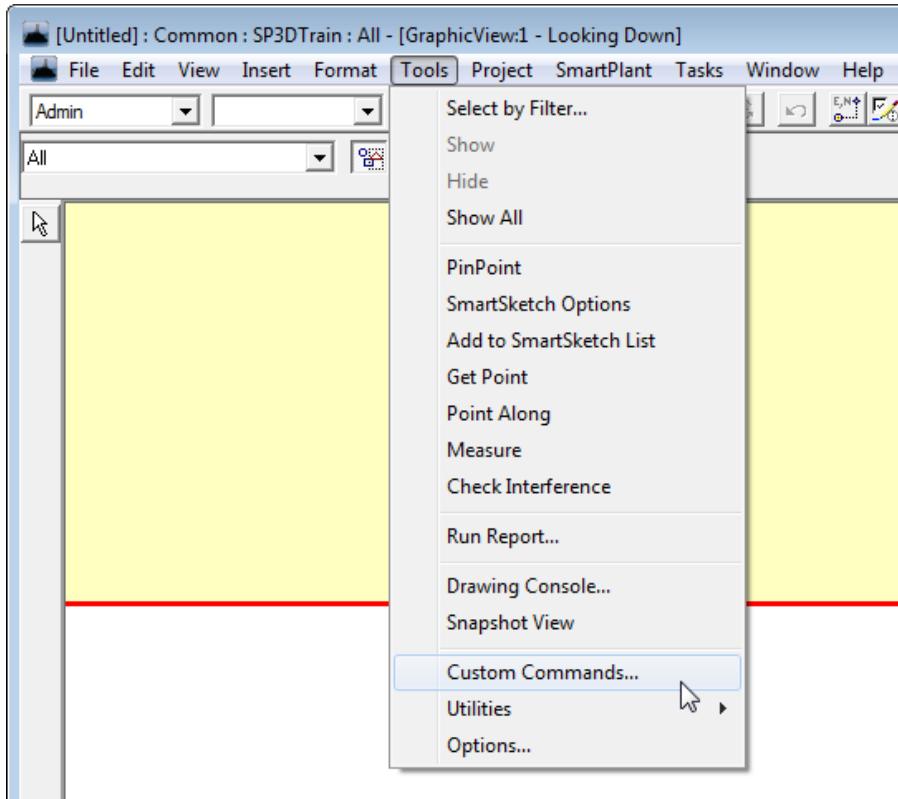
Table Data:

Coordinate System		Not found	{00044636-0000-0000-EC0}			CommonStruct	New
REFDATGasketSelectionFilter	Catalog	Active	{0000EA78-0000-0000-0D0}	1/11/2010 1:11:57 PM		Core	Resolve Fixed
	No	Working	Catalog	1/11/2010 1:11:57 PM			Crucial
REFDATBoltSelectionFilter	Catalog	Active	{0000EA76-0000-0000-990}	1/11/2010 1:11:57 PM		Core	Resolve Fixed
	No	Working	Catalog	1/11/2010 1:11:57 PM			Crucial

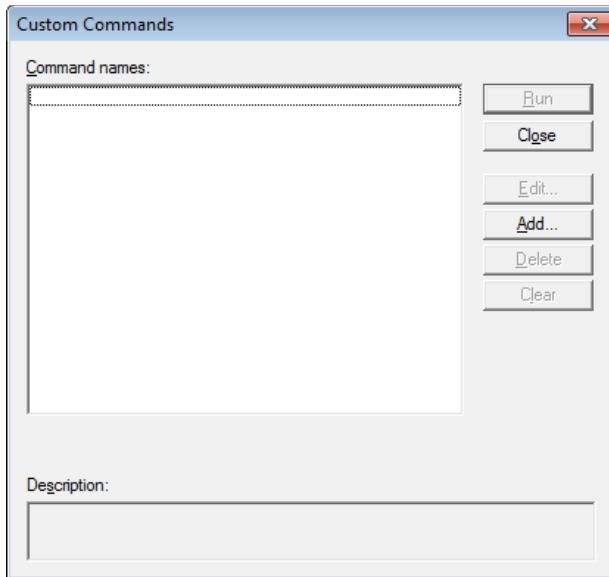
17. Close Excel after revision of reported objects.

Note: Once Database Integrity has finished, next action is to clean the database for issues that were found. The Clean Database command is not yet integrated in the GUI environment, you will need to use a special custom command with ProgID **SP3DCleanDatabaseCmd.CCheckObj** to perform the clean procedure. This command needs to be executed from an Smart 3D session as there may be objects that need to be modified in the graphical environment. An example of how to access this command from a Smart 3D session in the event that there were items to be cleaned is as follows.

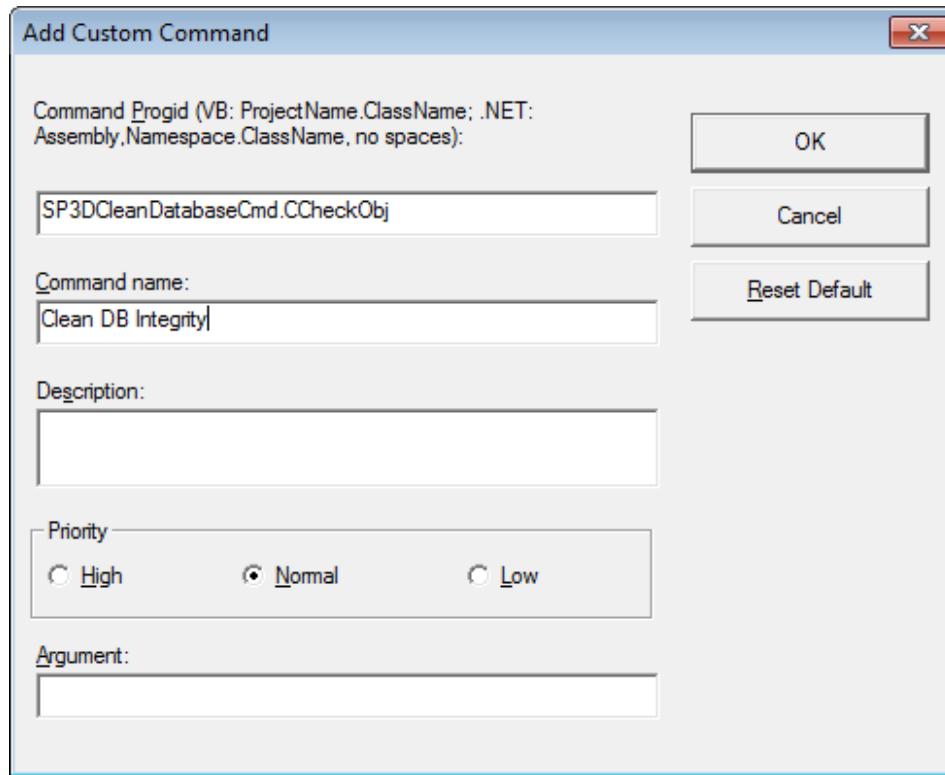
18. From Tools menu select **Custom Command**



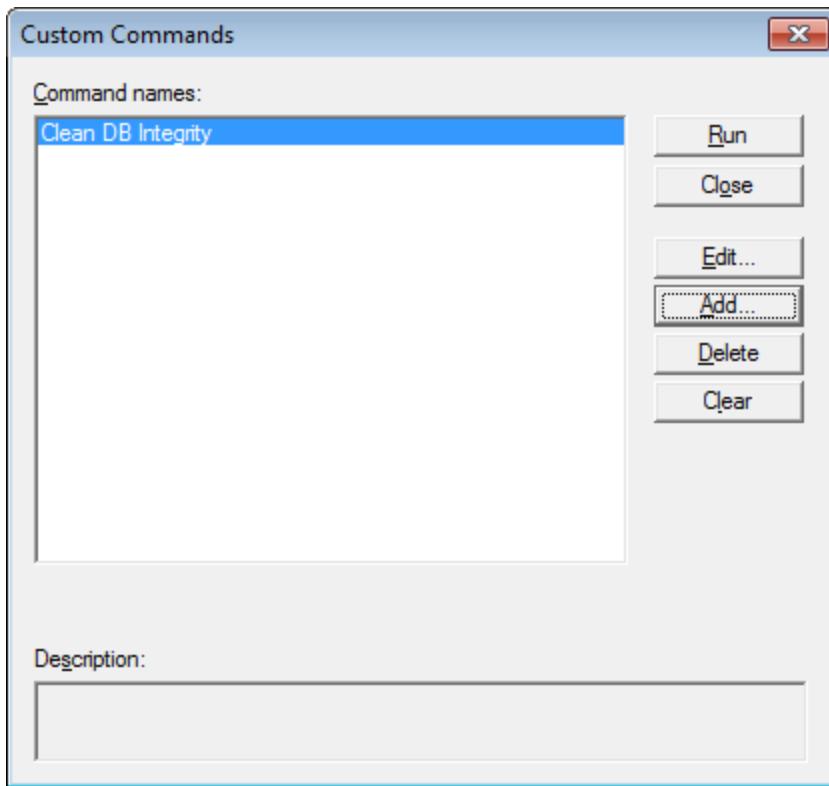
19. Following form will be displayed:



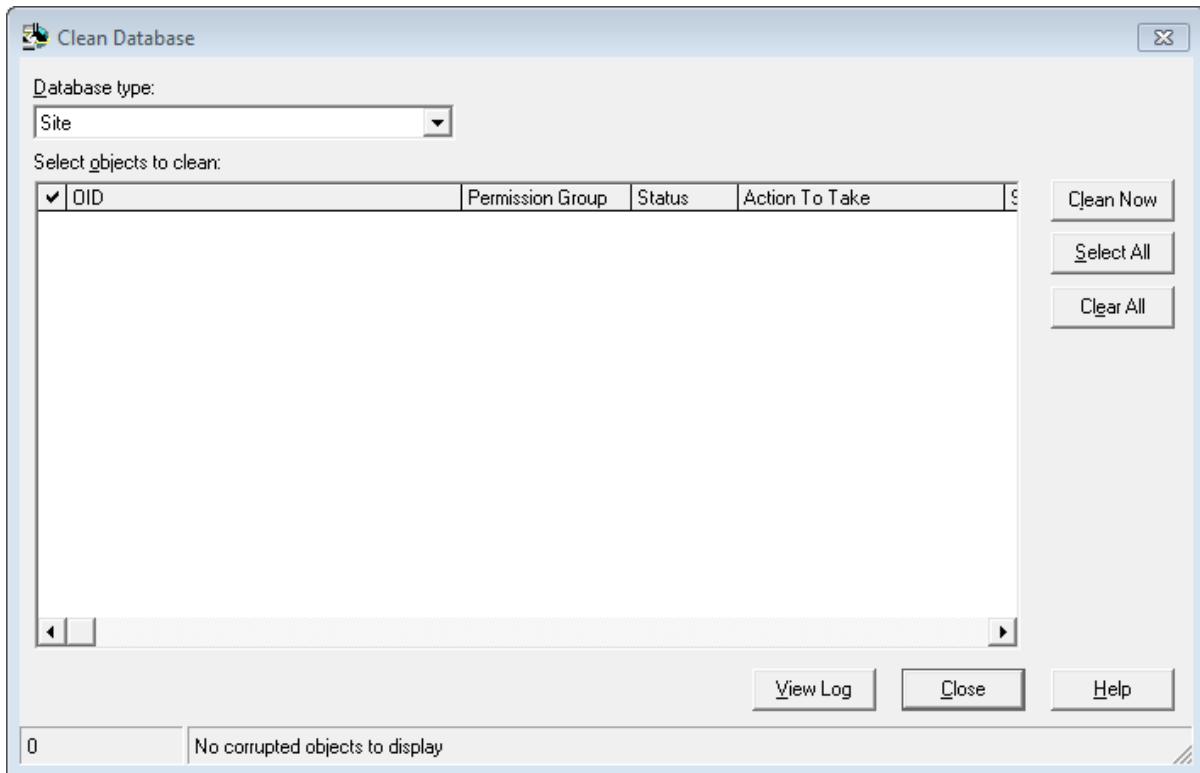
20. Click **Add** button



21. Click **OK** after completing the form as depicted above.



22. Click **Run** command.



23. In general, you will use this Form to select any items appearing on the list and then perform a **Clean Now** operation. Refer to the DBIntegrity.pdf help file (located in C:\Program Files(x86)\Common Files\Intergraph\Smart3D\Help) for more detailed information on specific issues.
24. **Close** the command and custom commands window, close the Smart 3D session.

LAB 24: Reference a PDS Project (Optional)

Guidelines

Smart 3D V2014 can only reference PDS versions 2010 SE and 2011 SE.

The PDS project is assumed to be setup as usual on a PDS server. Any database type (SQL or Oracle) may be used for the PDS project.

Software installed

The following software must be installed on an SP3D client that references a PDS project on a PDS server.

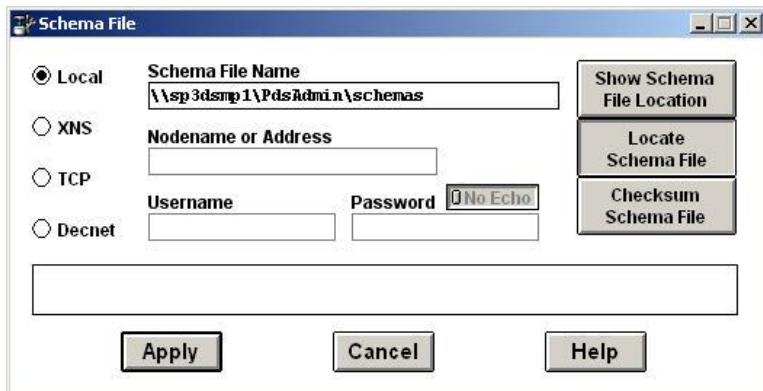
- ✓ Batch Services
- ✓ RIS_Share (RIS Shared Components)
- ✓ SmartPlant License Manager
- ✓ PD_Shell (Plant Design System environment)

Procedure to reference

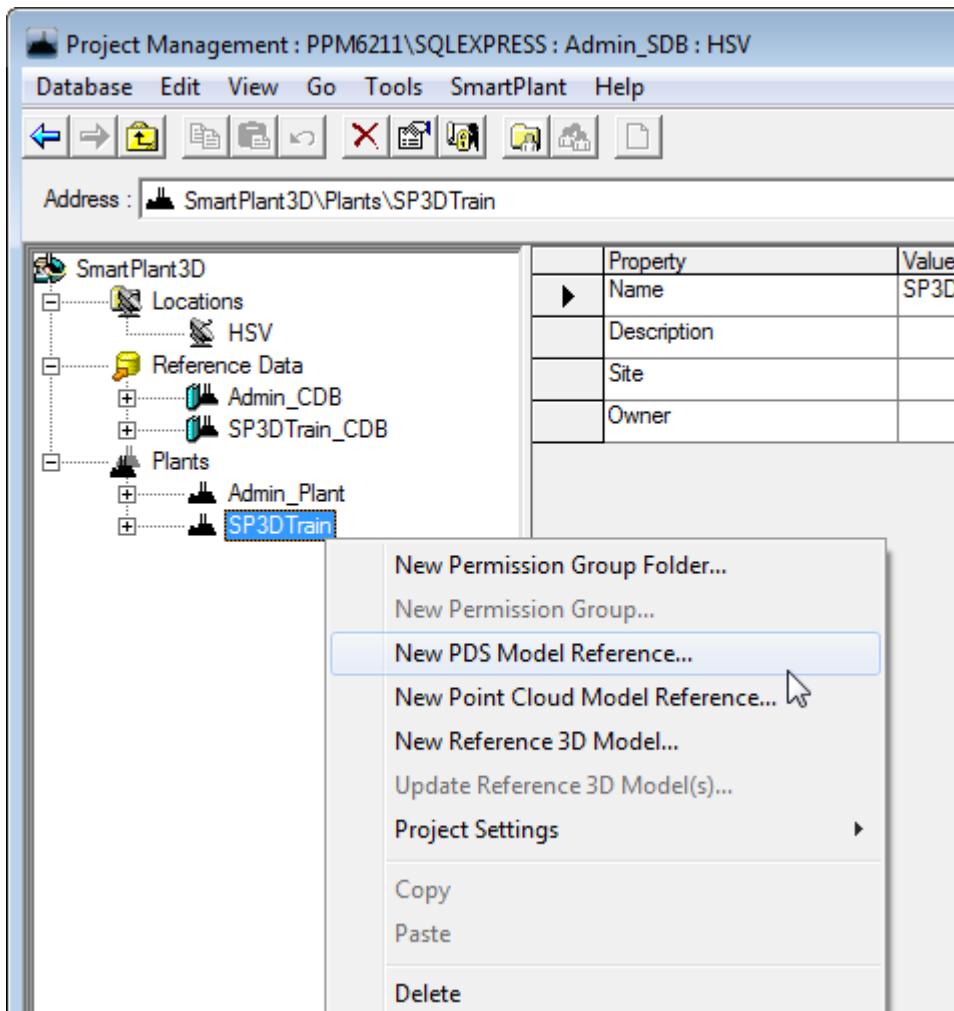
1. Using PDS Configure, point to pds.cmd file that contains the path to the profile containing PDS project to reference



2. Using RIS Schema Manager point to schema file for PDS project to reference



3. Create a batch queue. Click Start > All Programs > PD_Shell > PDS Queue
4. Using Project Management, attach the PDS project to the SP3D plant by selecting a plant, right mouse click and select **New PDS Model Reference** from the list.



Dos and Don'ts

- Don't de-reference a PDS project and re-reference it to the same SP3D plant. This generates a new reference string and invalidates prior filters.
- If two SP3D plants that share a catalog refer the same PDS project, de-referencing it from one plant de-references it from the other plant as well.

LAB 25: Error log files

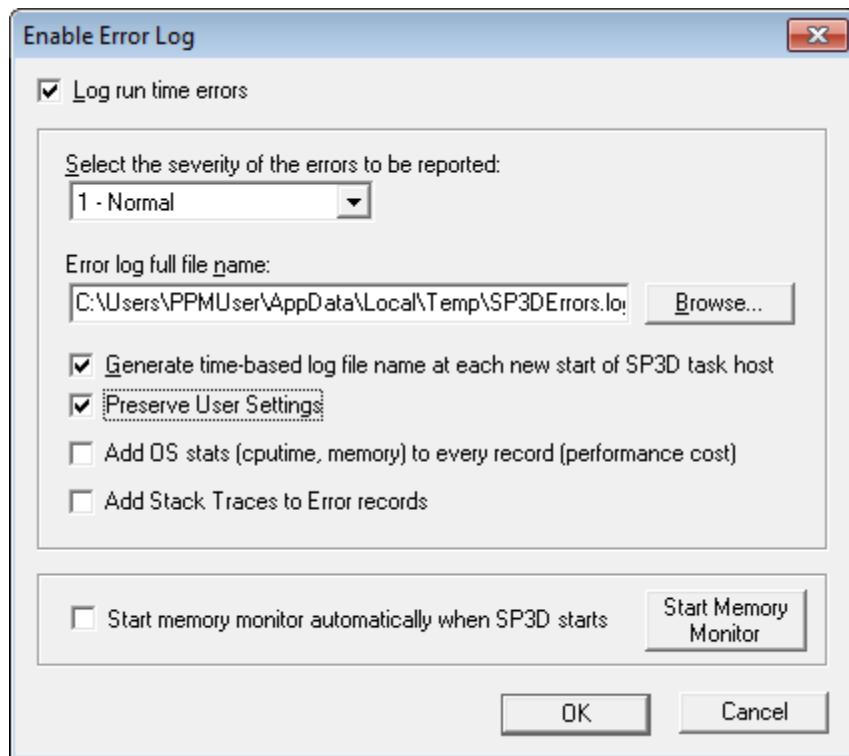
Objectives

After completing this lab, you will be able to:

- Configure and save options for Smart 3D error log reporting.
- 1. During execution of the software, several log files are created that will help to perform troubleshooting procedures if needed. The majority of these log files are written to temp folder of the current user profile. This location can be quickly accessed by using the windows environment variable %temp% on the address bar of Windows Explorer.

By default, Smart 3D error logs are created when a session is opened, but the log file will be deleted if it has not been set to be permanent.

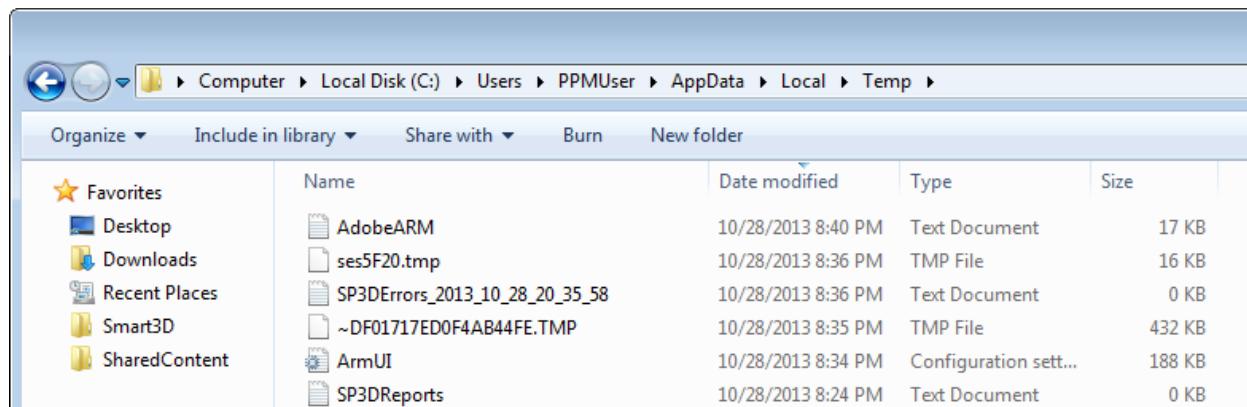
- 2. Navigate to **[Smart 3D install folder]\Core\Tools\Administrator\Bin** and execute program **ErrorLogEnable.exe**
- 3. Set options according to following values



Note: Ensure the path that provided on the form is writable by all local users (if it is not, then it will not be written for other users that log in because it will not be able to write to specified location). In General, severity level “1-Normal” will usually be sufficient, but there may be times when a support analyst working a problem you have reported, will have you adjust this value.

You will need to close Smart 3D and start it again (potentially from an already saved session file) before these settings take effect.

4. Click **OK**
5. From now on, an error log file will remain in temp directory every time a session is opened and closed. A different error log is going to be created for each instance of Smart 3D opened.
6. Open **Smart 3D** to generate a new log file.
7. Navigate to temp folder (you can type in the address bar of a Windows Explorer window **%temp%** then enter)



8. **Open** the most recent Smart 3D log file (sort by date modified column for quick revision), it will have a name that is compounded of the words SP3DErrors_TIMESTAMP where TIMESTAMP is the date and time when the log file was created.

```

SP3DErrors_2013_10_28_20_35_58 - Notepad
File Edit Format View Help

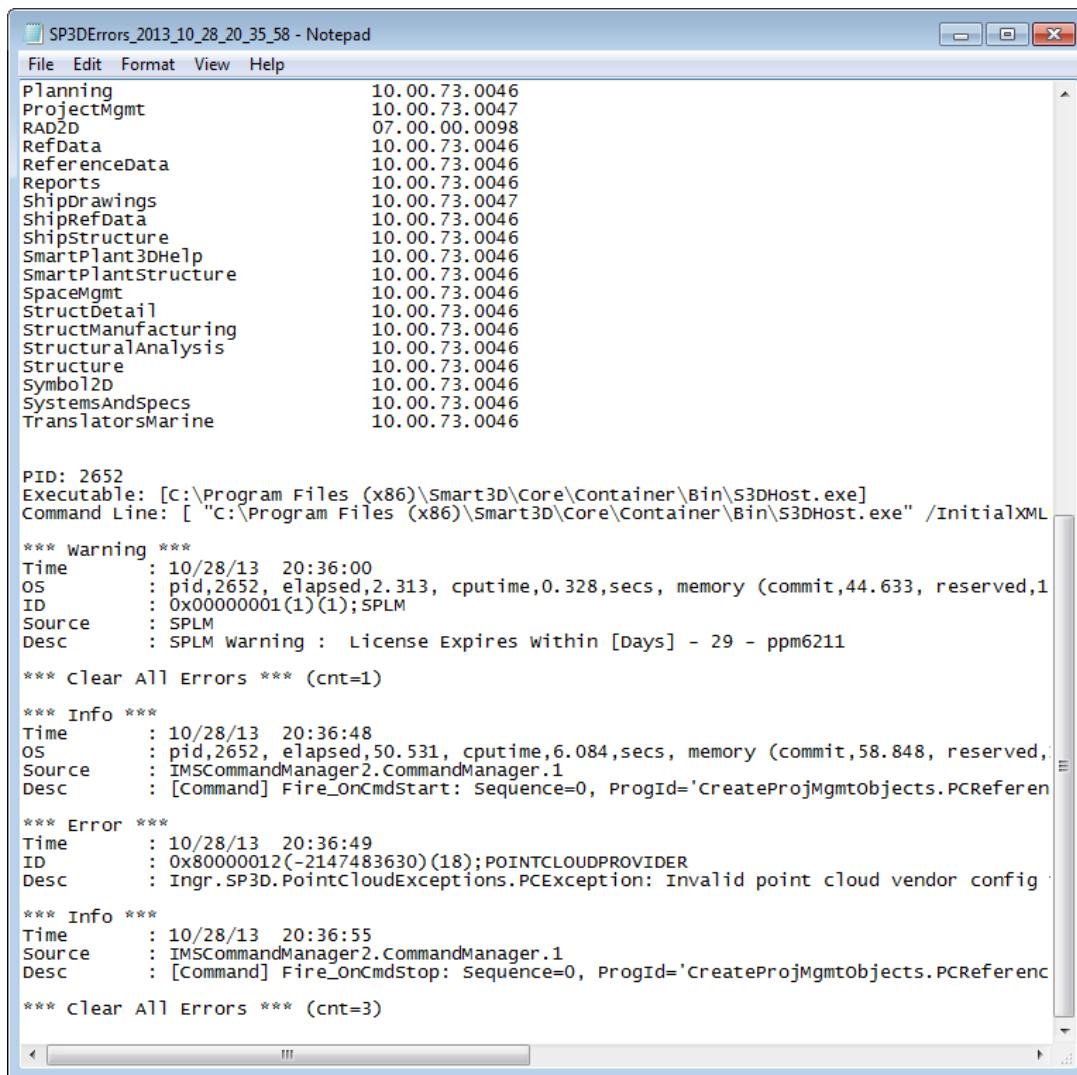
ps      : Microsoft Windows 7 Enterprise Edition Service Pack 1 (build 7601), 64-bit
os      : This process is large address aware (/3GB)
os      : The calling process has total virtual address space ,4095, MB.
os      : The client machine has total physical address space ,8181, MB.
os      : The client machine has available physical address space ,5874, MB.
os      : The client machine has total pagefile space ,16361, MB.
os      : The client machine has available pagefile space ,13836, MB.

Product version 10.00.73.0047

Task           version
-----
Cable          10.00.73.0046
Cableway        10.00.73.0046
CatalogData    10.00.73.0046
Civil           10.00.73.0046
Common2D         10.00.73.0046
CommonApp        10.00.73.0046
CommonRoute       10.00.73.0047
CommonSchema     10.00.73.0046
Commonship       10.00.73.0046
CommonSpace       10.00.73.0046
CommonStruct      10.00.73.0046
Compartmentation 10.00.73.0046
CopyByFamily     10.00.73.0046
Core             10.00.73.0047
Drawing Editor   10.00.73.0046
Drawings          10.00.73.0046
Equipment         10.00.73.0046
FoulCheck         10.00.73.0046
GeometryAnalysisAndRepair 10.00.73.0046
GeometryTopology   10.00.73.0046
GridSystem        10.00.73.0046
HangersAndSupports 10.00.73.0046
HoleMgmt          10.00.73.0046
HVAC              10.00.73.0046
MaterialsHandling 10.00.73.0046
MoldedForms        10.00.73.0046
Piping             10.00.73.0047
Planning            10.00.73.0046
ProjectMgmt        10.00.73.0047
RAD2D              07.00.00.0098
RefData             10.00.73.0046
ReferenceData       10.00.73.0046
Reports             10.00.73.0046
ShipDrawings        10.00.73.0047
ShipRefData         10.00.73.0046
ShipStructure       10.00.73.0046
SmartPlant3DHelp   10.00.73.0046

```

9. The information reported initially will help to identify the kind of operating system, total addressable memory and product version (very helpful when troubleshooting setup issues).
10. Further down, information about process ID and path to executable file that generated the log file can be seen, continued by display rendering settings.



The screenshot shows a Windows Notepad window with the title "SP3DErrors_2013_10_28_20_35_58 - Notepad". The window contains a list of system components and their corresponding version numbers, followed by a detailed error log entry.

Component	Version
Planning	10.00.73.0046
ProjectMgmt	10.00.73.0047
RAD2D	07.00.00.0098
RefData	10.00.73.0046
ReferenceData	10.00.73.0046
Reports	10.00.73.0046
ShipDrawings	10.00.73.0047
ShipRefdata	10.00.73.0046
ShipStructure	10.00.73.0046
SmartPlant3DHelp	10.00.73.0046
SmartPlantStructure	10.00.73.0046
SpaceMgmt	10.00.73.0046
StructDetail	10.00.73.0046
StructManufacturing	10.00.73.0046
StructuralAnalysis	10.00.73.0046
Structure	10.00.73.0046
Symbol2D	10.00.73.0046
SystemsAndspecs	10.00.73.0046
TranslatorsMarine	10.00.73.0046

PID: 2652
Executable: [C:\Program Files (x86)\Smart3D\Core\Container\Bin\S3DHost.exe]
Command Line: ["C:\Program Files (x86)\Smart3D\Core\Container\Bin\S3DHost.exe" /InitialXML]

*** Warning ***
Time : 10/28/13 20:36:00
OS : pid,2652, elapsed,2.313, cputime,0.328,secs, memory (commit,44.633, reserved,1
ID : 0x00000001(1)(1);SPLM
Source : SPLM
Desc : SPLM Warning : License Expires Within [Days] - 29 - ppm6211

*** Clear All Errors *** (cnt=1)

*** Info ***
Time : 10/28/13 20:36:48
OS : pid,2652, elapsed,50.531, cputime,6.084,secs, memory (commit,58.848, reserved,
Source : IMSCommandManager2.CommandManager.1
Desc : [Command] Fire_OnCmdStart: Sequence=0, ProgId='CreateProjMgmtObjects.PCReferen
*** Error ***
Time : 10/28/13 20:36:49
ID : 0x80000012(-2147483630)(18);POINTCLOUDPROVIDER
Desc : Ingr.SP3D.PointCloudExceptions.PCEception: Invalid point cloud vendor config
*** Info ***
Time : 10/28/13 20:36:55
Source : IMSCommandManager2.CommandManager.1
Desc : [Command] Fire_OnCmdStop: Sequence=0, ProgId='CreateProjMgmtObjects.PCReferenc
*** clear All Errors *** (cnt=3)

11. Knowledge of the location and information on the error log files is important when performing troubleshooting procedures. An Intergraph support analyst may also require you to generate and send this error log files as a regular methodology to track down and find additional data when performing investigation of a problem.
12. **Close** log file and **Smart 3D** session.

LAB 26: Interference Checking

Objectives

After completing this lab, you will be able to:

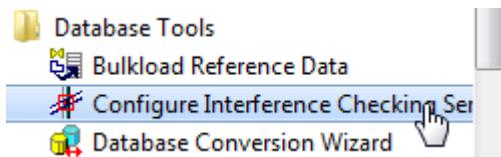
- Configure an Interference Checking Server for a particular project.
- Enable and use Local interference checking.
- Review interference objects using the List view.
- Modify and configure Interference clearance rules

Database Detection

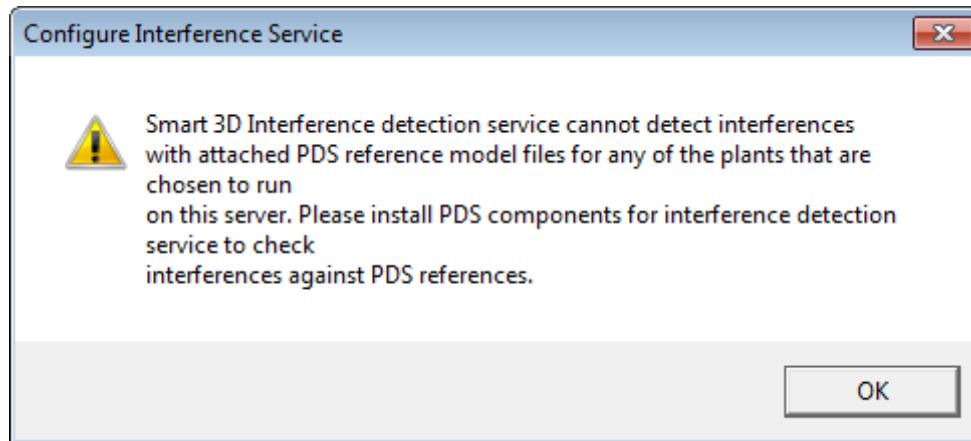
Upon software installation, the option “Database Interference Detection Service” can be selected from the list of available features, this is what enables the workstation to become a potential IFC Server.

During this lab practice, the word **IFC** will be used to refer to **Interference Checking**.

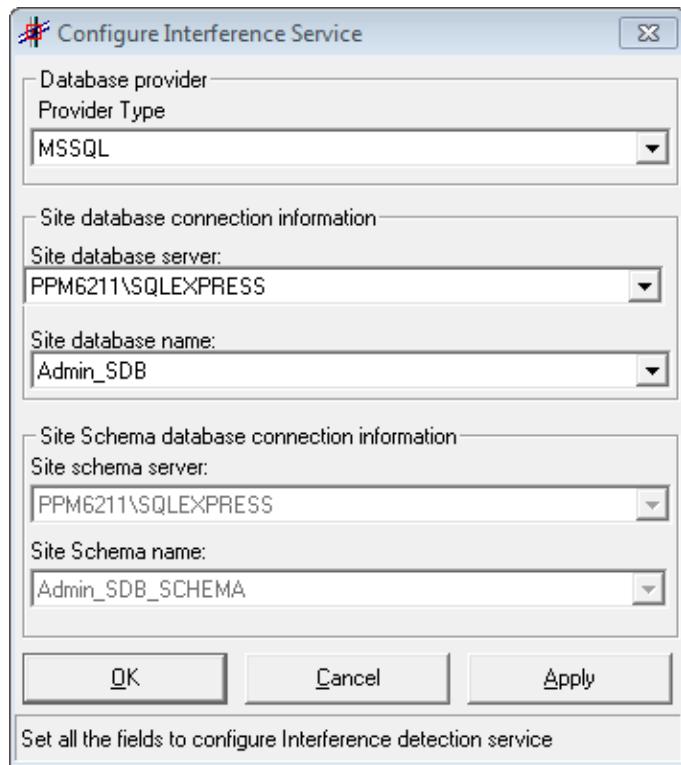
1. Click on **Configure Interference Checking Service** utility found in **Start → All Programs → Intergraph Smart 3D → Database Tools → Configure Interference Checking Service**



2. The following message may appear depending upon the configuration of your workstation, if it does, then click **OK**.

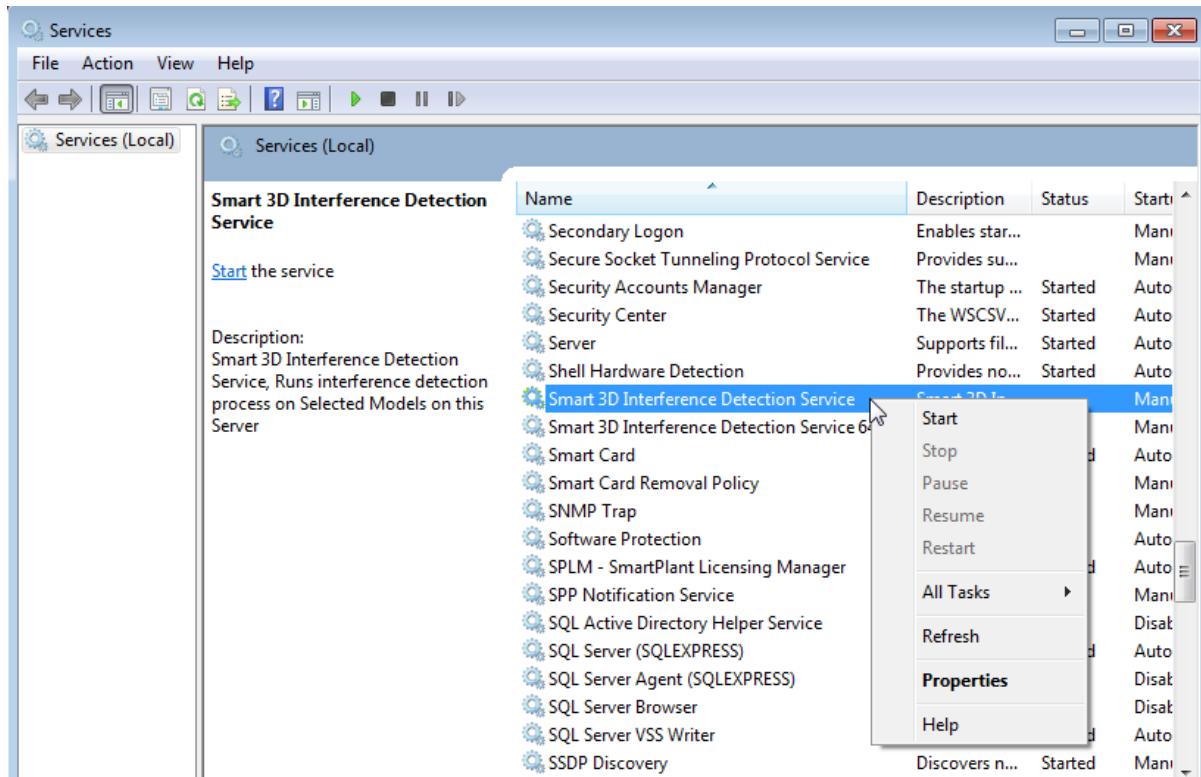


3. **Complete** the form as depicted below identifying **Admin_SDB** and **Admin_SDB_SCHEMA**. By completing this form in this manner you are indicating that this IFC Server can process any Plant that belongs to Admin_SDB site database.

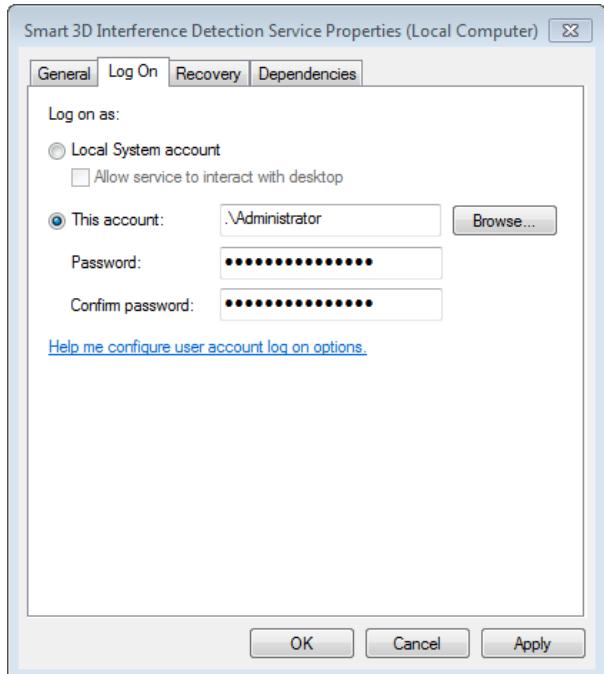


4. Click **OK** to close Configure Interference Service form.

5. Open a windows **Services console** by going to Start > Run then type command **services.msc**. Locate service named **Smart 3D Interference Detection Service**, right click on it and select **Properties**.



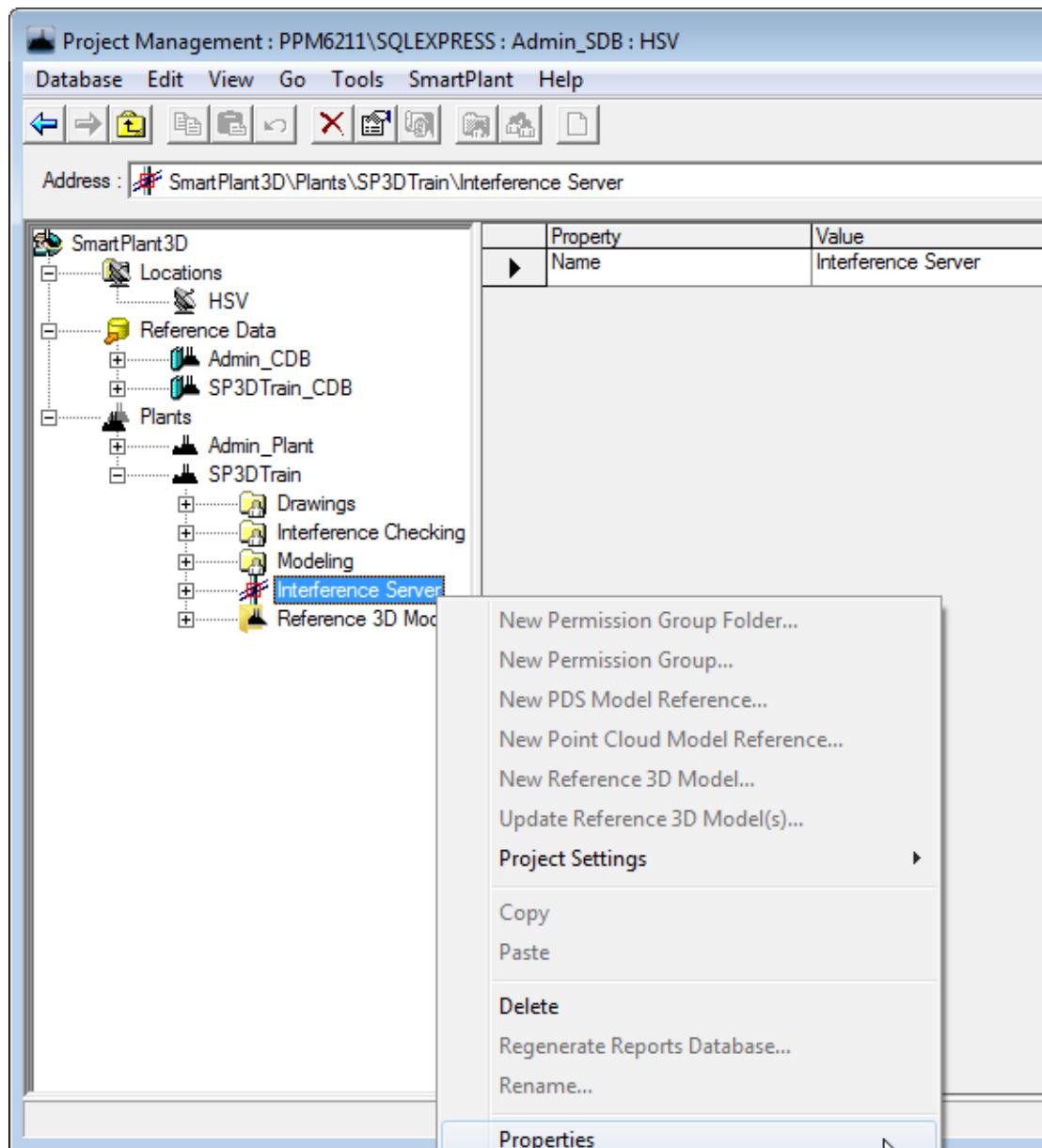
6. Switch to **Log On** tab and select **This account** option, specify a login account that meets permission requirements to act as the identity for the Interference Checking service. For the purpose of this lab practice, type in local administrator account credentials, then click **OK**.



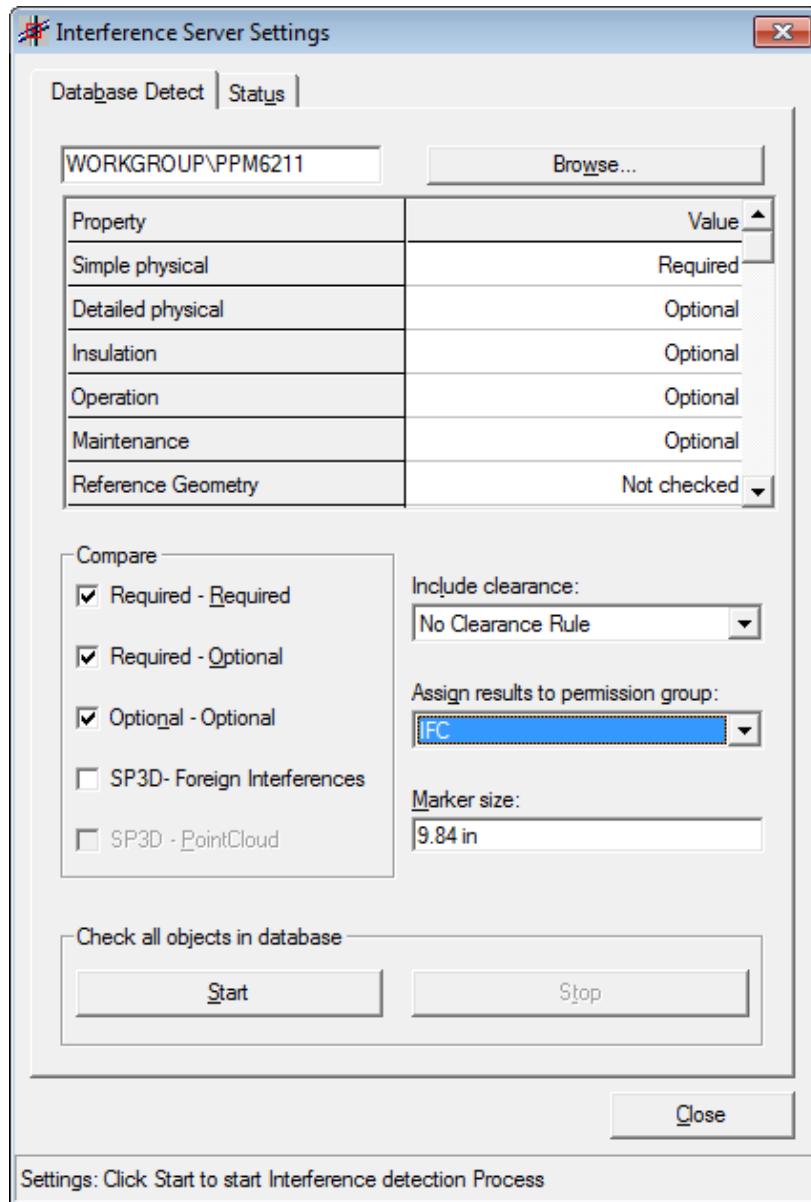
Note: In a production project, this identity is a domain account that meets the following permission requirements.

- ✓ Account is included in local administrators group
- ✓ Has database access and permissions as a regular user to SQL or Oracle database
- ✓ Has write or higher level of access to the Interference Checking permission group

7. Start windows service **Smart 3D Interference Detection Service**.
8. Open **Project Management** and expand **SP3DTrain** plant. Right mouse click on the **Interference Server** icon and select **Properties**.

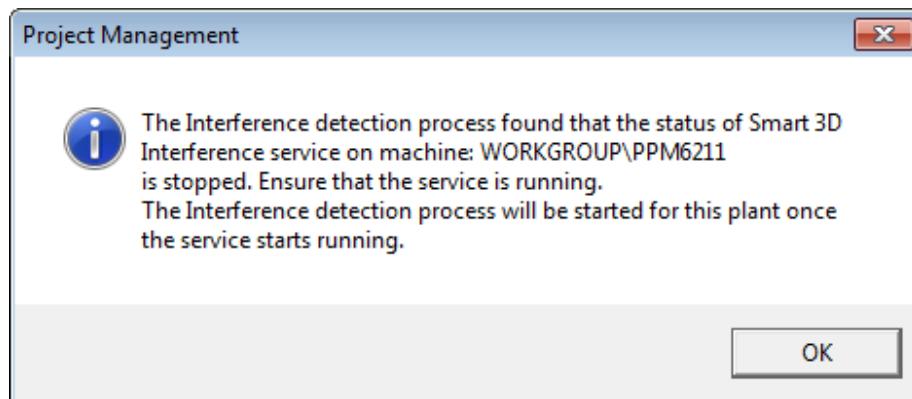


9. Complete the form as depicted below taking care to identify machine name where the practice is being performed as domain\computer, this field identifies the computer where the IFC service has been started. In a production environment this form could be completed from any computer with Project Management loaded and does not need to be completed from the IFC machine.

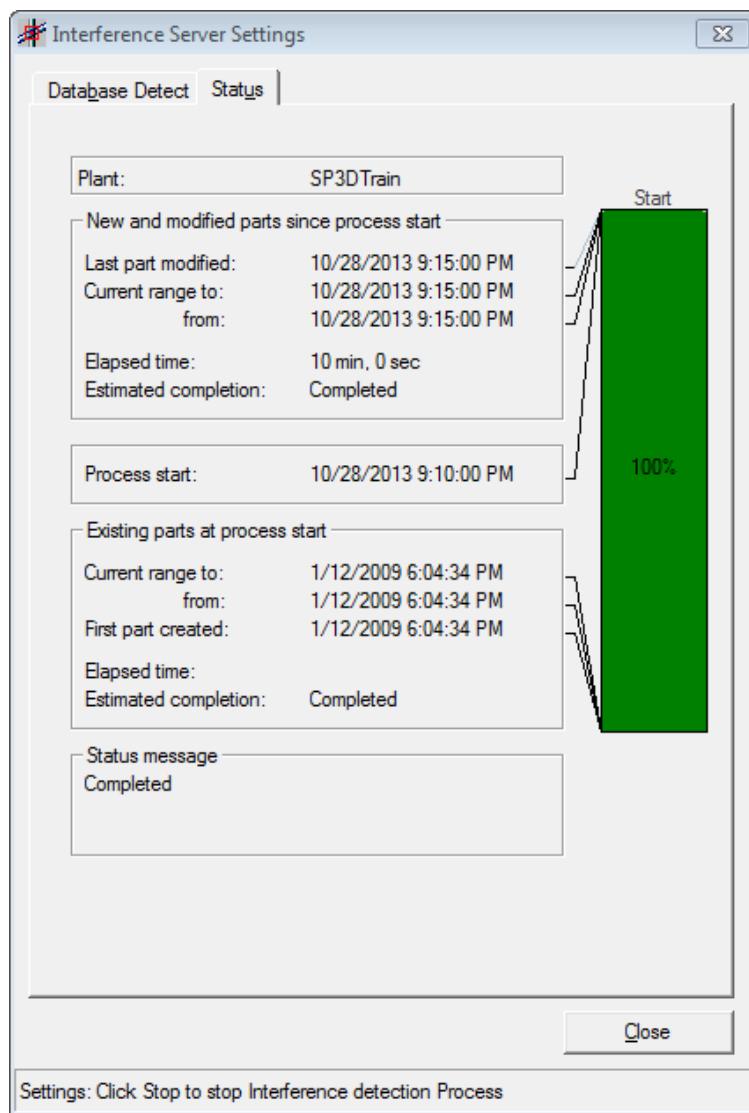


10. Click the **Start** Button.

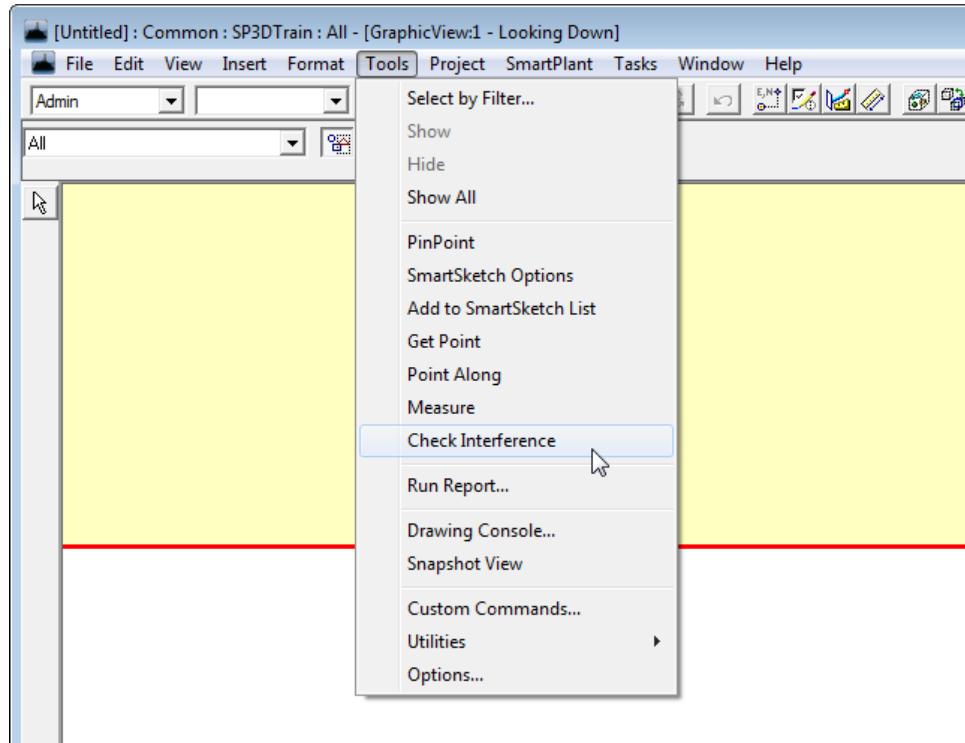
Note: If the Service was not started in previous steps, you may be presented with the following message:



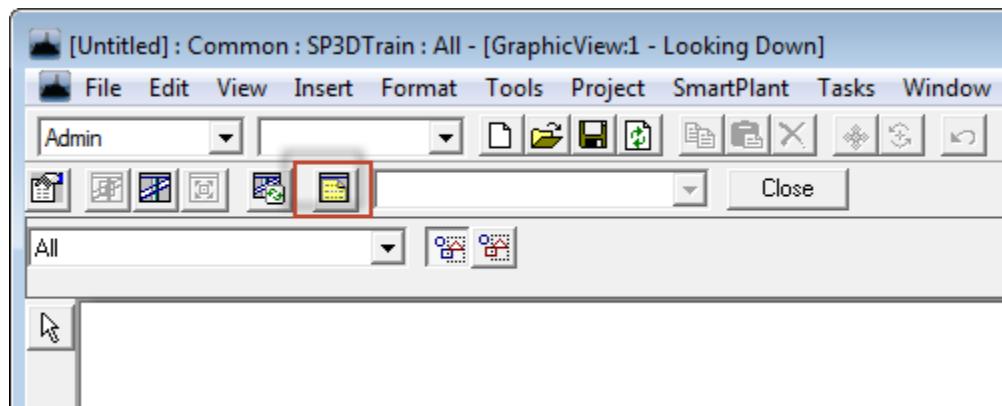
11. It may take up to 4 minutes for the processing to start and when it does, you can review progress on the status tab.



12. Start a **Smart 3D** session; define a workspace on plant **SP3DTrain** with the **All** filter.
13. From the **Tools** menu select **Check Interference**



14. A new toolbar will be displayed, Click on the yellow icon to open the Interference List

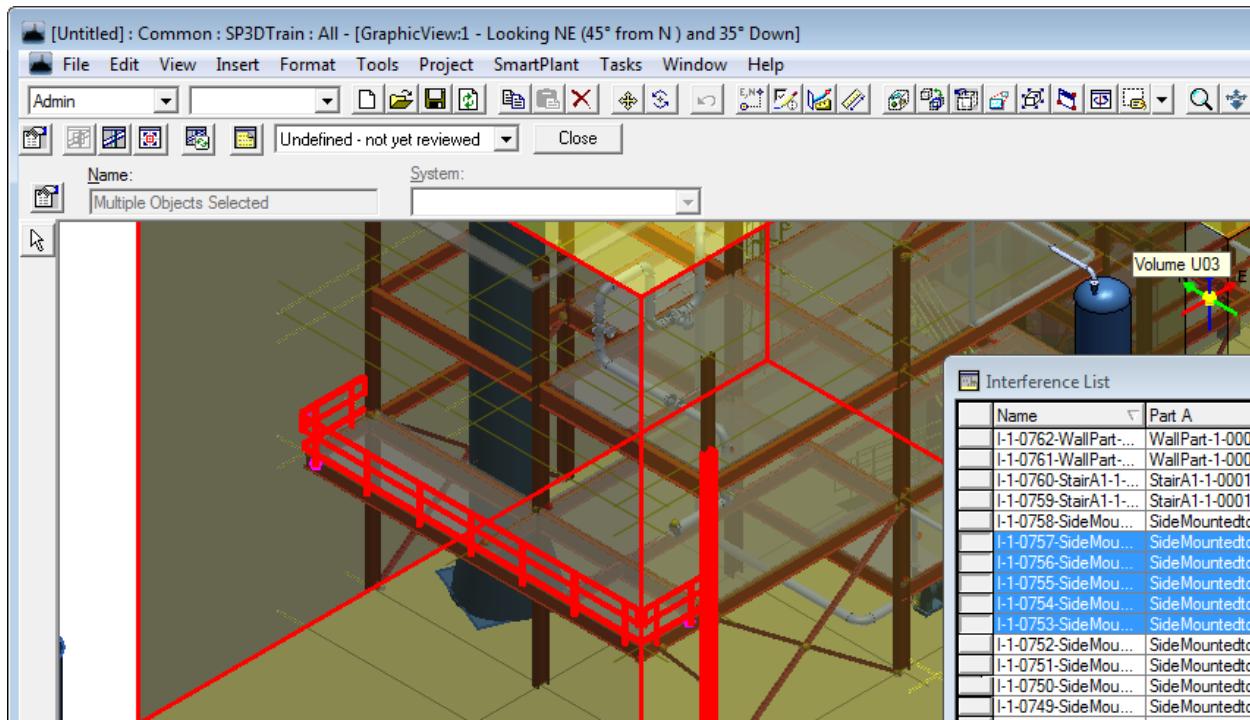


Name	Part A	Part B	Type	Required Action	Last Modified
I-1-0762-WallPart-...	WallPart-1-0003	Duct Part	Severe	Edit - must resol...	2013-10-28 21:15:30
I-1-0761-WallPart-...	WallPart-1-0003	WallPart-1-0001	Severe	Edit - must resol...	2013-10-28 21:15:30
I-1-0760-StairA1-1...	StairA1-1-0001	MemberPartPrisma...	Severe	Edit - must resol...	2013-10-28 21:15:29
I-1-0759-StairA1-1...	StairA1-1-0001	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0758-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0757-SideMou...	SideMountedtoMe...	MemberPartPrisma...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0756-SideMou...	SideMountedtoMe...	Column_BlockEnc...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0755-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0754-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0753-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0752-SideMou...	SideMountedtoMe...	MemberPartPrisma...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0751-SideMou...	SideMountedtoMe...	Brace_Custom_2L...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0750-SideMou...	SideMountedtoMe...	Slab-1-0201	Severe	Edit - must resol...	2013-10-28 21:15:29
I-1-0749-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0748-SideMou...	SideMountedtoMe...	Column_BlockEnc...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0747-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:28
I-1-0746-SideMou...	SideMountedtoMe...	Beam_BlockEnca...	Optional	Undefined - not ...	2013-10-28 21:15:28

15. Hold the **Ctrl** key and select any **row header** from this list, the IFC object and its corresponding clashing objects will be highlighted.

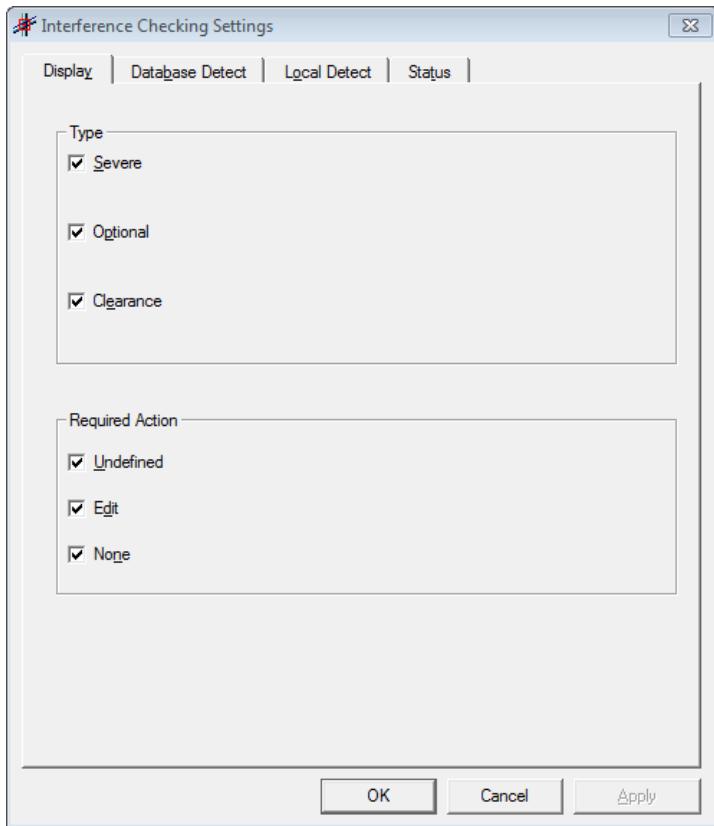
Name	Part A	Part B	Type	Required Action	Last Modified
I-1-0762-WallPart-...	WallPart-1-0003	Duct Part	Severe	Edit - must resol...	2013-10-28 21:15:30
I-1-0761-WallPart-...	WallPart-1-0003	WallPart-1-0001	Severe	Edit - must resol...	2013-10-28 21:15:30
I-1-0760-StairA1-1...	StairA1-1-0001	MemberPartPrisma...	Severe	Edit - must resol...	2013-10-28 21:15:29
I-1-0759-StairA1-1...	StairA1-1-0001	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0758-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0757-SideMou...	SideMountedtoMe...	MemberPartPrisma...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0756-SideMou...	SideMountedtoMe...	Column_BlockEnc...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0755-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0754-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0753-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0752-SideMou...	SideMountedtoMe...	MemberPartPrisma...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0751-SideMou...	SideMountedtoMe...	Brace_Custom_2L...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0750-SideMou...	SideMountedtoMe...	Slab-1-0201	Severe	Edit - must resol...	2013-10-28 21:15:29
I-1-0749-SideMou...	SideMountedtoMe...	Beam_BlockExpos...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0748-SideMou...	SideMountedtoMe...	Column_BlockEnc...	Optional	Undefined - not ...	2013-10-28 21:15:29
I-1-0747-SideMou...	SideMountedtoMe...	SideMountedtoMe...	Optional	Undefined - not ...	2013-10-28 21:15:28
I-1-0746-SideMou...	SideMountedtoMe...	Beam_BlockEnca...	Optional	Undefined - not ...	2013-10-28 21:15:28

16. Click on **Fit Interferences** button  located on Interference checking toolbar.
 17. The graphic window will zoom you to that interference and the objects involved, change to an isometric view for better viewing.

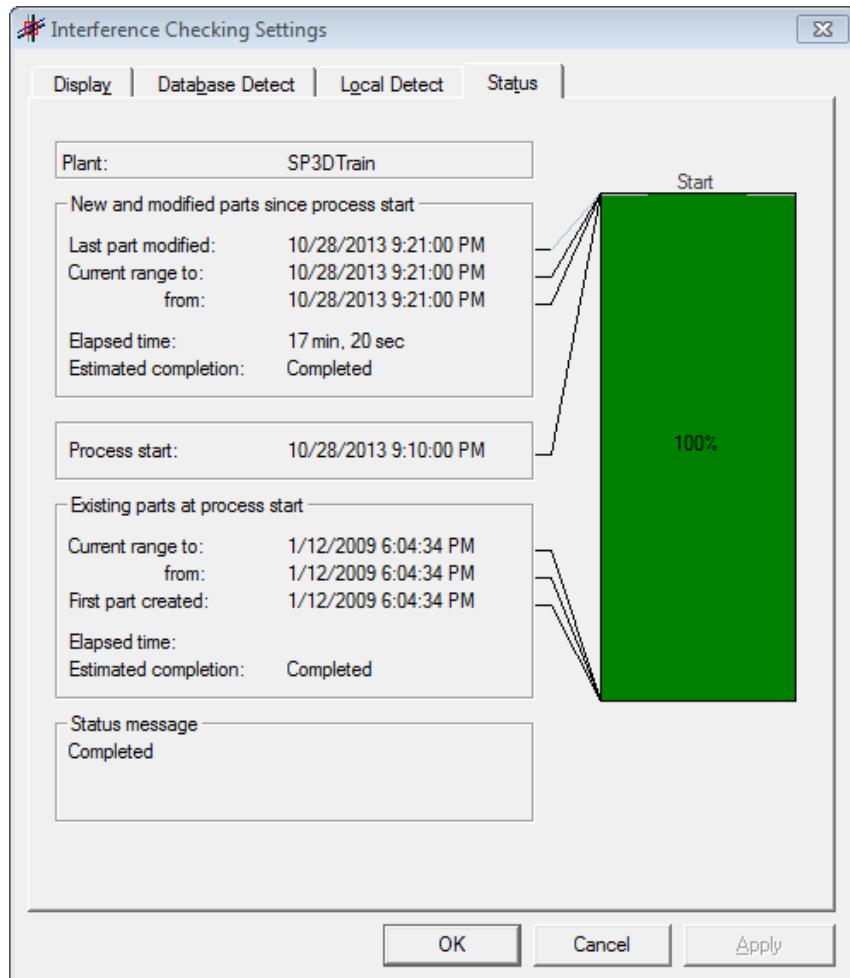


18. Any user can turn on/off the IFC markers that are displayed graphically on a session by using

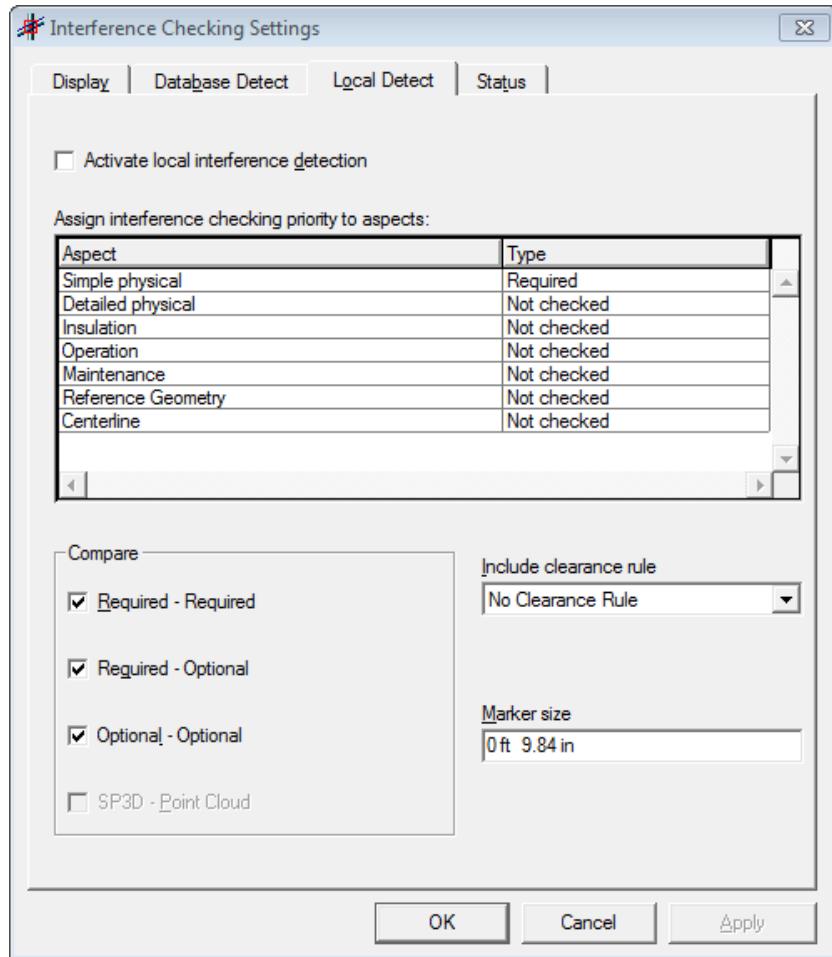
 Settings button to access following form



19. De-selecting checkboxes from **Type** or **Required Action** sections will hide IFC markers from the current view (though they will still exist in the database).
20. The status tab shows progress of database interference detection in workstations where project management is not installed.



21. On **Local Detect** tab you will find options to set and start local interference checking. Note the options that can be set are basically the same as settings for database detection; however, the user is free to modify them according to his/her needs. Local IFC will not interfere with Database IFC results.



22. **Close** interference checking settings form.
23. Enable **Interference list** from the toolbar or bring it to focus. **Expand** it so as to see the **Notes** column.
24. Click the **Notes** field of any IFC entry and start typing, hit enter to accept the input. Try to find this interference in the Model and review its properties, the note should be there as well.

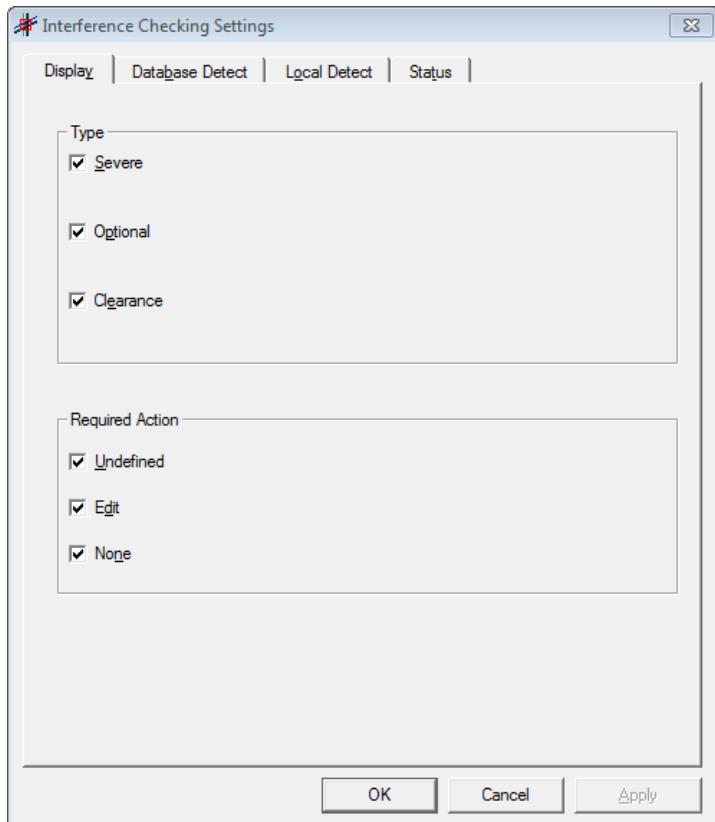
Type	Required Action	Last Modified	Notes
Optional	Undefined - not ...	2013-10-28 21:13:06	Marked for revision
Optional	Undefined - not ...	2013-10-28 21:15:14	
Optional	Undefined - not ...	2013-10-28 21:12:52	
Optional	Undefined - not ...	2013-10-28 21:15:15	
Severe	Edit - must resol...	2013-10-28 21:14:07	
Optional	Undefined - not ...	2013-10-28 21:11:26	
Optional	Undefined - not ...	2013-10-28 21:13:06	
Optional	Undefined - not ...	2013-10-28 21:13:39	

25. Right click any Interference under the **Name** column. The properties page for that interference will appear.

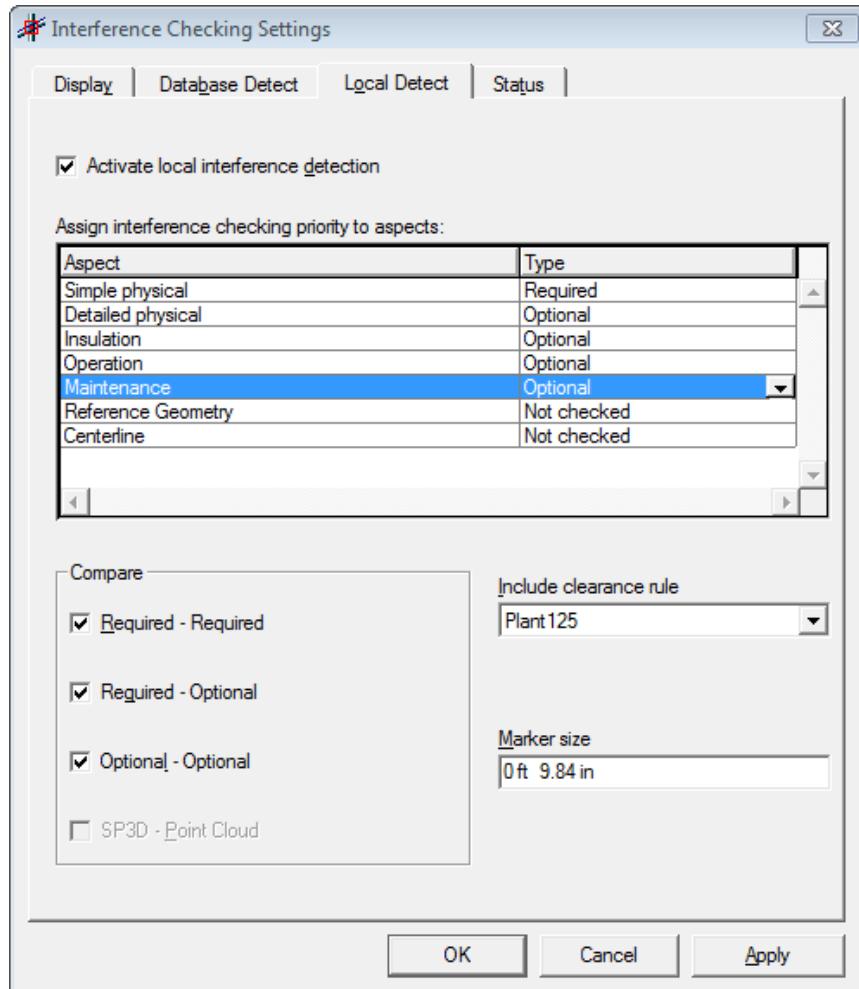
26. Close the list and review overall IFC markers. Examine one that may catch your attention and determine if it is of the correct type (hard, soft, or clearance) according to options set in Project Management on IFC form.

Local Detection

27. Start **Smart 3D** (Start → All Programs → Intergraph Smart 3D →Smart 3D) if not already open.
28. **Define a workspace** using the **All** filter or **refresh** the session.
29. If IFC toolbar is not already enabled, from the **Tools** menu, select **Check Interference**.
30. Click the left most button for IFC Settings , the following form will be displayed



31. On **Local Detect** tab, complete the form as follows



32. Click **OK**.

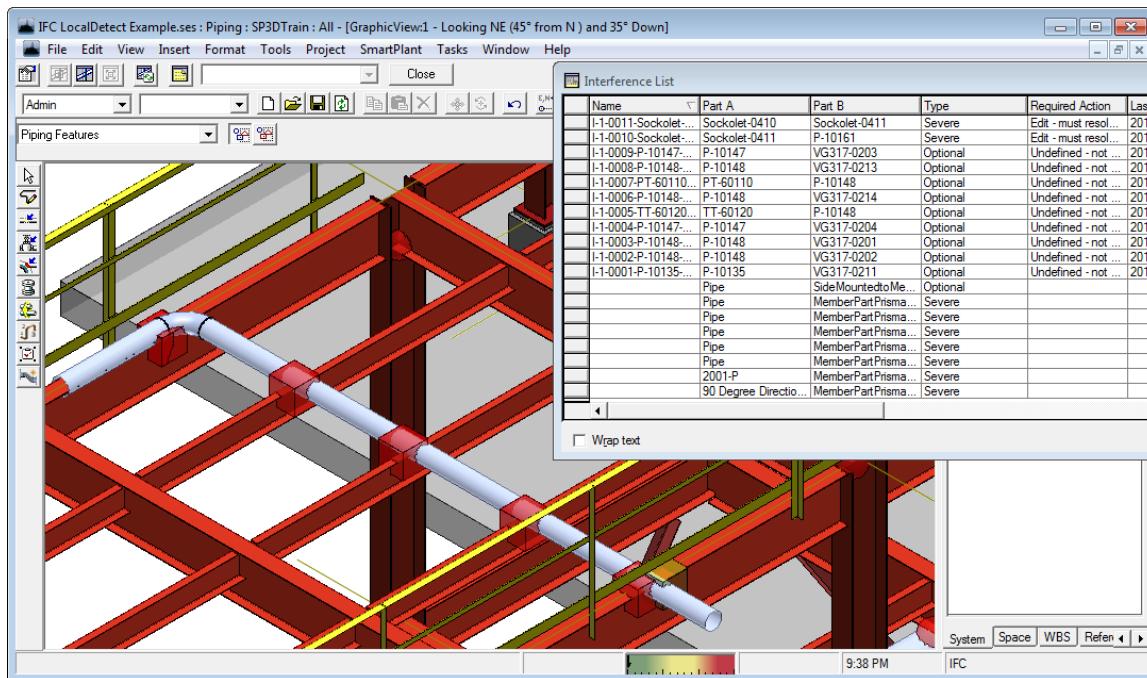
33. Note that IFC word appears at the bottom left of the Smart 3D window as acknowledgement of local IFC execution for the session:



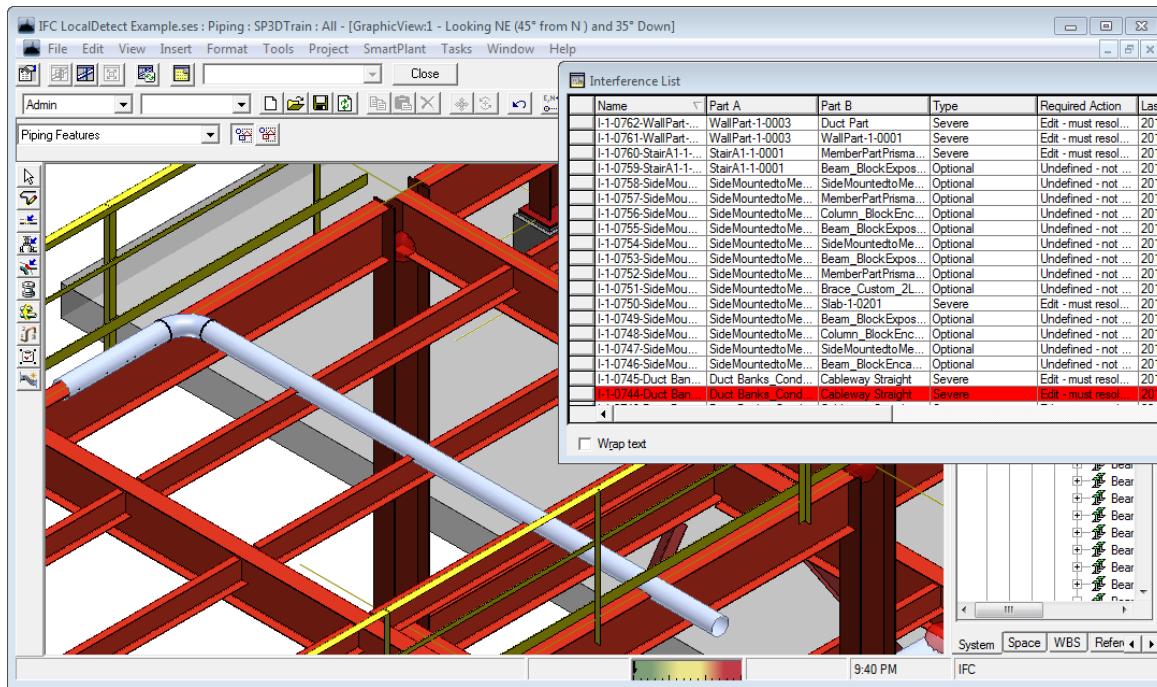
34. **Save** session file as "IFC LocalDetect Example.ses"

35. Because this class is presumed to be taken before the Equipment or Piping classes, the instructor may guide you through some ad hoc simple examples to show that the Local Detect is now working. You may also try to generate some clashes by doing base move of objects so as to make them collide (to move objects, use the commands from the main toolbar).

36. Bring up the IFC List. Note that Local Detect Entries do not have a name and there is no additional information different than the two colliding parts.



37. Do a **Refresh** to the workspace and note that local detect markers disappear, while database detect IFC markers (if any) remain.

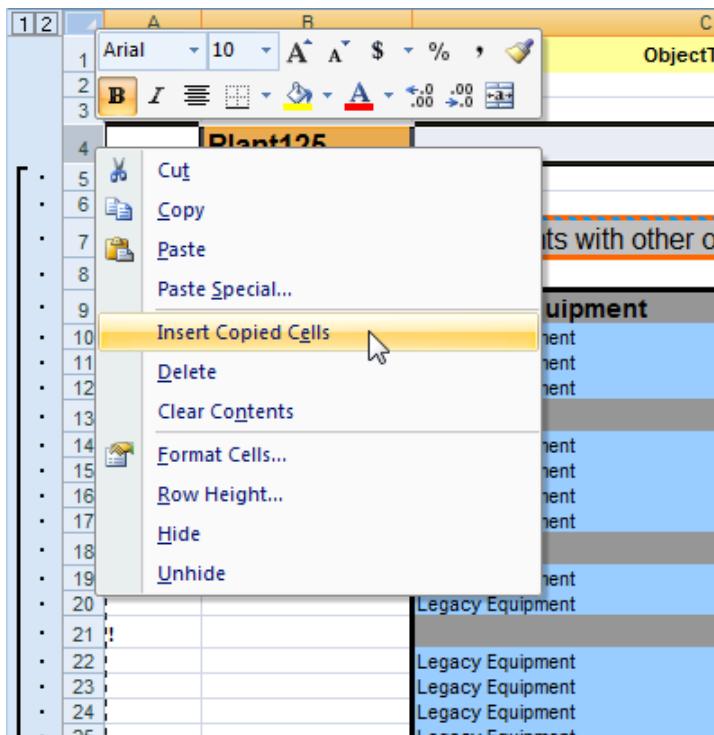


38. Try to create one of each clash type (hard, soft and clearance) depending on the rules previously set when enabling local detect.
39. To finish the practice at this point, **stop Database Interference Checking** from **Project Management**, then stop the windows service **Smart 3D Interference Detection Service**.
40. **Close** any open **Smart 3D** Sessions.

Configuring IFC Clearance Rules (Optional)

Clearance rules are used to mark two objects that are closer than a specified X distance. Interferences created as clearances can be identified by the color green. This lab practice will help you review existing clearance rules and create a new one based from existing Plant125 rule.

41. **Open** Excel workbook **IFCRule.xls** delivered to [Smart 3D install folder]\CatalogData\BulkLoad\Datafiles\
42. In **IFCClearanceRule** worksheet, highlight all rows pertaining to “**Equipment with other objects types**” section under **Plant125** rule. This is approximately row 7 thru 116.
43. **Copy** selected rows
44. Select row header where **Plant125** name is located.
45. Right click the row header and select **Insert copied cells**.



46. Insert one additional blank row at that same location so that you can create a name for the new Clearance Rule. In the case of the screen shot below, that cell is B4. Provide the name **EquipOnlyClearance** for the new Clearance rule.

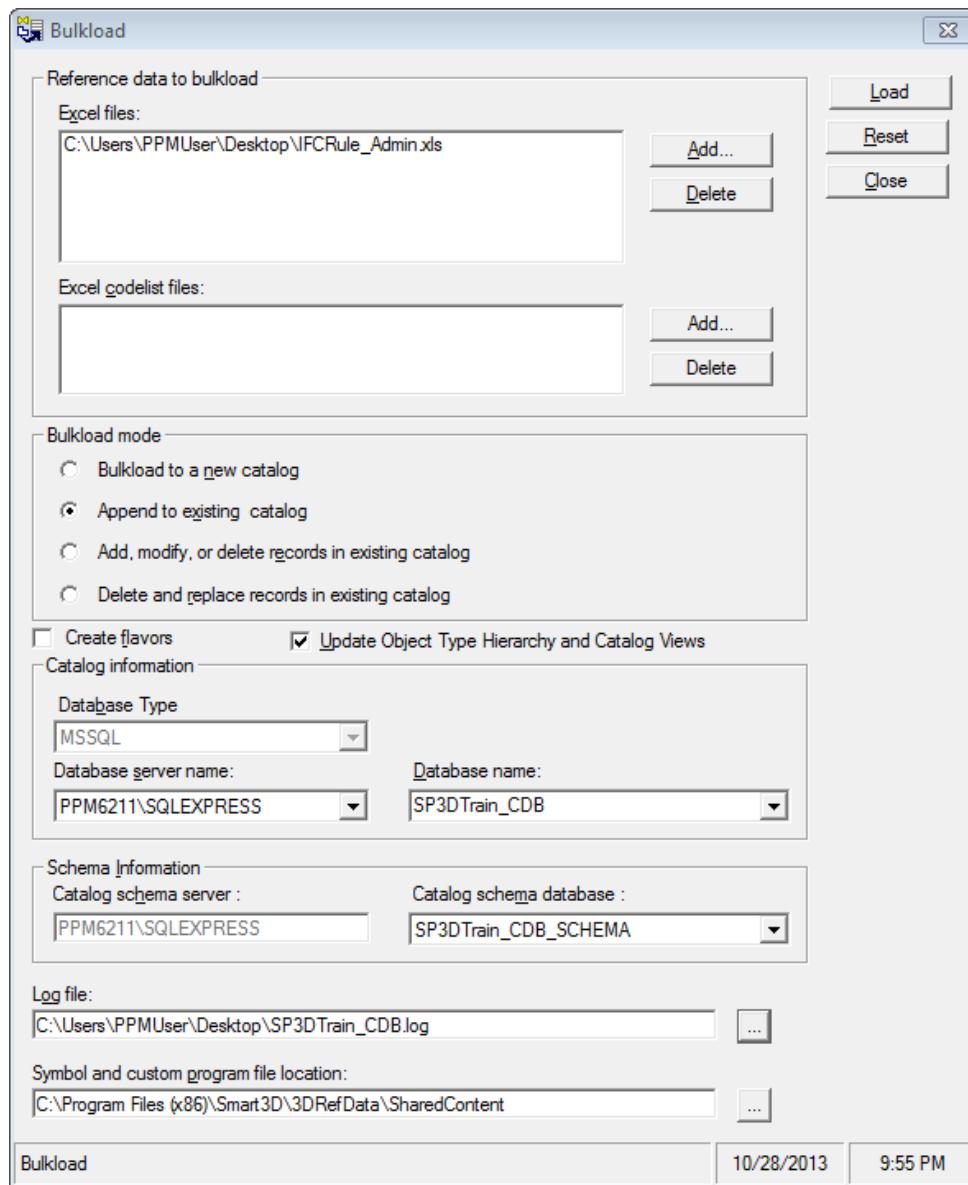
1	2	A	B	C
1	HEAD	RuleName		ObjectType1
2				
3	START			
4		EquipOnlyClearance		
5	!		p	
6	!			
7	!			
8				
9				
10				
11	!			
12				
13				
14				
15				

47. Scroll to column G, which is labeled **Clearance**.

48. Replace all values with “152” (~6 in) for all EquipOnlyClearance Rule entries that have been just copied. This will now create a clearance rule of 152mm between equipment against all other S3D object types (except R3D objects).

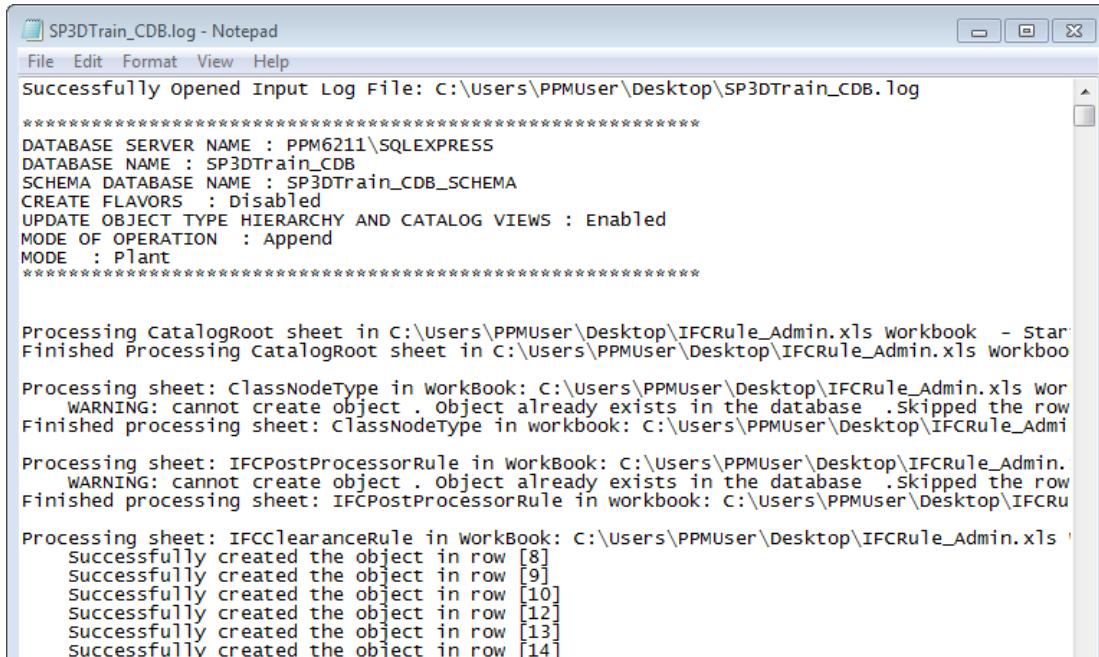
E	F	G
ObjectType2	Aspect2	Clearance
Equipment(s)		
Legacy Equipment	Simple physical	152
Legacy Designed Equipment	Simple physical	152
Equipment	Simple physical	152
Cableways(S)		152
Cableway Turn	Simple physical	152
Cableway Straight	Simple physical	152
Cable Trays	Simple physical	152
Cable Tray Components	Simple physical	152
HVAC(S)		152
HVAC Components	Simple physical	152
Ducts	Simple physical	152
Piping(S)		152
Piping Welds	Simple physical	152
Piping Components	Simple physical	152
Piping Instruments	Simple physical	152
Piping Specialty Items	Simple physical	152
Pipes	Simple physical	152
Volume(S)		152
Interference Volumes	Simple physical	152
Structure(S)		152
Member Part Linear	Detailed physical	152
Member Part Curved	Detailed physical	152

49. **Save** the Excel Workbook as **IFCRule_Admin.xls**
50. Start the **Bulkload** Utility, **Start → All Programs → Intergraph Smart 3D → Database Tools → Bulkload Reference Data.**
51. **Complete** bulkload form providing the path to the Excel file “IFCRule_Admin.xls” and options as depicted below:



Note: Make sure the Catalog and Catalog schema databases are properly selected.

52. Click **Load**.
53. **Review** bulkload log file for any errors. Correct and retry the bulkload as necessary. There will be a large number of warnings due to records already existing in the database, this is ok, but errors have to be reviewed.



SP3DTrain_CDB.log - Notepad

File Edit Format View Help

Successfully Opened Input Log File: C:\Users\PPMUser\Desktop\SP3DTrain_CDB.log

DATABASE SERVER NAME : PPM6211\SQLEXPRESS
DATABASE NAME : SP3DTrain_CDB
SCHEMA DATABASE NAME : SP3DTrain_CDB_SCHEMA
CREATE FLAVORS : Disabled
UPDATE OBJECT TYPE HIERARCHY AND CATALOG VIEWS : Enabled
MODE OF OPERATION : Append
MODE : Plant

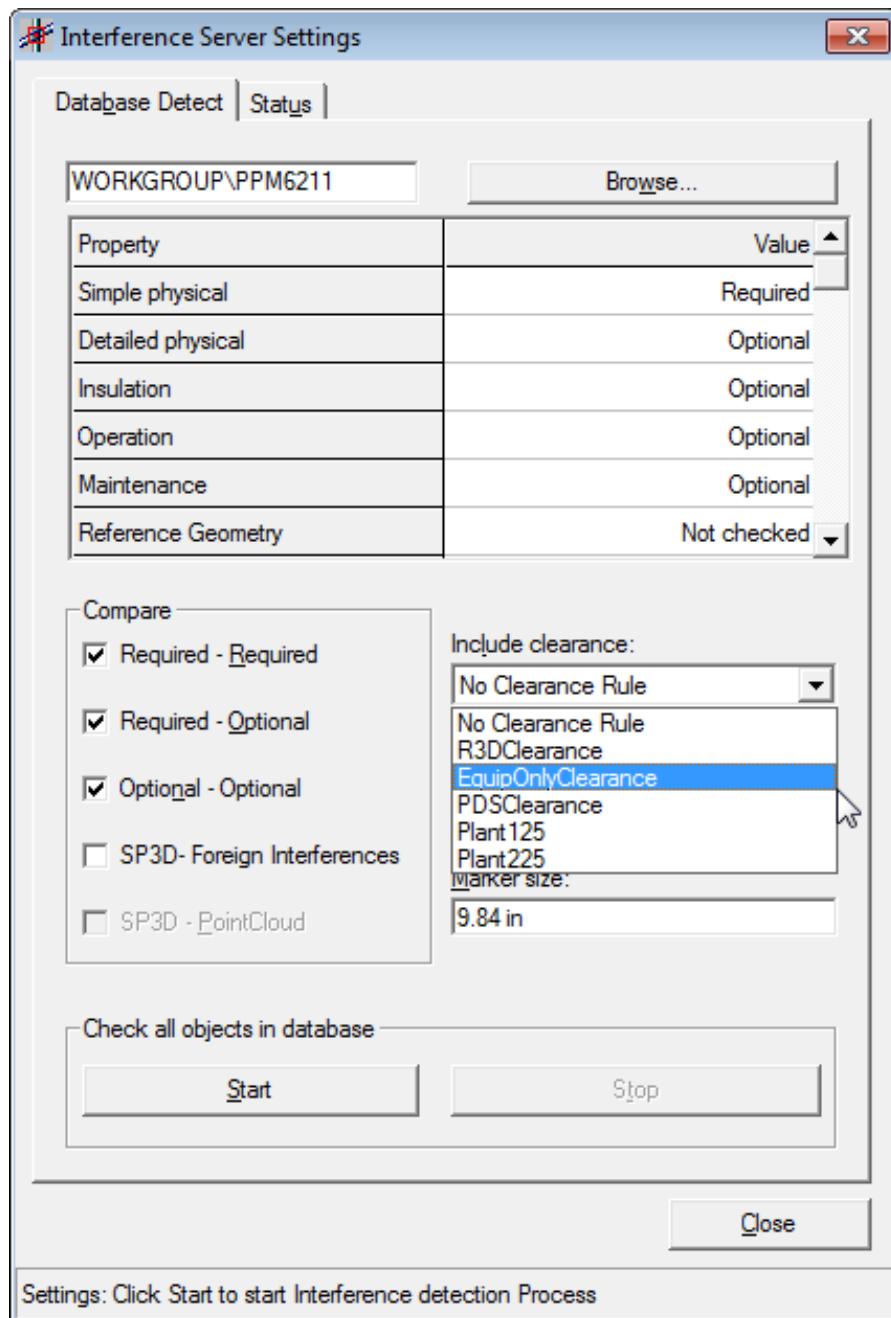
Processing CatalogRoot sheet in C:\Users\PPMUser\Desktop\IFCRule_Admin.xls workbook - star
Finished Processing CatalogRoot sheet in C:\Users\PPMUser\Desktop\IFCRule_Admin.xls workbook

Processing sheet: ClassNodeType in WorkBook: C:\Users\PPMUser\Desktop\IFCRule_Admin.xls wor
WARNING: cannot create object . Object already exists in the database .Skipped the row
Finished processing sheet: ClassNodeType in workbook: C:\Users\PPMUser\Desktop\IFCRule_Admi

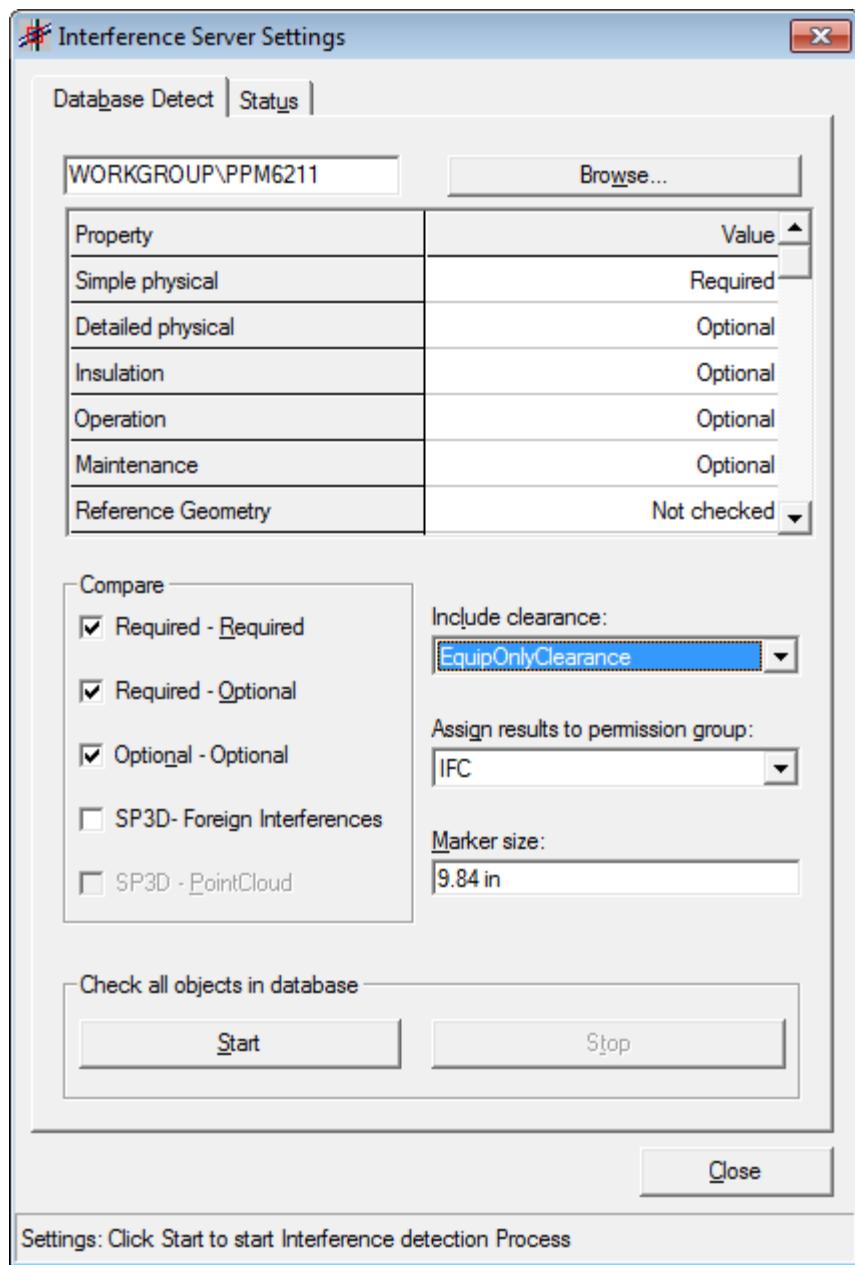
Processing sheet: IFCPostProcessorRule in workBook: C:\Users\PPMUser\Desktop\IFCRule_Admin.
WARNING: cannot create object . Object already exists in the database .Skipped the row
Finished processing sheet: IFCPostProcessorRule in workbook: C:\Users\PPMUser\Desktop\IFCRU

Processing sheet: IFCClearanceRule in WorkBook: C:\Users\PPMUser\Desktop\IFCRule_Admin.xls |
Successfully created the object in row [8]
Successfully created the object in row [9]
Successfully created the object in row [10]
Successfully created the object in row [12]
Successfully created the object in row [13]
Successfully created the object in row [14]

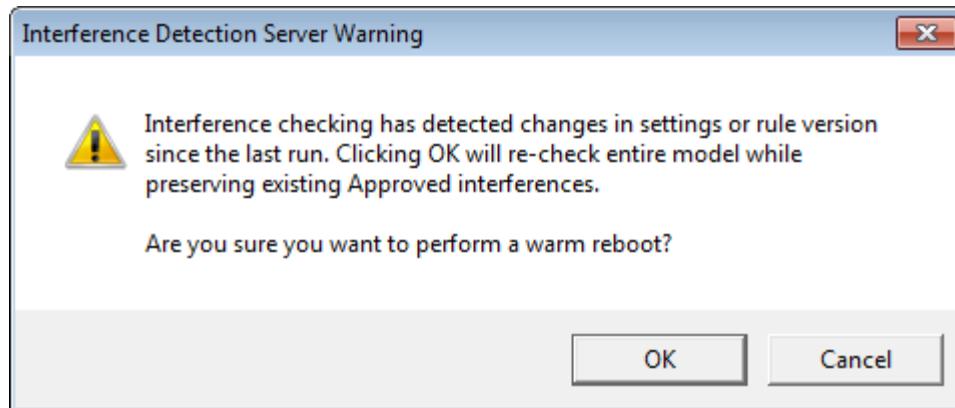
54. Start a new Project Management Session.
55. Open **Interference checking** properties form by going to **SP3DTrain > Interference Server**.
56. Stop Interference checking if it is running.
57. Observe existence of recently bulkloaded rule **EquipOnlyClearance**



58. Complete the form similar to what was done in previous practice for local detection, this time selecting the newly created **EquipOnlyClearance** rule.



59. Start the Smart 3D Interference Detection windows service, then Click **Start** in .
60. The following message will be displayed advising that the plant will be rechecked due to changes in the IFC setttings, click **OK**.



61. You may now go into a modeling session and test the newly added rule.

Note: If this is the last Interference Checking practice performed; stop the Windows Service **SmartPlant 3D Interference Detection Service**.

LAB 27: Export ZVF and XML files to be used in R3D referencing

Objectives

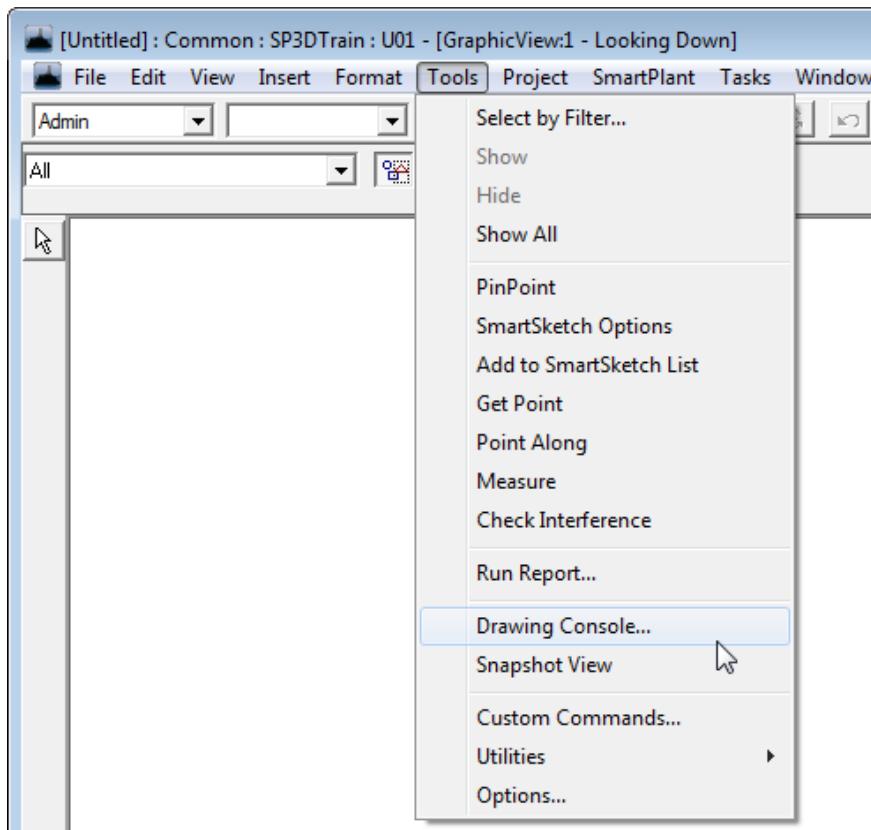
After completing this lab, you will be able to:

Export zvf and xml files from a Smart 3D project that can be used for attachment as R3D references.

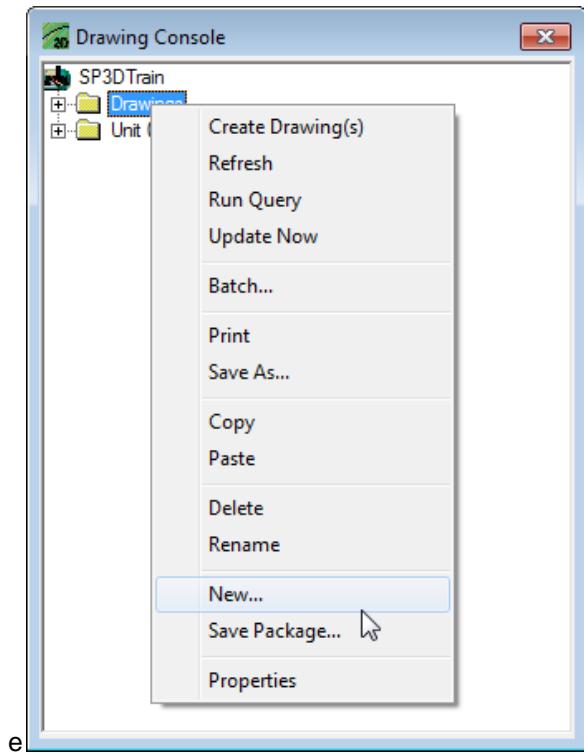
Notes:

- If the project is currently registered with SmartPlant Foundation, the user generating these files must be able to make successful connection onto SPF server.
- SmartPlant schema component is prerequisite software that cannot be omitted. Make sure it is loaded in the system before proceeding.

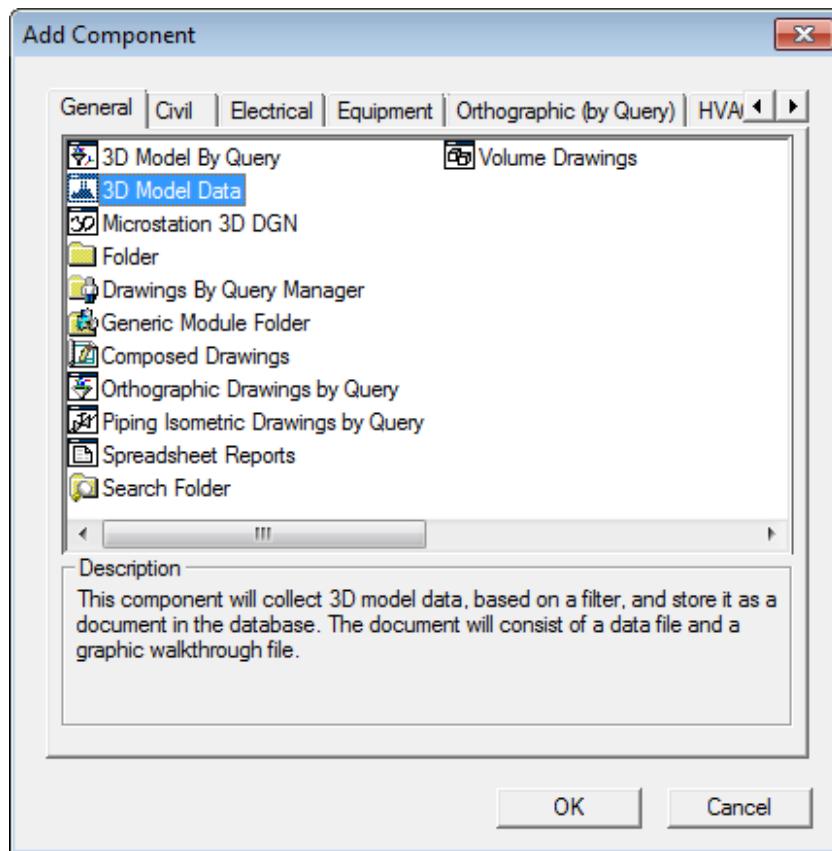
1. On any graphical task, go to **Tools > Drawing console**



2. Right click on **Drawings** or any other folder in drawings hierarchy, select **New...**

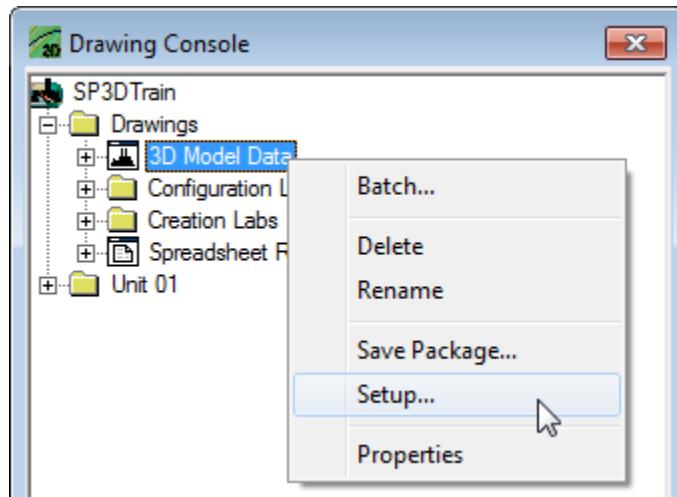


3. In Add Component form under **General** tab, select **3D Model Data**



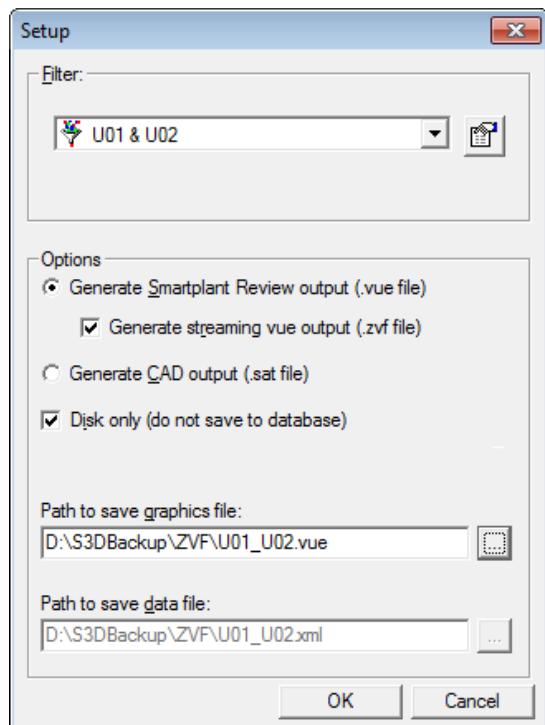
Note: the 3D Model Data object can be located on any folder in the drawings hierarchy, but not under the root.

- Right click recently created **3D Model Data** object and select **Setup...**

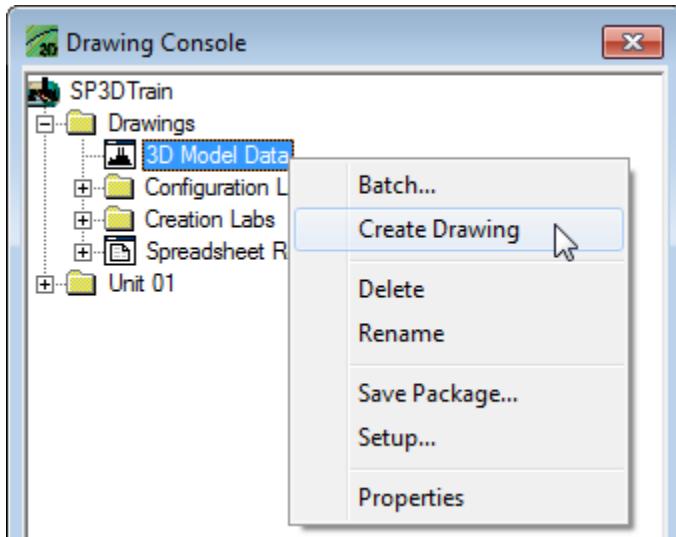


- In setup form, select **filter** containing objects to be exported. Choose filter **U01 & U02** from *Plant filters > Training filters* node.

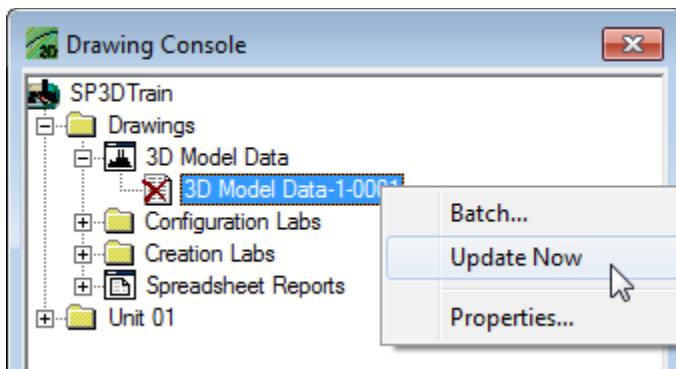
6. Select option **Generate SmartPlant Review output (.vue file)**, check **Generate streaming vue output (.zvf file)** checkbox if not selected.
7. Check **Disk only (do not save to database)** checkbox if not selected.
8. Define a path to save graphics file that can be accessed later and give as name for graphics file **U01_U02.vue**. The path for data file should be automatically populated with same location.



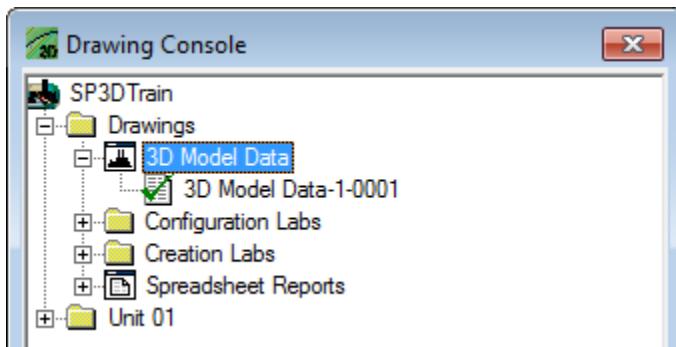
9. Click **OK**
10. Back on the **Drawings Console**, right click recently modified **3D Model Data** object, select **Create Drawing**



11. When a drawing object has been created, right click on it and select **Update Now**



Note: The drawing object must update successfully.



12. Once the drawing has been properly updated as shown by the green checkmark, go to specified location and retrieve *.zvf and *.xml files to be used in R3D referencing.

Note: Following errors may appear in the drawing log file if SmartPlant Schema component is not loaded in the system:

[ERROR - Reported on: 10/28/13 at 22:24:08]

Error Number: 1
Process Virtual Memory: 183 MB
Description: Schema Component installation not found.
Source: CThreeDViewGenerator::Run
Method: CThreeDViewGenerator::Run
Source File: ThreeDViewGenerator.cpp
Source Line: 644

13. **Close the Smart 3D session.**

LAB 28: Attach external 3D data as a reference (R3D)

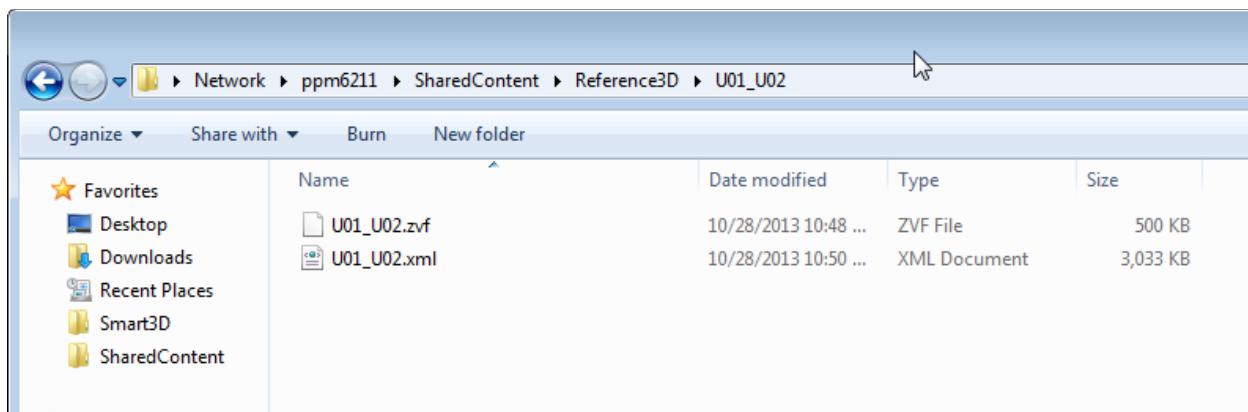
Objectives

After completing this lab, you will be able to:

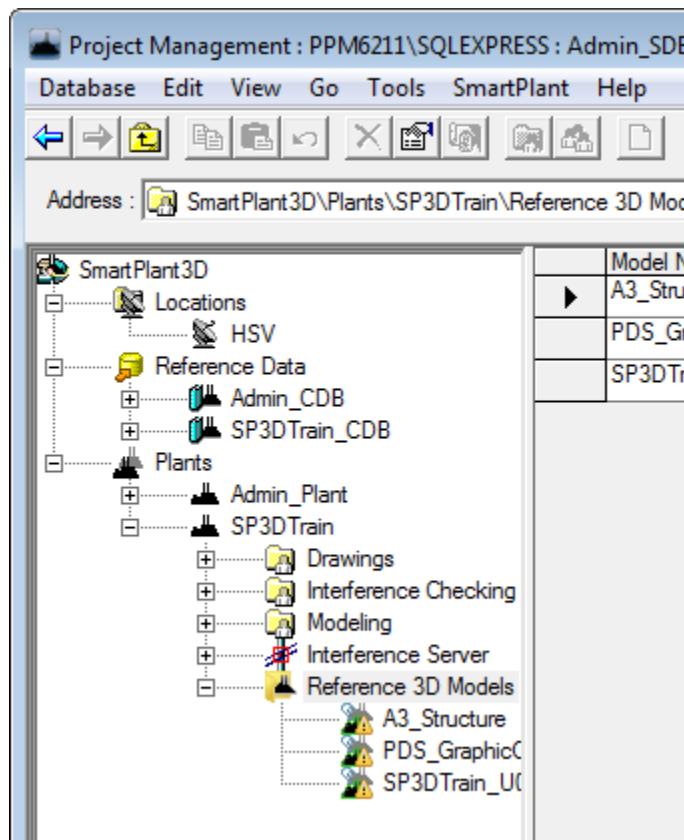
- Attach external 3D data (R3D reference).

This practice will demonstrate the steps to attach external 3D data into the plant with the option to perform basic transformations (rotation, scaling and translation).

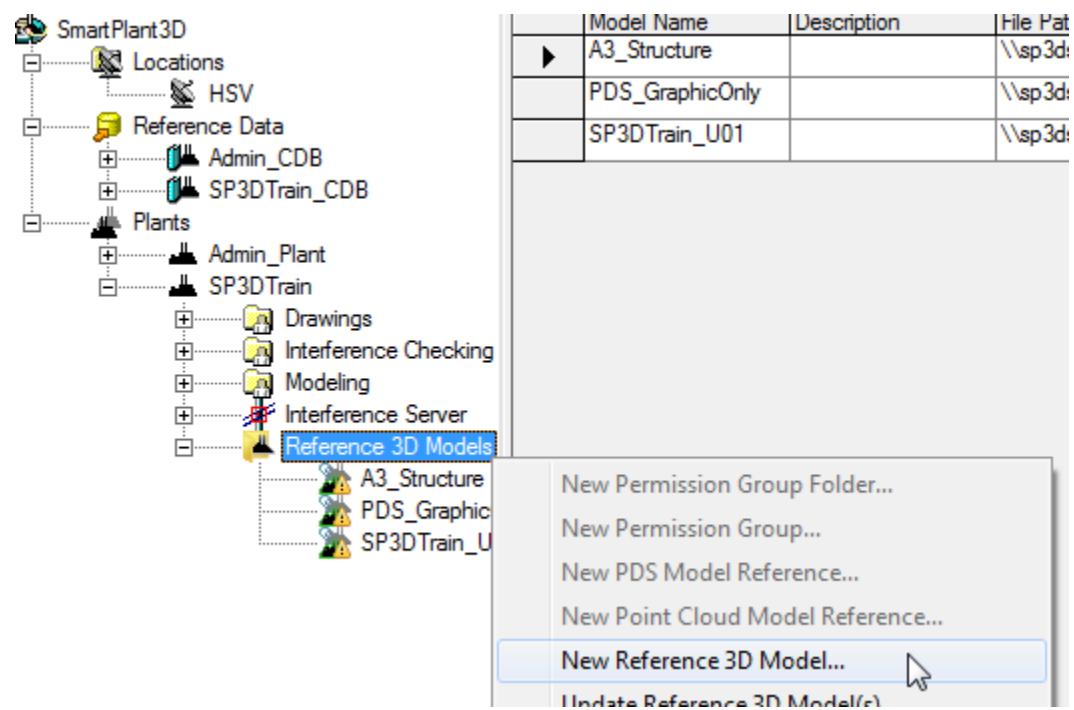
1. Locate files needed for R3D reference, these are the zvf and xml files previously exported from Smart 3D; place them onto a directory where they must remain and be accessible at all times. The symbols folder is the preferred location, example..\\SharedContent\\Reference3D\\



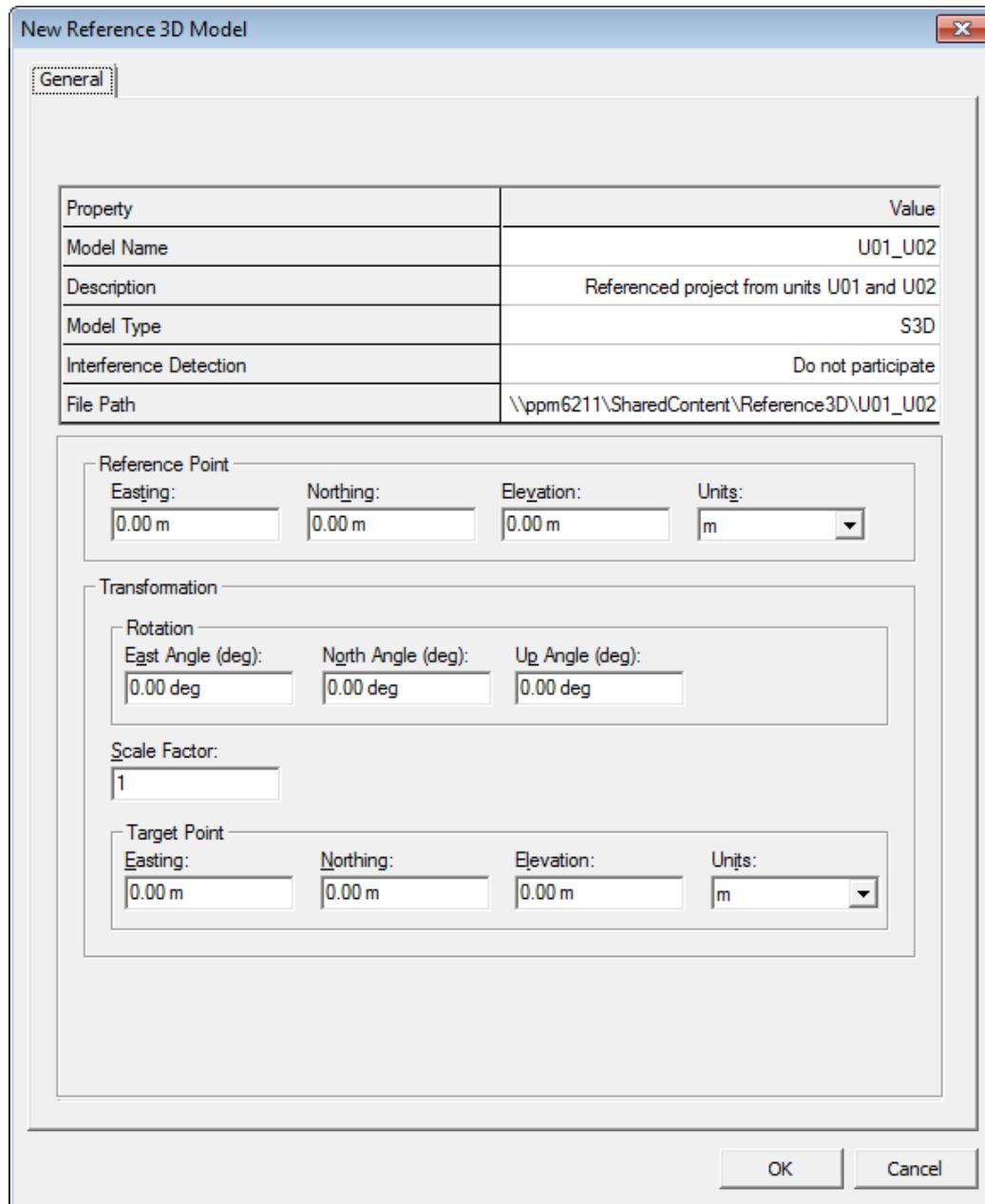
2. Open **Project Management**
3. Expand SP3DTrain plant hierarchy; note the existence of a **Reference 3D Models** node. This node will only exist on plants that already have an R3D referenced object.



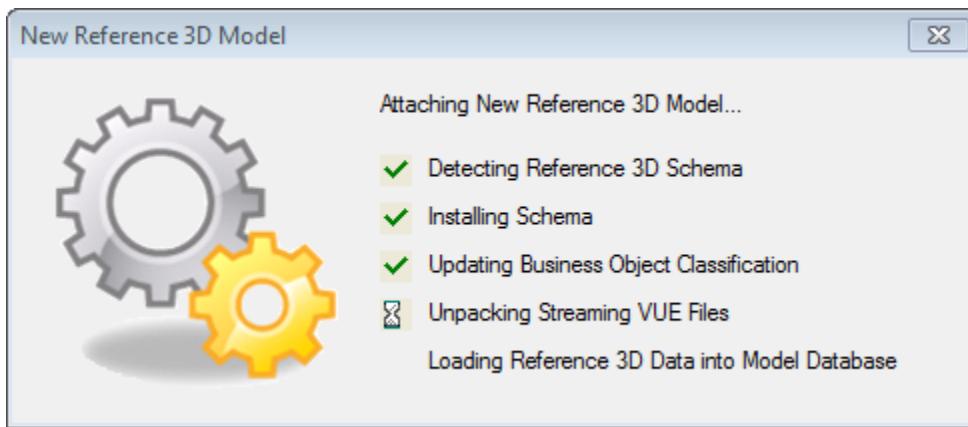
4. Right click **Reference 3D Models** node and select **New Reference 3D Model...**.



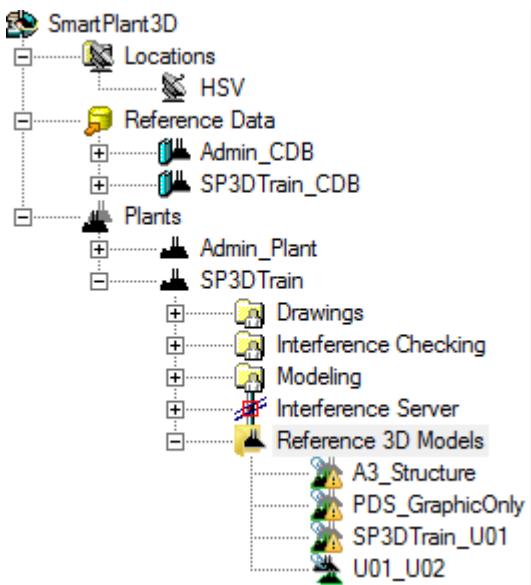
5. Set the values on the form as depicted below. Use a name that is related to the files to be referenced. Make sure to use a UNC path when browsing for the files.



6. Click **OK**
7. The referencing process will start and a new dialog will be shown indicating the actions that are currently being performed

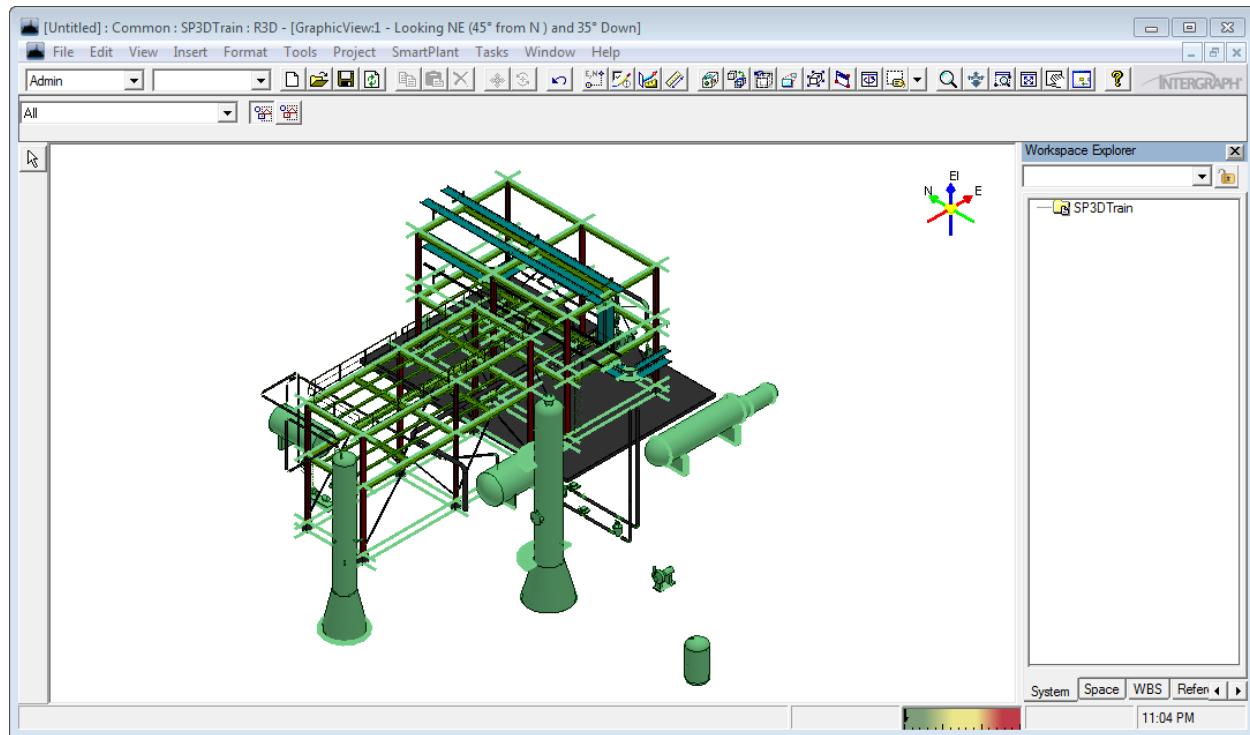


8. When the process finishes, the referenced project will appear as a new item under Reference 3D Models node.



9. Review the log file created for the referencing. It can be located in the %temp% folder
10. Open a session file or create a new one and define a workspace to bring the inserted Reference 3D objects.

Note: Referenced objects have their own classification in the objects hierarchy, you may use predefined filters found in the Catalog filters node > Default Filters > Reference 3D Object Filters > Object Types or you can create a filter based on Object types. A new tab for Reference3D objects is available as well.

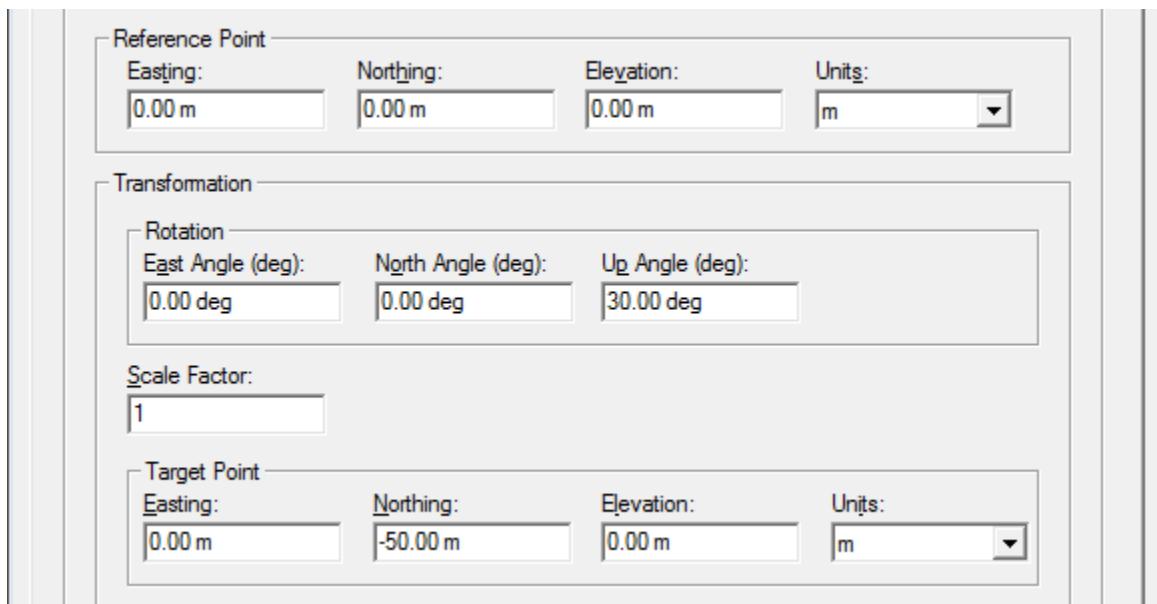


LAB 29: Perform transformation (rotation, scaling, and translation) to R3D models.

Objectives

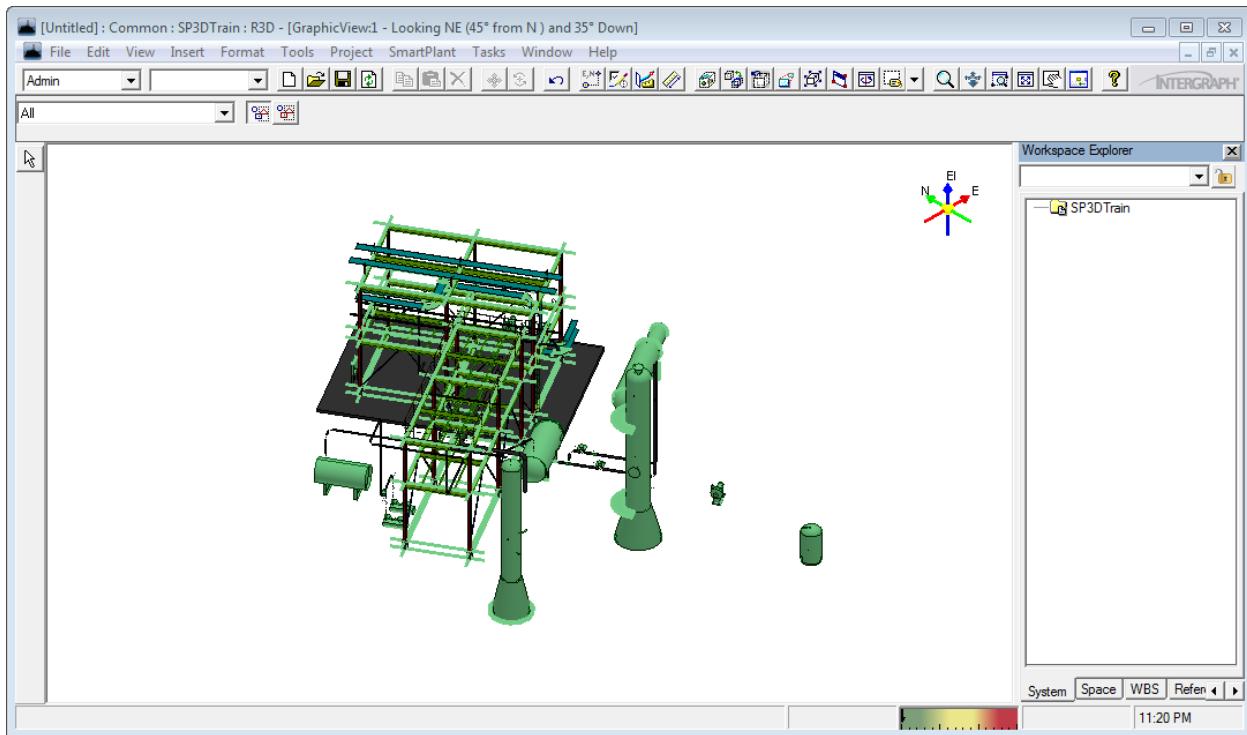
After completing this lab, you will be able to:

- Perform different transformations to currently attached R3D projects.
1. Open a session file or define one and bring the R3D model that will be transformed into the workspace.
 2. Open **Project Management** if not already open.
 3. Open **properties** dialog for **U01_U02** referenced model.
 4. Set values as follow:
 - Target Point - Northing: -50 m
 - Rotation – Up angle: 30 deg

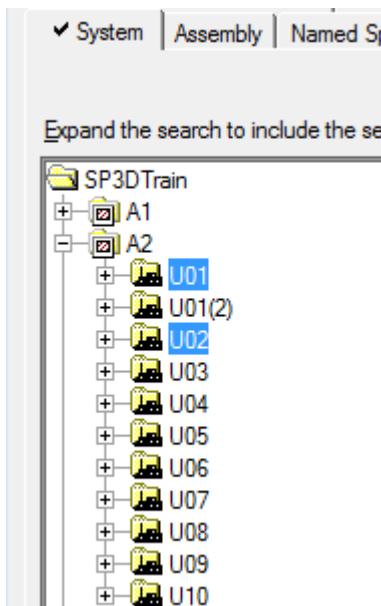


5. Click **Apply**
6. Return to **Smart 3D** session and do a **refresh**.

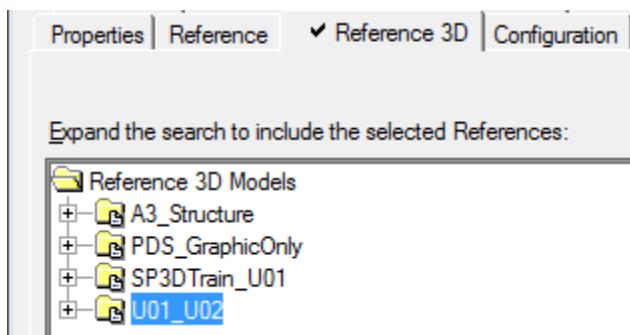
Note: You may need to fit the view in order to locate the objects.



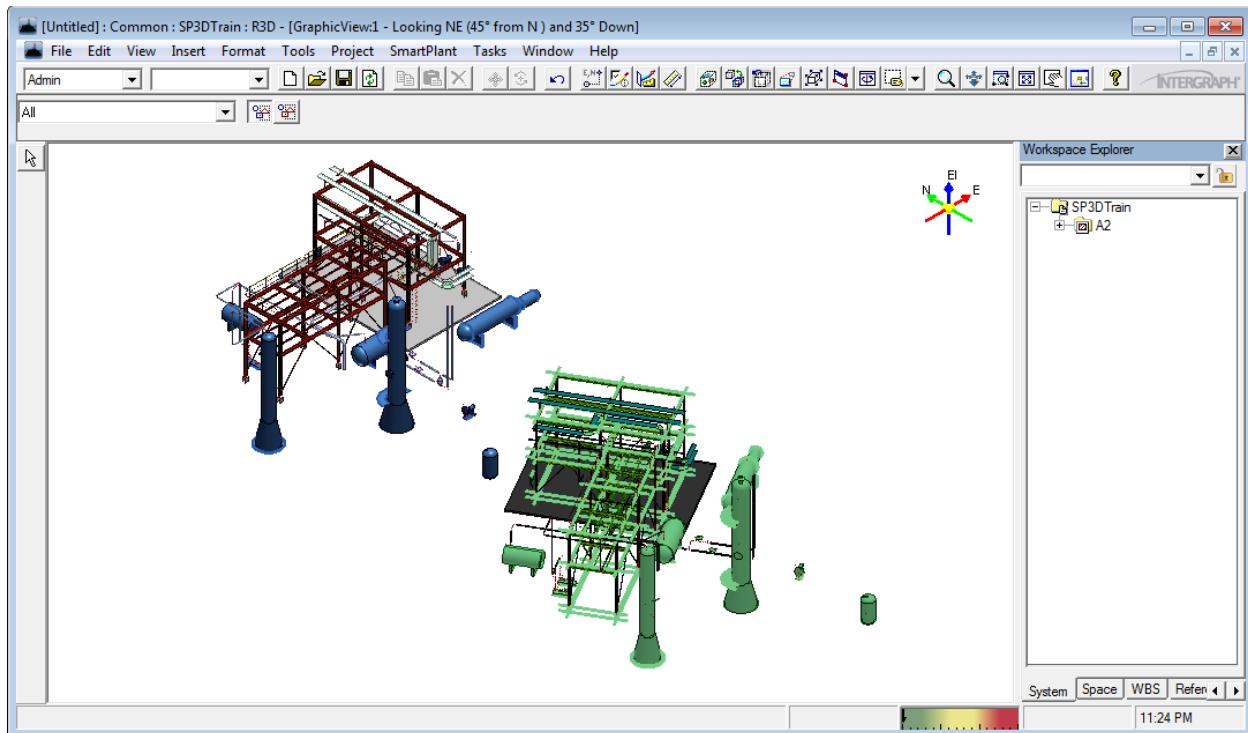
7. Return to **Project Management** and try other transformation values. **Compare** results by going back to the session file keeping in mind to do a refresh every time there is a change.
8. **Define a workspace** that will return objects from **U02** and **U01** units as well as the attached reference 3D model **U01_U02**. You may create a filter with following criteria for this purpose:



✓ Reference3D tab:



9. Compare results. Try other transformation values now that there is a visual reference of the original position.



LAB 30: Update attached R3D models.

Objectives

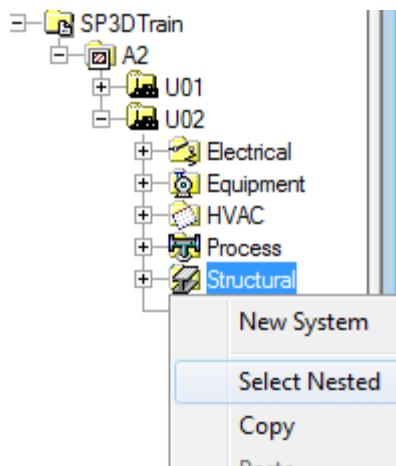
After completing this lab, you will be able to:

- Perform updates to attached R3D models. Such updates can be modifications performed to modeled objects such as new designs, change in styles (color of the objects) or removal of content due to revisions.

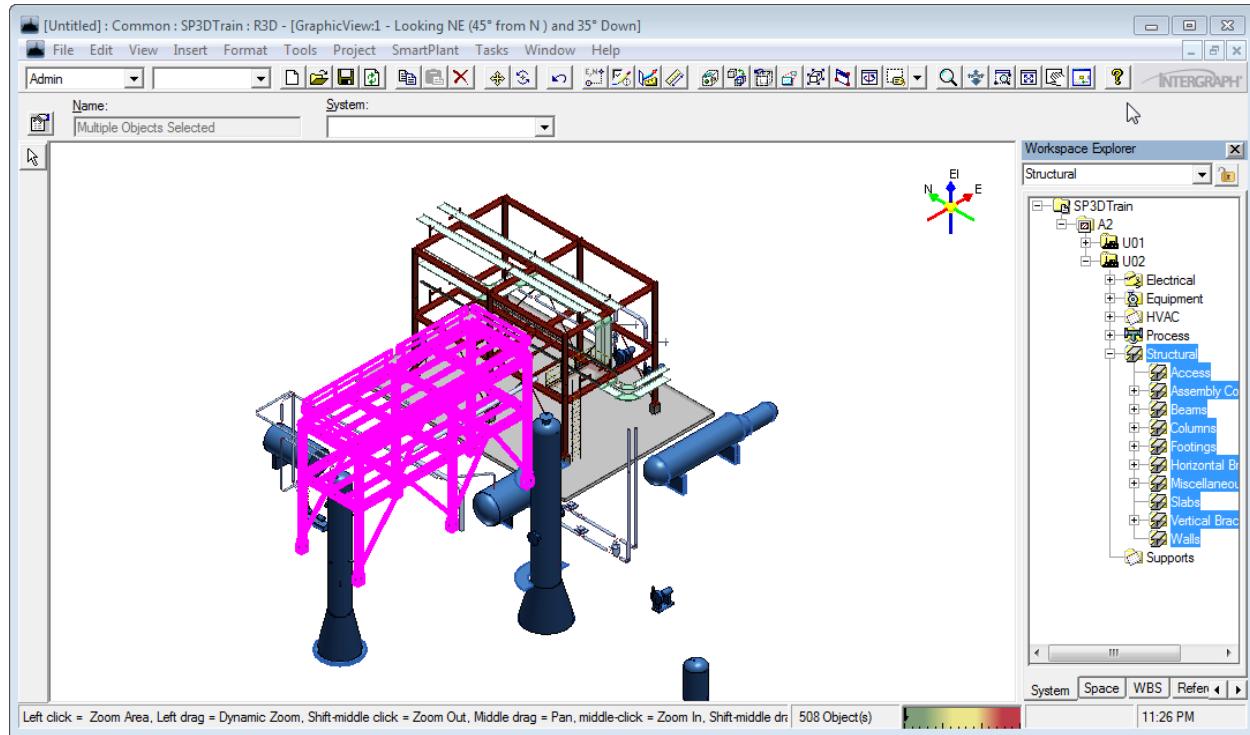
Note: To simulate an update performed to initially published objects, it would be necessary to perform a change that will allow visible comparison of the results. The next series of steps will guide you through the process of deletion for some objects in unit U02 of the training plant.

Prepare objects to be republished.

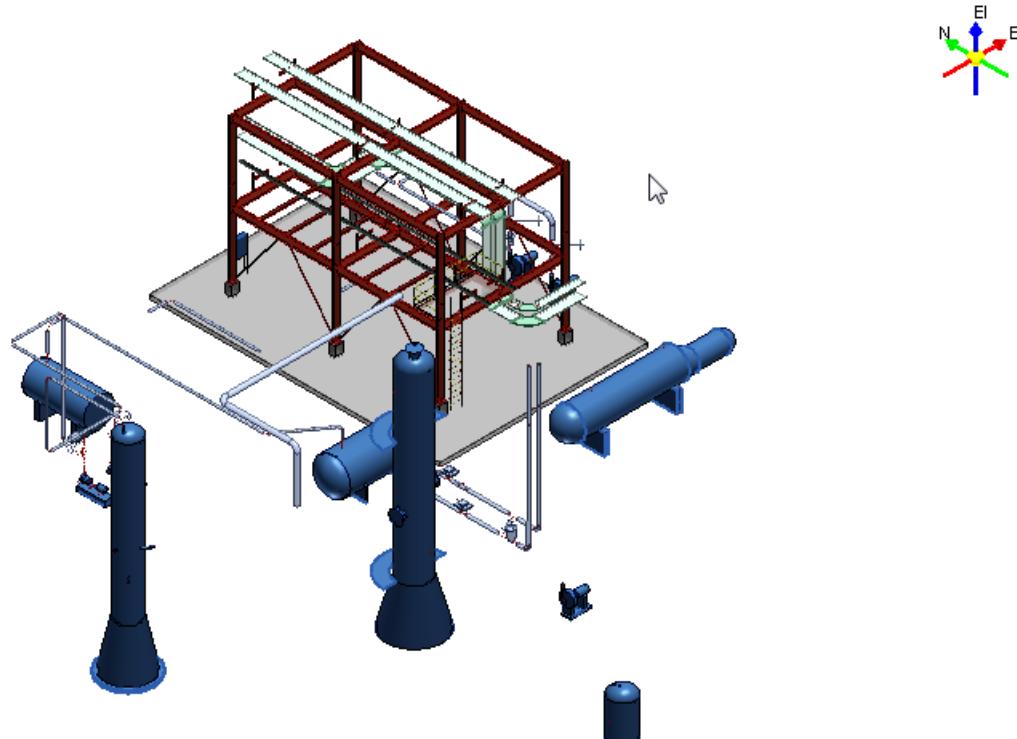
1. Open a **session file** or define a new workspace with the filter **U01 & U02** located under Plant filters > Training filters
2. From the workspace explorer, right click the **Structural** system under **U02** and choose **Select Nested**



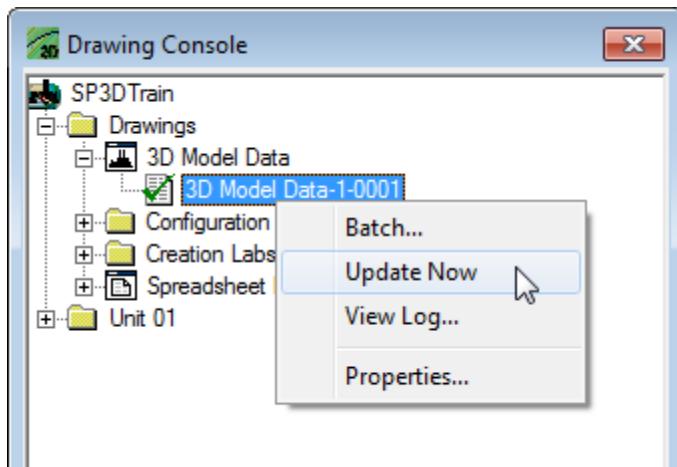
3. You may be able to see all structural objects under Structural system being highlighted in active view.



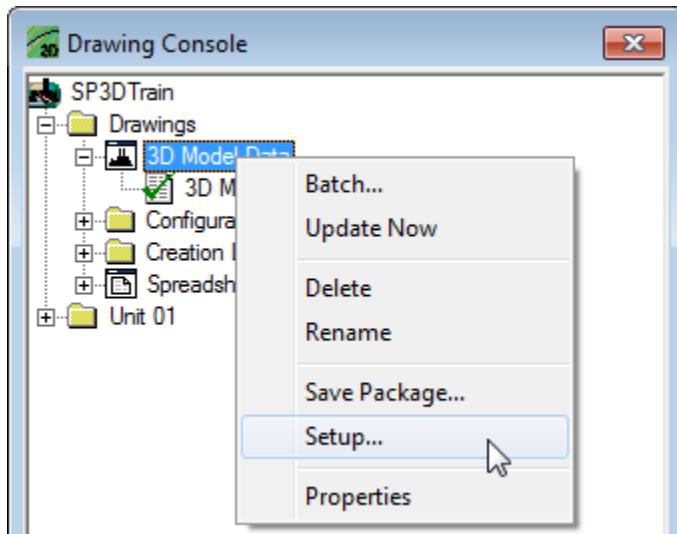
- With the objects selected, hit **delete** key, or go to Edit > Delete... don't worry, you can recover using MDR or Smart 3D Backups.



5. Open **drawings console** from **Tools > Drawing console** and update the **3D Model data** object created in previous lab.

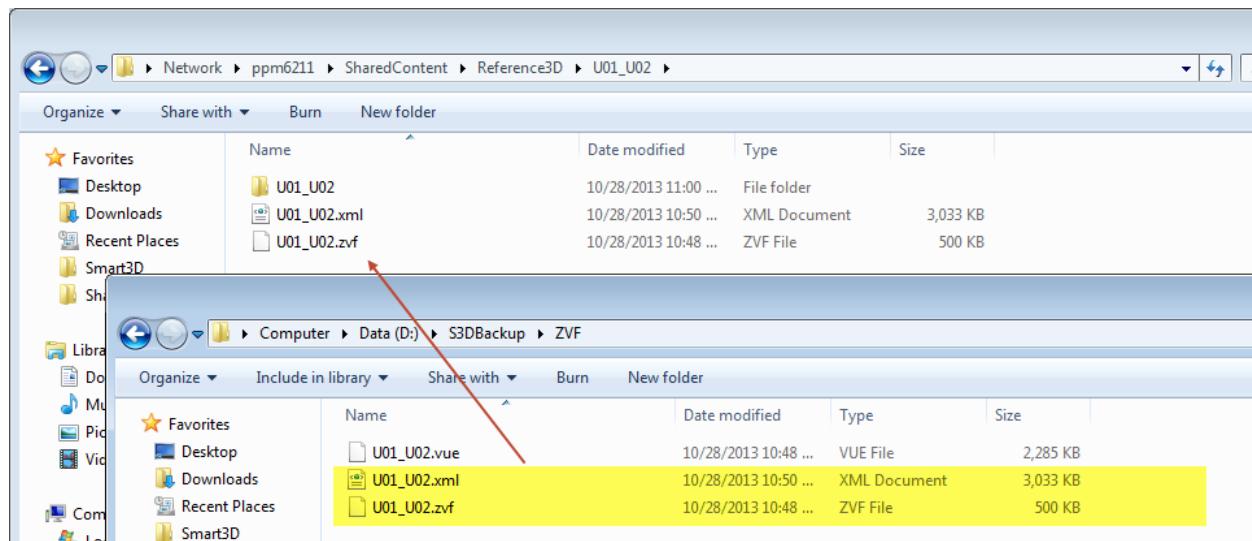


6. Locate exported zvf and xml files, recall their location by opening setup properties of the 3D Model Data object:

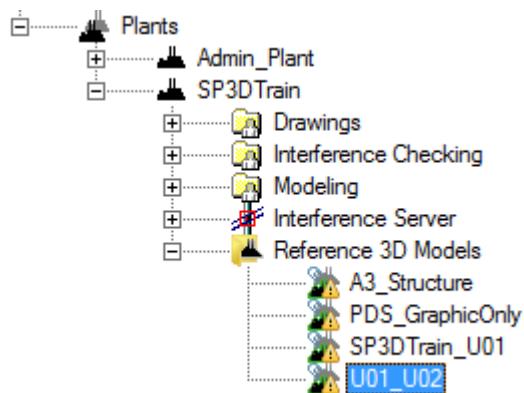


Update Reference 3D models

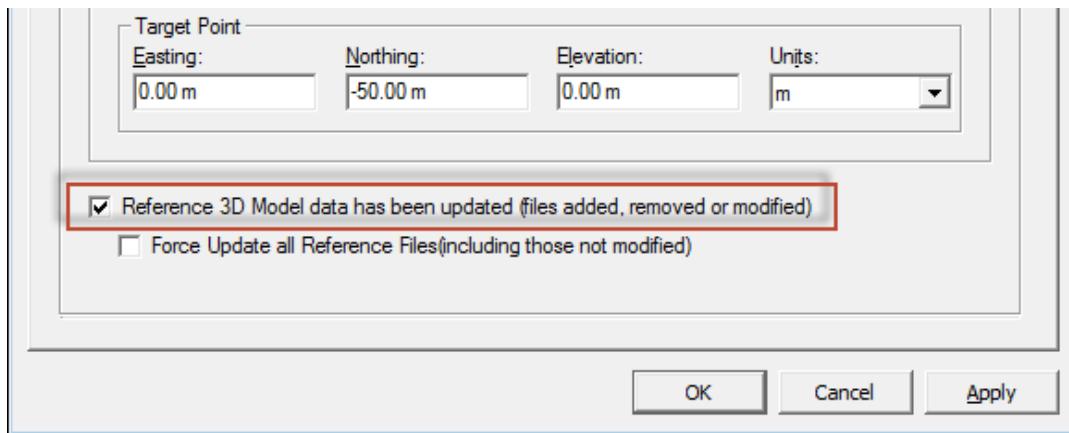
7. Replace existing zvf and xml files of exported objects from U01 & U02 filter into their referenced location from Project Management; this place could be the symbols folder.



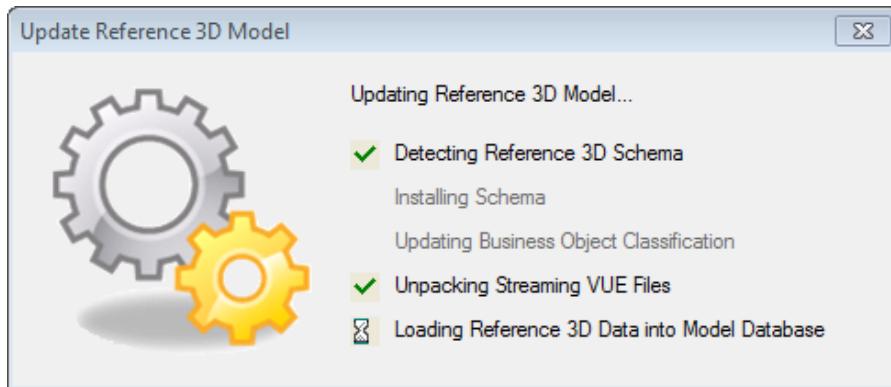
8. Open **Project Management**, if there is a session already open, do a refresh by hitting **F5** key or go to **View > Refresh**.
9. The referenced 3D model should now look as out of date as an indication that the files have been added, removed or modified.



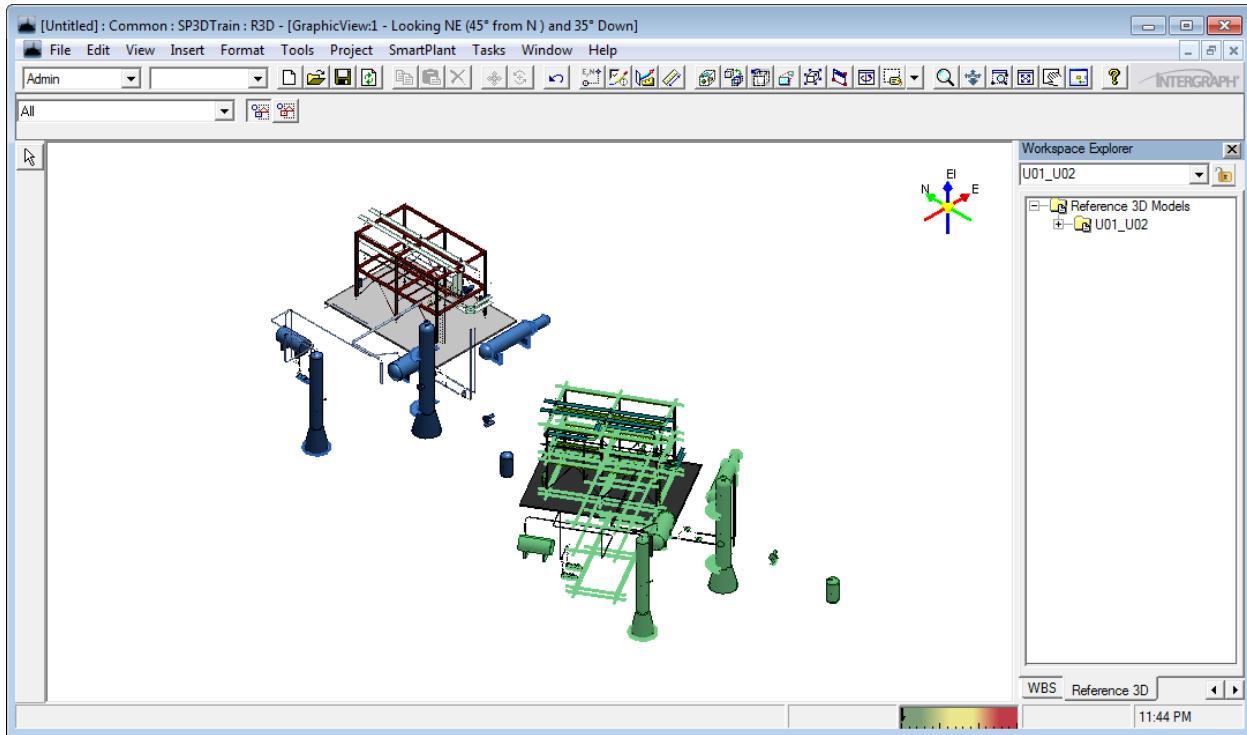
10. Open **properties** dialog for **U01_U02** referenced model and check the box at the bottom
Reference 3D Model data has been updated ...



11. Click **Apply** or **OK**
12. Status dialog will appear:



13. Once the update has finished, open an existing session or create a new one to evaluate results.
14. Refresh the workspace if needed for the changes to be reflected.



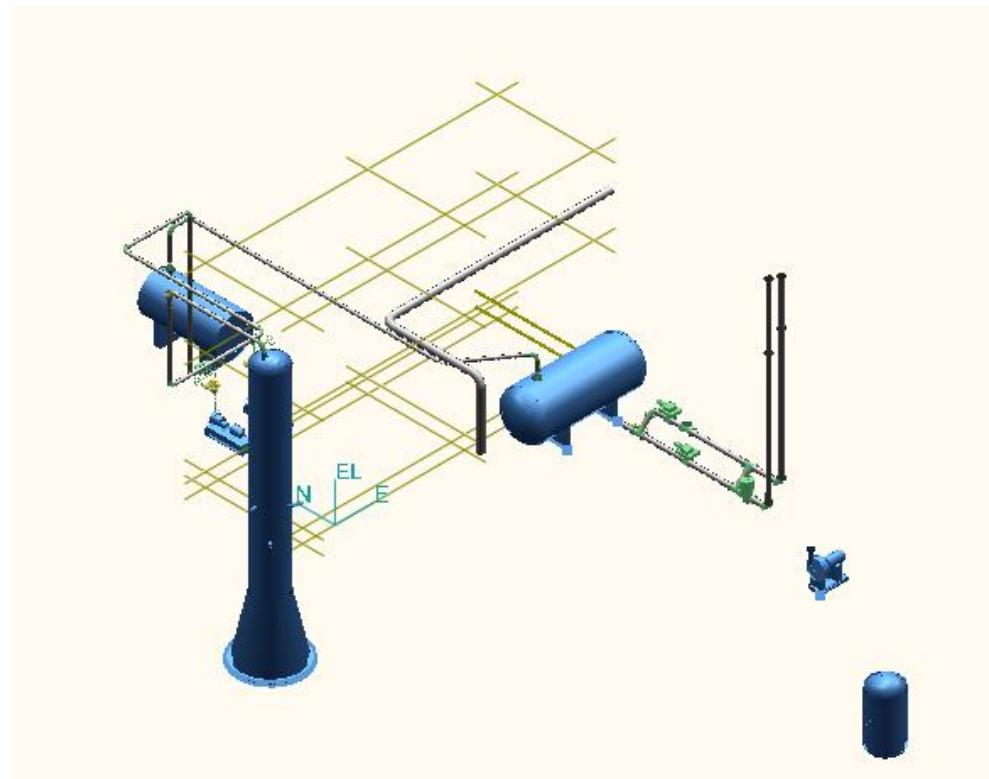
LAB 31: Export VUE and MDB2 files to be used for R3D Referencing

Objectives

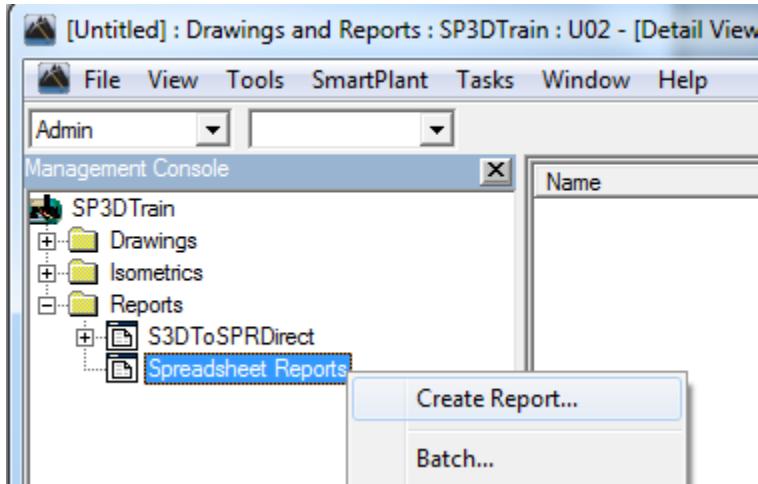
After completing this lab, you will be able to:

- Create VUE and MDB2 files using SPRDirect in a SP3D project.
- Convert VUE file to ZVF using the ConvertToZVF utility.
- Attach new R3D model using the ZVF and MDB2 files in SP3D.

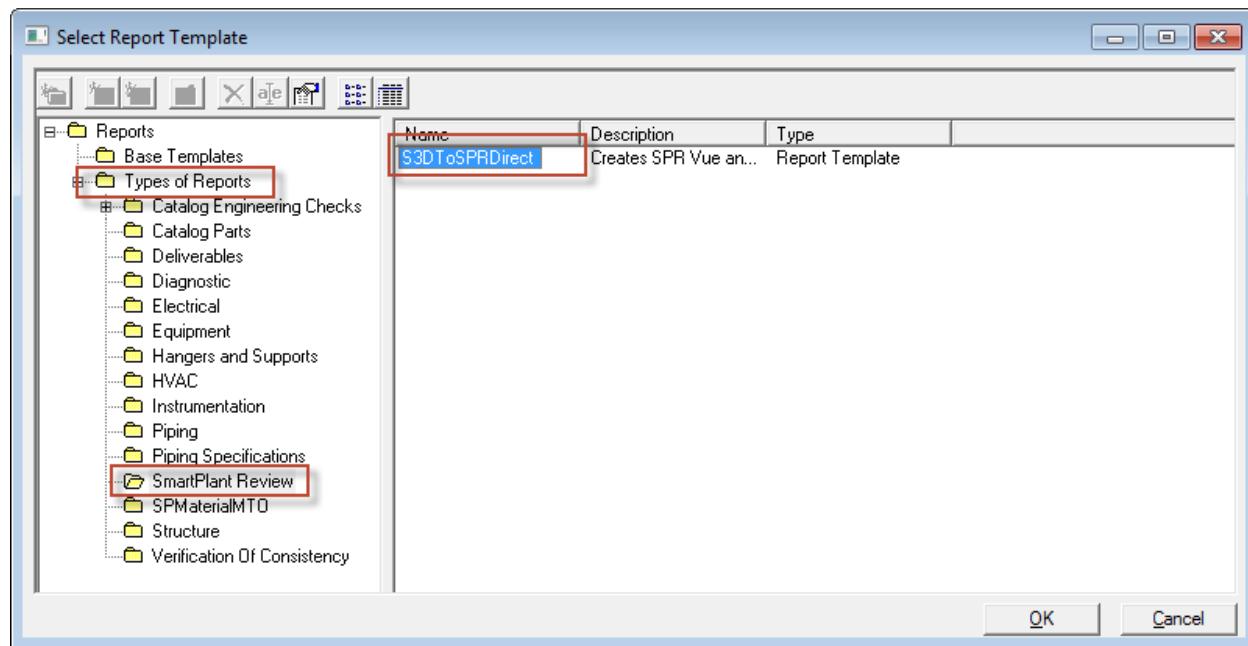
1. Open a **Smart 3D** session or create a new session and define your workspace to view Unit U02 from **SP3DTrain** plant using the filter named **U02** located under **Plant Filters→ Training Filters→ U02**.
2. Switch your graphic view to **Isometric** and do a **Fit**. Your workspace should resemble the view shown below.



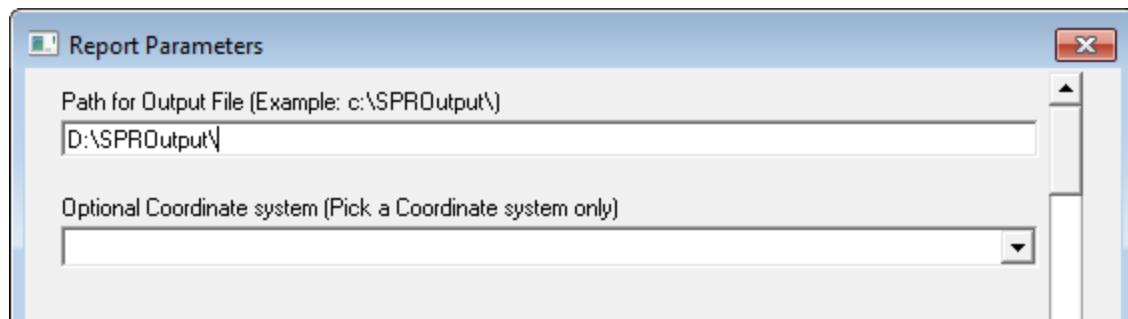
3. Switch to the **Drawings and Reports** task by selecting **Tasks → Drawings and Reports...**
4. Expand the **Reports** folder in the Management Console.
5. Select the **Spreadsheet Reports** in the Management Console and right click and select **Create Report...**



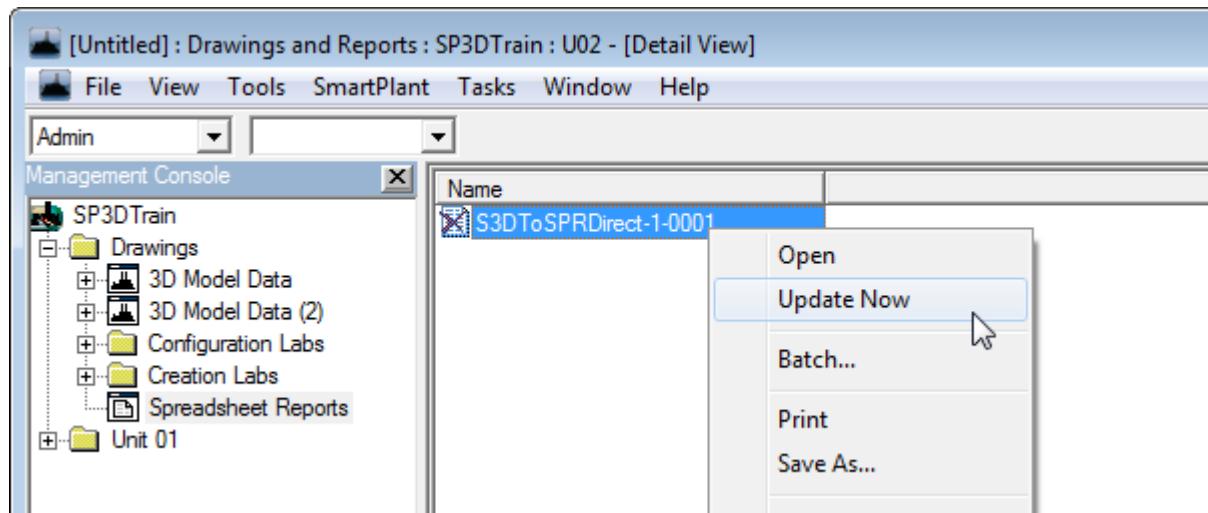
6. On the Select Report Template dialog select the **S3DToSPRDirect** report from **Types of Reports → SmartPlant Review → S3DToSPRDirect** and click **OK**.



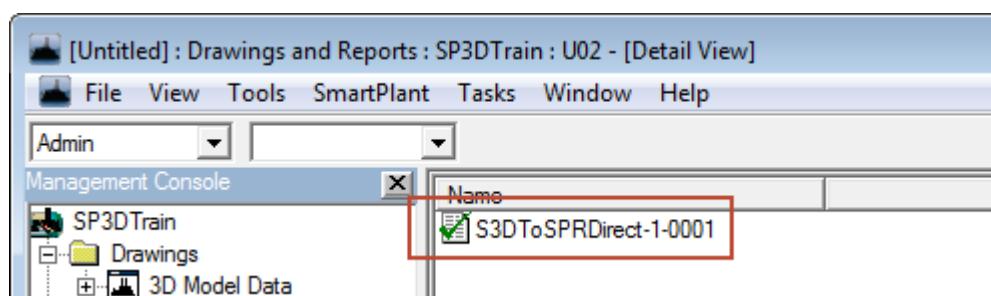
7. On the **Select filter** dialog select the filter named **U02** located under **Plant Filters → Training Filters → U02** and click **OK**.
8. On the Report Parameters dialog specify the output location for the files as **D:\ISPROoutput** and click **Finish**. Do not provide the optional coordinate system information.



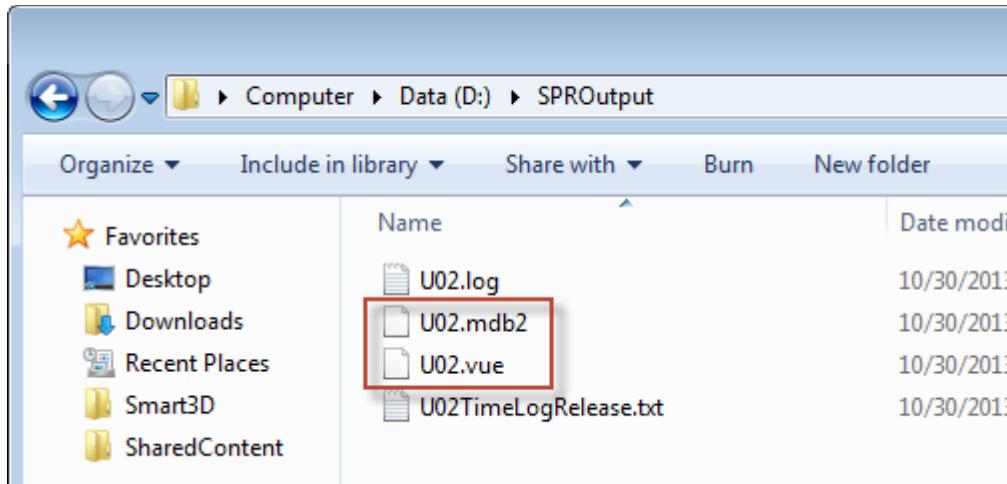
9. A new SPRDirect report will be created. Select the report, right click and choose **Update Now**.



10. After the update is complete a green check will be placed on the report.



11. Start windows explorer and navigate to the output folder location specified on the Report Parameters dialog in step 8.



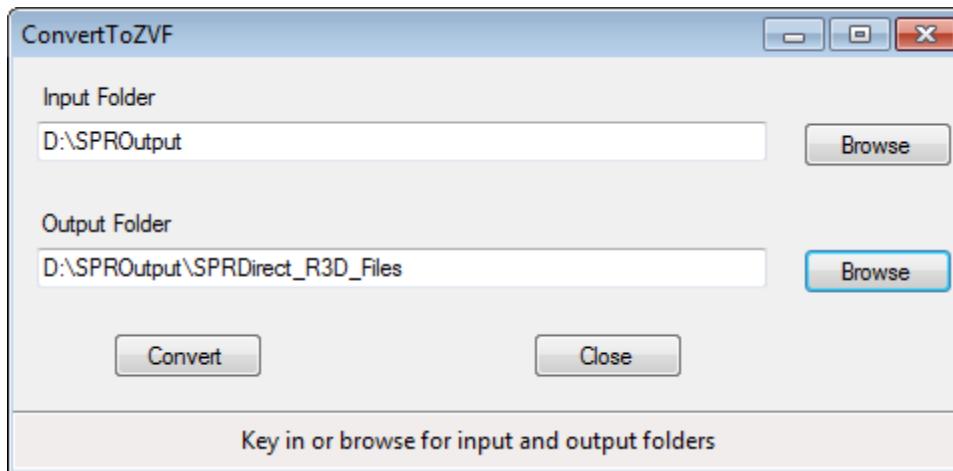
12. Create a new folder in the SPROOutput folder, name it **SPR_R3D_Files** and Copy the **U02.mdb2** file from **SPROOutput** folder to **SPR_R3D_Files** folder.

Convert to ZVF

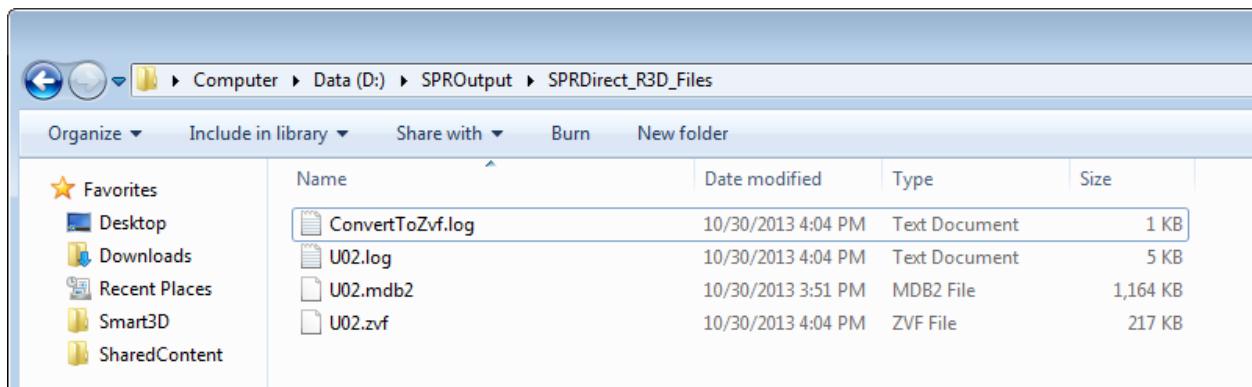
13. Open windows explorer and navigate to the following location to get to the **ConvertToZVF.exe** utility;
[Smart 3D install folder]\Core\Tools\Administrator\Bin
14. Start the utility by double clicking on the **ConvertToZVF.exe**.
15. Specify the **Input** and **Output** folder path on the ConvertToZVF window and click **Convert**.

Input Folder: D:\SPROOutput

Output Folder: D:\SPROOutput\SPR_R3D_Files



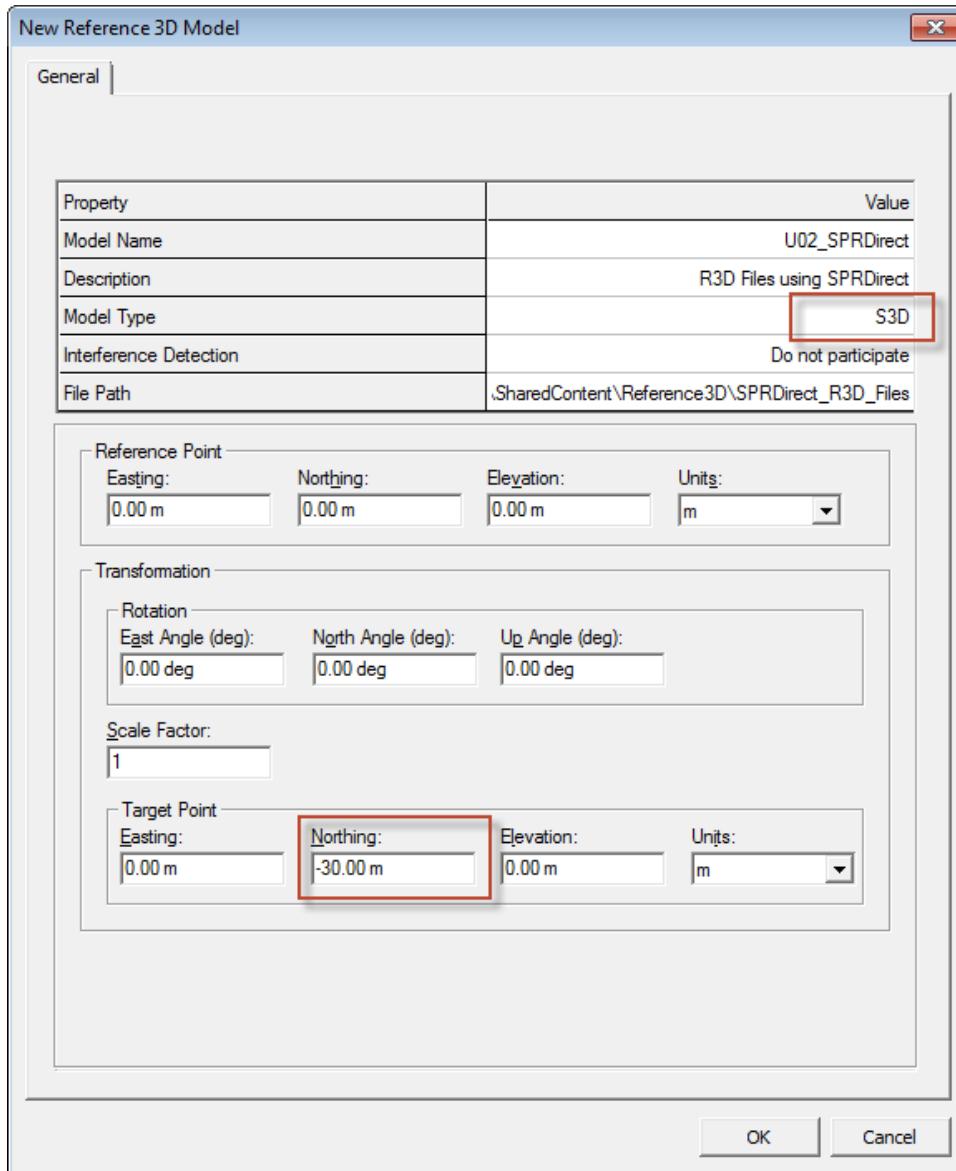
16. After the conversion is complete, open the **SPR_R3D_Files** folder and you should see the converted ZVF file.



17. Copy the **SPR_R3D_Files** folder to your **Shared content** folder.

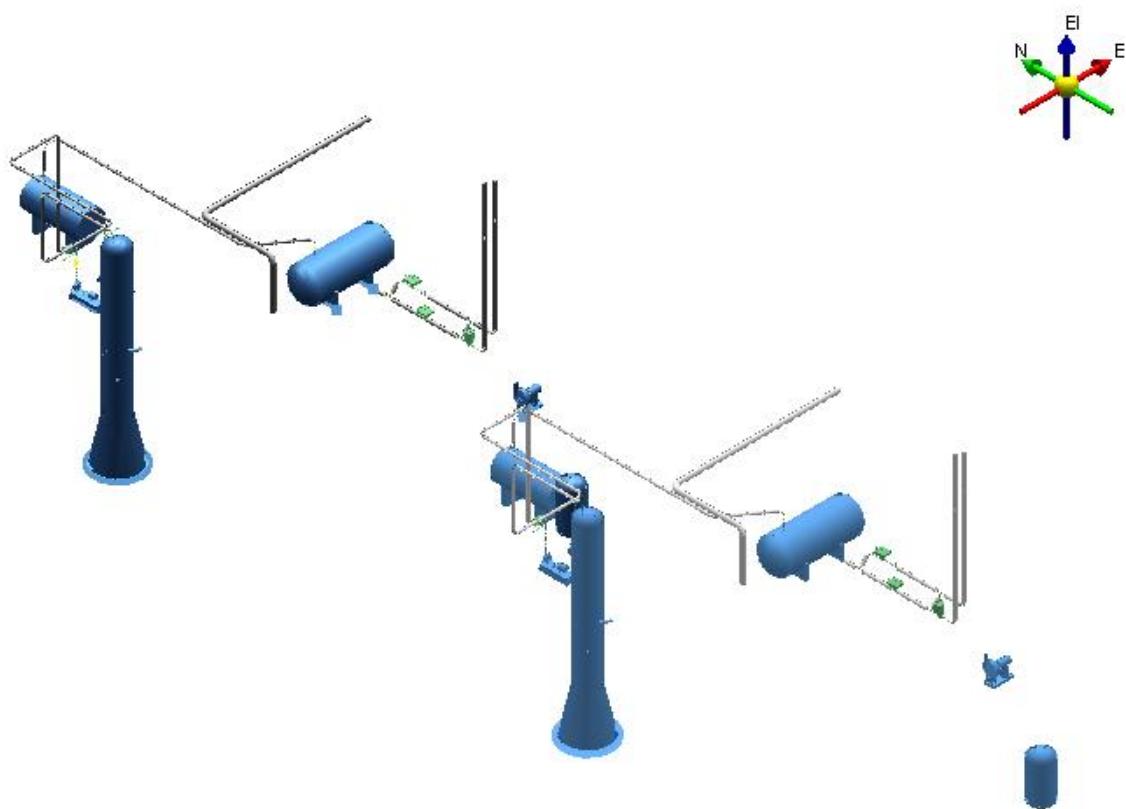
Attach a new R3D Model

18. Open Project Management
19. Expand **SP3DTrain** plant hierarchy
20. Right click **Reference 3D Models** node and select **New Reference 3D Model...**
21. Set the values on the form as depicted below. Use a name that is related to the files to be referenced. Make sure to use a UNC path when browsing for the files.



22. Click **OK**

23. The referencing process will start and a new dialog will be shown indicating the actions that are currently being performed. When the process finishes, the referenced project will appear as a new item under Reference 3D Models node.
24. **Review** the **log** file created for the referencing. It can be located in the %temp% folder.
25. **Exit Project Management.**
26. **Open** a new **Smart 3D** session and define your workspace to view the reference 3D model attached.



LAB 32: Convert DGN to ZVF and Create Folder Hierarchy for R3D Models (Optional)

Objectives

After completing this lab you will be able to:

- Convert DGN file to ZVF using the ConvertToZVF utility.
- Create folder hierarchy for R3D models which will be reflected in the workspace explorer (WSE).
- Attach multiple R3D models in S3D under a single parent folder.

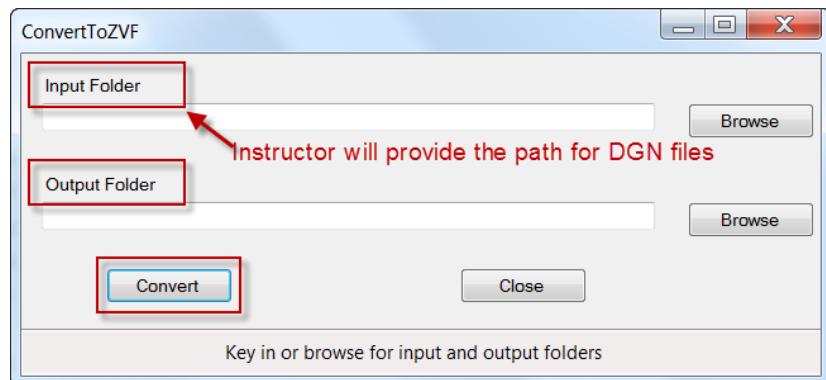
During this session we will go over the workflow to convert DGN files to ZVF using the ConvertToZVF utility delivered with the software. The ZVF files will be used to attach new R3D models in Smart 3D. The DGN files used in this lab practice have different object types defined on different levels.

When the user creates a folder hierarchy on disk below the root folder of the R3D attachment, the folder hierarchy is automatically reflected in the WSE without having to do anything extra in S3D.

Note: Instructor will provide the location of the DGN files.

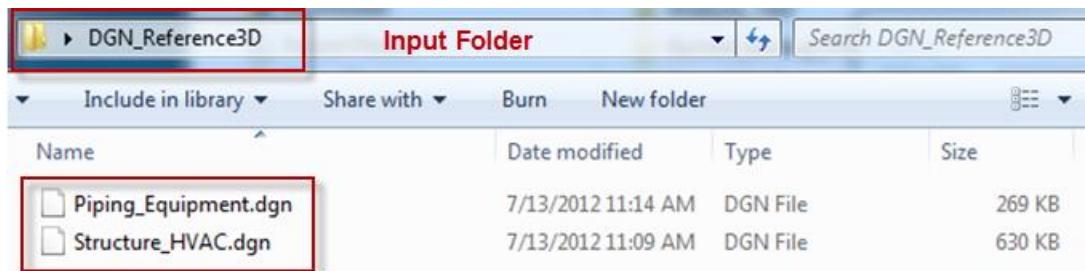
Convert to ZVF

1. Open windows explorer and navigate to the following location to get to the **ConvertToZVF.exe** utility; [Smart 3D install folder]\Core\Tools\Administrator\Bin\
2. Start the utility by double clicking on the **ConvertToZVF.exe**.

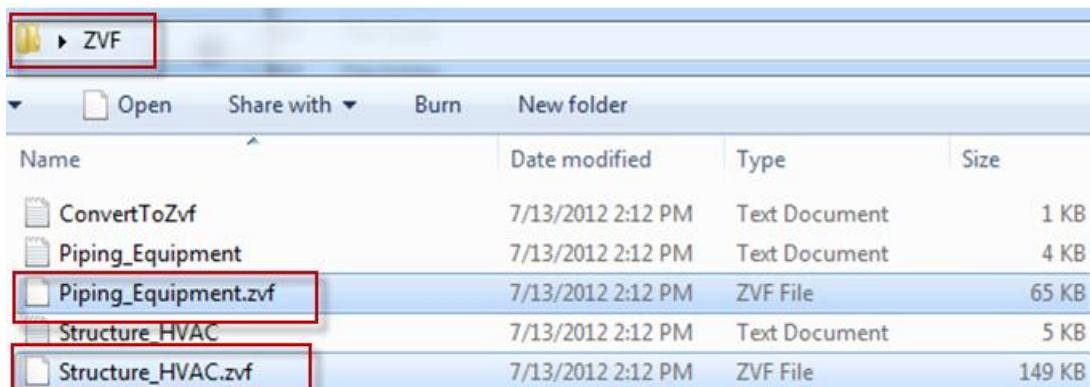


3. Specify the Input and Output folder path on the ConvertToZVF window. Instructor will provide the location for two DGN files (**Piping_Equipment.dgn** and **Structure_HVAC.dgn**) that will be converted to ZVF.

Note: It is recommended that the Input and the Output folder should not be the same.

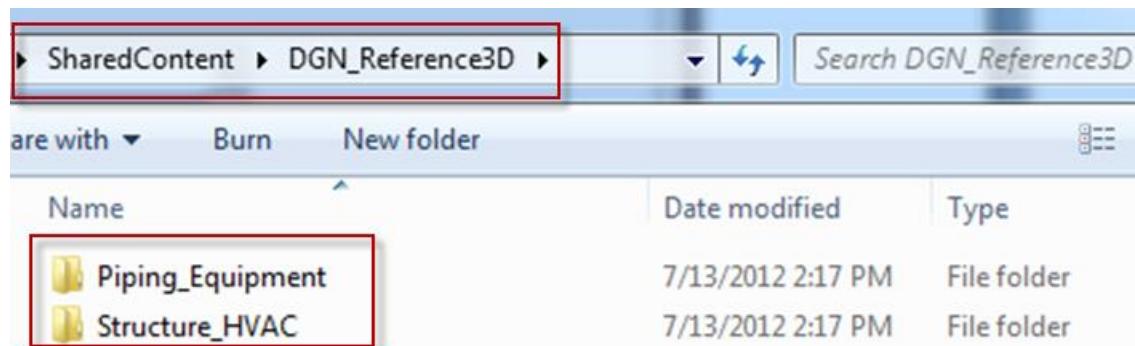


4. Click on the **Convert** button after specifying the correct paths for the input and outputs folders.
5. **Close** the ConvertToZVF window after the DGN files are converted. At this point you will have two ZVF's converted from DGN files.



Create Folder Hierarchy

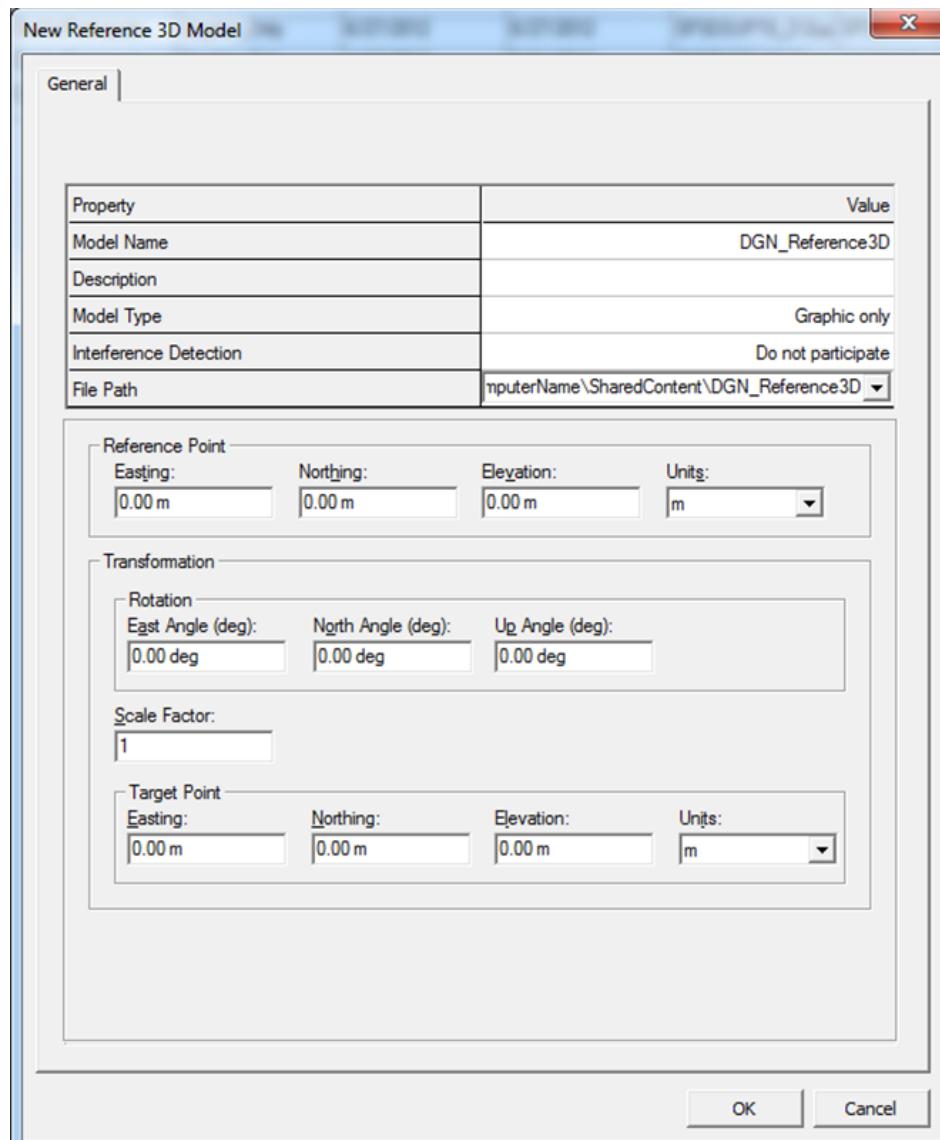
6. Open windows explorer and navigate to the Shared Content folder;
\ComputerName\SharedContent
7. Create a new folder under the SharedContent folder and name it **DGN_Reference3D**.
8. Create two new folders under the **DGN_Reference3D** folder and name it **Piping_Equipment** and **Structure_HVAC** respectively.



9. Copy the **Piping_Equipment.zvf** and **Structure_HVAC.zvf** to the **Piping_Equipment** and **Structure_HVAC** folders respectively, which were created in step 8.

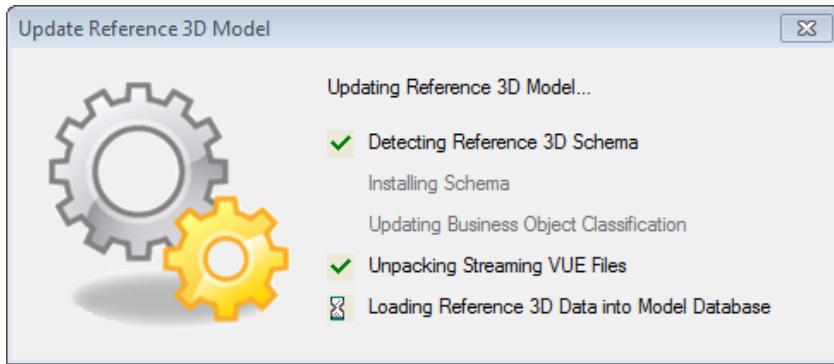
Attach Reference 3D model

10. Open **Project Management**
11. Expand **SP3DTrain** plant hierarchy
12. Right click **Reference 3D Models** node and select **New Reference 3D Model...**
13. Set the values on the form as depicted below. Use a name that is related to the files to be referenced. Make sure to use a UNC path when browsing for the files.

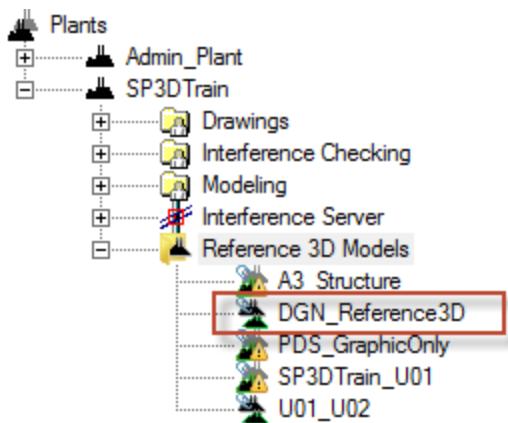


14. Click **OK**

15. The referencing process will start and a new dialog will be shown indicating the actions that are currently being performed



16. When the process finishes, the referenced project will appear as a new item under Reference 3D Models node.



17. **Review the log file** created for the referencing. It can be located in the %temp% folder.
18. **Exit Project Management.**

LAB 33: Use R3D referenced models for Parallel Design (Optional)

Objectives

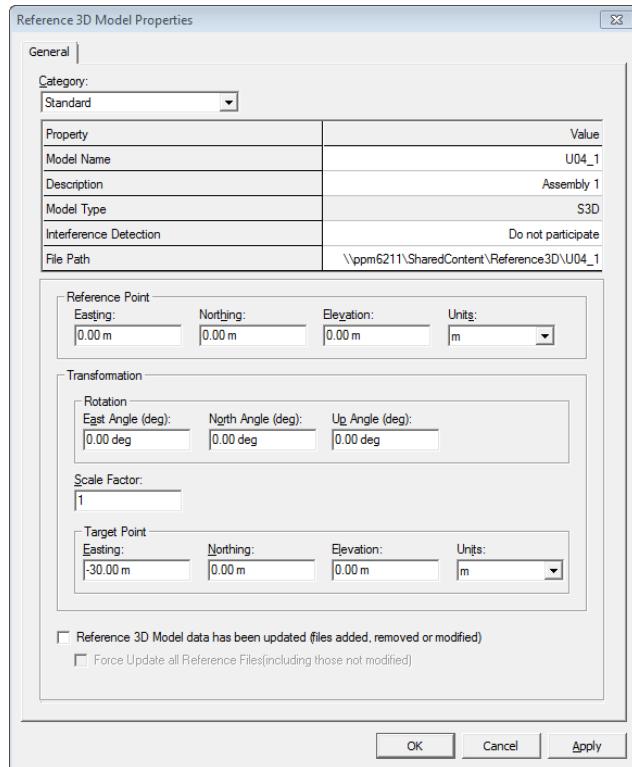
After completing this lab, you will be able to:

- Reference multiple times the same model to achieve initial phase of parallel design workflow.

It is sometimes a requirement to work in parallel on areas that will need to be replicated later in the project. In the meantime, work may need to be performed around the areas where the objects will be finally positioned. To achieve parallel design of a unit that will be replicated, the base unit will first be exported as a zvf and xml files, and then referenced as an R3D model as many times as needed.

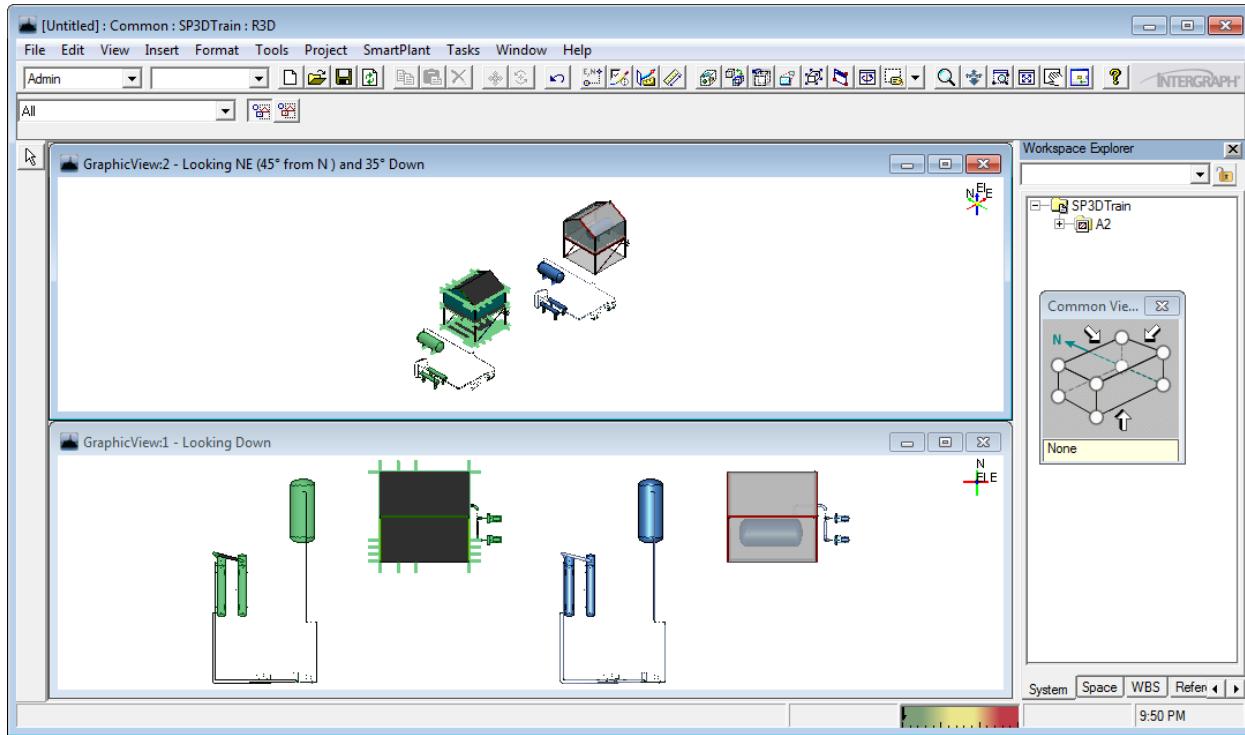
After work on the initial unit is completed, the referenced models will be deleted and MDR will be used to replicate the actual objects.

1. **Export** zvf and xml files of unit U04 from **SP3DTrain** plant, use previous labs as guidance on how to achieve this. U04 objects can be found on the filters hierarchy under Plant Filters > Training Filters > U04.
2. **Attach** as R3D reference U04 objects on **SP3DTrain** plant; name it **U04_1**, set as target point **- 30 m E, 0 m N and 0 m EL**.



Note: It is recommended to create a hierarchy of folders to avoid double referencing of files in the plant. Project Management will attach and assign all zvf and xml files existing in provided file path to same R3D model.

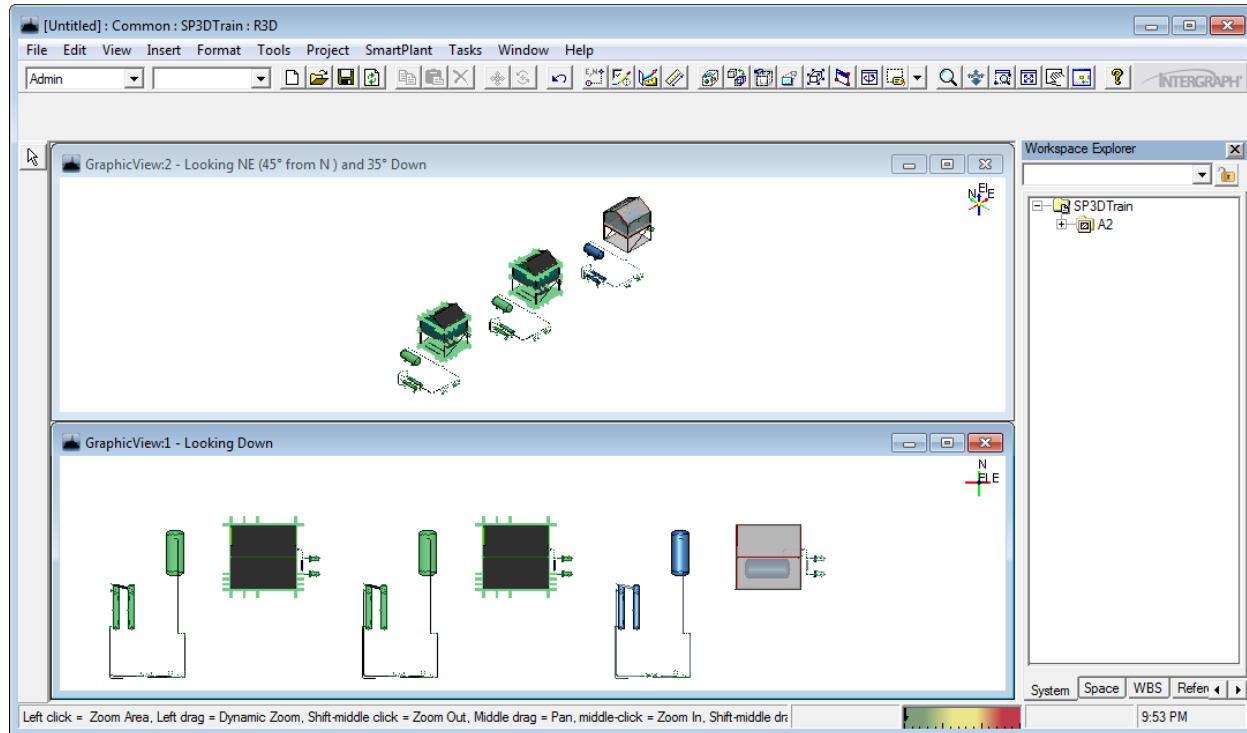
3. Open a new session and define a workspace to bring objects from U04 unit alongside recently attached R3D model U04_1



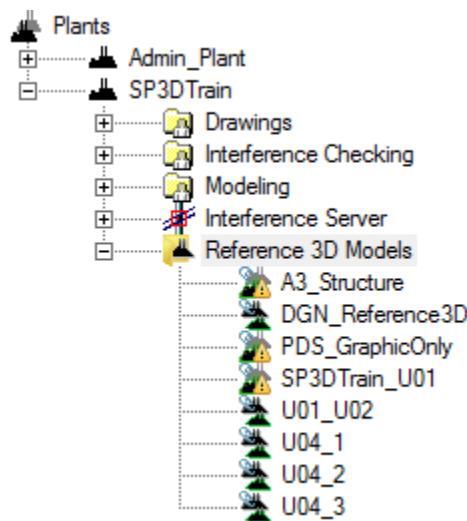
4. **Attach** same zvf and xml files of U04 objects to the plant **SP3DTrain**, name it as **U04_2** and set as target point **-60 m E, 0 m N, 0 m EL**.
5. **Open** a session and review new R3D objects.

Note: If you are working on previous session file which was open at the moment the attachment was made in Project Management, you are required to re-open the session in order to get the new connection objects in order to see recently attached R3D model. Until that is done, refresh will not return any additional referenced objects. To re-open the session you can either close it, save changes if preferred, then open it from its saved location, or you can leave the session file up, then go to File > Close then File > Open, or select it from the list of recent files.

You may also need to modify the filter definition in order to include recently attached R3D model.

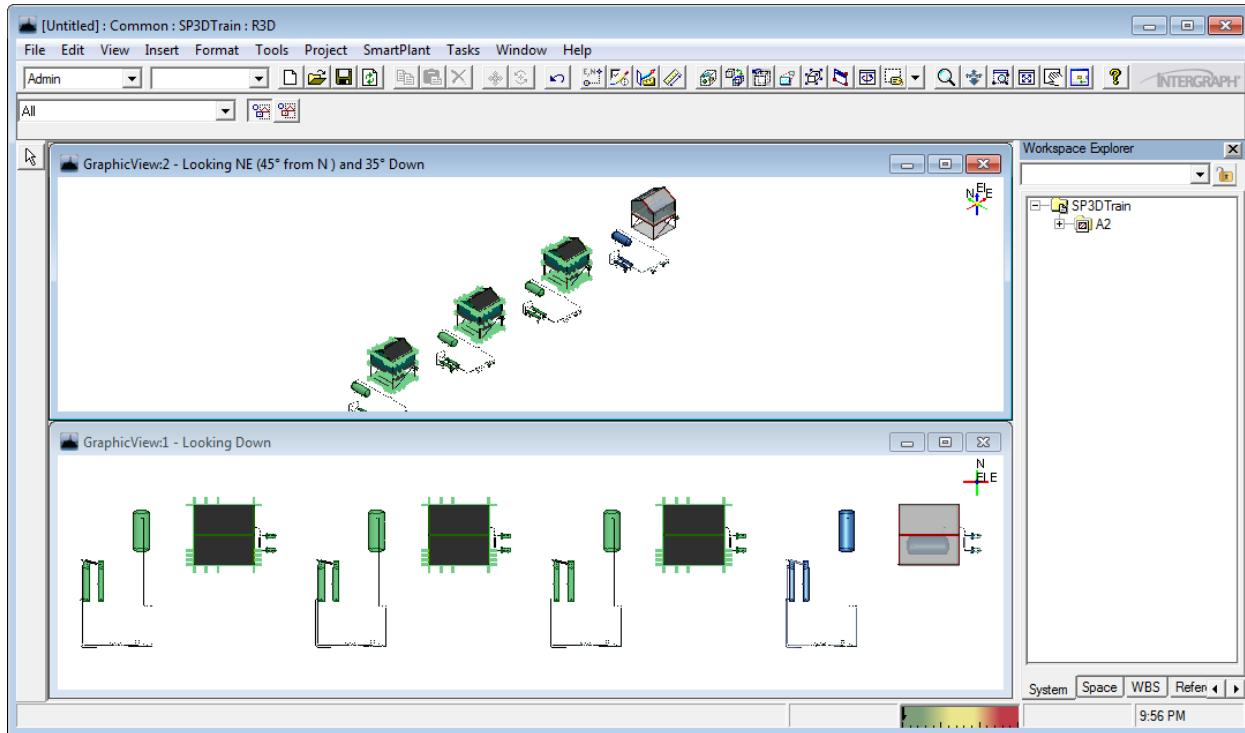


6. Repeat attachment procedure of U04 model one more time, name it as **U04_3** and set as target point **-90 m, 0 m N, 0 m EL**.
7. The list of referenced models in Project Management hierarchy may resemble something like this:



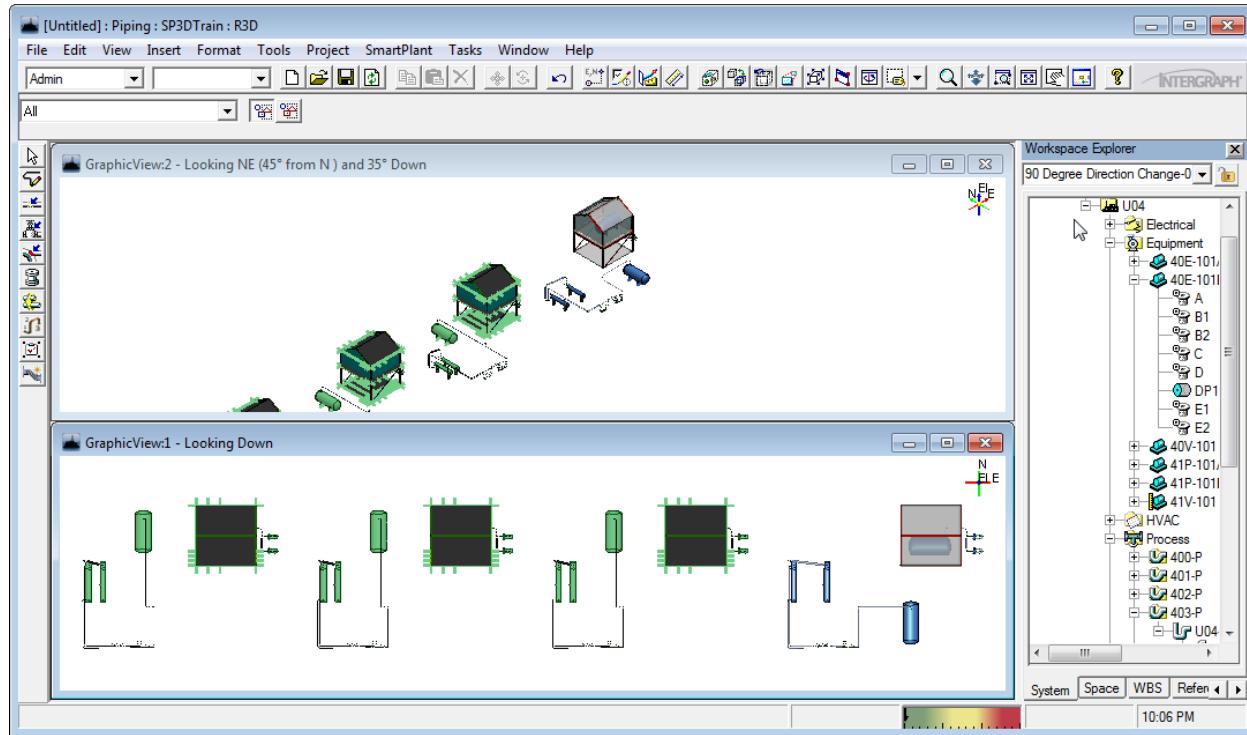
8. Open a session to review changes and the new R3D objects.

Note: Recall that session file needs to be re-opened if it was active when doing the reference. Filter may also need to be modified for the attached objects to be returned.

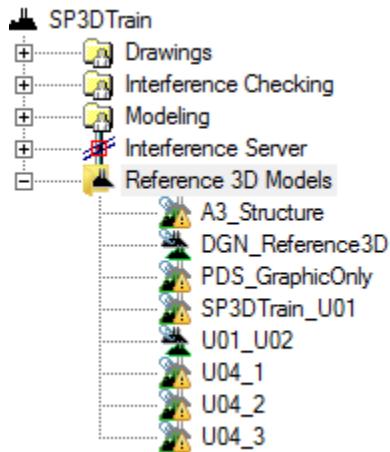


Work can now be performed against or around the referenced models. If IFC is configured appropriately, interferences with R3D modeled objects will be detected and properly reported. To simulate parallel design, changes need to be performed in the original unit. These changes will then need to be reflected in referenced models.

9. Perform a **change** in the design to objects in unit **U04** of **SP3DTrain** plant. It could be adding or removing content. If necessary, refer to previous lab practices for assistance on how to remove objects.

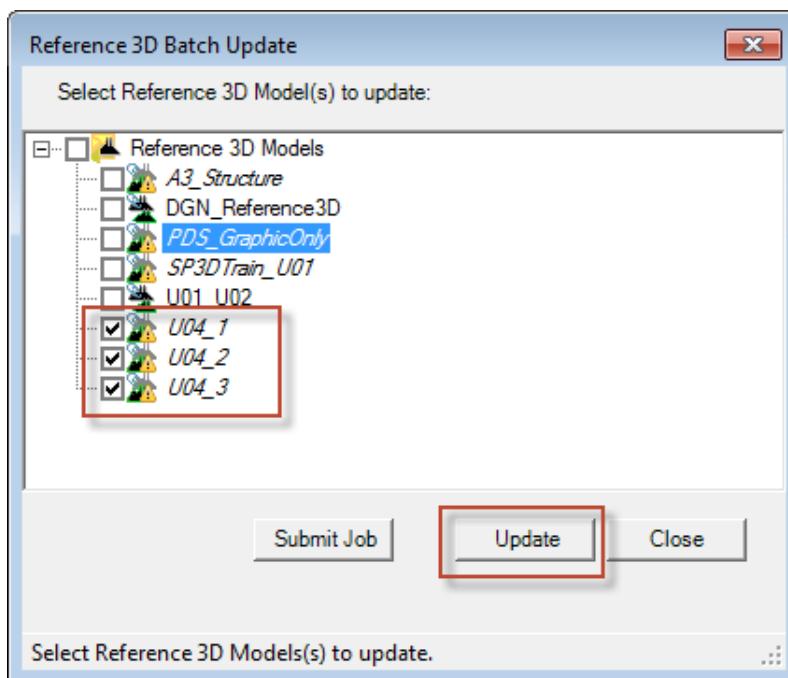


10. Once the modifications have been performed. Reupdate xml and zvf files of unit **U04** then replace existing files in referenced location file path for all three R3D models. This would make the referenced objects to be out of date as reflected in the Project Management hierarchy.



Note: You may need to refresh Project Management session for the icons to change.

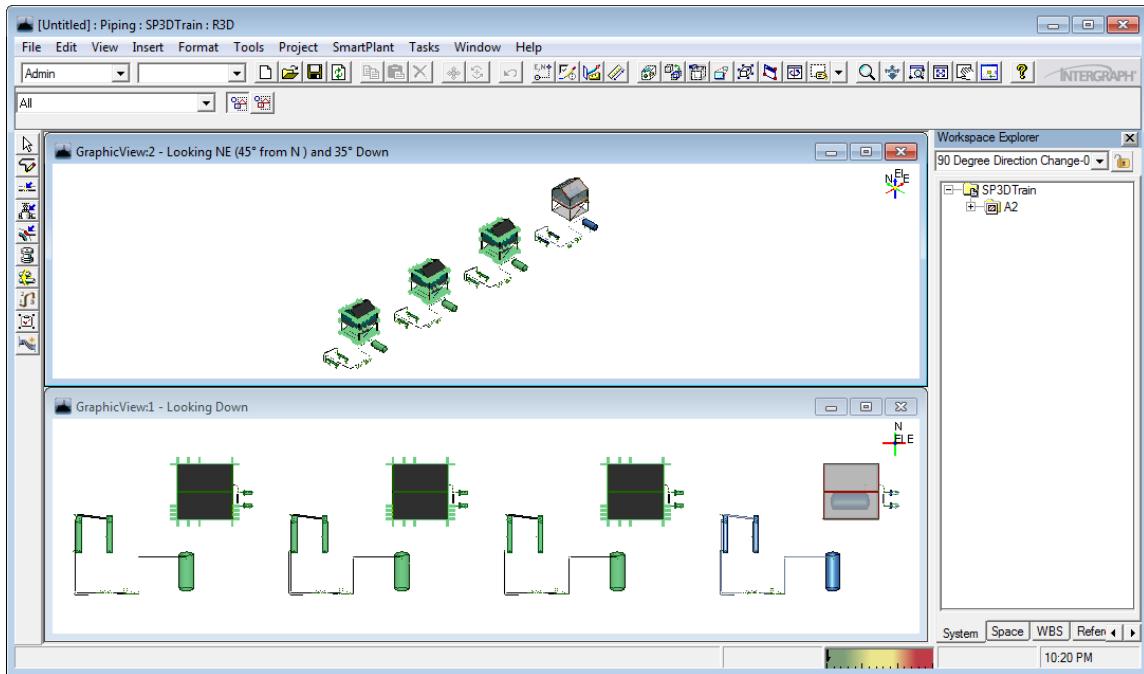
11. Update each one of the referenced models. Recall that referenced models are updated by using check box provided in properties form. Alternately, they can be updated simultaneously by using option **Update Reference 3D Model(s)** found under right click menu of the **Reference 3D Models** node.



12. Refresh the Smart 3D session and review changes.

Note: this time closing and opening the session is not necessary as there are no new connections to the database. R3D models were not referenced in previous step, they were only updated.

Intergraph Smart 3D™



LAB 34: Install Intergraph Batch Services

Objectives

After completing this lab, you will be able to:

- Install Intergraph Batch Services and configure it with the purpose to act as a Batch server for Smart 3D related tasks.

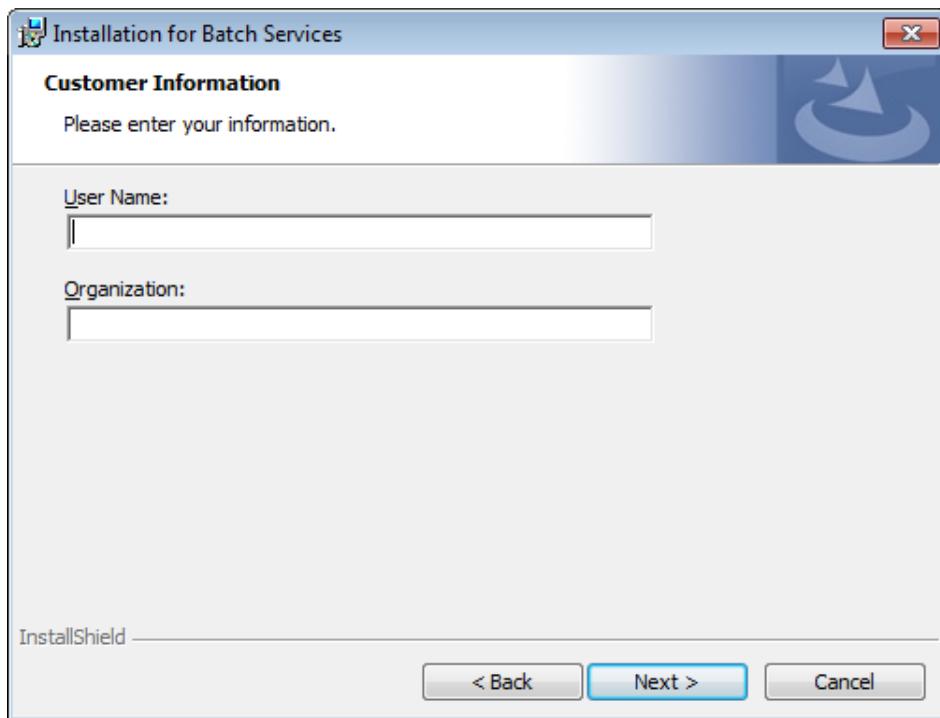
1. Locate and **execute** Intergraph **Batch Services** installer file (**setup.exe**).

Note: Intergraph Batch Services software can be downloaded from the Smart Support website (<https://smartsupport.intergraph.com/>) located under *View Downloads*→*Batch Services*→*Service Packs and Fixes*→*Current Version Updates* or it may be provided by the instructor.

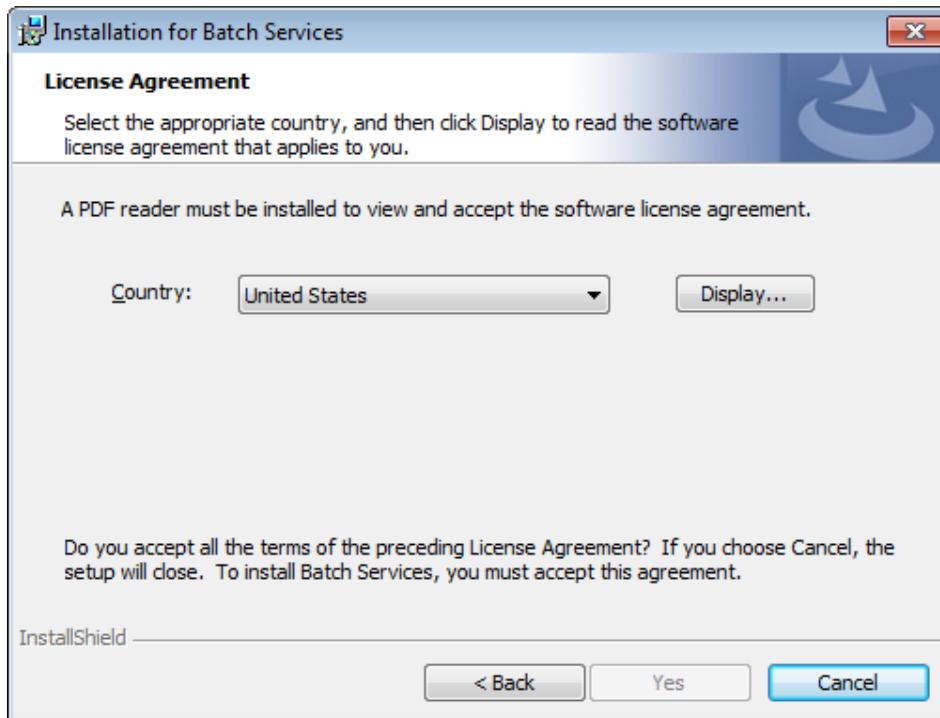
2. Select **Batch Services Installation**



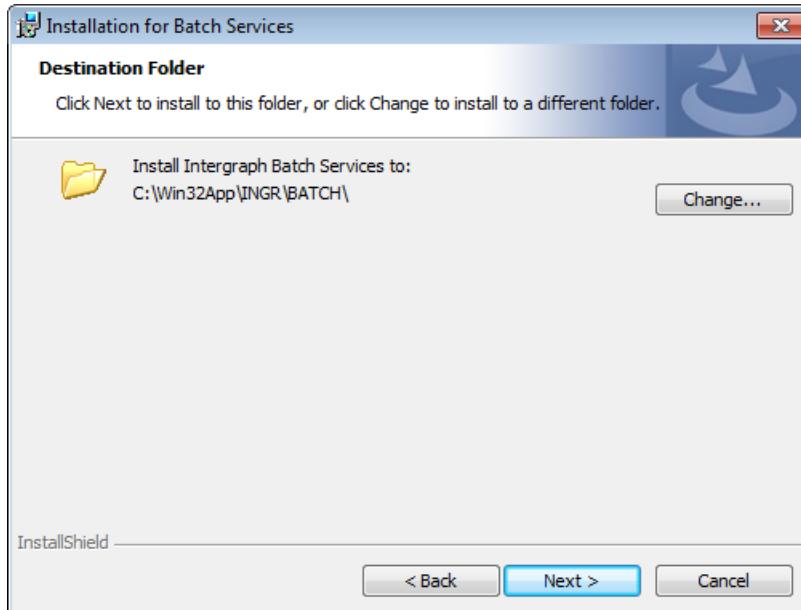
3. Provide registration information



4. Acknowledge license agreement by clicking **Display**, then **Yes**



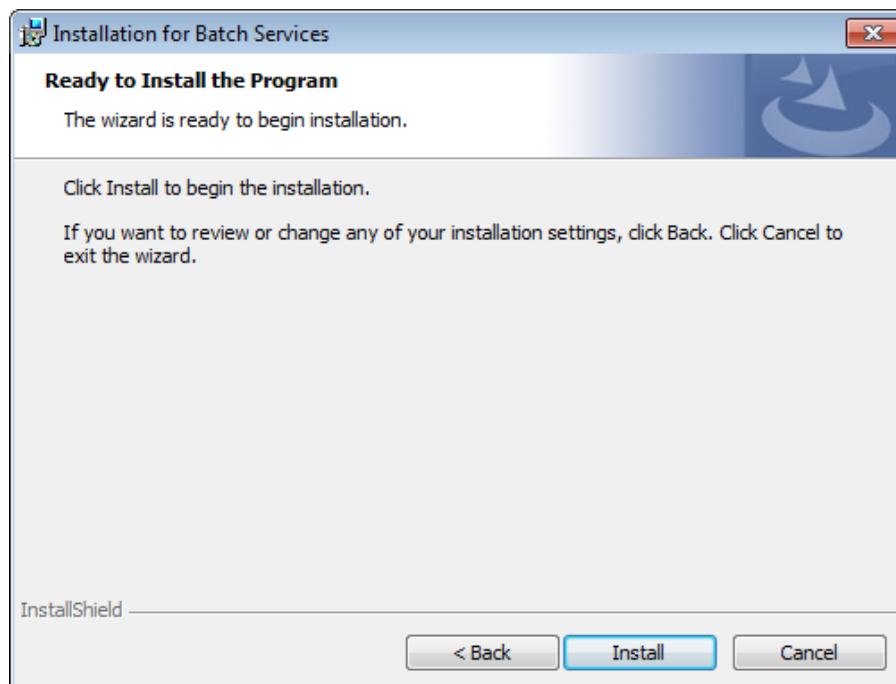
5. Confirm the path where to install Intergraph Batch Services. This path can be anywhere in the system, however, if this installation of batch services is to be used with the PDS software, then it must be a path containing no spaces.



6. Select **Yes** to run all jobs as the same user account. This account must be a domain account that meets the same permission requirements as any other Smart 3D user in order to be able to access the plant and perform the required batch actions.
7. For this practice you will use the local administrator account to run all the jobs. Type the local administrator account as **computername\administrator**.



8. Finish the product installation.



LAB 35: Configure Intergraph Batch Services

Objectives

After completing this lab, you will be able to:

- Configure an Intergraph Batch Services server to be used with Smart 3D scheduled jobs.

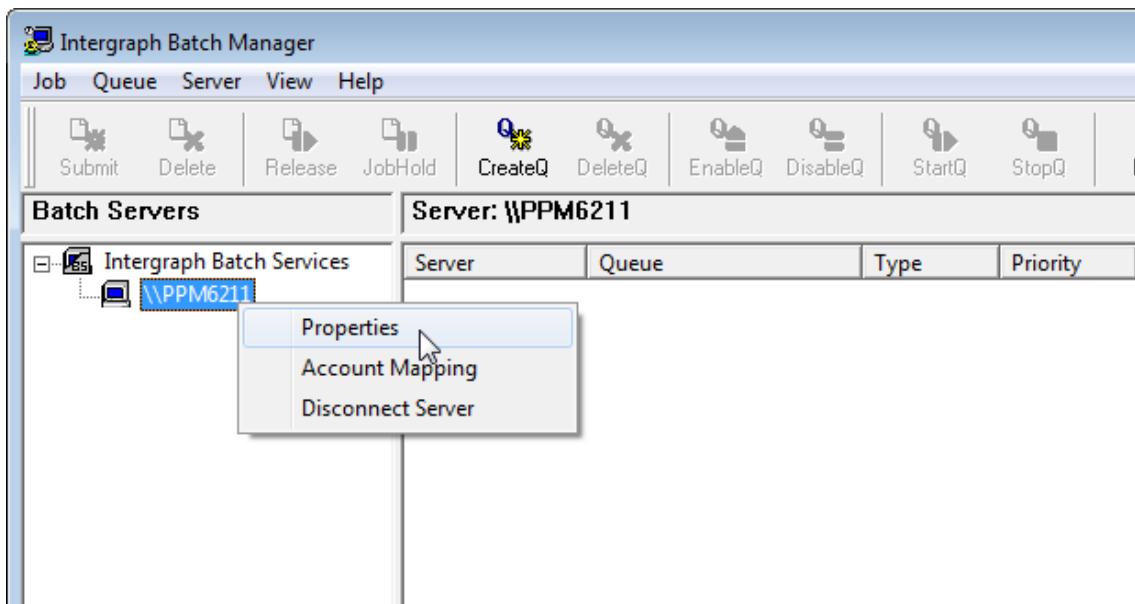
Once Intergraph Batch Services software is installed in the system, there are additional configurations that must be done in order to create the queues and to configure the machine to acts as a Batch server for a Smart 3D project.

Verify Intergraph Batch Services status

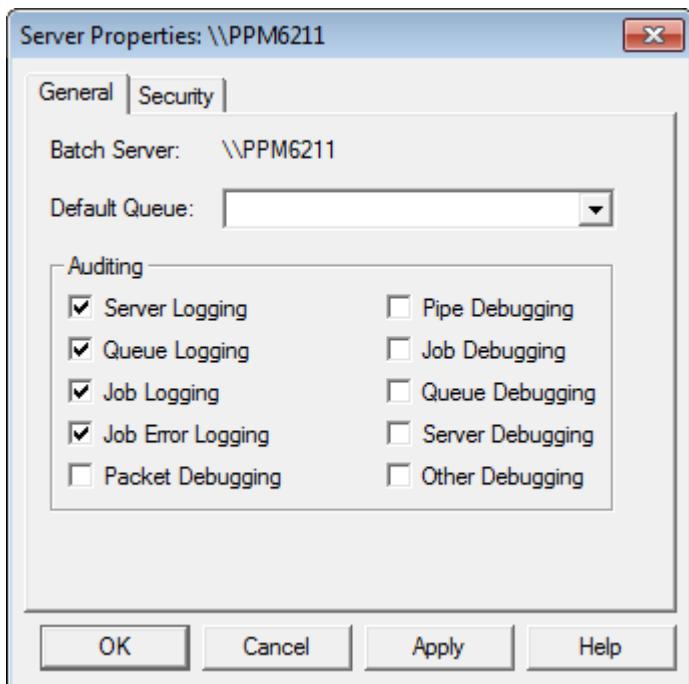
1. When you install Intergraph Batch Services software, the batch server service is configured to start automatically each time you restart your computer. No further configuration is required. The windows service for the Batch server can be found in the list of Windows Services with name **Intergraph Batch Server**.
2. Open the properties page of the **Intergraph Batch Server** service and verify that the startup type is set to **Automatic**.

Grant access privileges and enable error logging to Batch server

3. Before you begin using Intergraph Batch Services, you should use Intergraph Batch Manager to ensure that users on your system (and users on other systems if appropriate) are granted the proper privileges for access to Batch Services.
4. Open the **Batch manager** by going to **Start > All Programs > Intergraph Batch Services > Intergraph Batch Manager**
5. You may get prompted to create a queue, select **No**
6. Select the current **batch server** from the tree on the left, **right click** and then choose **Properties**

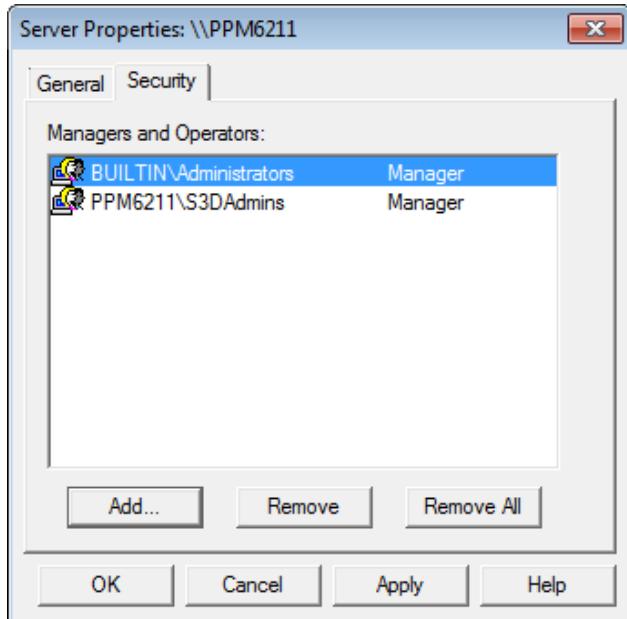


7. Logging information for the operations carried out by Batch server will be located in the Application Event Viewer. Under the **General** tab enable the following auditing options:
Server logging, Queue logging, Job logging, Job error logging



8. Switch to **Security** tab and add users that will act as managers or operators of the batch server.
Users with manager privileges can use all the commands that affect batch server configuration and operation; a user with operator privileges can manage jobs, including those belonging to

other users, and can start/stop batch server queues. For this exercise, add the **S3DAdmins** local group as a **manager** to this server. (SP3DAdmins local user group was created in lab practice number one).

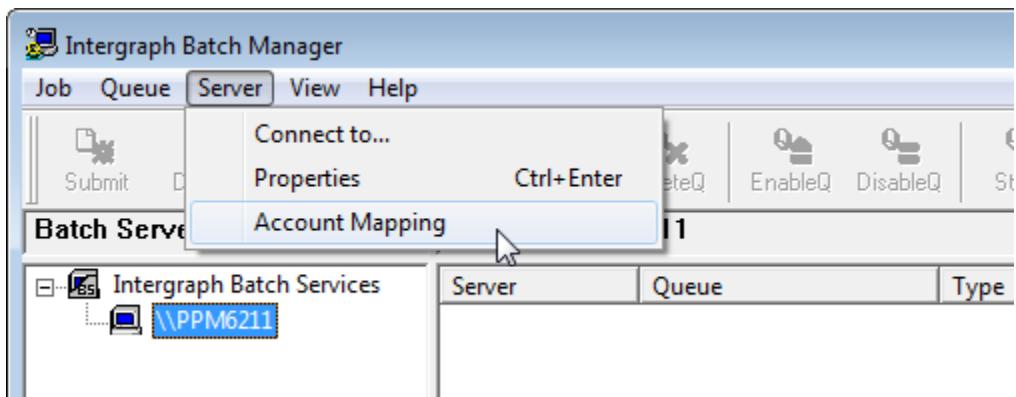


Note: Users or groups without privileges can only submit requests to queues to which they have been granted access; most users or user groups are non-privileged users.

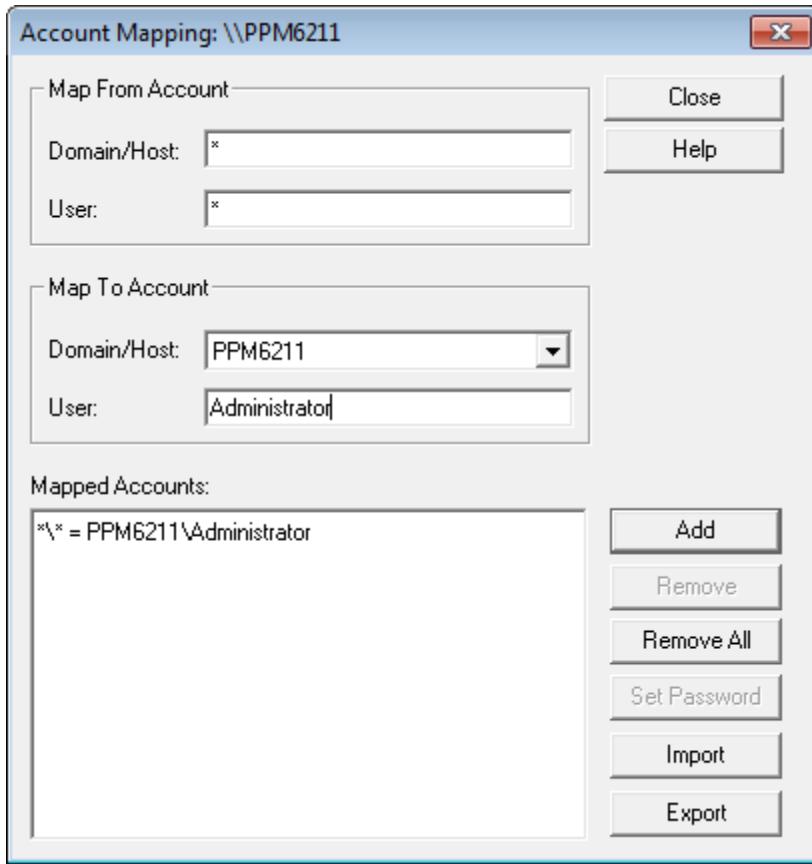
9. Click **OK**

Configure account mappings

10. After manager and operator users have been defined, it is recommended to verify that account mapping has been properly set for Smart 3D users. The mapped account must meet the permission requirements as a Smart 3D user to perform the tasks of each one of the scheduled jobs (i.e. enough privileges to perform backups, run database integrity, update drawings, etc).
11. In the **Intergraph Batch Services** manager, go to **Server > Account Mapping**



12. Type * in the domain/host and user field as depicted below to indicate that all users connecting to the server will be mapped to the same account. For the purposes of this practice, map the local administrator account to all accounts connecting to the Batch server.



Note: Account mapping configuration depends on the security needs and configuration of your plants. For more information on configuring account mapping, see the Intergraph Batch Services help. Other mapping options are possible; for instance, jobs submitted by some users can be

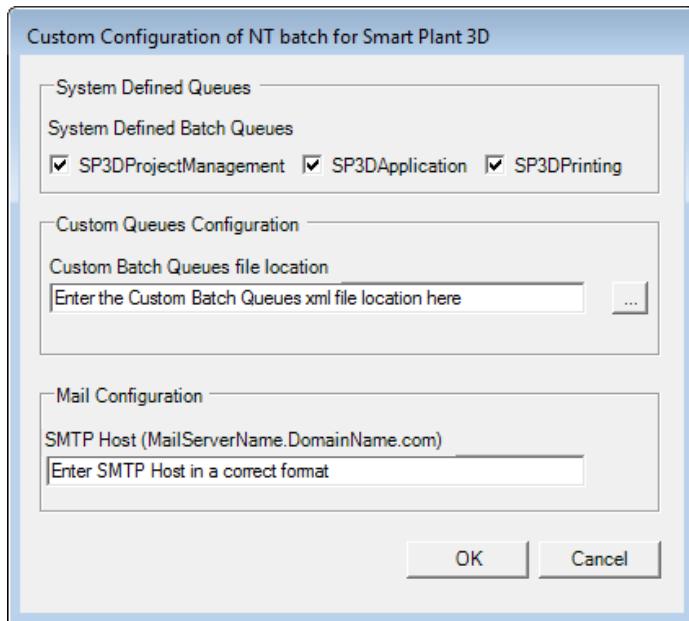
mapped to one account while jobs from other users can be mapped to a second account. It is not a requirement for the mapped account to be a local administrator.

13. When finished, click **Close**

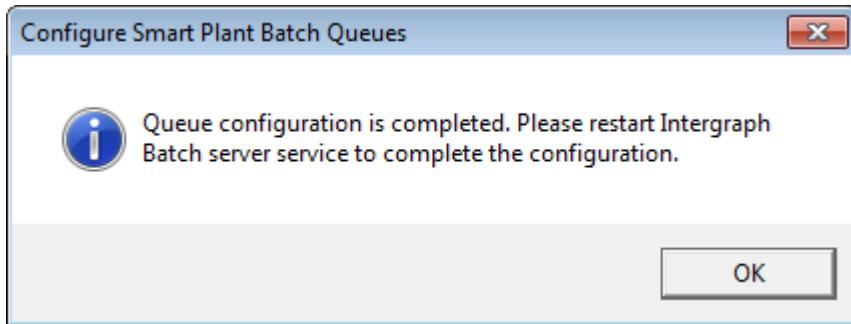
Create Smart 3D related queues

The queues to be used with Smart 3D must be created before submitting jobs. To create the queues you can use the **ConfigureSP3DBatchQueue.exe** utility provided by the software. This utility will also create an additional environment variable needed for proper functioning of the batch server.

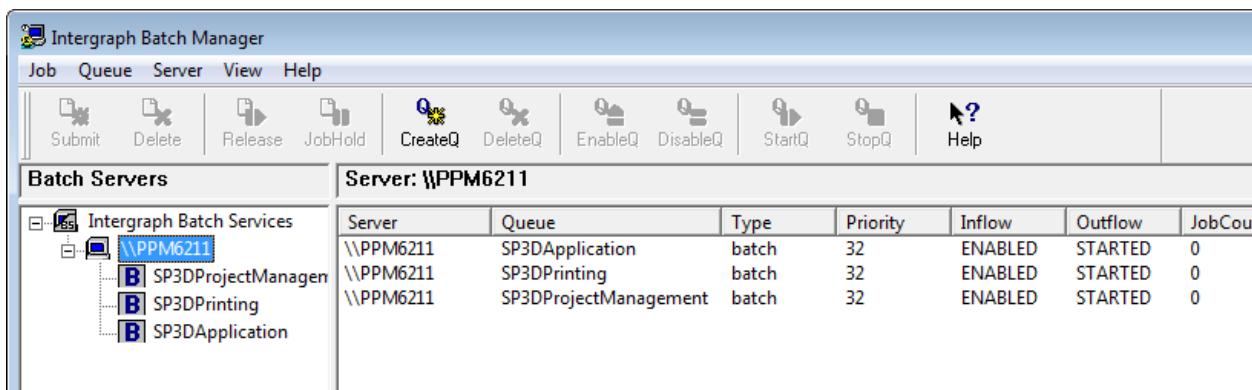
14. Open **Windows Explorer** on computer on which Intergraph Batch Services is installed.
15. Locate and execute utility **ConfigureSP3DBatchQueue.exe** found in the following path of the Smart 3D installation folder:
..\\ProjectMgmt\\Tools\\bin\\ConfigureSP3DBatchQueue.exe
16. Select the system defined queues **SP3DProjectManagement**, **SP3DApplication** and **SP3DPrinting**. The name of an SMTP server can be provided for emails to be sent to submitters after jobs are processed (including error logs of the operation).



17. After queues are created successfully, the following message will appear.



18. Click **OK**, the queues will not be reflected in the Batch server interface until the services are restarted. To do this, open the Windows **services console** and **restart** the service **Intergraph Batch Server**.
19. Open Batch manager to verify the queues were created



Configuring the Batch Services Server for Drawings Tasks

20. In the folder **[Smart 3D Installation folder]\Core\Container\Bin\Assemblies\Release**, run **ConfigureDrawingsBatch.exe**.
21. Click **Yes**, and then click **OK**.
22. Append the following entries to the system **PATH** environment variable for **3D model data documents** to update:
 - [Smart 3D Installation folder]\Core\Runtime
 - [Smart 3D Installation folder]\Common2D\Rad2d\Bin
 - [Smart 3D Installation folder]\GeometryTopology\Runtime.

Excel configurations

These configurations are required for the successful update of reports in Excel format.

23. Microsoft Excel must have the same security settings that are necessary for interactive updates.
Excel must be configured correctly for every mapped account on the batch server, so that it can be accessed by the batch processes (Excel security settings to allow access to VB Projects).
24. Microsoft Excel must be opened on the batch server machine at least once by each mapped user.

Configure Queues for Jobs

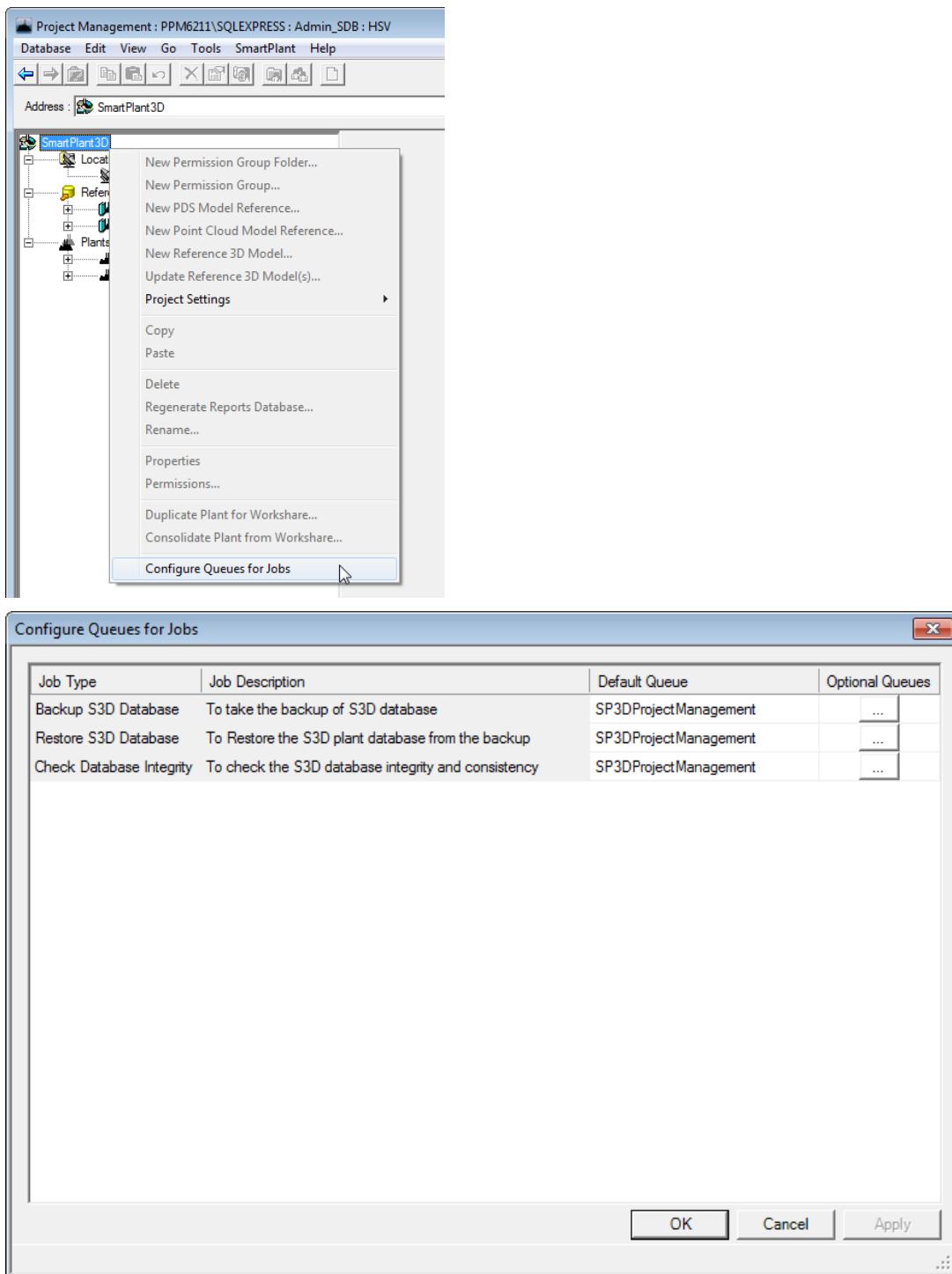
You must have Smart 3D project administrator privileges to access this tool. When you are logged in as an administrator, this tool is available under the **Tools** menu from **Project Management**.

For sites, you must have the following privileges:

- In Oracle, you must have the SP3DProjectAdministrator role.
- In SQL, you must be a sysadmin on the server.

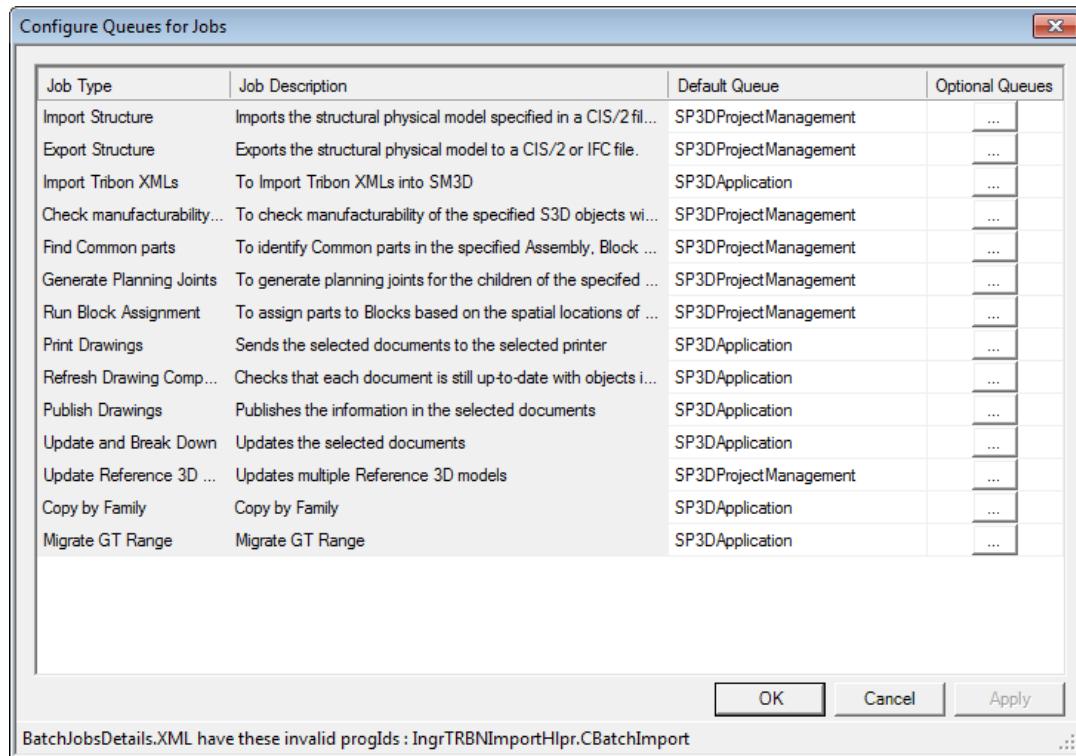
For models, you must have full access or write permissions on the selected model database.

25. Open **Project Management**
26. Right click the **SmartPlant 3D** node in the hierarchy root, then select option **Configure Queues for Jobs**



27. Click **OK**

28. Right click the plant to be configured, then select option **Configure Queues for Jobs**



29. Review the different job types and map them to queues as appropriate, then click **OK**

Additional considerations

- Log files produced during a batch process are saved in a folder called "SP3DBatchSvcTemp".
The folder is created under the location defined by the system variable %SYSTEMDRIVE%.
Example "C:\SP3DBatchSvcTemp".
- Print jobs require printer access on both the client where the job is created and on the server where the job will be performed. The server and the client machines must have exactly the same printer setup, and every individual printer should have exactly the same name on both the client and server machines. This issue is shared with the previous batch implementation.
- When creating documents containing objects from referenced PDS projects, ensure that the latest compatible PDS Data Access build has been loaded. The latest PDS Data Access can be found on the eCustomer site.
- The ConfigureDrawingsBatch utility must be run each time mapped account settings are changed.
- If you are running 64-bit drawings batch services and Oracle, you must install the 64-bit Oracle client on the computer running the batch services.

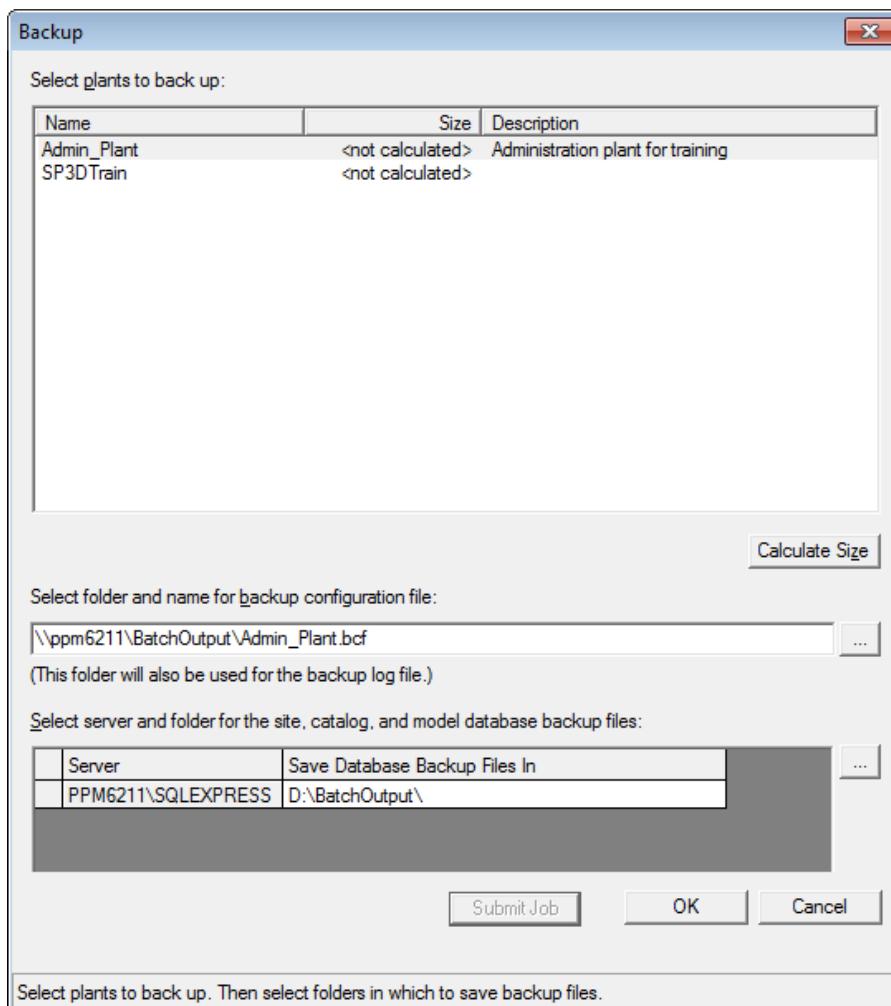
LAB 36: Submitting a job to a batch server

Objectives

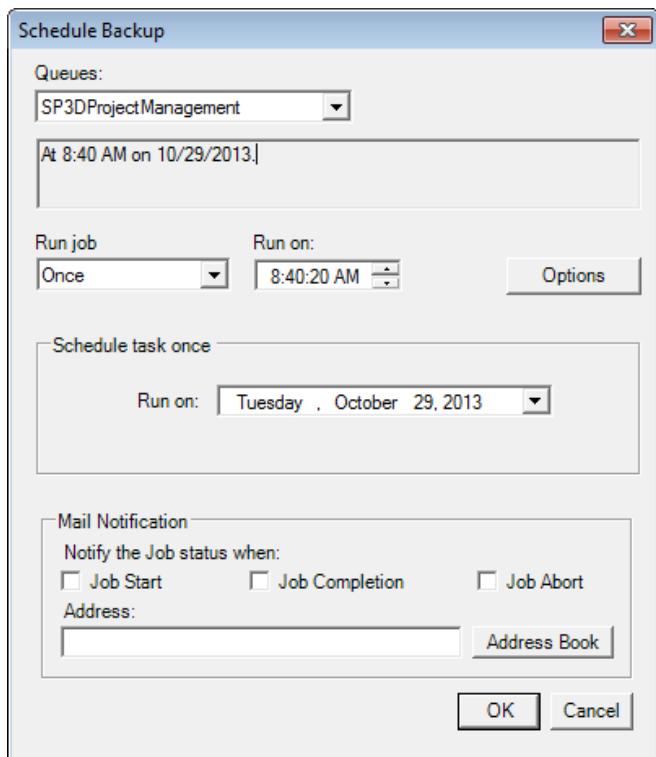
After completing this lab, you will be able to:

- Submit a job or schedule a task to an Intergraph batch server that is already configured for use with Smart 3D.

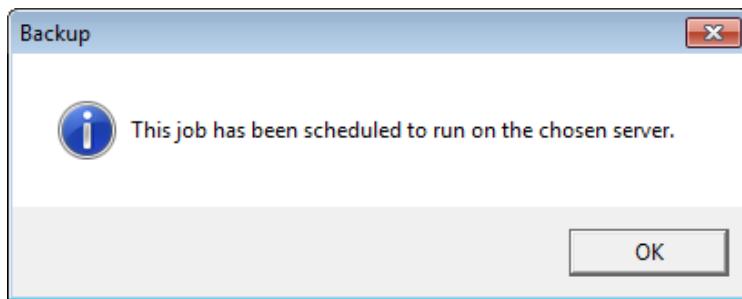
1. Open **Project Management** if not already open
2. Go to **Tools > Backup** option
3. Note the submit job button appears as enabled. This button is only enabled when Intergraph Batch services software is installed in the workstation where the job is being submitted.
4. Fill the backup form as you normally would. The folders defined for output will be the actual folders were the resulting files of the backup job will be placed.



5. Click **Submit Job**
6. Select the queue where the job will be processed from the drop down list and set scheduling options for the backup job to be submitted. For this practice, you will set the backup job to run once and five minutes from now.

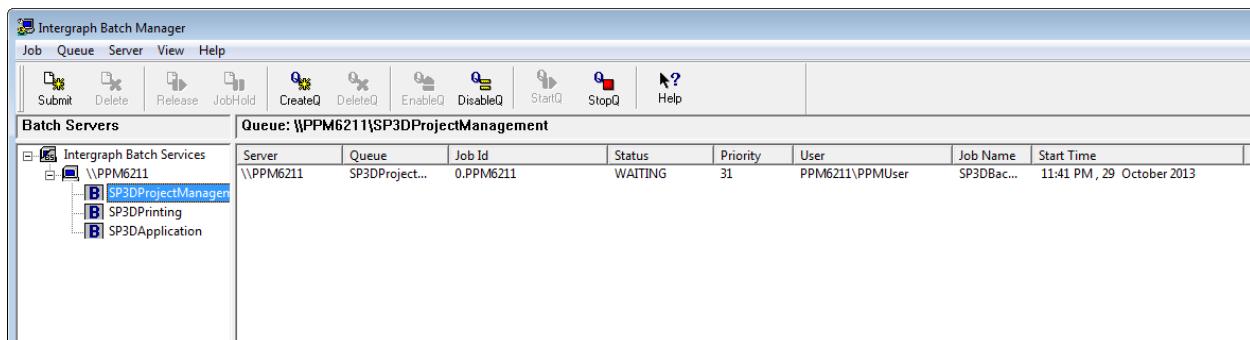


7. Click **OK**, the following message will appear as a confirmation of the action



8. Click **OK** to dismiss the dialog box, and then click **Cancel** in the backup form.

9. Open **Batch manager** if not already open and then verify that the job appears under the **SP3DProjectManagement** queue.



10. Wait for the backup job to complete, the entry under the SP3DProjectManagement queue will be automatically cleared if it is not a recurrent event.
11. Open the output folder where the backup files were set to be saved, verify the backup files were created.

Name	Date modified	Type	Size
Admin_Plant.bcf	10/29/2013 11:44 ...	BCF File	1 KB
Admin_Plant_CatalogBackup.dat	10/29/2013 11:44 ...	DAT File	472,546 KB
Admin_Plant_Model_Backup.dat	10/29/2013 11:44 ...	DAT File	66,917 KB
Admin_PlantBackup.log	10/29/2013 11:44 ...	Text Document	3 KB
Admin_SDB_SiteBackup.dat	10/29/2013 11:43 ...	DAT File	12,456 KB

12. Open the **SP3DBatchSvcTemp** folder on the batch server and review the log files created for the backup job. You may open the log files folder by typing **%SYSTEMDRIVE%\SP3DBatchSvcTemp** in the address bar of any windows explorer window.

Name	Date modified	Type	Size
cache	10/29/2013 11:08 ...	File folder	
SP3DBackup_Admin_Plant_MDB(PPM6211)	10/29/2013 11:44 ...	File folder	

13. When properly configured, the batch server can send emails notifying of job completion or failure; the job's log files can be sent as attachments.
14. As an additional practice, use guidelines already provided and schedule a weekly job to perform a Database Integrity check on the Site, Catalog, Model and Reports databases of the training plant.

Verify results using the Batch manager to confirm the job is in the queue and has been successfully executed.

15. Close Project Management and Batch Manager if they are open.

LAB 37: Adding User Defined Attribute to Smart 3D Database

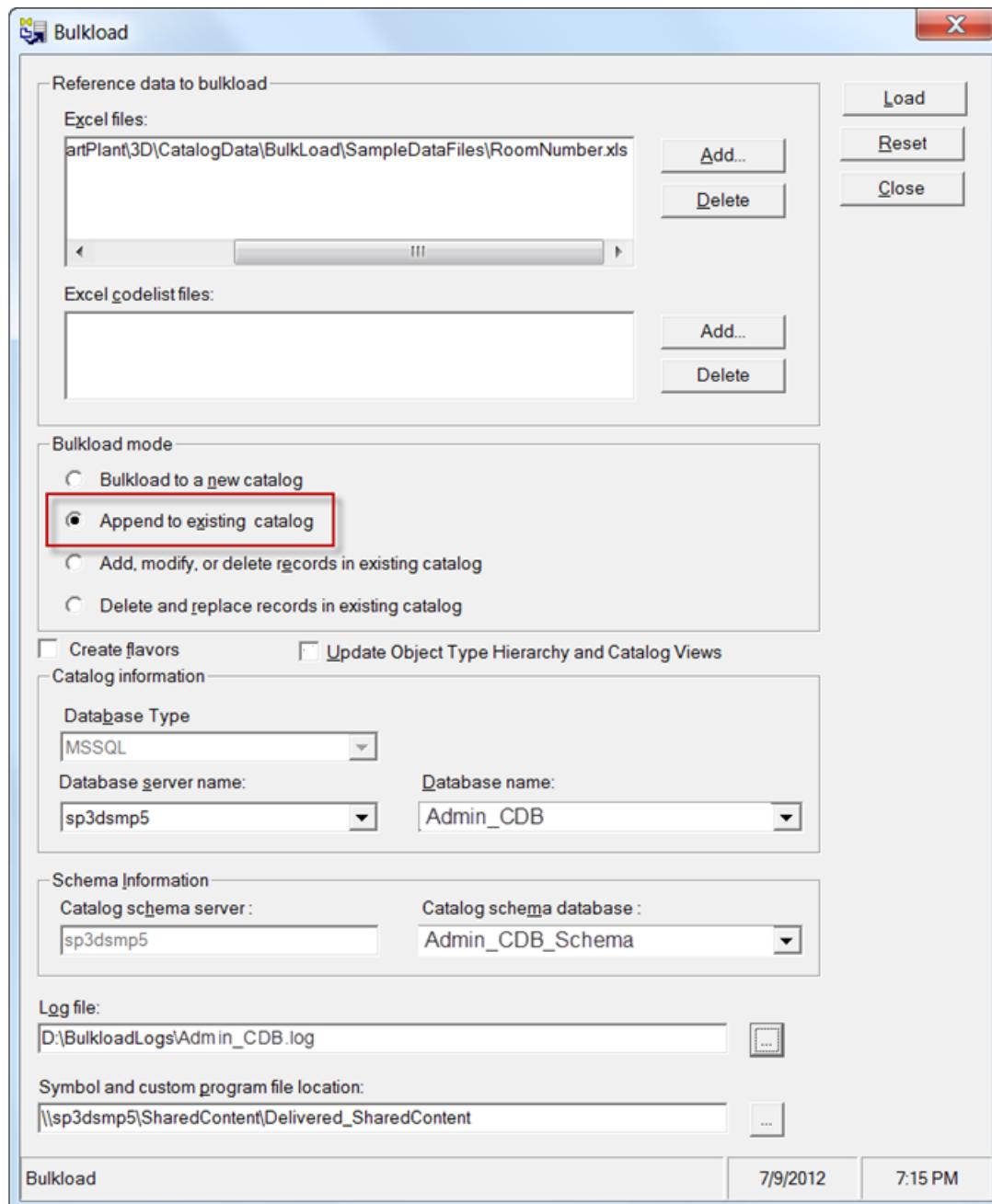
Objectives

After completing this lab you will be able to:

- Add user defined attributes to objects in S3D database.
1. In this lab practice we will add the **Room Number** attribute on S3D object classes using the workbook **RoomNumber.xls** delivered under [Smart 3D install folder]\CatalogData\BulkLoad\SampleDataFiles\

	A	B	C	D
1				
2	HEAD	ClassName		InterfaceName
3				
4	Start			
5				
6	!	Example of adding interfaces to virtual classes		
7				
8				
9	!	Adding interfaces to non-virtual classes		
10				
11	!	Cableway Features		
12		CPCablewayAlongLegPathFeat	IURoomNo	
13		CPCablewayBranchPathFeat	IURoomNo	
14		CPCablewaySlantTransFeat	IURoomNo	
15		CPCablewayStraightPathFeat	IURoomNo	
16		CPCablewayTransALPathFeat	IURoomNo	
17		CPCablewayTurnPathFeat	IURoomNo	
18		CPCablewayTurnTransFeat	IURoomNo	
19		CPCablewayEndPathFeat	IURoomNo	
20				
21	!	Cable Tray Parts		
22		CPRteCableTrayComponentOcc	IURoomNo	
23		CPRteCableTrayOccur	IURoomNo	
24				
25	!	Duct Features		

2. Start the **Bulkload** utility by going to **Start → All Programs → Intergraph Smart 3D → Database Tools → Bulkload Reference Data**.
3. Complete bulkload form providing the path to the Excel file “**RoomNumber.xls**” and options as shown below:



Note: Make sure the Catalog and Catalog schema databases for the Admin plant are selected correctly.

4. Click **Load**.
5. Once the bulkload is complete, review bulkload log file for any errors.

```

Admin_CDB.log - Notepad
File Edit Format View Help
Successfully Opened Input Log File: D:\BulkloadLogs\Admin_CDB.log
*****
DATABASE SERVER NAME : dmitry\sqlexpress
DATABASE NAME : Admin_CDB
SCHEMA DATABASE NAME : Admin_CDB_SCHEMA
CREATE FLAVORS : Disabled
UPDATE OBJECT TYPE HIERARCHY AND CATALOG VIEWS : Disabled
MODE OF OPERATION : Append
*****

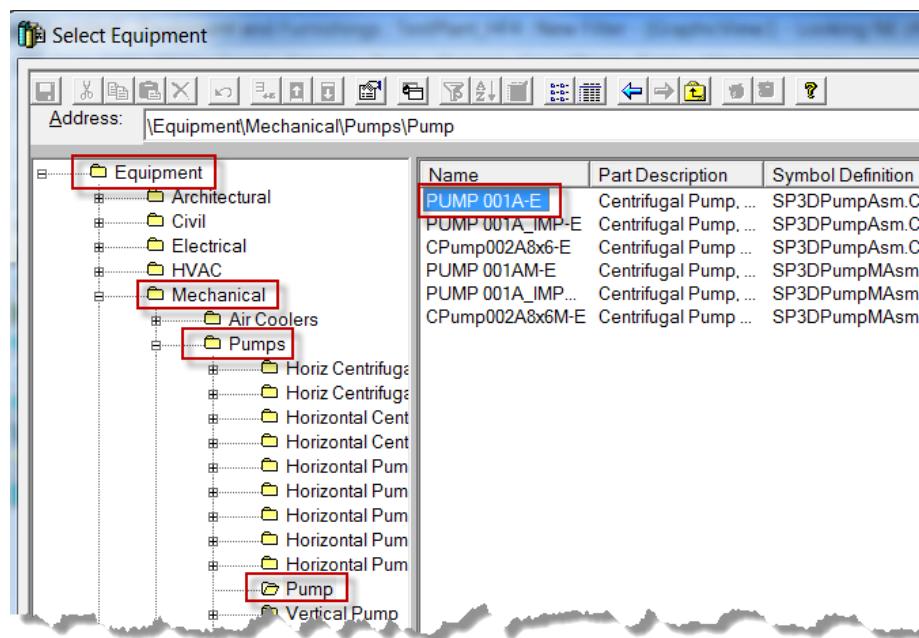

Processing sheet : CustomInterfaces in C:\Program Files (x86)\SmartPlant\3D\CatalogData\BulkLoad\SA
Finished Processing sheet: CustomInterfaces in C:\Program Files (x86)\SmartPlant\3D\CatalogData\bul

Processing sheet : CustomClassInterfaceList in C:\Program Files (x86)\SmartPlant\3D\CatalogData\Bulk
Successfully added user interface :IURoomNo to the class:CPCablewayAlongLegPathFeat in row [12]
Successfully added user interface :IURoomNo to the class:CPCablewayBranchPathFeat in row [13]
Successfully added user interface :IURoomNo to the class:CPCablewaySlantTransFeat in row [14]
Successfully added user interface :IURoomNo to the class:CPCablewayStraightPathFeat in row [15]
Successfully added user interface :IURoomNo to the class:CPCablewayVerticalPathFeat in row [16]
Finished Processing sheet: CustomClassInterfaceList in C:\Program Files (x86)\SmartPlant\3D\CatalogData\bul

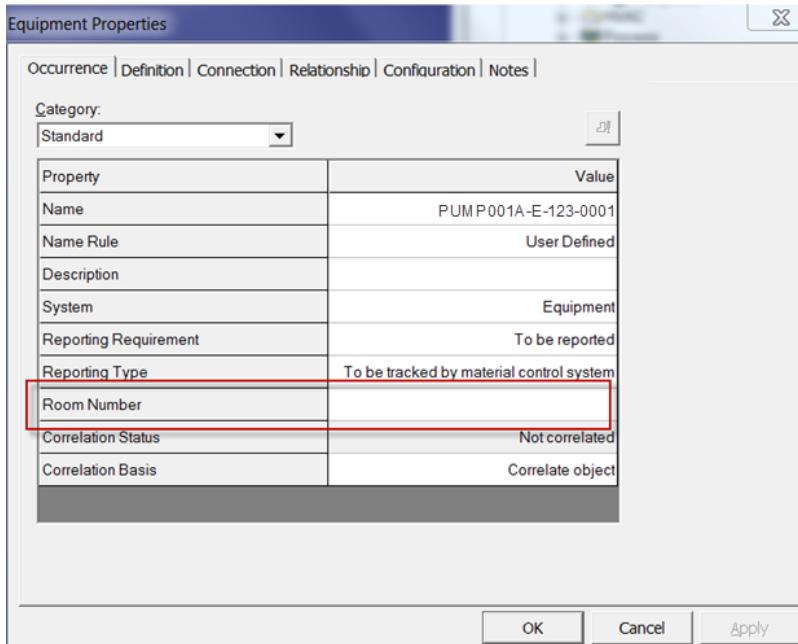
Bulkload is successful with out any errors/warnings.
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
ERROR ANALYSIS
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

```

6. Start a new **Smart 3D** session and define your workspace in **Admin_Plant**.
7. Switch to the **Equipment and Furnishings** task.
8. Start the **Place Equipment** command  on the vertical toolbar.
9. On the **Select Equipment** window, navigate to **Equipment → Mechanical → Pumps → Pump** and select **PUMP 001A-E** and click **OK**.



10. The equipment properties dialog will be displayed. Note the **Room Number** attribute on the Occurrence tab of the equipment properties under the Standard category.



11. Click OK on the equipment properties dialog and click in the graphic view to place the equipment.
12. The room Number attribute will be displayed on all the S3D object classes that we saw in the **RoomNumber.xls** workbook. If time permits, try placing a few objects and check for the Room Number attribute on their properties dialog.
13. Exit **Smart 3D**.

LAB 38: Adding Approval Status in Smart 3D

Objectives

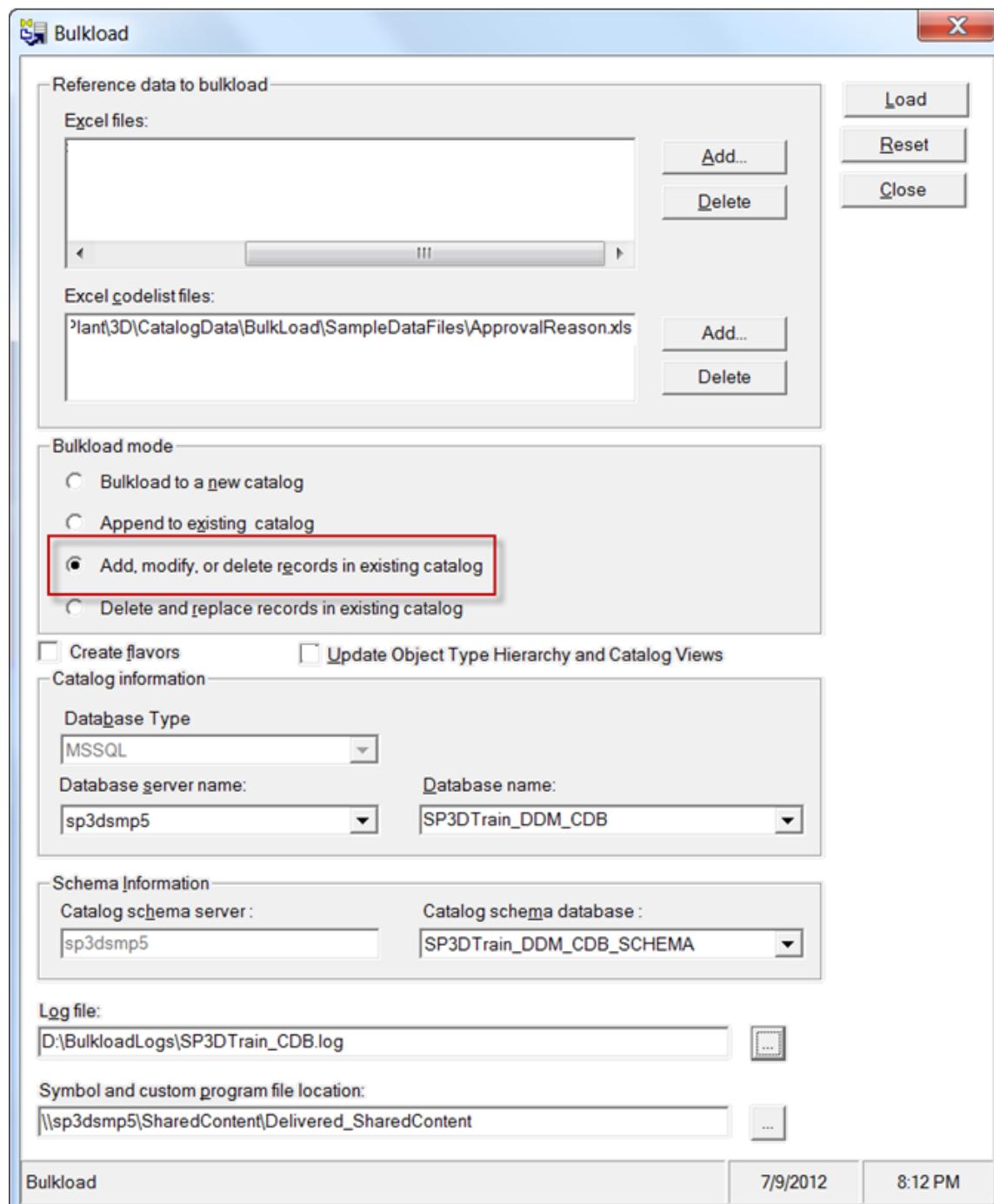
After completing this lab you will be able to:

- Add approval reasons for objects modeled in Smart 3D. These approval reasons will be shown on the properties page of the modeled object in the configuration tab.

1. In this lab practice we will add approval reasons on Smart 3D objects using the workbook **ApprovalReasons.xls** delivered under **[Smart 3D Install folder]\CatalogData\BulkLoad\SampleDataFiles**

A	B	C	D	E	F	G
1	<i>!Cell in yellow are default status provided by system.</i>					
2	<i>!User can customize long description but not allowed to change CodeListNumber for yellow cells.</i>					
3	<i>!Cell in green have to match values to get list in order. Pattern has to be followed for status to show in sorted order.</i>					
4						
5	HEAD	ApprovalStatus ShortDescription	ApprovalStatus LongDescription	ApprovalReason ShortDescription	ApprovalReason LongDescription	Codelist Number
6	<i>The numeric value for any new code list entry added by the user should be between 10,001 and 40,000. SmartPlant v10.0.0.0 supports up to 40,000 entries.</i>					
7	START					
8						
9	A	Approved	Approved			8
10	A		Approved-D	Approved-D		803
11	A		Approved-C	Approved-C		802 803
12	M		Approved-B	Approved-B		801 802
13	M	Rejected	Rejected	Approved	Approved-A	8 801
14	A		Rejected-D	Rejected-D		403 8
15	A		Rejected-C	Rejected-C		402 403
16	A		Rejected-B	Rejected-B		401 402
17	M		Rejected	Rejected		4 401
18	A	InReview	InReview			2
19	A		InReview-D	InReview-D		204 4
20	A		InReview-C	InReview-C		203 204
21	A		InReview-B	InReview-B		201 203
22	M		InReview	InReview		2 201
23	A	Working	Working			1
24	A		Working-B	Working-B		102 2
25	M		Working	Working		1 102
26	END					

2. Start the **Bulkload** by going to **Start → All Programs → Intergraph Smart 3D → Database Tools → Bulkload Reference Data.**
3. Complete bulkload form providing the path to the Excel file **ApprovalReasons.xls** and options as shown below:



Note: Make sure the Catalog and Catalog schema databases are properly selected. The **ApprovalReasons.xls** is a codelist file and has to be bulkloaded as such.

4. Click **Load**.

- Once the bulkload is complete, review bulkload log file for any errors.

```

SP3DTrain_CDB - Notepad
File Edit Format View Help
Successfully opened Input Log File: F:\Users\Support\Desktop\SP3DTrain_CDB.log
*****
DATABASE SERVER NAME : SP3DSUPT6_2\SQLEXPRESS
DATABASE NAME : SP3DTrain_CDB
SCHEMA DATABASE NAME : SP3DTrain_CDB_SCHEMA
CREATE FLAVORS : Disabled
UPDATE OBJECT TYPE HIERARCHY AND CATALOG VIEWS : Disabled
MODE OF OPERATION : Add/Modify/Delete
*****

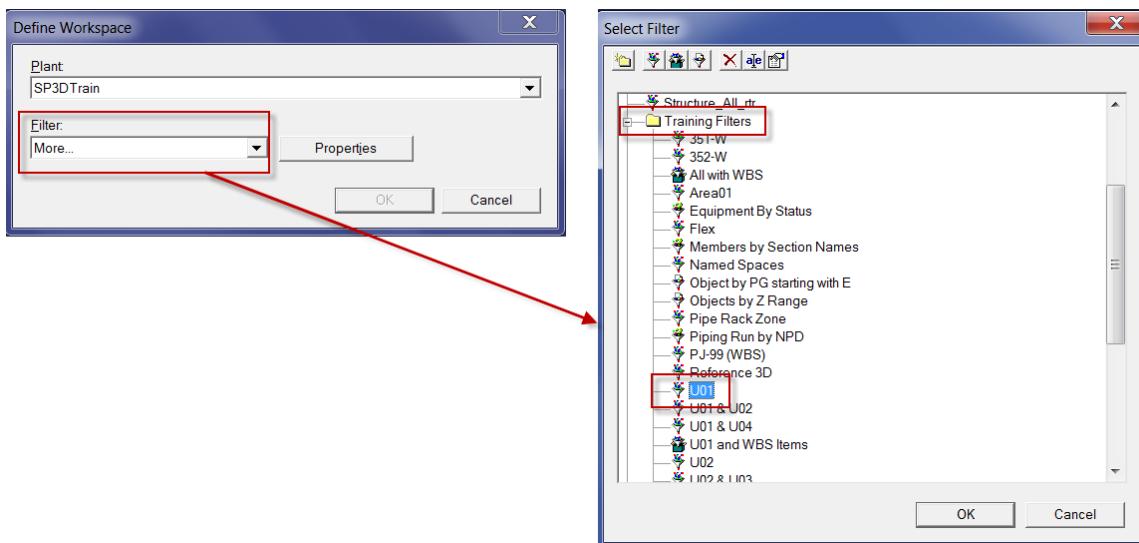
Processing sheet : ApprovalReason in F:\Users\Support\Desktop\ApprovalReason.xls workbook - Started at : 5/31/2012 3:11:47 PM
Successfully Modified the CodeList Value: 8 in the CodeList Table : ApprovalReason in row [12] in ApprovalReason worksheet of
Successfully Modified the CodeList Value: 4 in the CodeList Table : ApprovalReason in row [17] in ApprovalReason worksheet of
Successfully Modified the CodeList Value: 2 in the CodeList Table : ApprovalReason in row [22] in ApprovalReason worksheet of
Successfully Modified the CodeList Value: 1 in the CodeList Table : ApprovalReason in row [25] in ApprovalReason worksheet of
Successfully created all new entries in the CodeList Table : ApprovalReason
Finished Processing sheet: ApprovalReason in F:\Users\Support\Desktop\ApprovalReason.xls workbook - finished at : 5/31/2012 3:11:47 PM

Successfully updated the Excel workbooks after UpdateBulkload
bulkload is successful with out any errors/warnings.

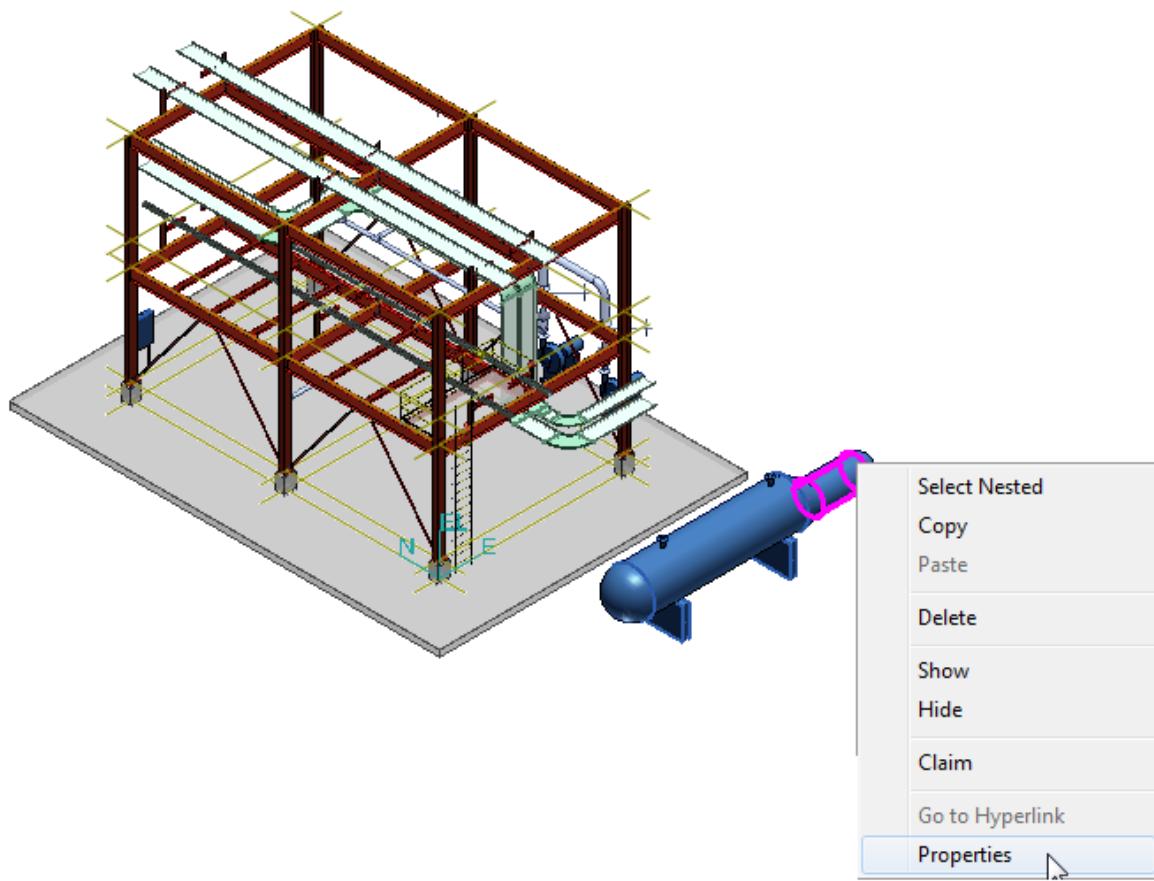
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

```

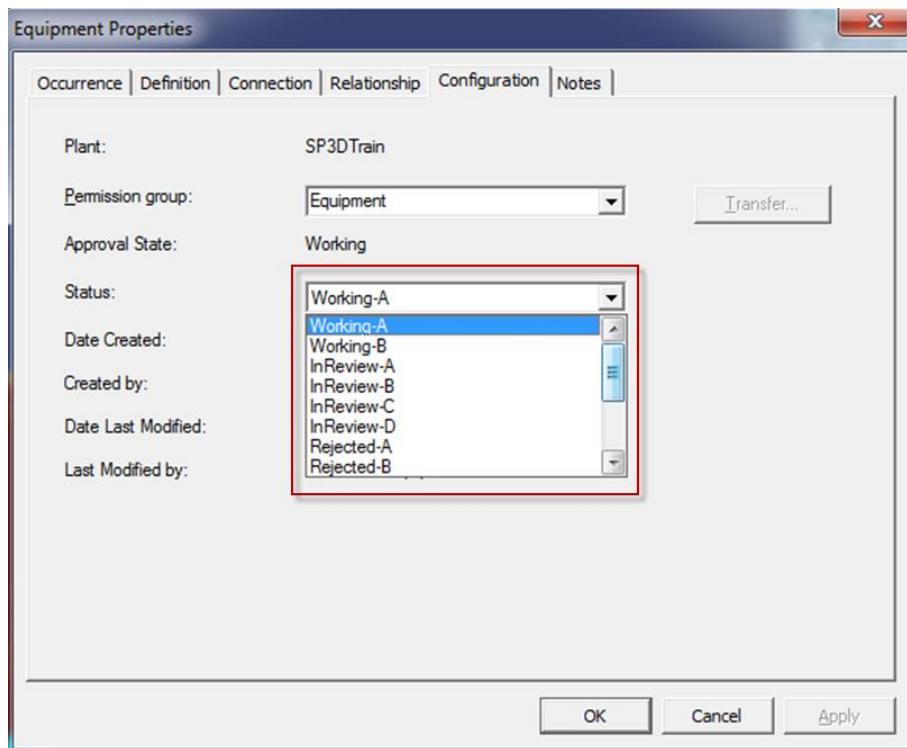
- Start a new Smart 3D session and define your workspace in **SP3DTrain** plant using filter **U01** located under **Plant Filters → Training Filters → U01**.



- Select the equipment **E-102** in the workspace and go to its properties.



8. Switch to the Configuration tab on the Equipment properties dialog and note the new Approval statuses that were bulkloaded in the catalog.



9. **Close** the Equipment properties dialog and exit **Smart 3D**.