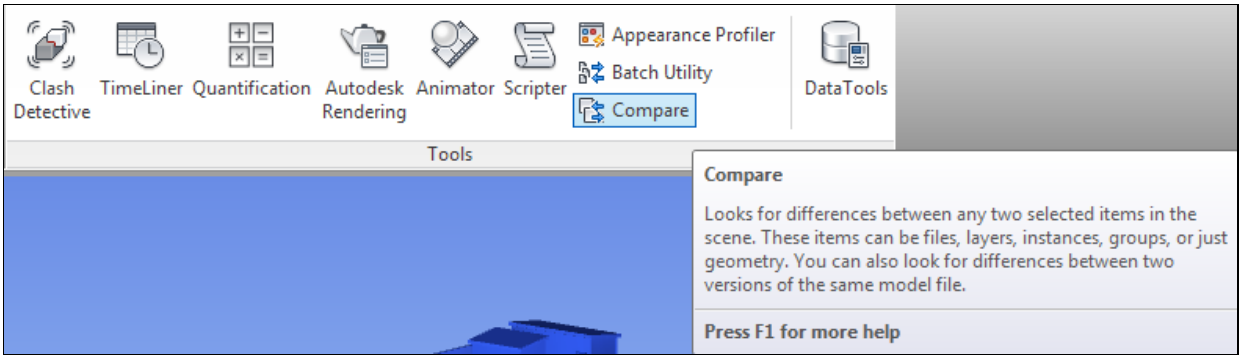
Compare two Versions of any CAD Files

Navisworks 2015

When working in a multi-disciplinary team, on a BIM project for example, you may be notified that a model files has been updated. However, it may not be obvious just what has changed between the previous version of the file and the new one. Fortunately, there is a simple way to identify the differences – and this will work for different versions of any two CAD files of most common formats.

The Navisworks Compare Tool

The ***Compare Tool*** in Navisworks enables you to look for differences between any two items that you select in the ***Selection Tree*** window. The items can be files, layers, instances, groups, or just geometry.



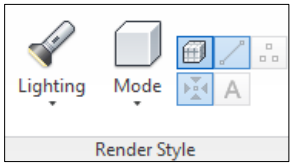
By appending two versions of the same CAD file into your Navisworks model, you can use this feature to identify the differences between different versions of the file.

During the comparison, Autodesk Navisworks starts at the level of each item, and recursively travels down each path on the Selection Tree, comparing each item it comes across.

When the comparison is finished, the results may be highlighted in the Scene View. The following colour-coding is used by default:

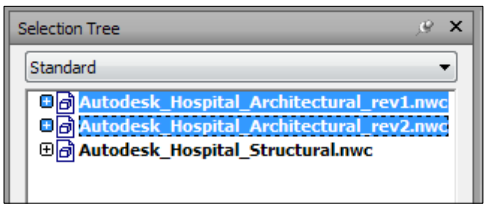
- White - Matching items.
- Red - Items with differences.
- Yellow - The first item contains objects not found in the second item.
- Cyan - The second item contains objects not found in the first item.

You need to select the ***Shaded Mode*** render style to view the highlighted colour scheme.

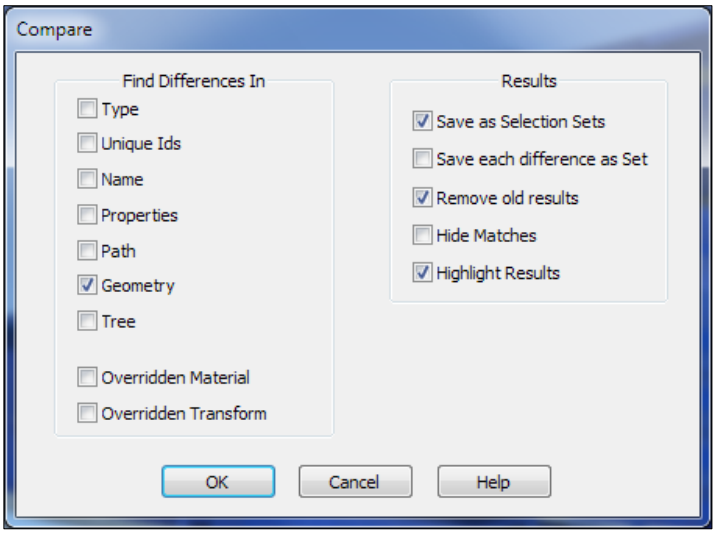


Comparison of Revit Models

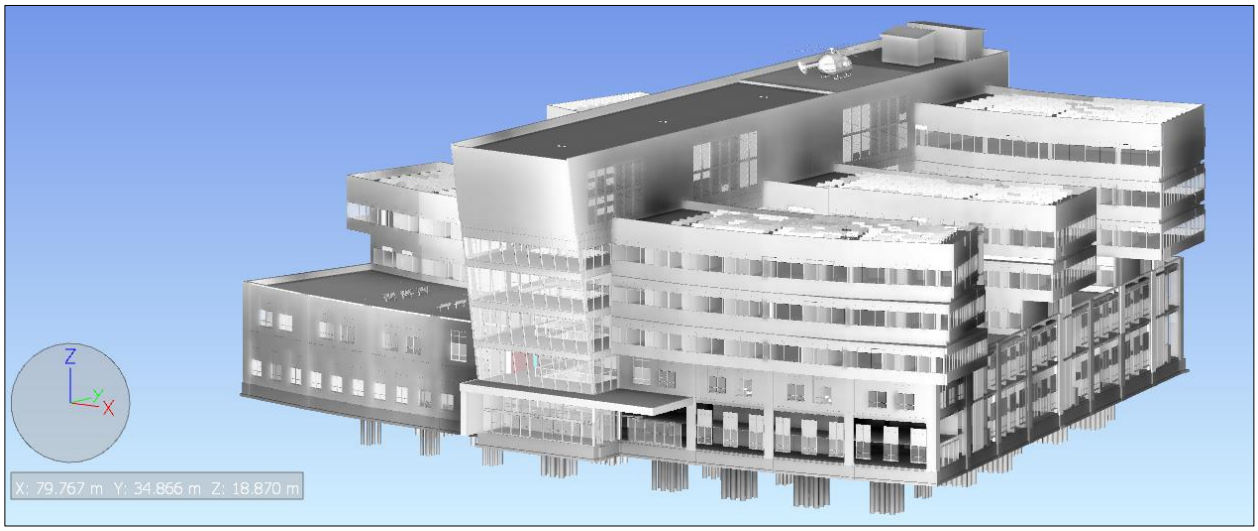
In the following example, I am comparing two versions of an architectural model from Revit. These have both been appended to my Navisworks model which also contains a structural model.



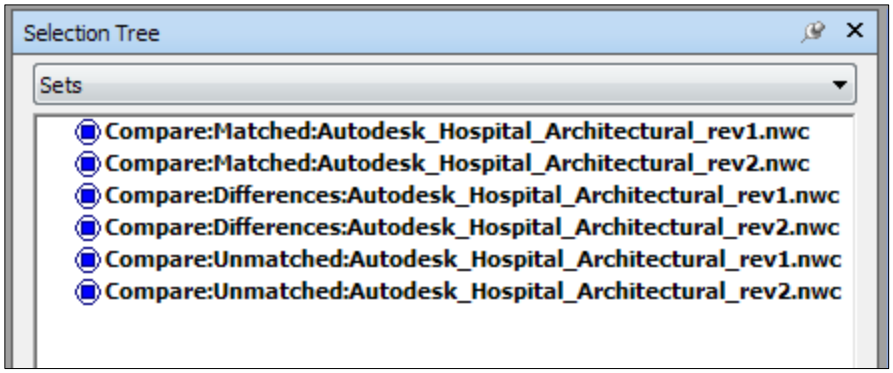
I have chosen to find differences in geometry only, to save the results as selection sets and to highlight them in the ***Scene View.***



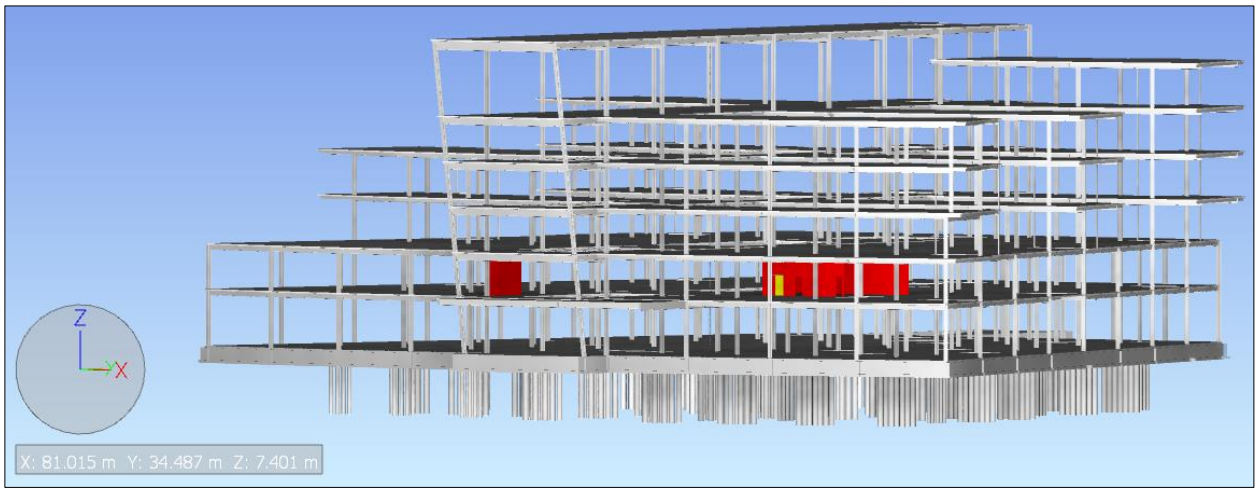
After comparing the files, the scene view shows most of the building coloured white, indicating that these parts of the building are the same in both versions of the file.



Looking at the ***Sets*** view of the ***Selection Tree***, I can see the results of the comparison as ***Selection Sets***.

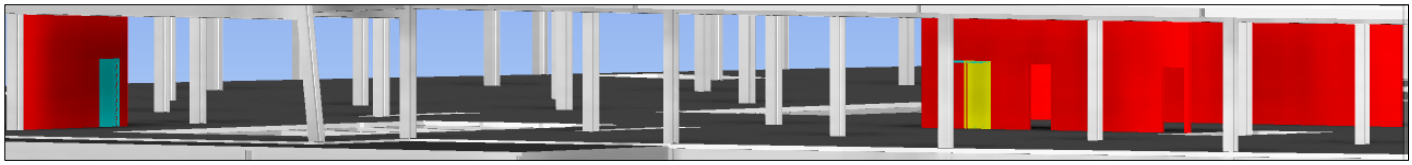


When I hide the matching parts of the model by selecting the **Compare:Matched:…** selection sets and choosing the Hide function, I can see easily the differences between the two files displayed in the ***Scene View***.

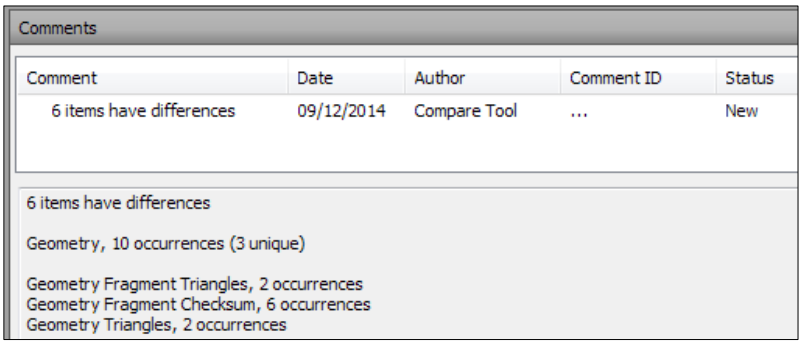


The walls highlighted in red exist in both versions of the file but are different.

By zooming in, I can see that a door has been removed from the second file (highlighted in yellow to the right) and another has been added into the second file (highlighted in Cyan to the left).



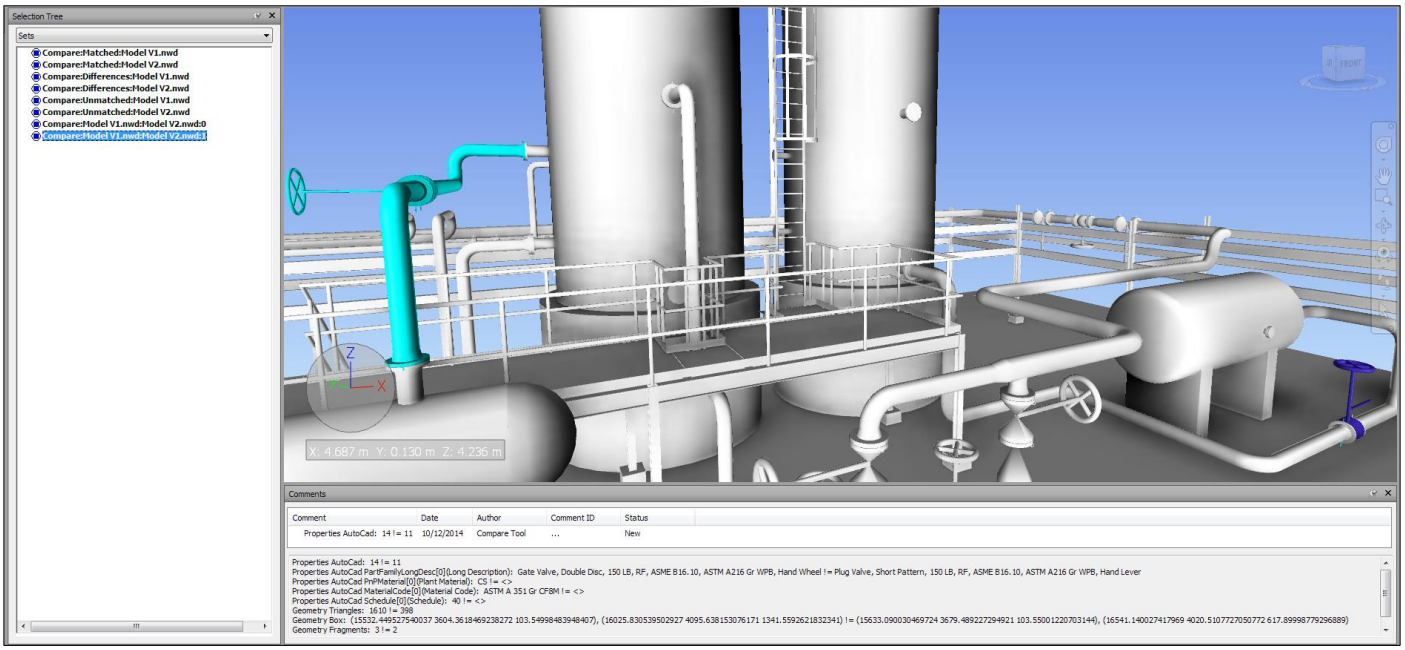
Also, when I look at the Comments Window, I can see a description of the results and further information that is added automatically to each selection set that is created during the comparison.



Comparison of AutoCAD Plant 3D Models

The compare tool will work for any two items that are selected in the selection tree window. Not only can we look for changes in geometry, but we can also look for changes in the properties of the items in the model.

In this second example, I have compared two versions of an AutoCAD Plant 3D model that I have created in Navisworks.



It is clear to see that most of the model is unchanged. However, the pipework shown in cyan to the left of the scene view has been added to the second version of the model.

Also, looking at the objects that are currently highlighted in blue to the right of the scene view, we can see that a change has been made. The information in the comments window shows us that the Gate Valve in the original model has been replaced with a Plug Valve in the updated model.