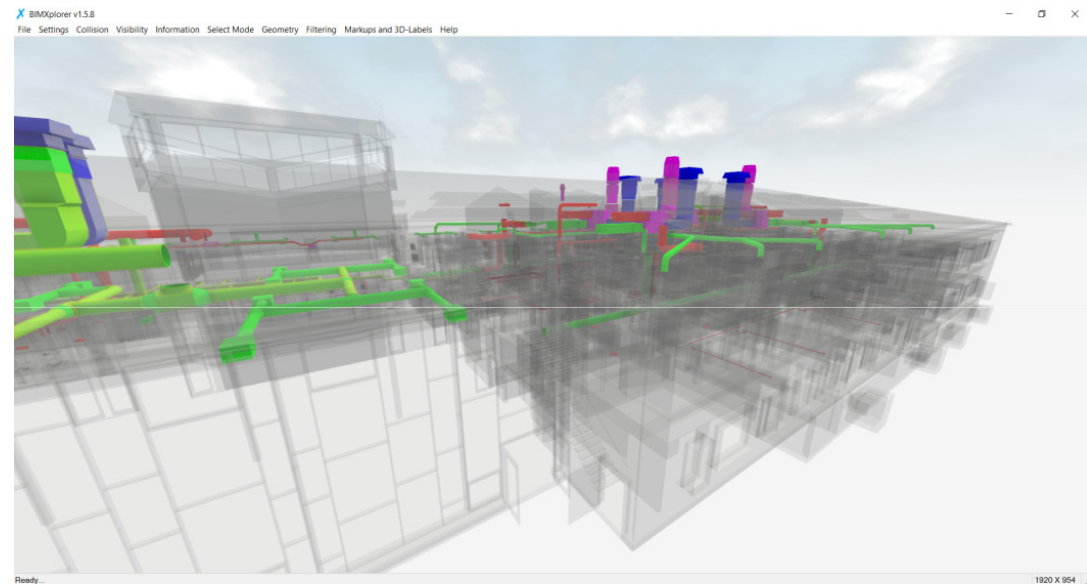
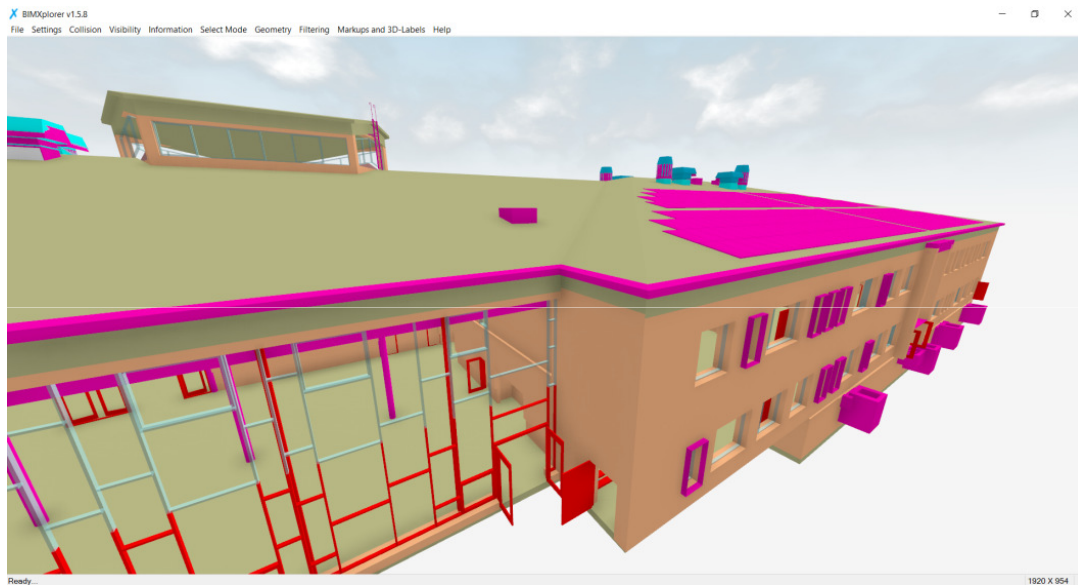
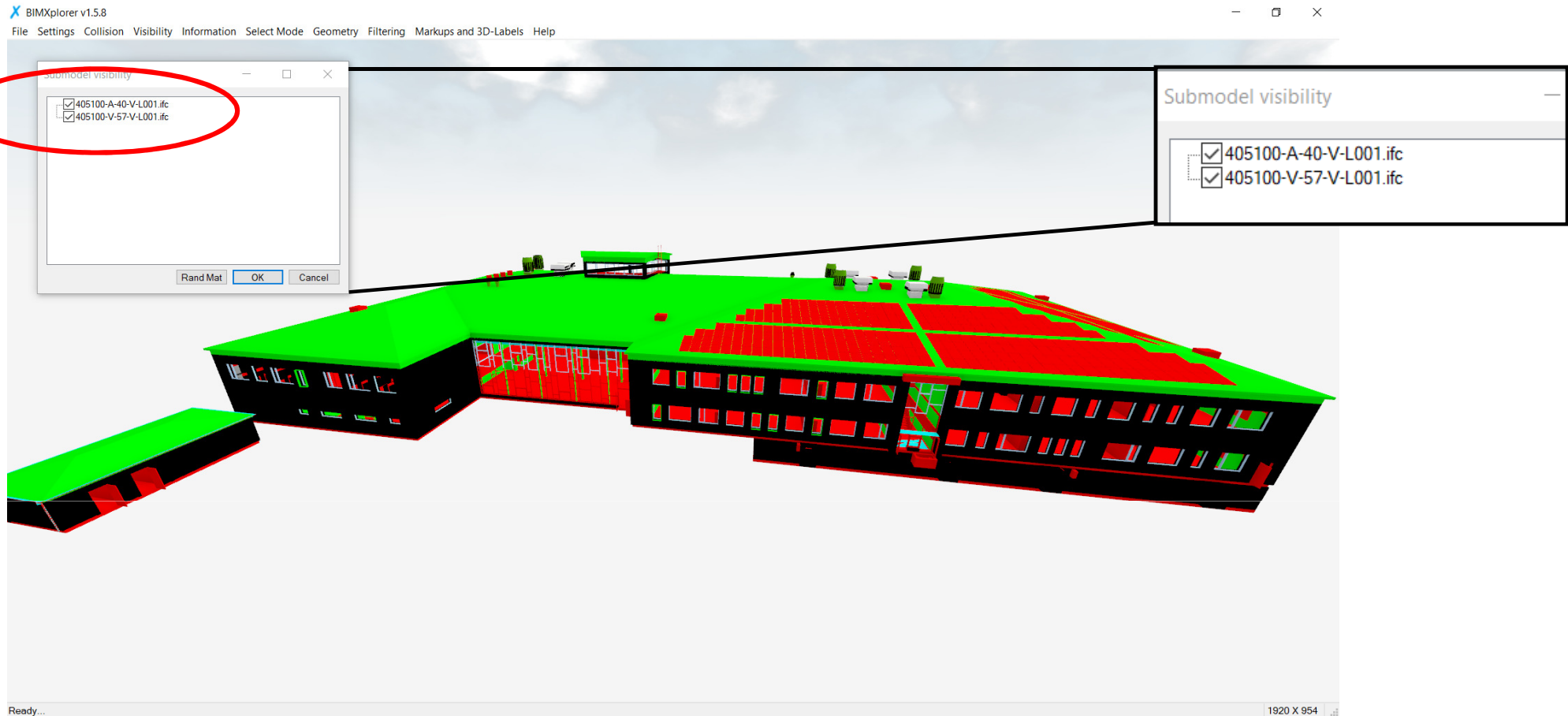


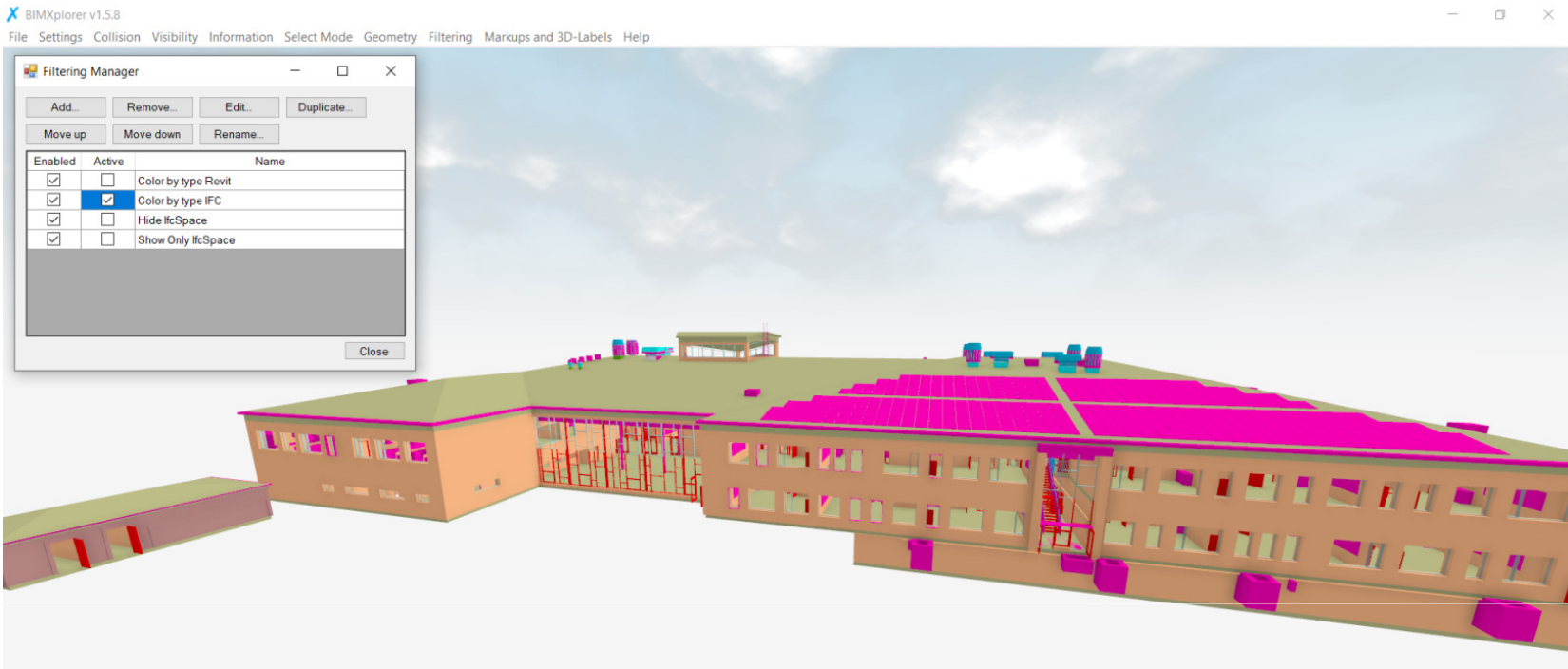
Introducing the Filtering Manager



(Same model and viewpoint, different filters)

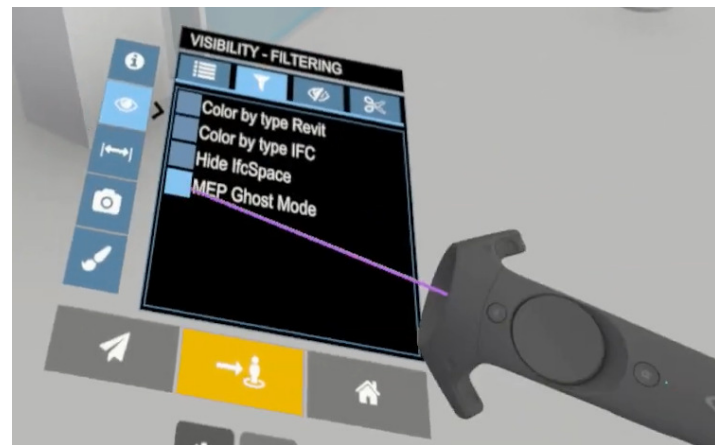


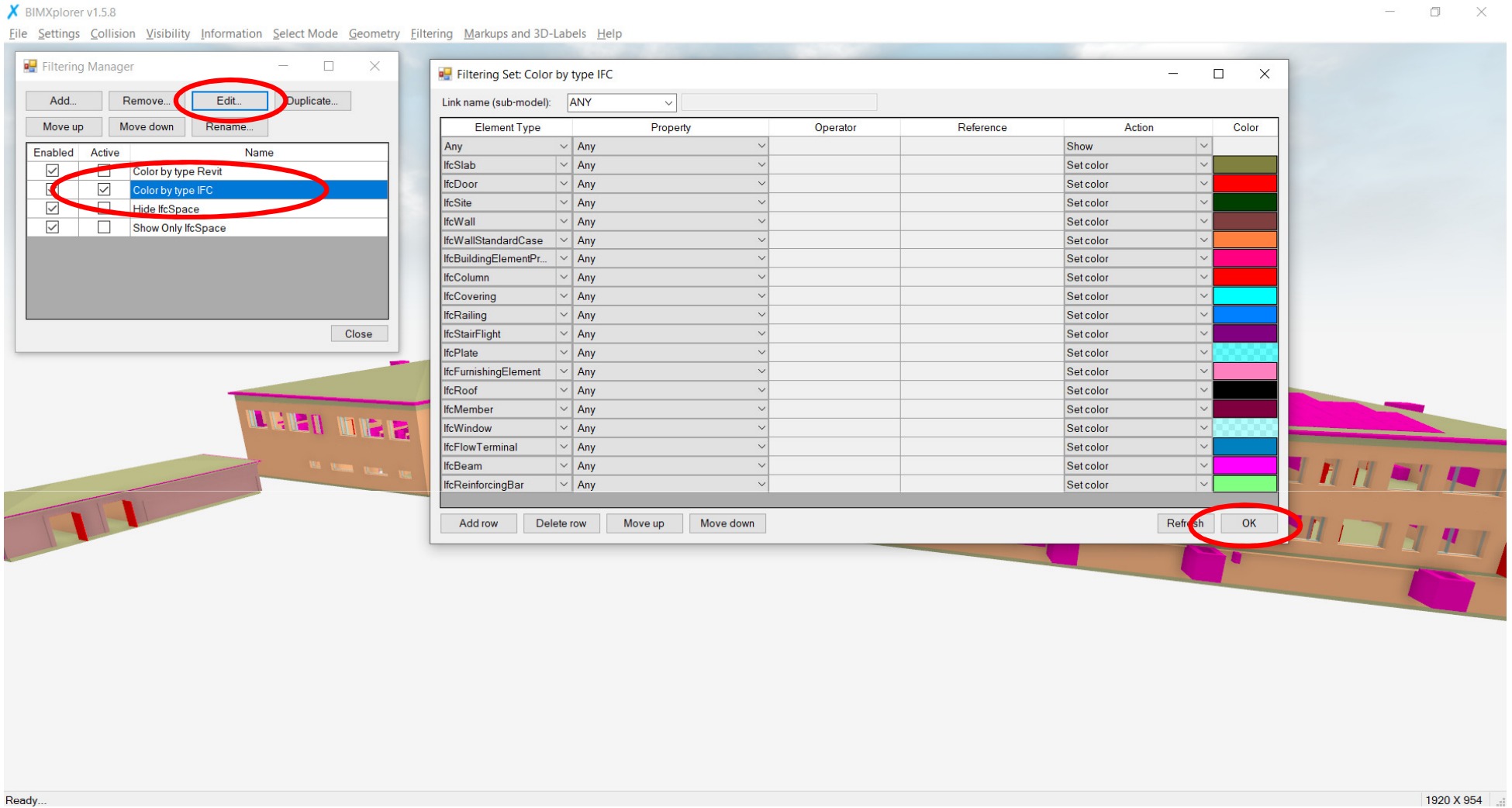
For this example we will import two different IFC-models from the same project; one architectural model and one ventilation model. By using **File->Open**, we can select both IFC-files. Another option would be to first import one model, and then use **File->Add** to select and add the other one. After import, we can go to **Visibility->Submodel Visibility...** and see the names of the different sub-models. Here we can tick/untick to hide/show the different submodels. The model is originally created in AutoCAD Architecture, and the coloring is perhaps not what we want. We will see how we can use the Filtering Manager to change that...



Go to **Filtering->Filtering Manager...** A number of filters are already defined. Tick "Color by type IFC" to give each IFC-type a unique color.

Also, once a filter is created it can be activated in VR as well:



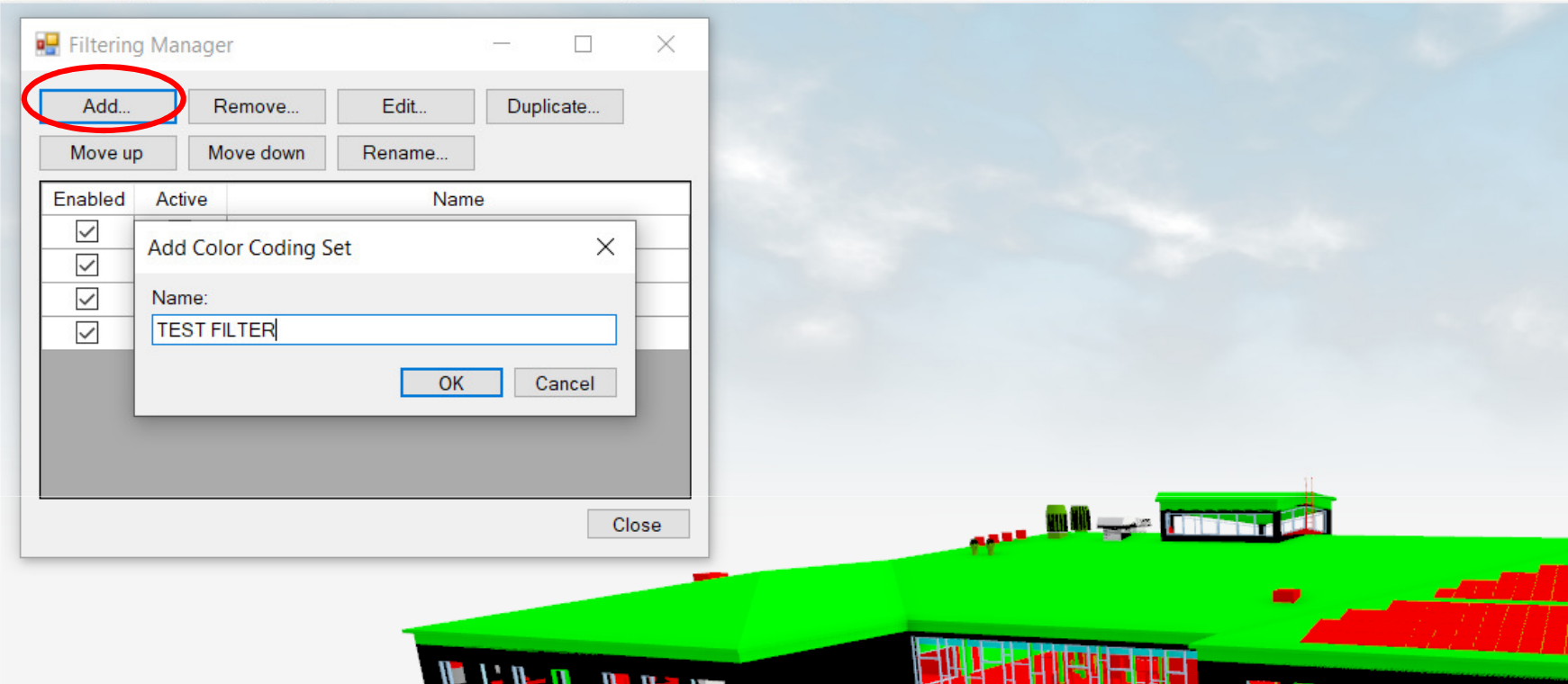


Mark "Color by type IFC" and click Edit... The actual filtering rules now opens up in a new window. In this case, we do not use any of the object's properties, but instead only set a unique color per IFC Element Type (i.e. IfcDoor, IfcWindow, etc.). Close the filtering set again by clicking OK.

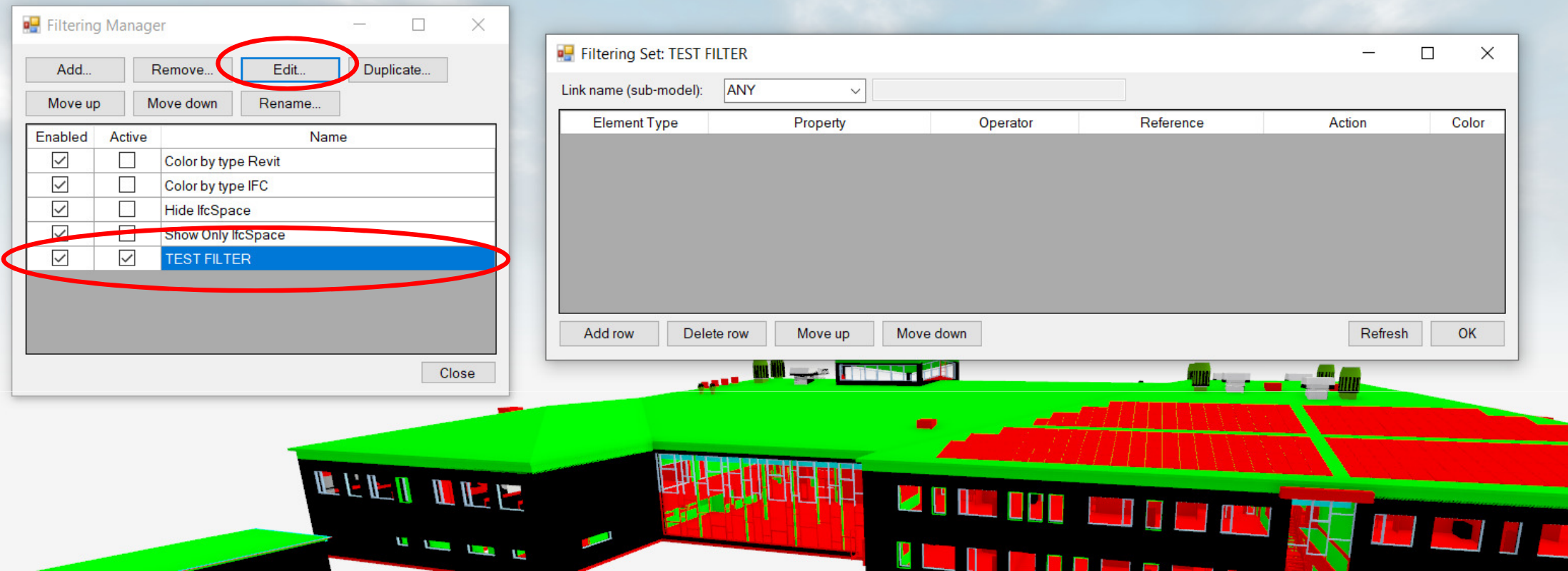


We will now see how we can create filters to color objects based on their properties.

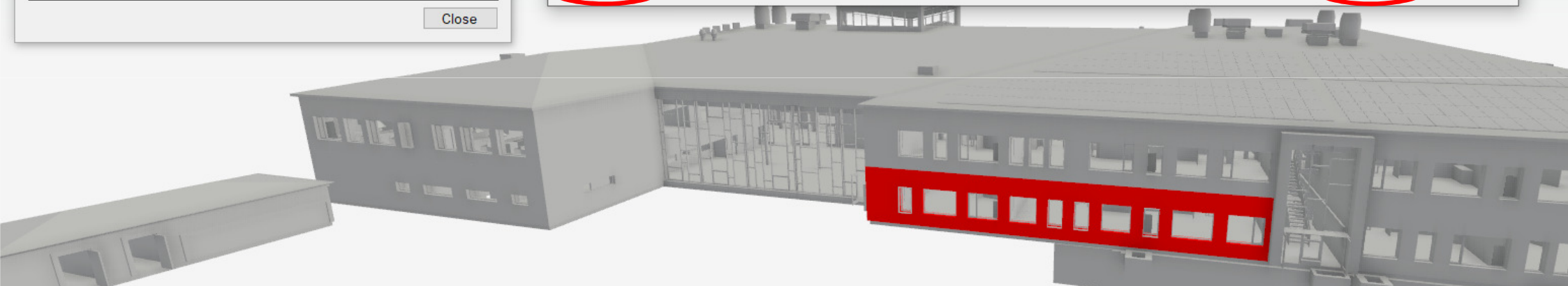
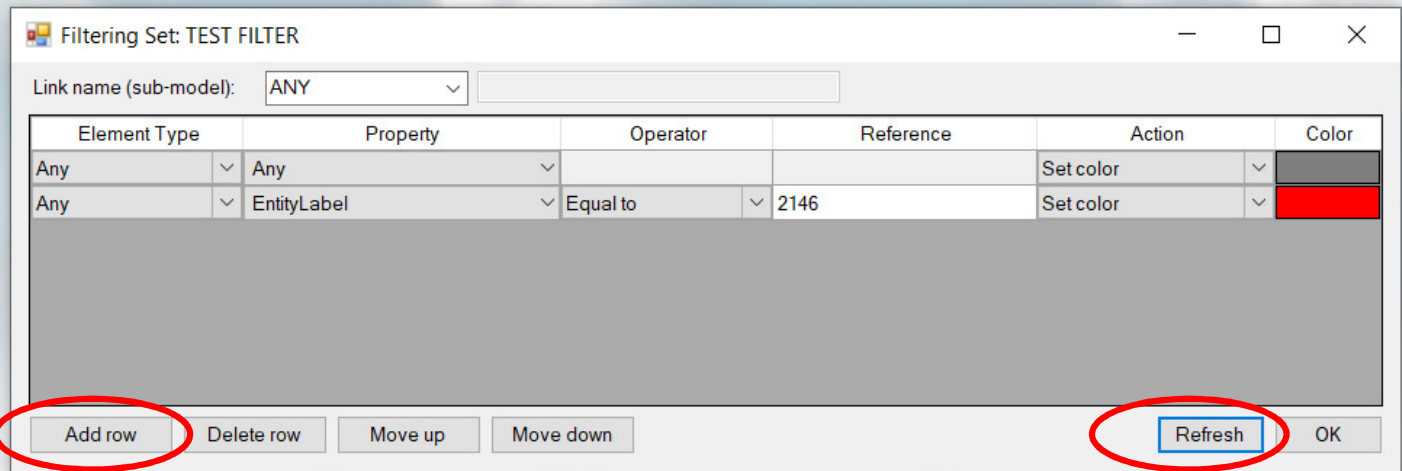
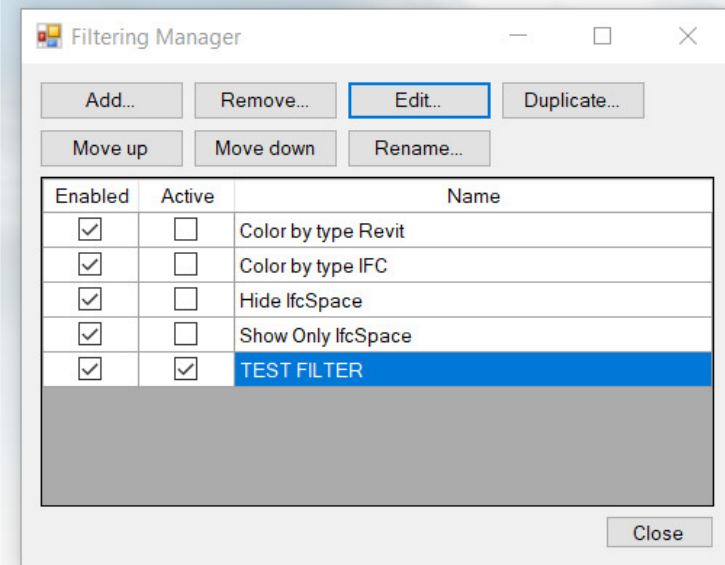
Go to **Information->Selection Info** to open the Properties Dialog. Select an object by left mouse click (in this case a wall). The object's properties are displayed in the Properties Dialog. In a PropertySet called *IfcElement Information* we see the Property *EntityLabel*, which in this case have the value 2146 (that value is actually the internal object id in the IFC-file, i.e. #2146)



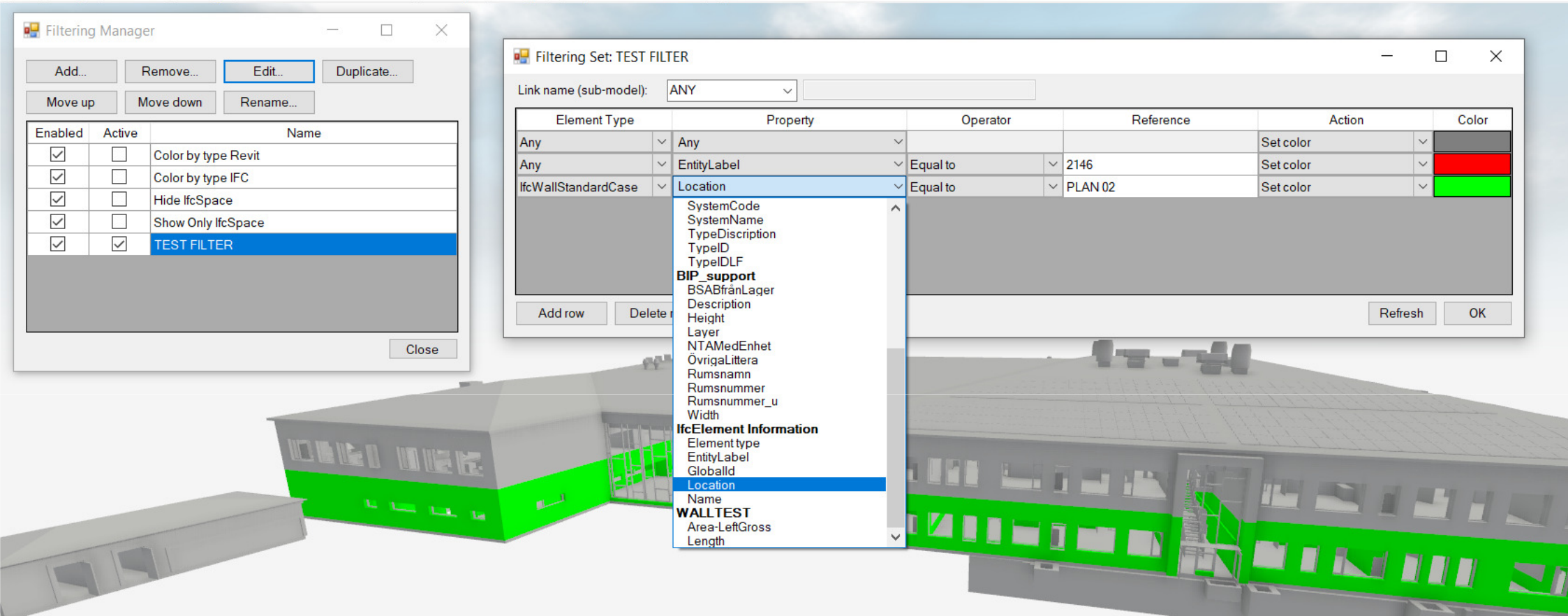
Un-tick *Color by type IFC* to go back to the original file colors. Click **Add...** to create a new filter and give it a suitable name, in this case TEST FILTER. Click **OK**.



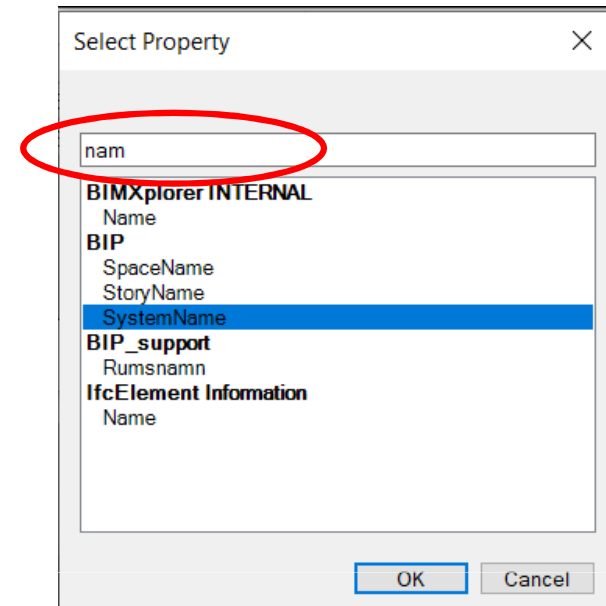
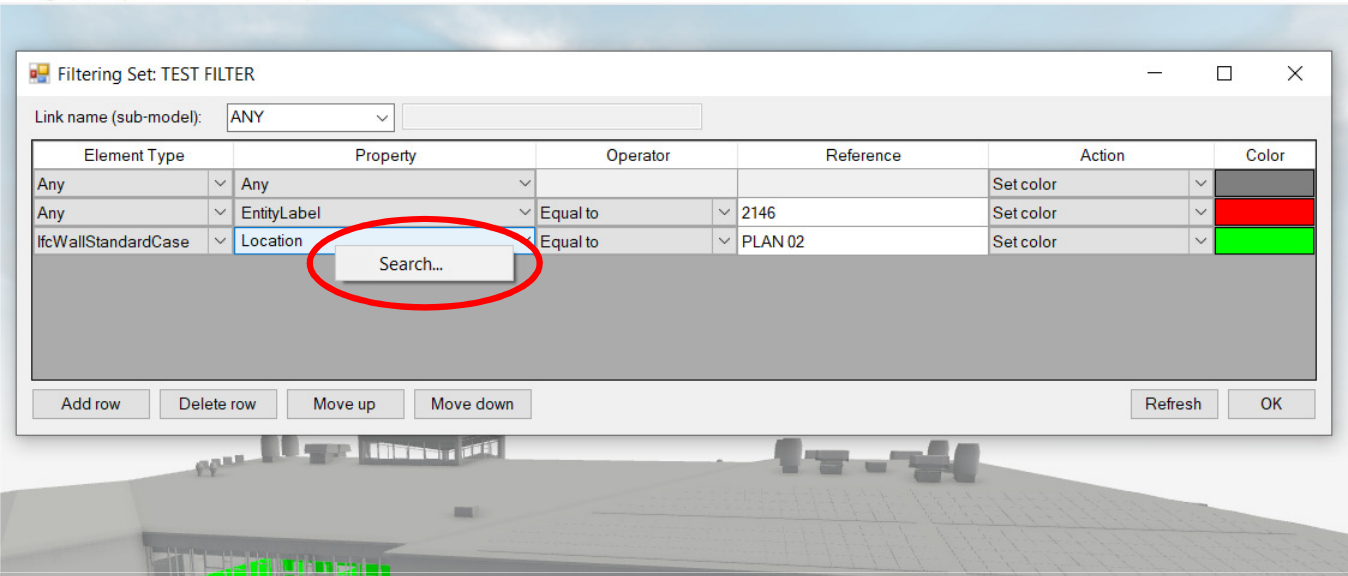
Tick *Enabled* (this is a legacy thing and will be removed in later versions) and *Active*. Ticking *Active* will activate the filter, but because the filter doesn't have any rules yet, nothing will happen. Select the filter and click **Edit...** to show the details of the filter.



Click **Add row** twice to create two "rules", and use the above settings to make the whole model grey, except for the wall element with the EntityLabel (in this case) 2146 red. Click Refresh to update. The rules are always processed from top to bottom, so it is always the last rule that affects an object that will set the final color. For example, if we add a new row (a third one) which is identical to the first row, the whole model will be grey, because we then "override" the second row/rule. See next slide for more details...

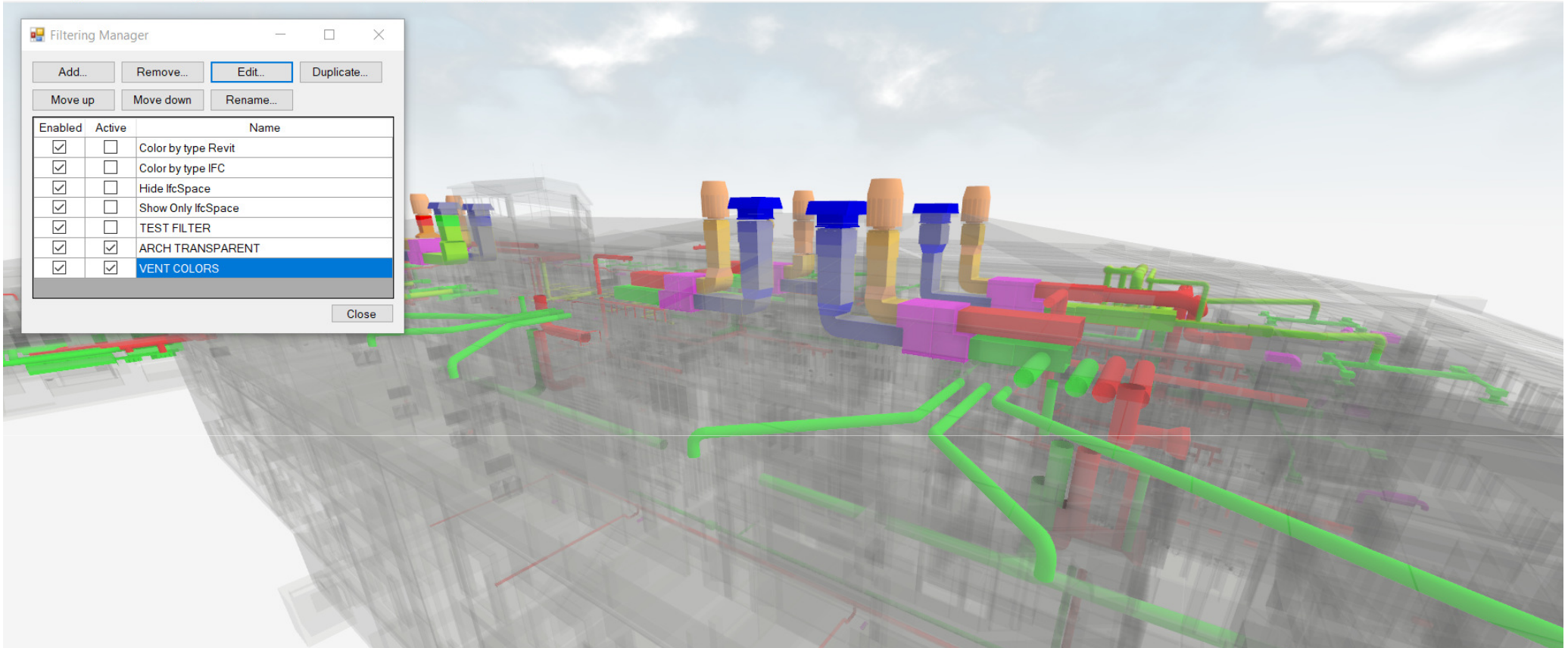


On each row (i.e. rule), we have the possibility to select if the rule should only apply to a certain object type, or if it should apply to all object types by selecting **Any**. In the above example we add a new rule that will make all the objects on level 2 green (i.e. Location=PLAN 02), however as we specify *IfcWallStandardCase* as the Element Type it will only apply to walls on that level. Also note that this rule will "override" the one that put a red color on the specific wall.



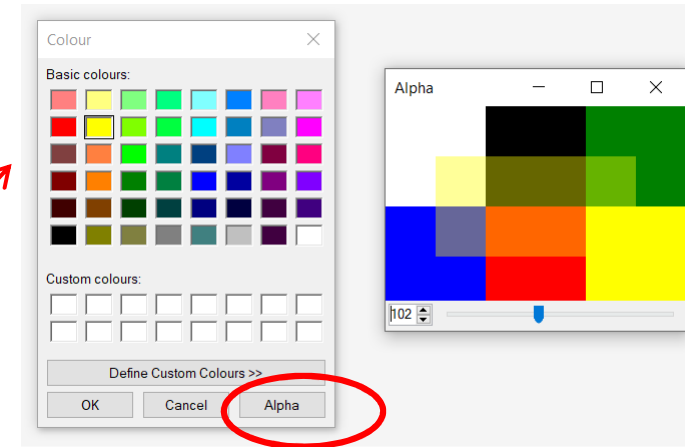
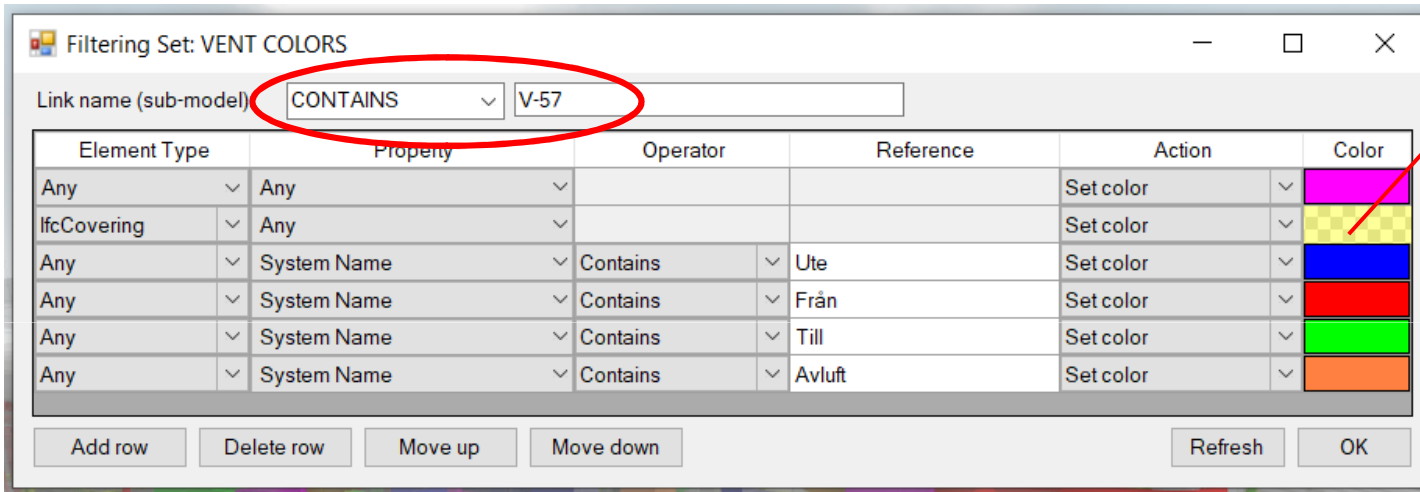
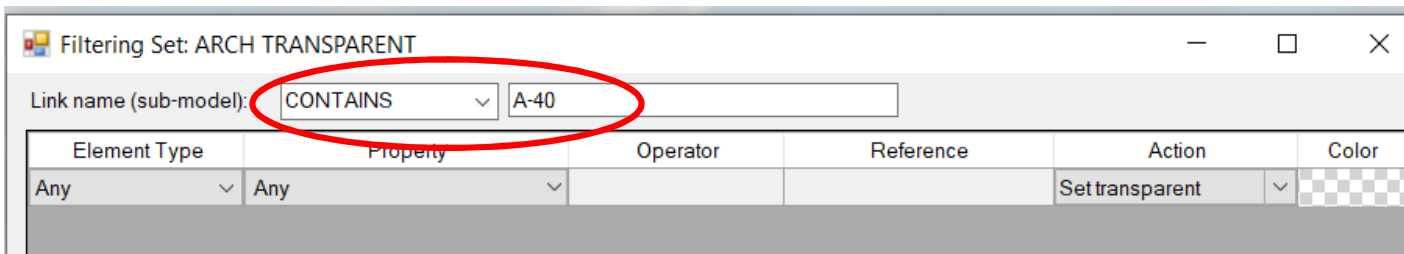
Sometimes the Property drop-down list can contain many items and it can be difficult to find a specific property. It is possible to right-click on the drop-down list and select **Search...** to display a window where it is possible to search for property names. That list will filter by what is written in the search field, and the specific property can then be selected.

We will now see how we can create a more "complex" filter...



In this case we have two filters; ARCH TRANSPARENT – which makes the architectural sub-model transparent, and VENT COLORS – which color the different pipes by function. Let's now see these filters in more detail...

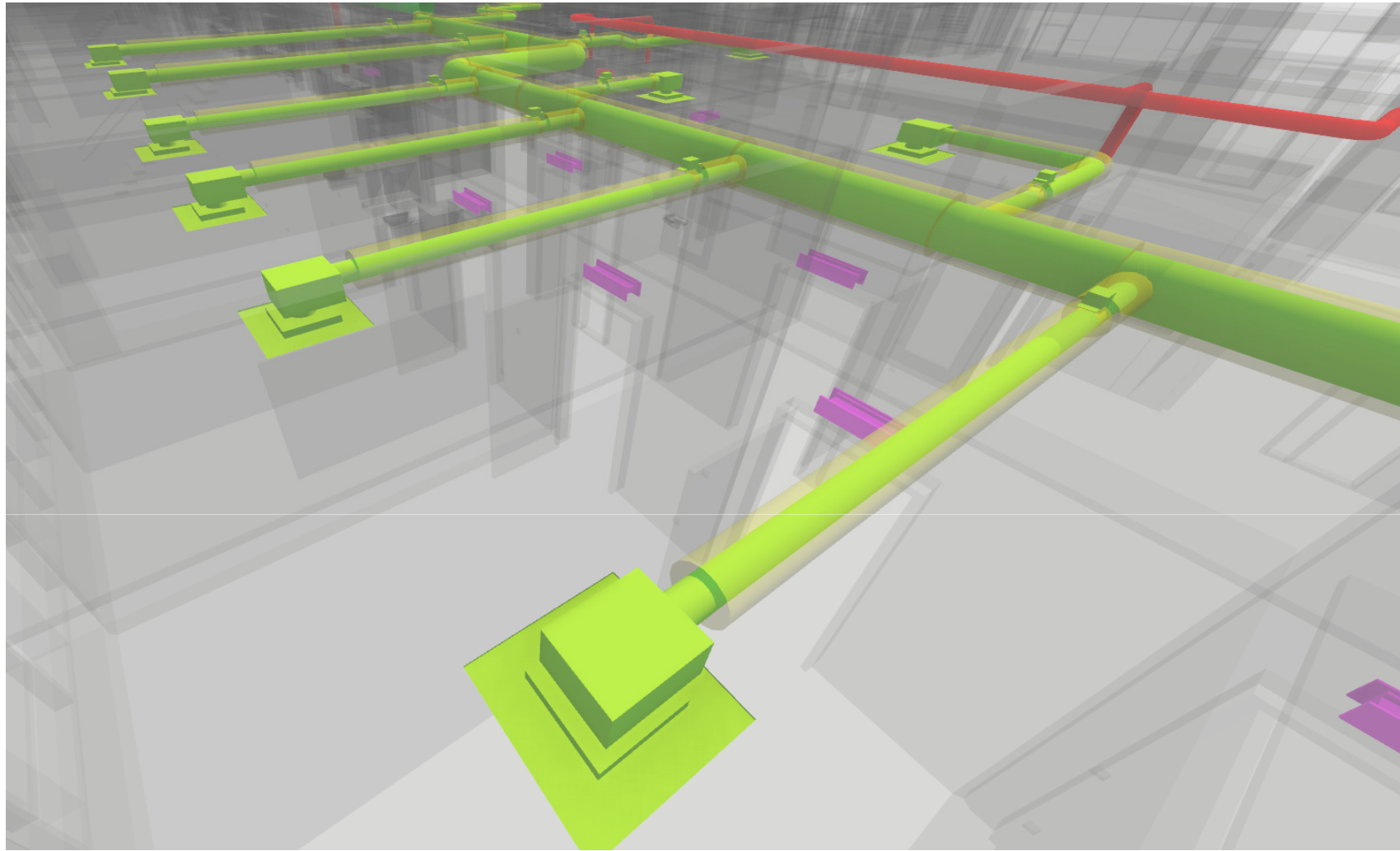
Also, one thing to note is that the different (active) filtering sets are also processed from top to bottom



ARCH TRANSPARENT just makes all the objects transparent. Important thing here is to note that we restrict the filter to **only** process sub-models which has "A-40" in the name (this is a typical classification for architectural models in Sweden).

Similarly, VENT COLORS will **only** process sub-models with "V-57" in the name (again, a Swedish classification). In addition, the filter sets any IfcCovering (insulation) to a semi-transparent color, and then different colors based on the system name (i.e. outdoor, supply, return), here with Swedish naming.

Note that when selecting color it is possible to change the "Alpha" to make it semi-transparent.



Also note that making the pipe insulation (IfcCovering) semi-transparent makes it easier to see the actual dimension of the pipe, at the same time that it is clear that the pipe has insulation applied.