BD

SysQue®

the difference is REAL™

Systems Electrical

Summary

Learn how use Systems Electrical for Revit 2016.

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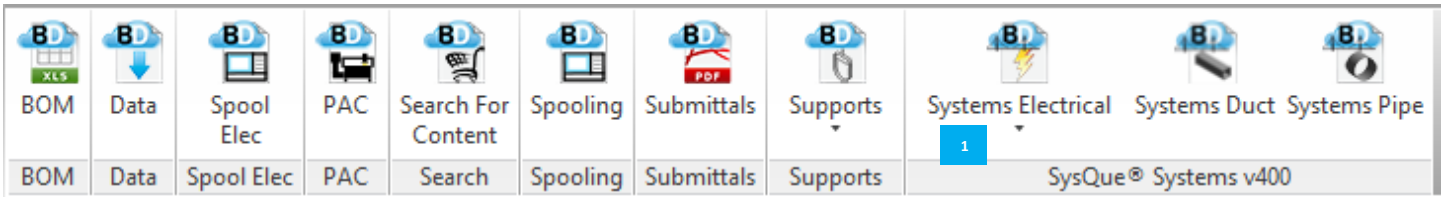
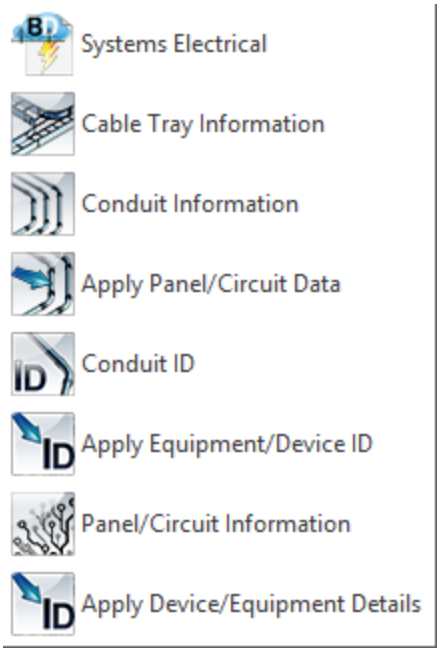
Introduction

In this document, users will~~.~~ learn how to utilize SysQue Systems Electrical, and how to draw Electrical into their projects. **Before starting your electrical model you must start by using either the I_Electrical_SysQue_Template or the M_Electrical_SysQue_Template file. Both of these can be found HERE**



1 Systems Electrical is located in the third panel from the right. It will drop down this following menu:

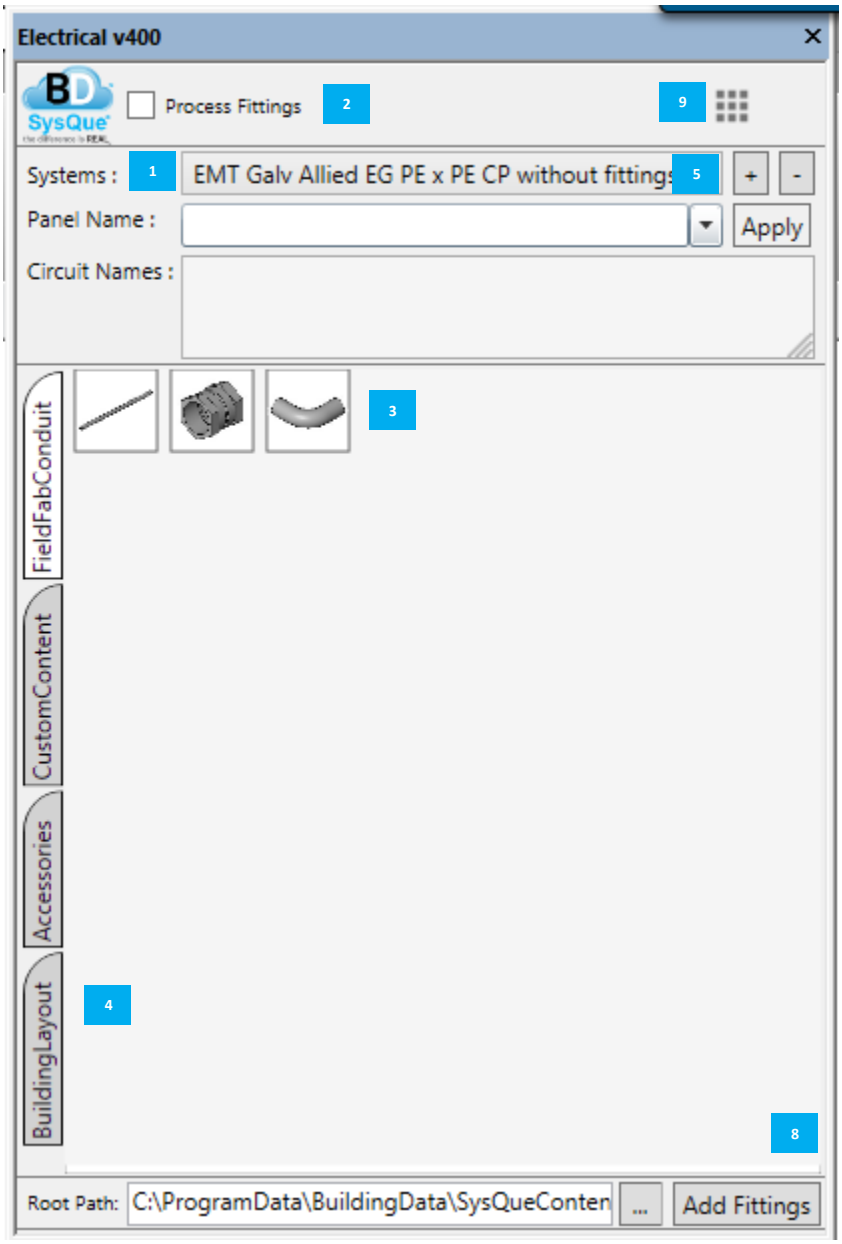


1 Clicking on Systems Electrical's drop down and Systems Electrical opens the "SysQue® Systems Electrical" window, wherein you can select an electrical system to draw in your Revit Model.

For other Systems Electrical drop-down menu information, you'll find it in the **Using SysQue Systems Electrical Information** section.

SysQue Systems Electrical

For the rest of this section and the Systems Electrical section, please refer to this diagram.



1 Click the down-arrow in the Systems combo box to view the list of available systems.

2 Process Fittings – With the checkbox marked, electrical runs will exhibit all fittings when drawn. However, the division of the mains and branches into standard straight lengths will not occur. Instead, abnormally long "design" lengths of duct will be used. This cuts down on drawing time as fewer calculations are needed to populate the design. Furthermore, changes can be enacted easier because the runs can be selected and changed as a whole. Long runs of straight electrical can be broken down into standard lengths using the "Place Coupling" command outlined on page 6. If unchecked, the electrical runs will be broken into standard length pieces as soon as you are done drawing the system.

3 Items available in that system appear as buttons in the main body of the window.

4 Tabs along the left side of the window each contain their own set of buttons.

5 To the right of the Systems combo box are two buttons, a plus (+) and a minus (-)

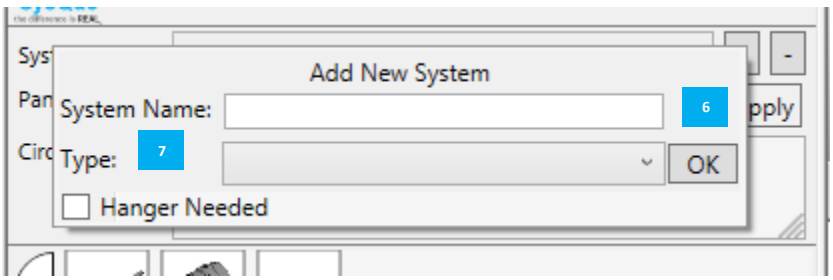
1. Clicking on the minus will delete the currently selected System.
2. Clicking on the plus will call up a dialog box allowing you to create a new System.

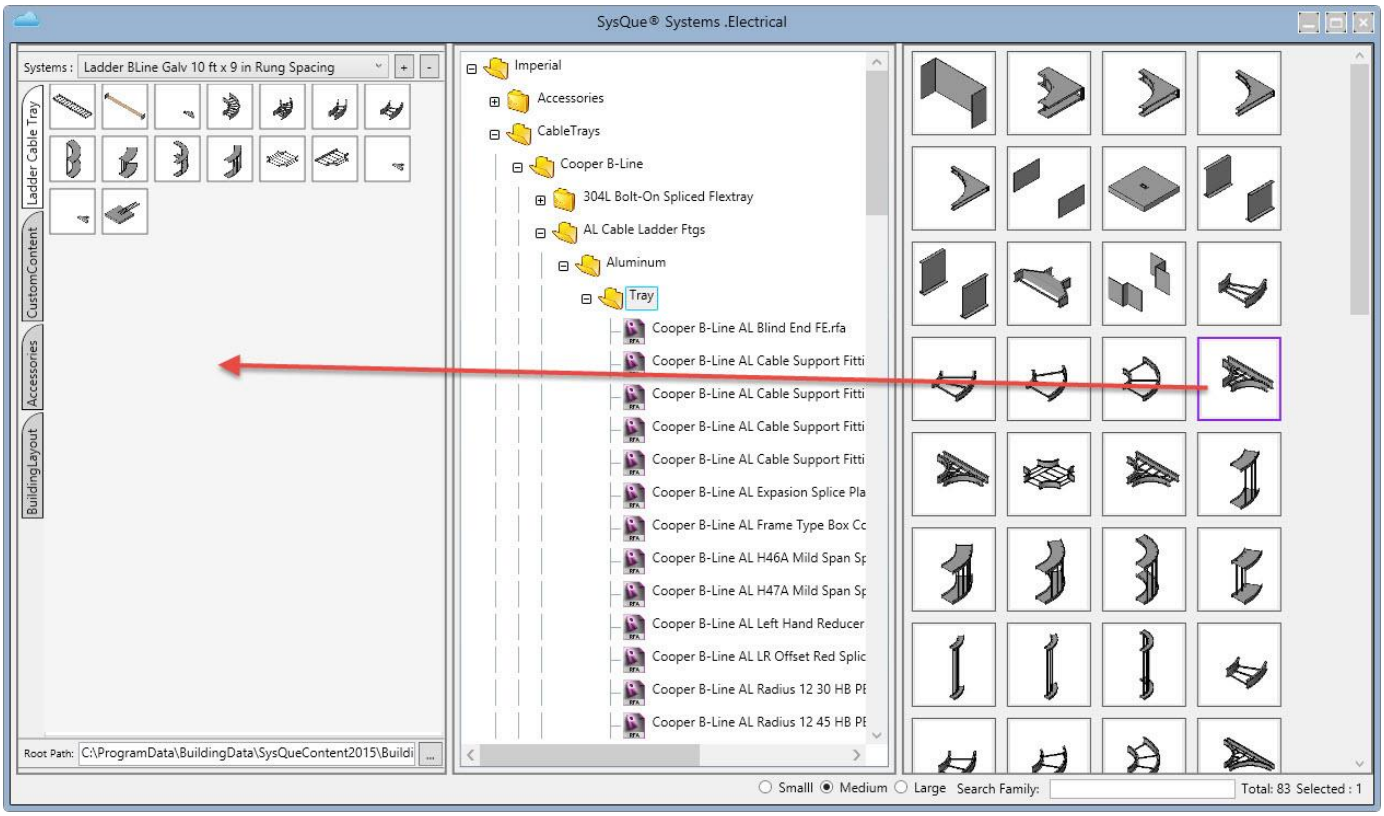
6 Type the new System Name into the box provided.

7 Select the Type of System. If a hanger is needed, check 'Hanger Needed'

Click the OK button to add the System to your configuration.

To exit without creating a new System, click outside of the dialog box.



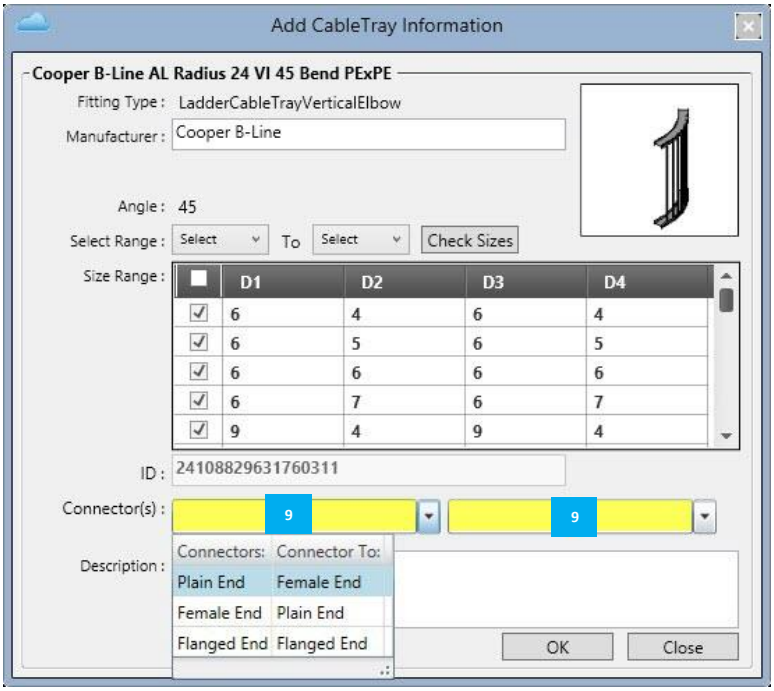


8 Clicking on “Add Fittings” opens a dialog box to select content to be dragged over to the System you selected.

Click on the plus sign (+) next to the folders you wish to expand in the middle section until you find the appropriate folder. The default location is: C:\ProgramData\BuildingData\SysQueContent2016\BuildingData

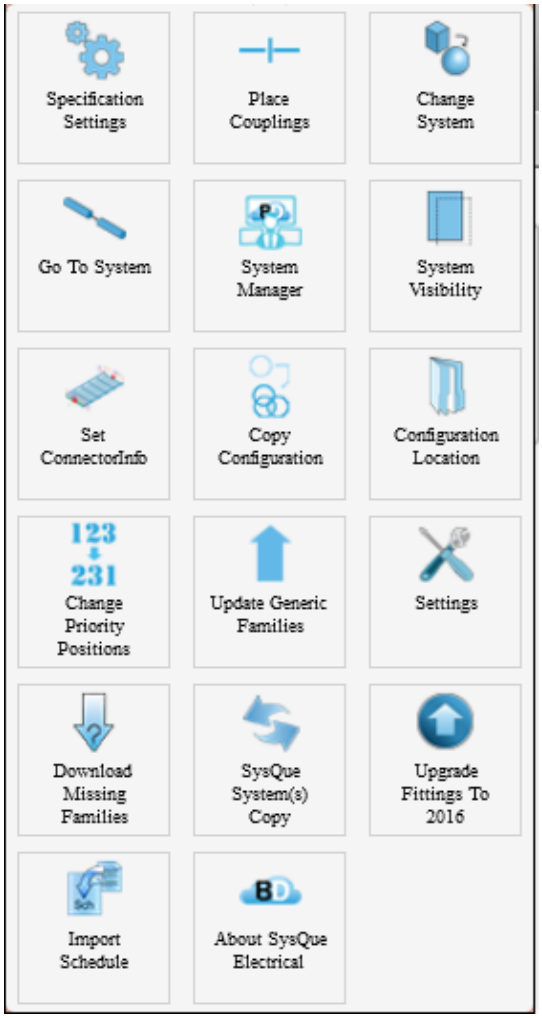
Click and drag icons from the right section over to the left section to copy it into your system.

9 After you release the left mouse button a dialog box will open for the selected item. Select the appropriate connector types.



SysQue Systems Electrical Menu

On the top of the "SysQue® Systems Electrical" window is a dropdown menu with twelve selections; Specification Settings, Place couplings, Change System, System Manager, System Visibility, Set Connector Info, Copy Configuration, Configuration Location, Change Priority Positions, Update Generic Families, Settings, and About SysQue Electrical.



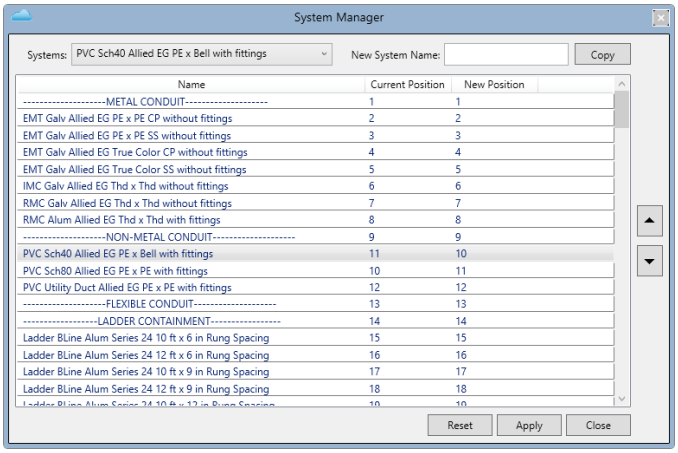
1) **Specification Settings** – Selecting this will allow you to view and edit your electrical specifications for Cable Tray Wire Fill, Conduit Wire Fill, Panels and Circuit Schedule. More information begins on page 12.

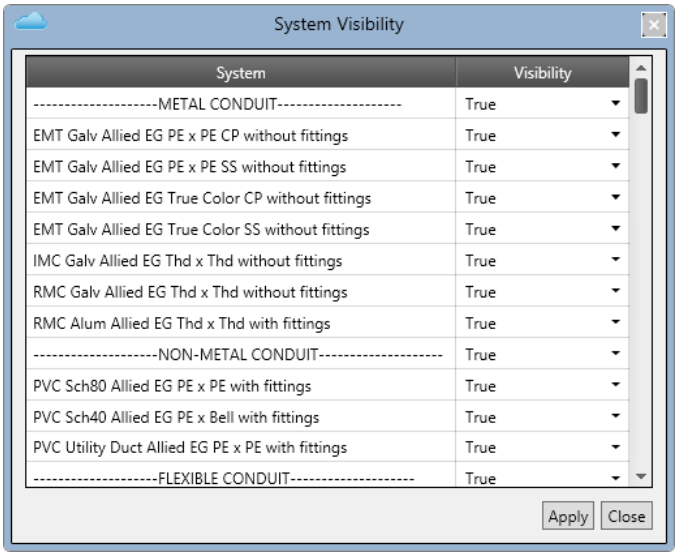
2) **Place Couplings** – Selecting this will allow you to break up a run of Electrical into standard lengths. By default, when placing a run of Electrical, couplings are automatically placed.

3) **Go To System –** Click a fitting on your drawing and it will go to this system automatically.

4) **Change System** – If you placed Electrical in your model using the incorrect system or Generic Revit content, you can change the system using this option.
   a) Select the electrical run in your model.
   b) Go to the Systems drop down box and select the system you want to change your existing run to.
   c) Click on the Change System menu item at the top.

5) **System Manager –** Allows you to adjust the order and position of systems in the dialog box and/or copy a system.
   a) Select the system you want to move and click on the arrow up or down until the system is in the desired location.
   b) Select Apply
   c) If you want to copy a system, select the system similar to the one you want to create.
   d) Add the New System Name and select Copy. The new system will be at the bottom of the list. Reposition to the desired location like above.
   e) Select Close when done.





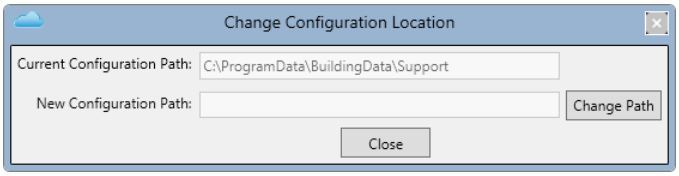
6) **System Visibility** – The dialog box will allow you to select which systems are actually visible in the systems drop down list. If you don't use a certain system in a project you can hide it by switching the visibility to "False". This will make the system disappear.

7) **Set Connector Info** – This process should be done when you first load SysQue or add a new system. This will set the information for your connectors in SysQue®. It can take several minutes depending on how many systems you have.

*NOTE: Run the Set Connector Info utility from within a blank Revit project

8) **Copy Configuration** – This will copy your current systems xml (ElectricalSpecification.xml) which holds all your systems information to a designated folder.

9) **Configuration Location** – Allows users to change the location of their xml to a folder on their company network.



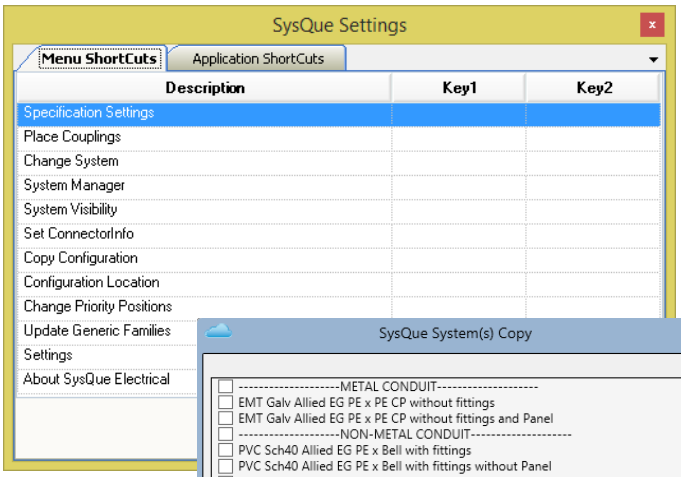
10) **Change Priority Positions –** The order that fittings are placed when the default fitting does not work for the type of routing is defined (mostly for Piping systems or Cable Tray systems).

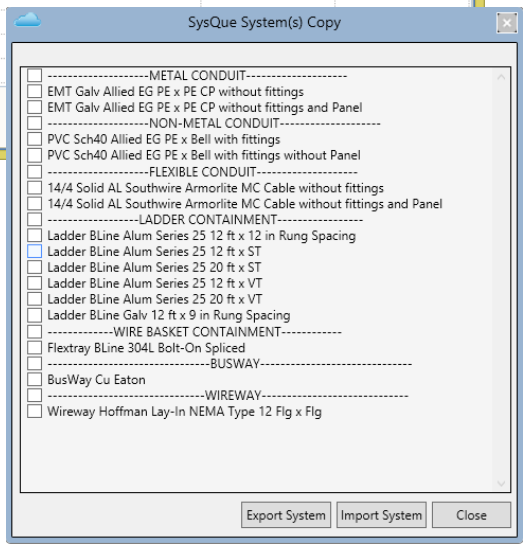
11) **Update Generic Families** – Updates the user's generic families.

12) **Settings** – Keyboard shortcut menus

13) **Download Missing Families –** This will download unreferenced families. While this will usually prompt when opening a system in SysQue, you can also access this on the menu if you have changed your families without rebooting the System.

14) **SysQue Systems Copy –** This will make a copy of your current system and export the system into your file structure. You can also choose to import your systems.



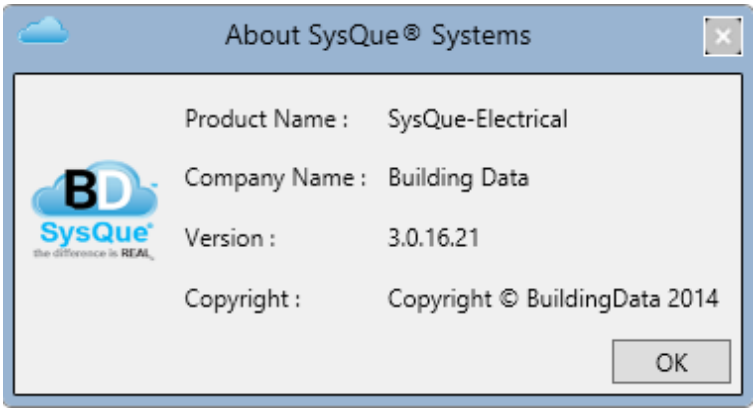


15) **About SysQue Electrical** - This menu item brings up the About window, which lists, among other things, the SysQue® Systems version number. Click OK to close this window.

16) Upgrade Fittings to 2016 – Upgrade your current fittings to the latest 2016 version since you can bring in your previous systems from 2015.

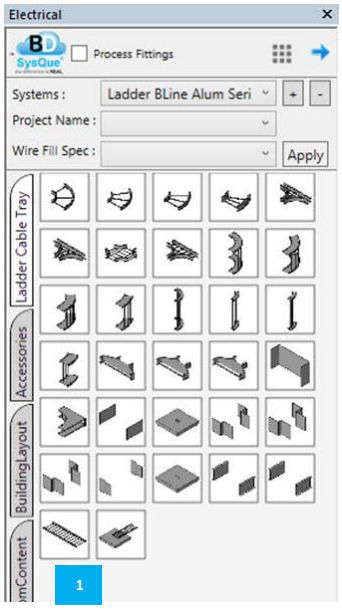
17) **Import Schedule –** Import a schedule from .xls or Excel format. To do so, you'll need to export a Revit Schedule, save it in excel format, and then the import schedule function will allow you to import it into Revit.

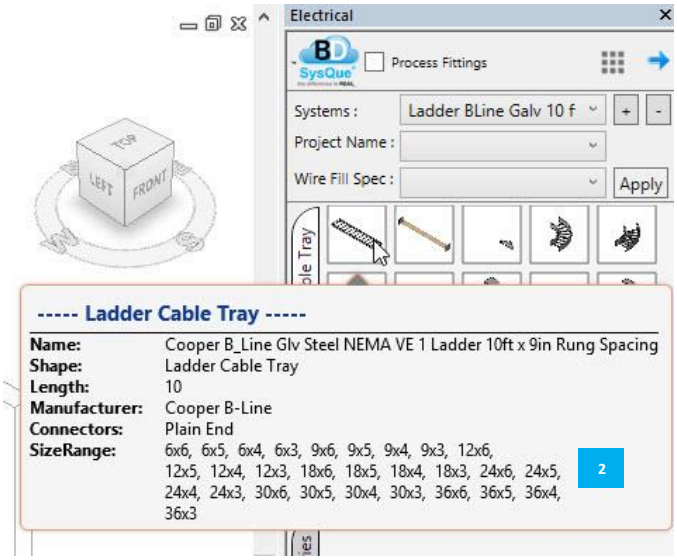
18) **About SysQue Electrical** - This menu item brings up the About window, which lists, among other things, the SysQue® Systems version number. Click OK to close this window.



Modeling Using SysQue Systems Electrical

1. To draw a run of Electrical using the selected system, click on the button for Straight Electrical in the SysQue® Systems Electrical system window 1 When you hover over the straight section of cable tray a pop-out shows you the available sizes of that type of cable tray. 2



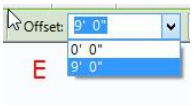


2. Across the top of the modeling area appears the options bar. Of particular interest are three items, the Width (C) Height (D) and Offset (E)

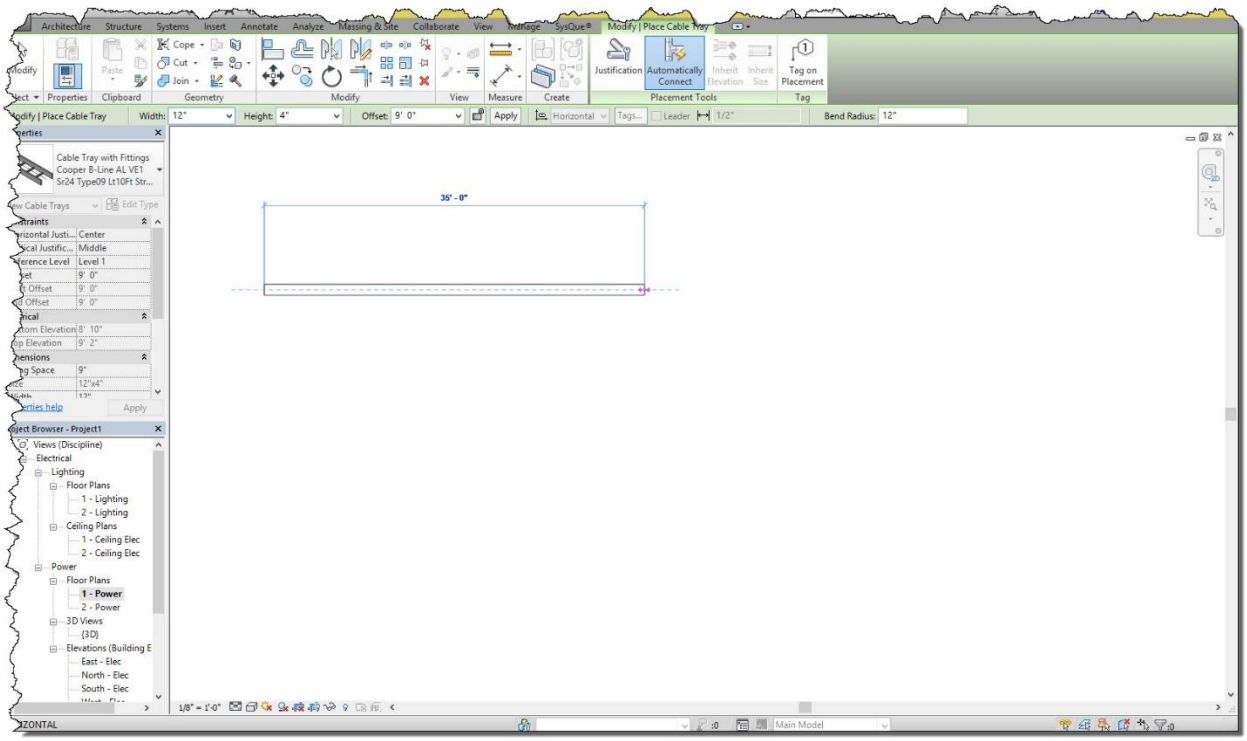
   a. **Width** – Clicking on the down arrow in the Width allows you to select the width of the tray

   b. **Height –** Clicking on the down arrow in the Height allows you to select a depth for your cable tray

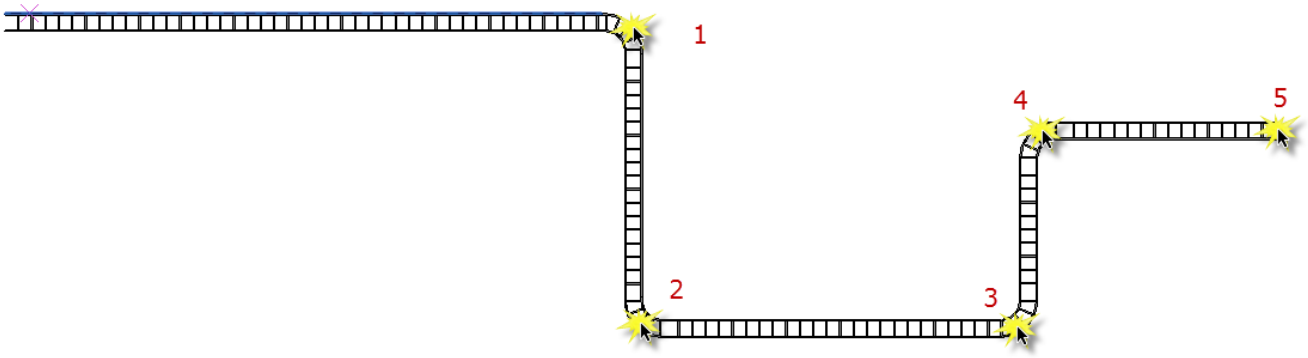
   c. **Offset** – The Offset combo box allows you to set the elevation of the Electrical you are drawing relative to the height of the floor (or Reference Level) you are working on. A down arrow next to it (**E**) allows you to select elevations previously input.



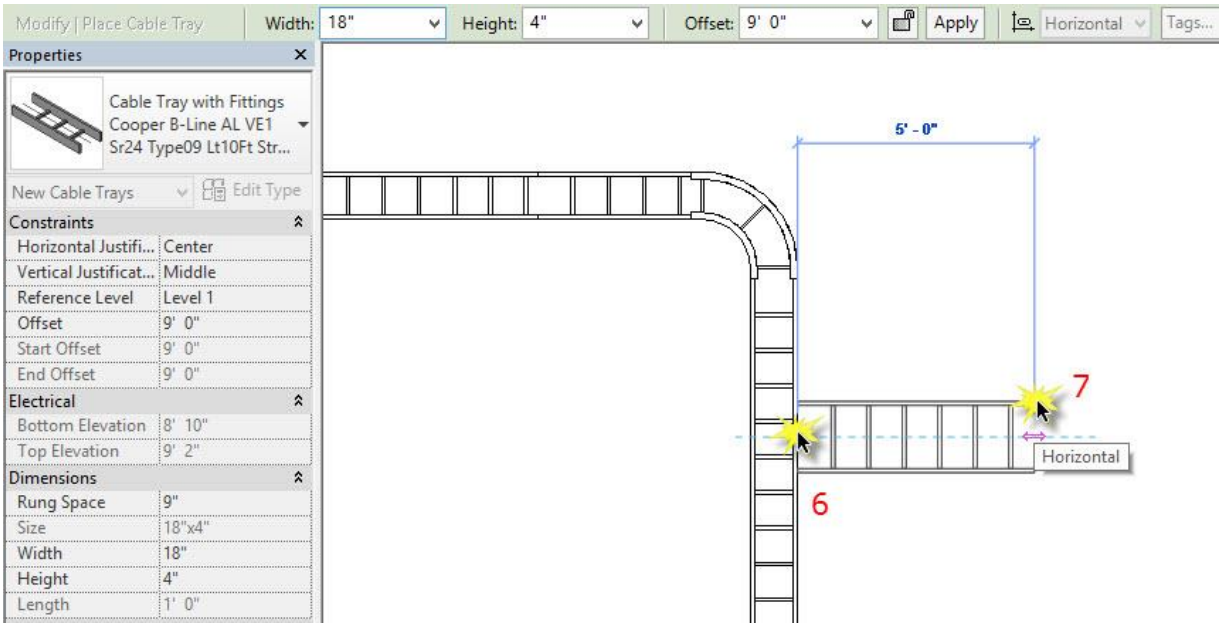
3. Once you have clicked on the Electrical in the "SysQue® Systems Electrical" window and selected your width, height and offset, start your Electrical run by left-clicking in the modeling field and moving your mouse in the direction you wish your Electrical to run. (In the below example, the Electrical is being drawn to the east 35'-0".) Left-click again to set the end of the run at that point.



4. To continue drawing your Electrical run, move the mouse according to the direction and distance necessary, left-clicking at each change in direction. To end your current run, press the [ESC] key once.



5. To add a branch, change your Electrical size if required. Move your mouse back over the section of Electrical you wish to attach to and left-click (**6**). Run out the direction and distance you want your branch to lead. Finally, left-click (**7**) and press the [ESC] key once to end the run.

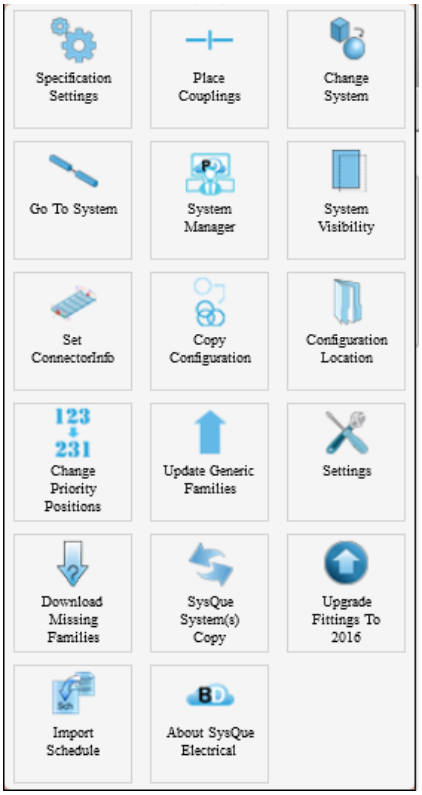


6. To continue in a new location, left-click and continue as before. When completed with runs, press the [ESC]

key twice.

7. At this point, SysQue® will calculate fittings and Electrical lengths, divide runs, and input couplings as necessary. It will also automatically begin to load the appropriate families into the model. When it is complete, you will have a live and accurate Electrical model from which you can order parts and create spools.

Using SysQue Systems Electrical Specification Setings

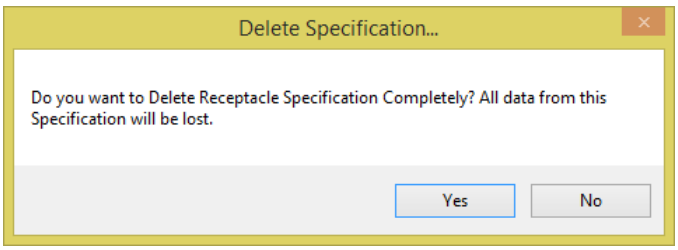


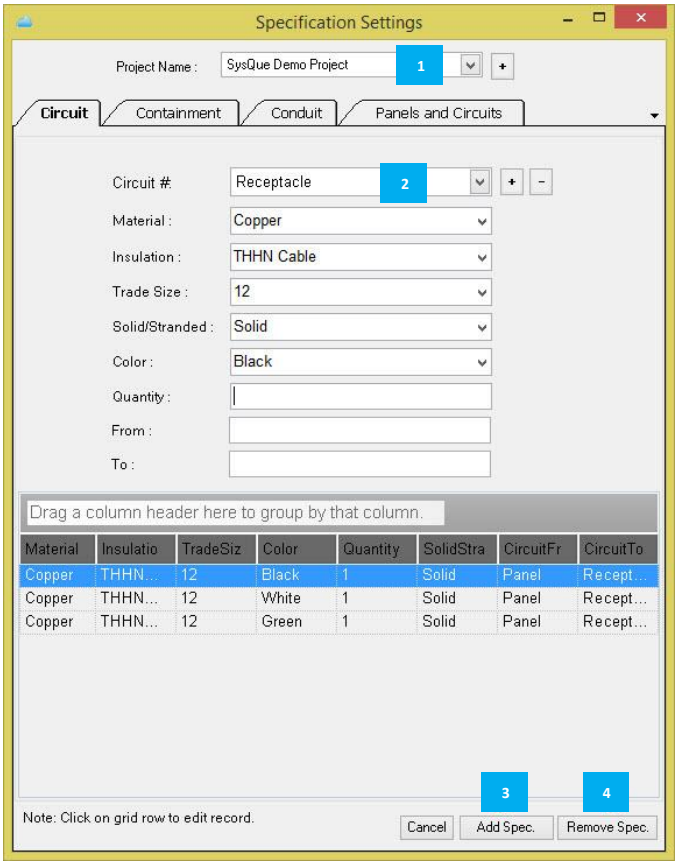
1 **Specification Settings** – Selecting this will allow you to view and edit your electrical specifications for Cable Tray Wire Fill, Conduit Wire Fill, Panels and Circuit Schedule. All information created and saved within this application is stored in the "cloud" and is available for all users within your company.

Circuit Tab:

1. A project name must be selected before you can enter information in any of the tabs. Click on the down arrow and select the desired project or click on the (+) to add a project. 1

2. A Circuit needs to be created first so it can be assigned to either a Containment (Cable Tray) or a Conduit. Click on the down arrow and select an existing circuit to edit it or to delete it 2 To delete the Circuit, click on the (-) button and select **Yes** or if you decide not to delete it, then select **No**. To add a Circuit, click on the (+) button and add a new Circuit number.





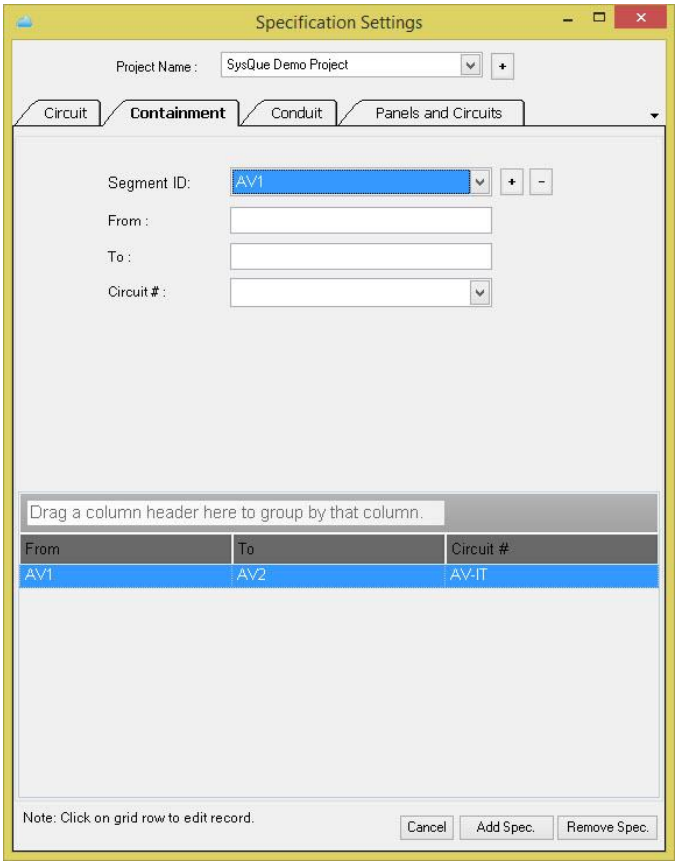
3. Select the Material type, Insulation, Wire size, Wire type, Color, enter a quantity, where the circuit will begin and end. Click on Add Spec. when completed 3

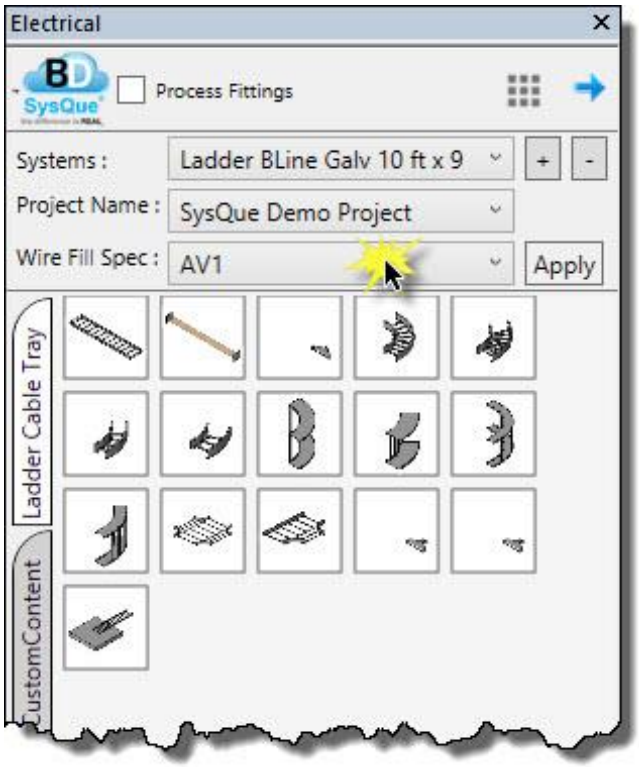
4. Continue adding wires to your circuit until you have added all the required wires. If you added a wire that is no longer needed or made a mistake in one of the attributes, highlight the wire that needs to be deleted and click on Remove Spec. 4

Containment Tab:

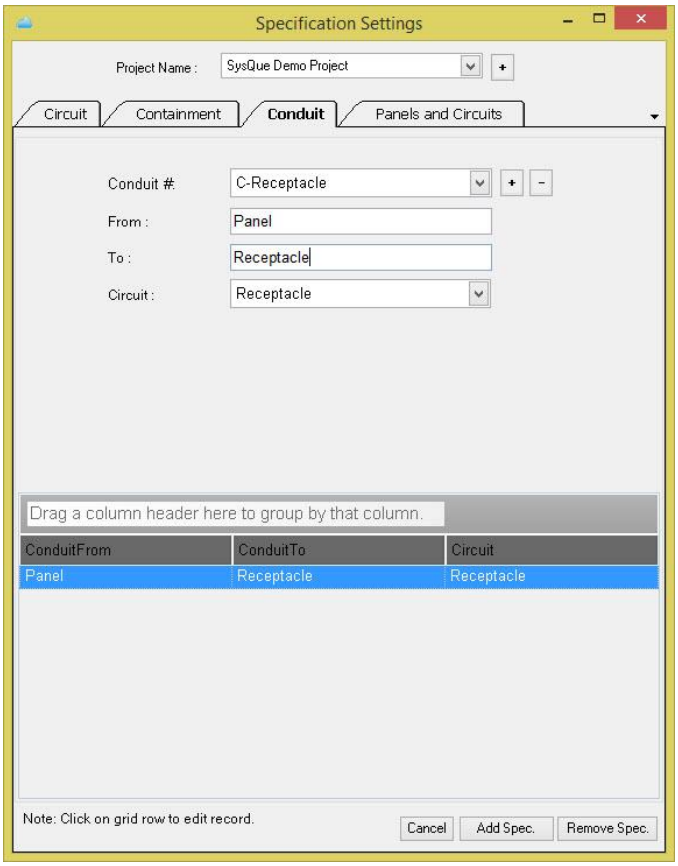
1. Add a Segment ID by clicking on the (+) button, or select an existing Segment ID by clicking on the down arrow.
2. Assign the From and To locations for your cable tray. For example, From IT Room and To Data Room.
3. Click the down arrow to assign a Circuit # that you defined in the Circuit Tab.
4. Click on **Add Spec** to save.

Note: The Segment ID is your Wire Fill Spec in the Electrical Systems palette.



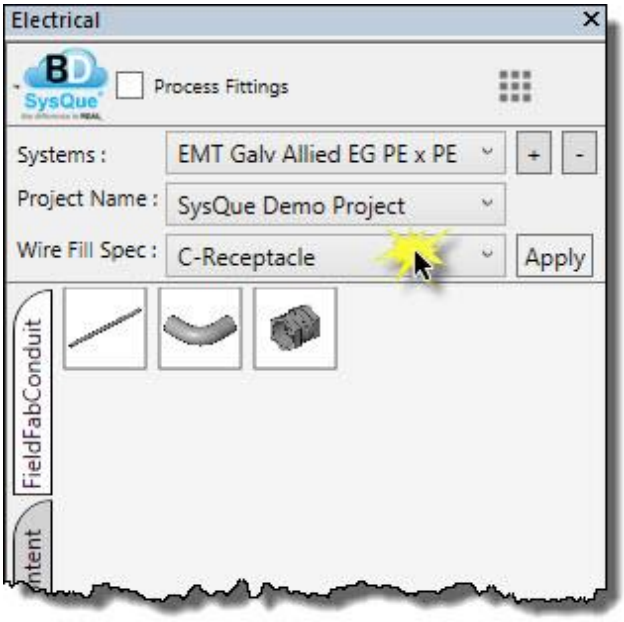


Conduit Tab:



1. Add a Conduit # by clicking on the (+) button, or select an existing Conduit # by clicking on the down arrow.
2. Assign the From and To locations for your conduit.
3. Click the down arrow to assign a Circuit # that you defined in the Circuit Tab.
4. Click on **Add Spec** to save.

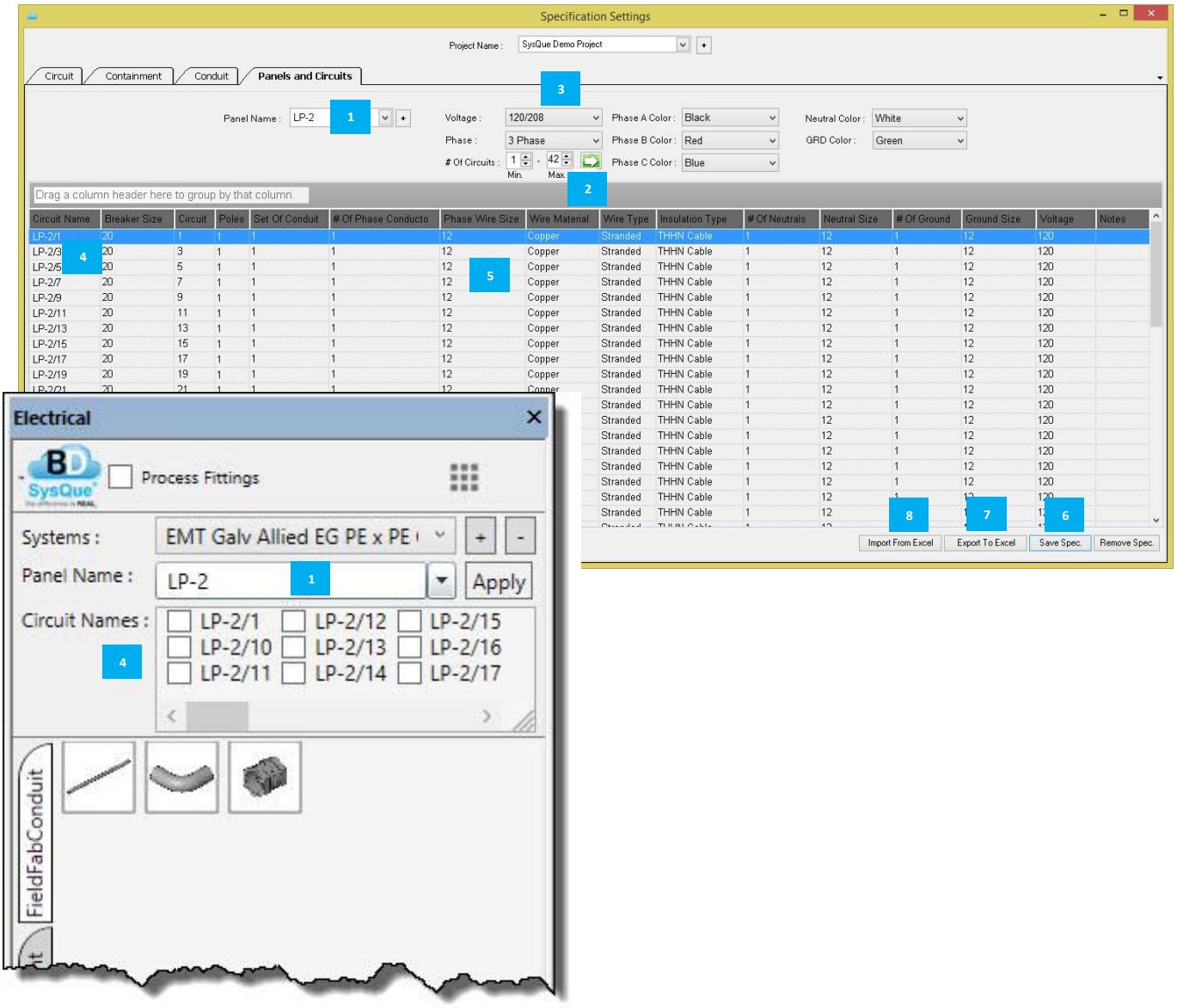
Note: The Conduit # is your Wire Fill Spec in the Electrical Systems palette.



Panels and Circuits Tab:

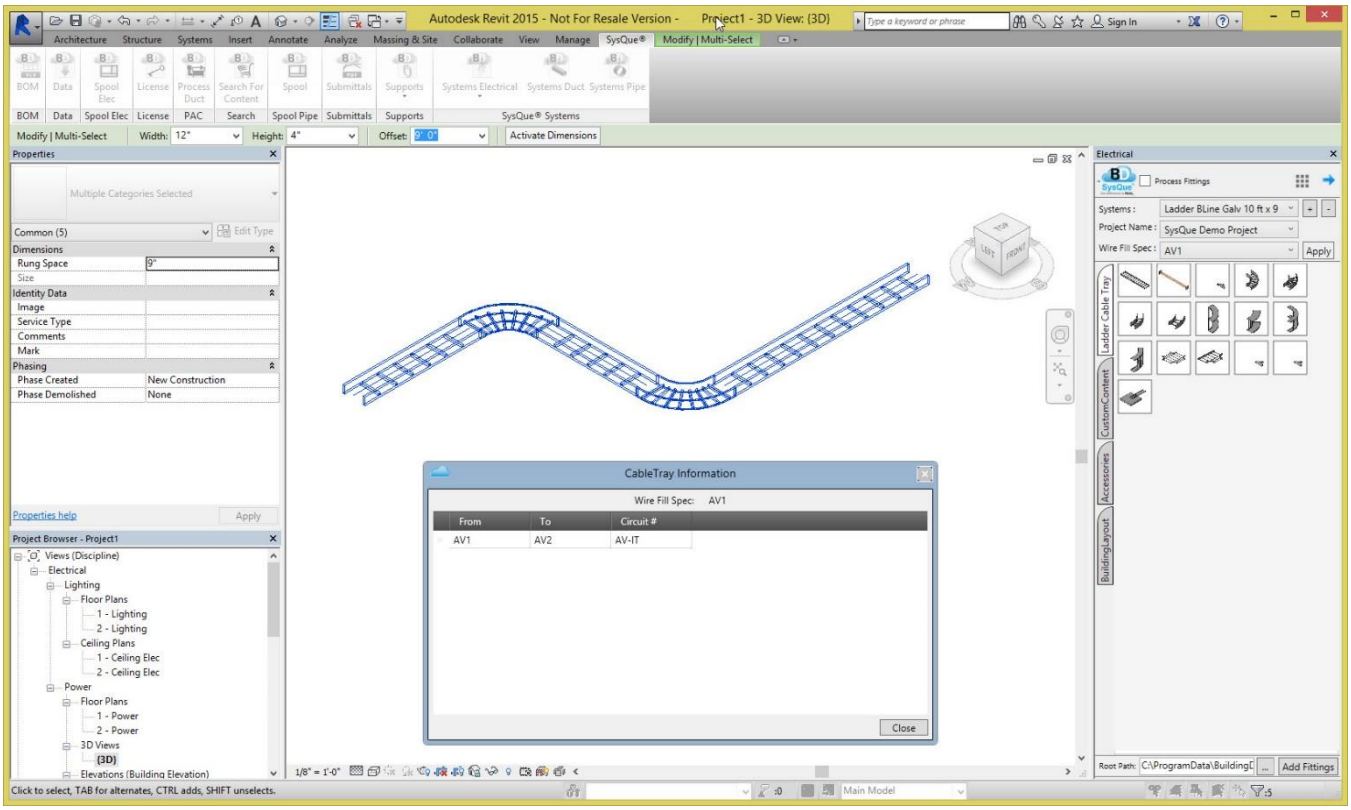
1. Add a Panel Name by clicking on the (+) button, or select an existing Panel Name by clicking on the down arrow 1
2. Define the maximum number of Circuits and Click on the Green Arrow 2 This will populate the spreadsheet part of the dialog box with the number of circuits you have selected.
3. Click on the down arrows to define the Voltage and Phase. Also define the Phase A, Phase B, Phase 3, Neutral, and Ground wire colors. 3
4. Enter the Circuit Name 4 Every circuit has to have a name, Spares can be called Spare. This is the same name that will be listed under Circuit Names in the Electrical Systems Palette, as shown below.
5. Enter the balance of information for each circuit 5 There are dropdown lists for selecting Phase Wire Size, Wire Material, Wire Type, Insulation Type, Neutral Size, and Ground Size.
6. When complete, Click on Save Spec. 6

Note: To speed up the process, we have provided the ability to export this spreadsheet to Excel 7 where it can be populated using cut/paste ability. When the spreadsheet is complete in Excel, you can import it back into this tab 8 Once complete, click on Save Spec. 6.


Specification Settings
Project Name :
SysQue Demo Project
Circuit
Containment
Conduit
Panels and Circuits
Panel Name :
LP-2
1
3
Voltage :
120/208
Phase :
3 Phase
Of Circuits :
1
Min.
42
Max.
2
Phase A Color :
Black
Phase B Color :
Red
Phase C Color :
Blue
Neutral Color :
White
GRD Color :
Green
Drag a column header here to group by that column.
Circuit Name
Breaker Size
Circuit
Poles
Set Of Conduit
Of Phase Conducto
Phase Wire Size
Wire Material
Wire Type
Insulation Type
Of Neutrals
Neutral Size
Of Ground
Ground Size
Voltage
Notes
4
5
Import From Excel
Export To Excel
Save Spec.
Remove Spec.
8
7
6
Electrical
Process Fittings
Systems :
EMT Galv Allied EG PE x PE
Panel Name :
LP-2
1
Apply
Circuit Names :
4
LP-2/1
LP-2/12
LP-2/15
LP-2/10
LP-2/13
LP-2/16
LP-2/11
LP-2/14
LP-2/17
FieldFabConduit

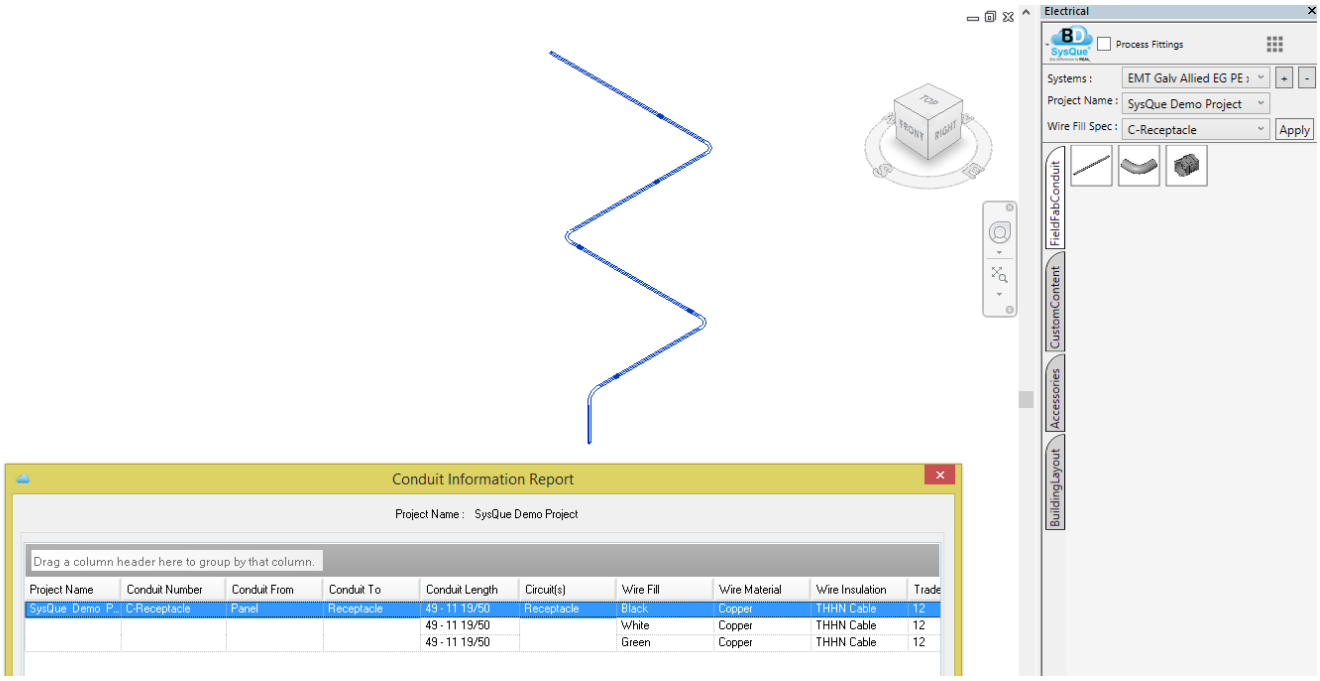
A. Cable Tray Information

1. Before drawing cable tray, set the Project Name and Wire Fill Spec in the Electrical Systems Palette.
2. Draw your cable tray system.
3. Select your cable tray system.
4. While the cable tray system is selected, go under Systems Electrical and Click on Cable Tray Information. A report will display on the screen listing the Wire Fill Spec, the From, To, and Circuit number you defined under Specification Settings.



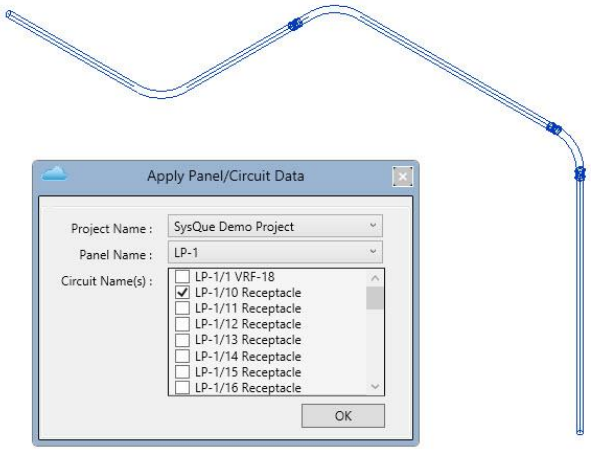
B. Conduit Information

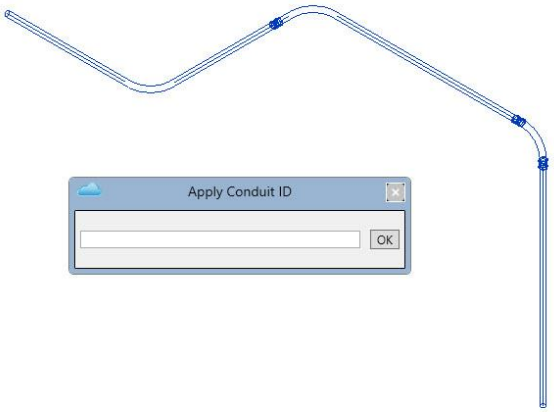
1. Before drawing conduit, select a System that has “without fittings and Panel” or “with fittings without Panel” at the end of the System name in the Electrical Systems Palette.
2. Select the Project Name and Wire Fill Spec.
3. Draw your conduit system.
4. Select your conduit run.
5. While the conduit run is selected, go under Systems Electrical and Click on Conduit Information. A Conduit Information Report will display on the screen listing the wires that are contained in the conduit, conduit length, the From, To, and Circuit number you defined under Specification Settings.



C. Apply Panel/Circuit Data

1. If you did not assign a Panel and Circuit(s) while drawing your conduit run, you can assign them now.
2. Select your conduit run.
3. While the conduit run is selected, go under Systems Electrical and Click on Apply Panel/Circuit Data. A dialog box will display on the screen allowing you to select the Project Name, Panel Name, and Circuit Name(s). Note: These will need to be defined ahead of time through Specification Settings.



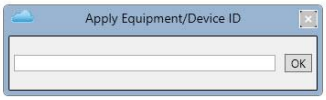


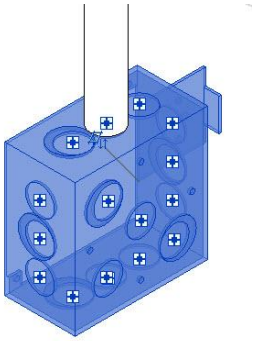
D. Apply Conduit ID

1. A Conduit ID needs to be defined before you can get a Panel/Circuit Information Report.
2. Select your conduit run.
3. While the conduit run is selected, go under Systems Electrical and Click on Conduit ID. A dialog box will display on the screen allowing you to enter a tag.

E. Apply Equipment/Device ID

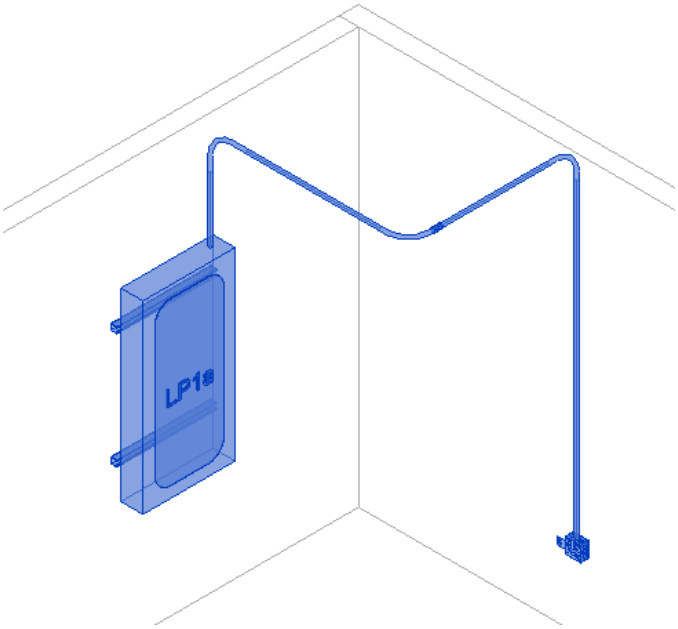
1. An Equipment/Device ID needs to be defined before for each piece of Equipment, Device, or Accessory that is connect to a conduit before you can get a Panel/Circuit Information Report.
2. Select your SysQue® Equipment/Device. If it is a manufacturer's family, you will need to follow the instructions under **G. Add Device/Equipment Details** below.
3. While the Equipment/Device is selected, go under Systems Electrical and Click on Equipment/Device ID. A dialog box will display on the screen allowing you to enter a tag.

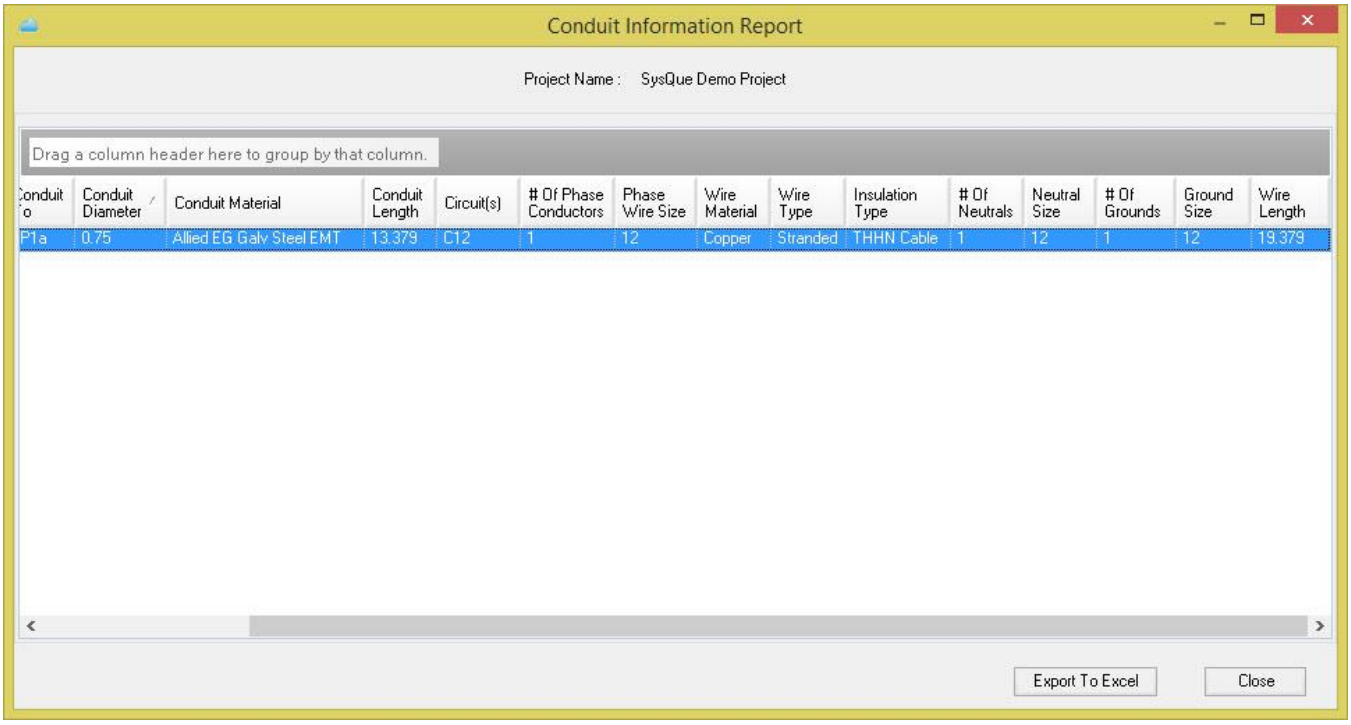




F. Panel/Circuit Information

1. After you have assigned ID's to your conduit and equipment/devices, select them. Note: you must have equipment or device connected to both ends of your conduit run.
2. While the Equipment/Device is selected, go under Systems Electrical and Click on Panel/Circuit Information. A Conduit Information Report will display providing you with the Panel, Circuits, Conduit Material, Wires contained within the Conduit, Conduit length, and Wire Length.
3. Devices/Equipment has a SysQue® added Parameter for Added Wire Length. This is why you will notice that the Wire Length is longer than the Conduit Length.

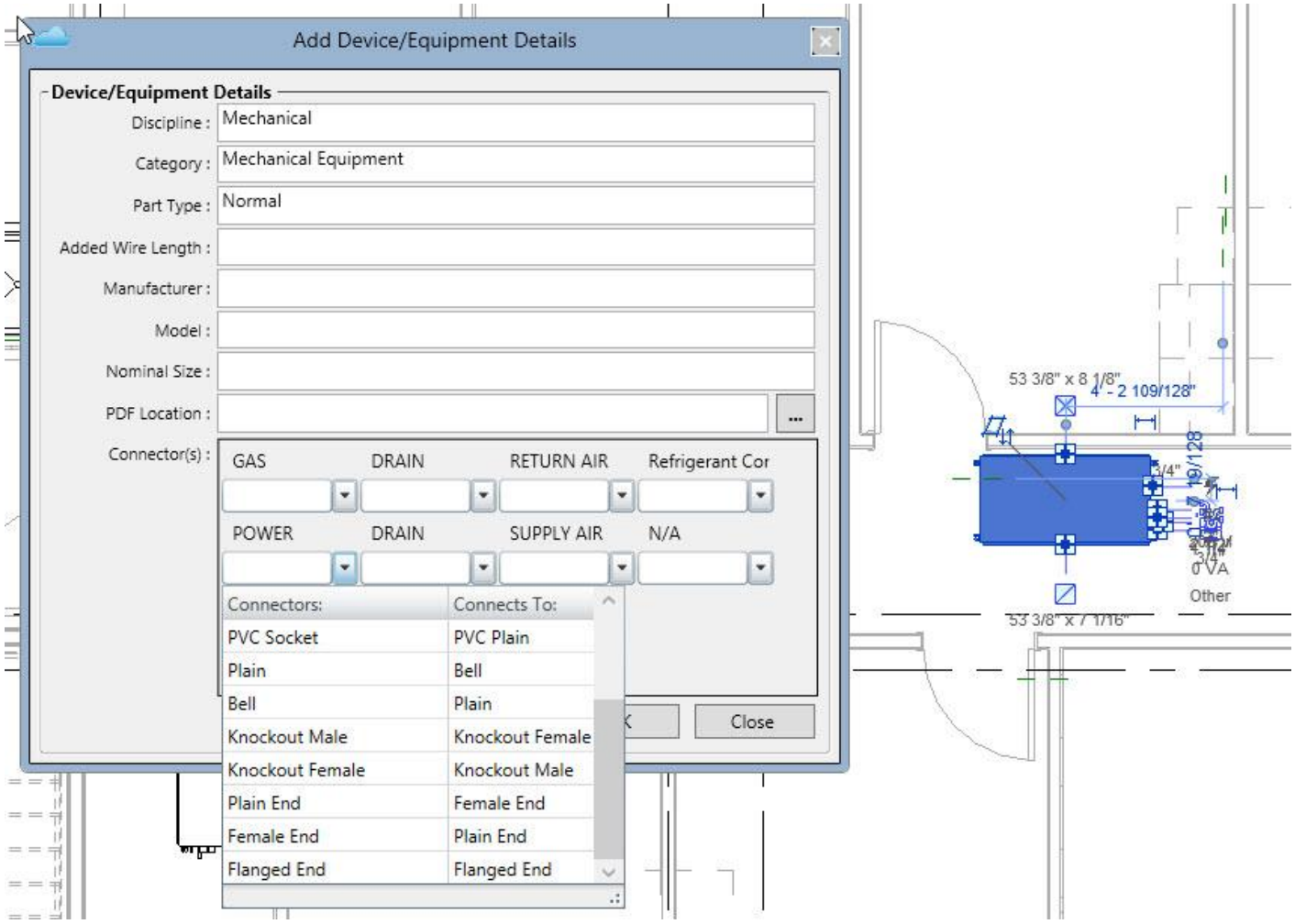


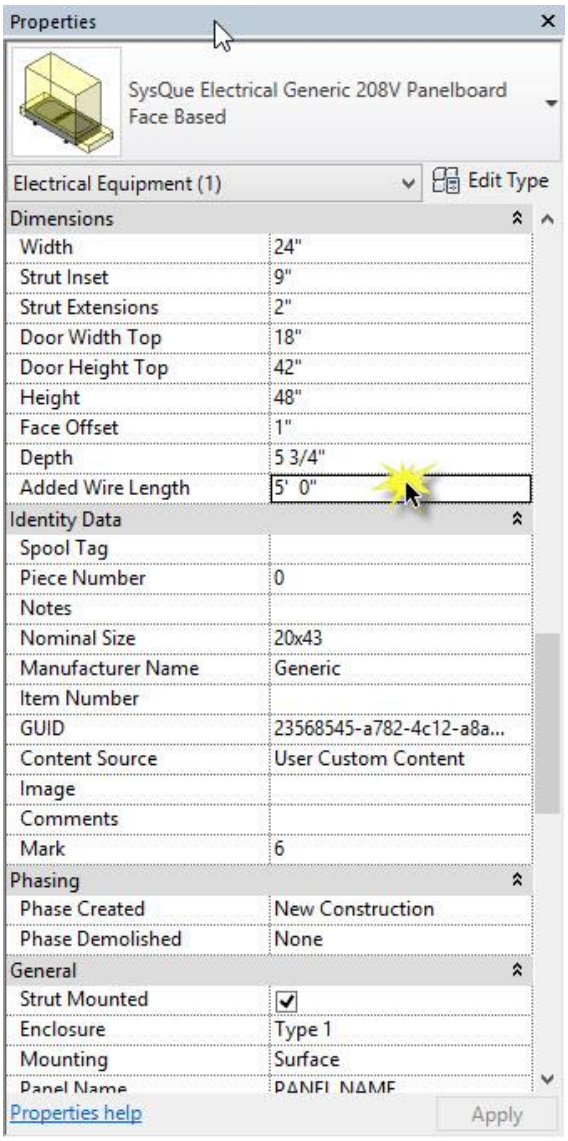


G. Add Device/Equipment Details

1. If you have Non-SysQue® Equipment or Devices in your model and want to report on the Conduit Information, you will need to add details first.
2. While the Equipment/Device is selected, go under Systems Electrical and Click on Add Device/Equipment Details. A dialog box will display providing you with the ability to define Added Wire Length, Manufacturer, Model, Nominal Size, a PDF location, and Connectors.

   Note: The Manufacturer's family may or may not have the Connectors' named. If not, you should go into the family and name the connectors with something logical so when you are entering the Connector types, you will be able to know which connector it is for what service.



H. Added Wire Length

SysQue® Equipment or Devices or Manufacturer's Equipment or Devices that you defined the details on will now have a parameter added named "Added Wire Length". This is a user defined parameter that is used to calculate the total wire length that is used in the Conduit Information Report.