AS227471

Easier Collaboration Using AutoCAD DWG Compare

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Learning Objectives

- Discover the DWG Compare feature in AutoCAD 2019
- Learn how to use DWG Compare to communicate and comment on changes
- Learn how to use DWG Compare to update drawings
- Learn some advanced tips related to DWG Compare

Description

With the introduction of the DWG Compare feature in AutoCAD 2019 software, collaboration with other designers becomes much easier. In this class, we will use real-world examples to tell a story about the pain of current collaboration workflow and how DWG Compare can help. We will also introduce and demonstrate Shared View and the AutoCAD web app in this collaboration story.
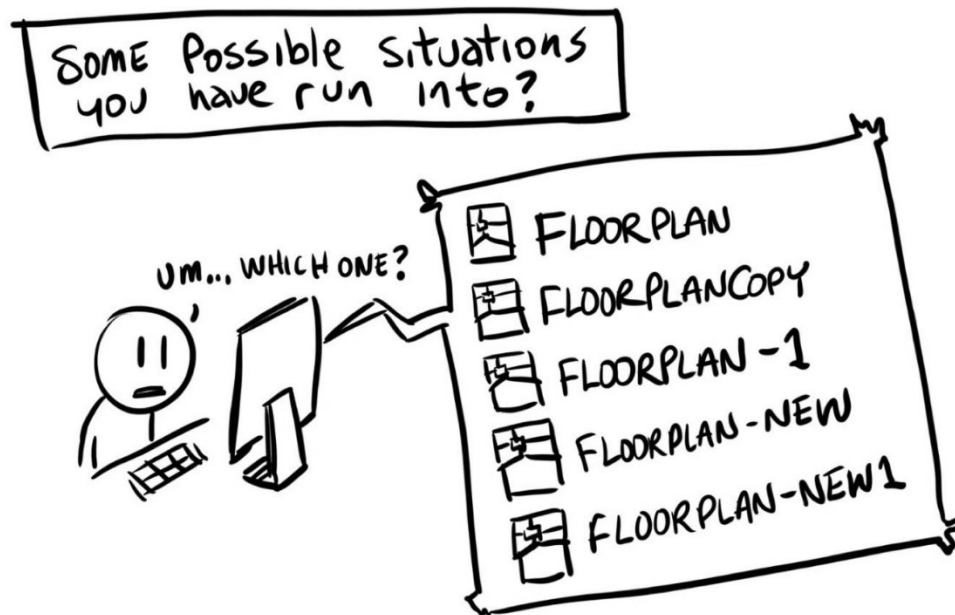
Speaker(s)

Christopher Chen, product owner and senior SQA engineer of AutoCAD. He has been using AutoCAD since school and then testing it for more than 10 years. Most recently, Christopher has been working on delivering the new DWG Compare feature. In the process, he had the chance to understand different ways users collaborate using DWGs by interviews, surveys and group discussions. Christopher has also been working on improving visual quality and performance of AutoCAD graphics and making sure it runs well on different hardware platform. Christopher has been speaker/co-speaker of AU China 2014, 2015, 2016, and 2017. He also held webinars to introduce new features for recent AutoCAD releases to hundreds of customers online.

Introduction

Change happens a lot in design collaboration process, and it's very important to know exactly what's changed, so that you can decide if the change matters to you – Sometimes you want to comment on the change and communicate with others; Sometimes you need to update your own design according to the change.

The change may come from one of your colleagues in the same office; or an external engineer in the side of the world; or was made by yourselves a long time ago.

From our survey result, existing ways for communicating and identifying changes include email, phone call, and even shouting (if in the same office). Those who use change documentation, need to manually highlight the changes which is not always accurate and precise enough.

DWG Compare is just the tool built for identifying geometry changes in two DWG files. It's available in AutoCAD 2019, AutoCAD LT 2019, and AutoCAD 2019 Specialized Toolsets.
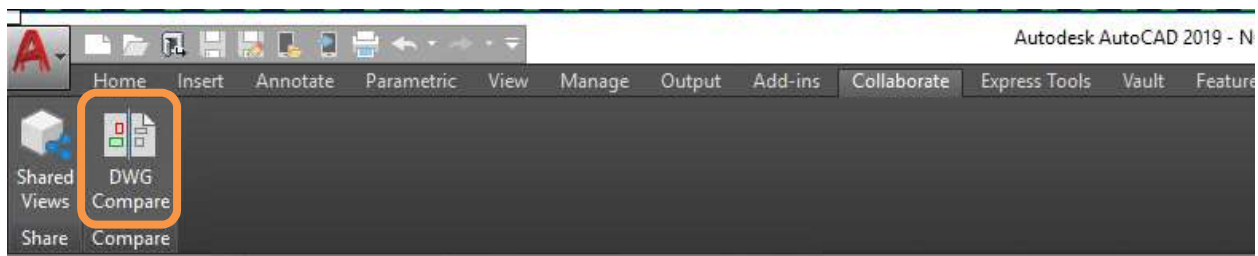
DWG Compare has the following advantages comparing to some existing tools:

- Built natively into AutoCAD, DWG compare can use high precision data in the comparison compared to tools using PDF or DWF which requires data conversion.
- Compare result is represented without losing visual fidelity in DWG format and is easy to share with others
- Leveraging multi-thread, DWG compare has high performance
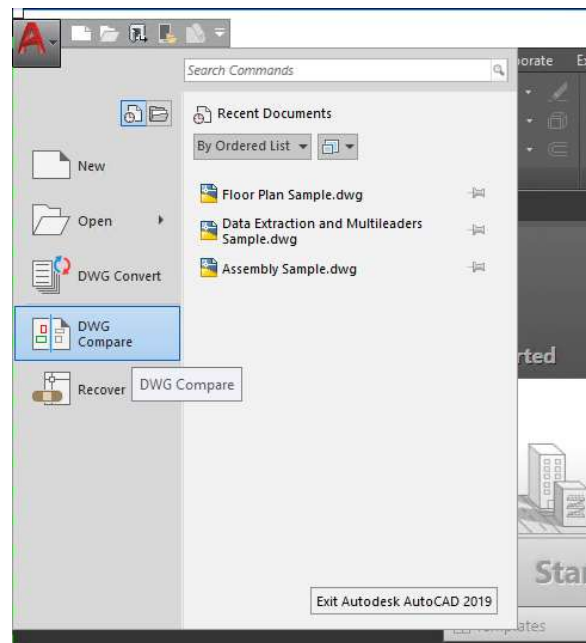- Focusing on geometry changes which designers care the most

Discover DWG Compare

Launch Compare

DWG Compare tool is easily accessible from *Ribbon > Collaborate tab > Compare panel*
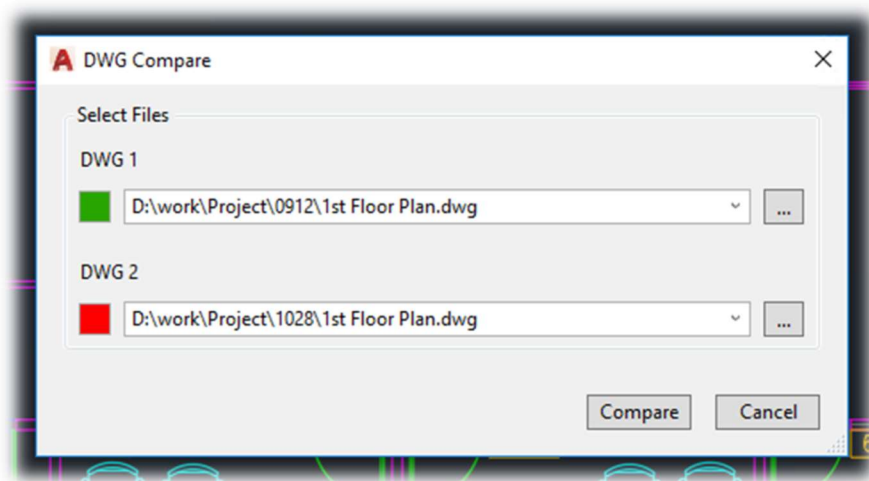
It also can be started from the *Application Menu > Drawing Utilities* (when there is active drawing) or *Application root option* (when there is no active drawing).

DWG Compare launch dialog will be presented for you to select drawings. By default, the current drawing will be automatically filled in as DWG 1. The two color boxes indicate the colors (green and red by default) that will represent the two drawings. You can change them from this dialog or change them later in compare drawing.

Click *Compare*, you will be taken into the compare result.
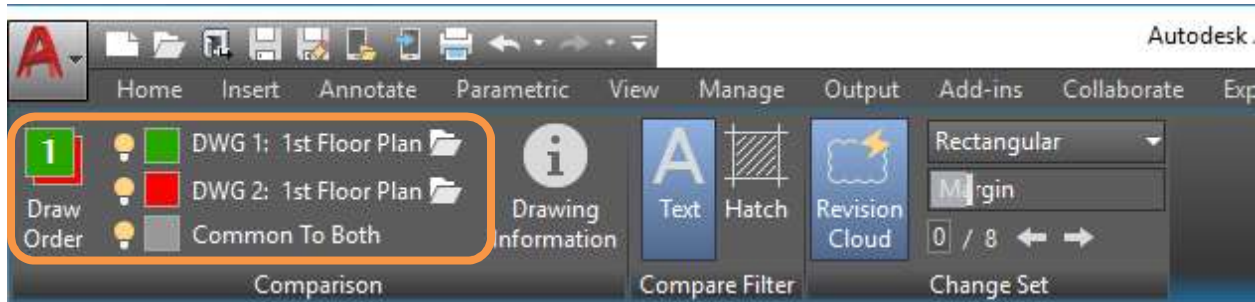
Control Compare Result Appearance

In the compare result drawing, entities are visually separated into three parts. By default:

- Green for entities that are only in DWG 1;
- Red for entities that are only in DWG 2;
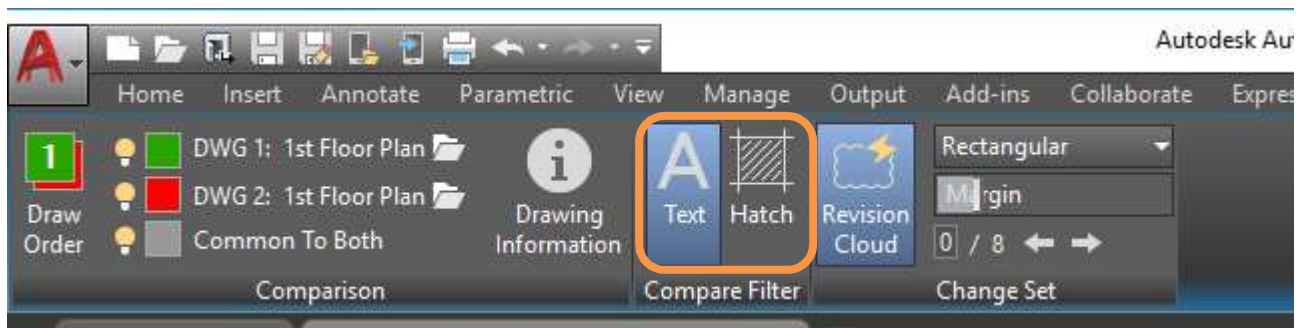- Grey for entities common to both DWGs.

The color legends and drawing names are shown in Comparison panel under Compare contextual Ribbon tab. There are a few more things you can do:

- With the light bulb, you can turn each part on or off;
- With the color box you can custermize the colors
- With the folder icon, you can open up the being compared DWG
- With the Draw Order button, you can switch the display order of DWG 1 and DWG 2 if they are overlapped or very close together
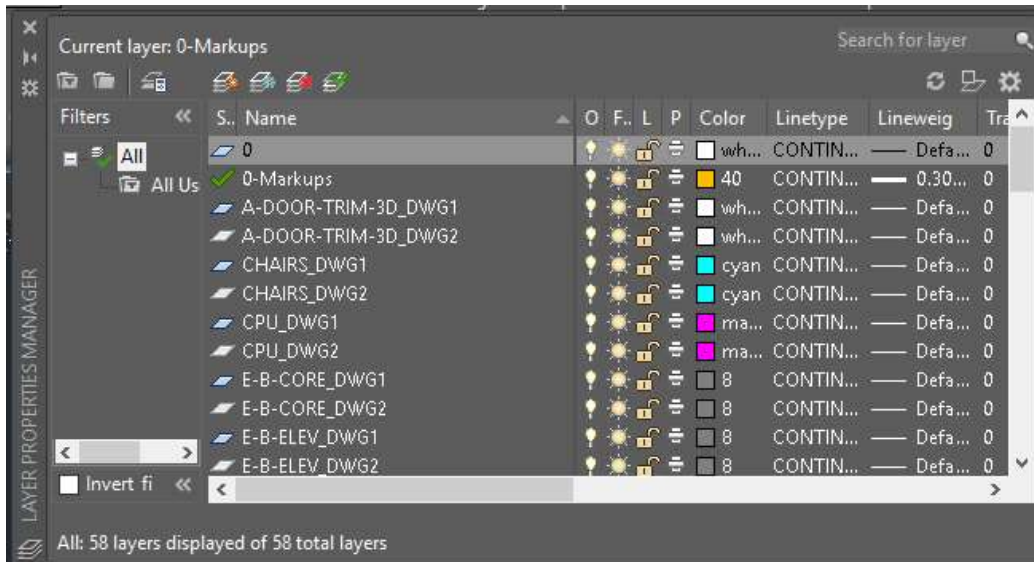

Filters and Layers

There are two types of objects can be filtered from *Compare Filter* panel: Text and Hatch. If you don't care about text and Hatch changes, you can use the filter to hide them in compare result.
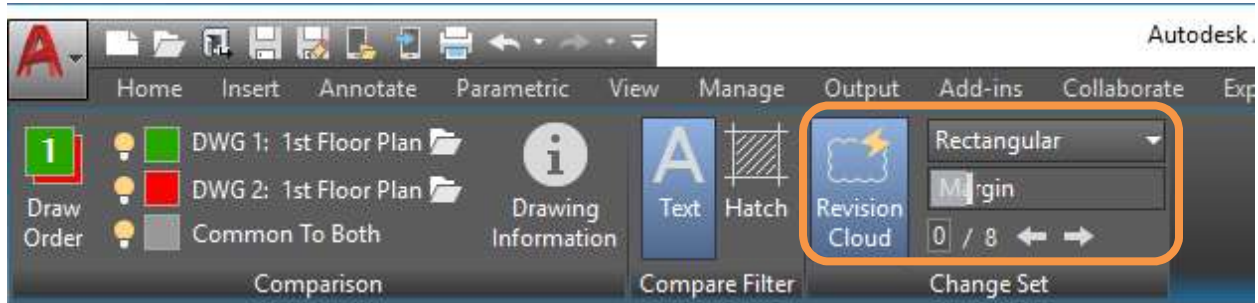

You can also filter objects by layer in compare result. In compare result drawing, layers with the same name from the two drawings are grouped together. You can turn some of them off to hide them.

Use DWG Compare for Communication
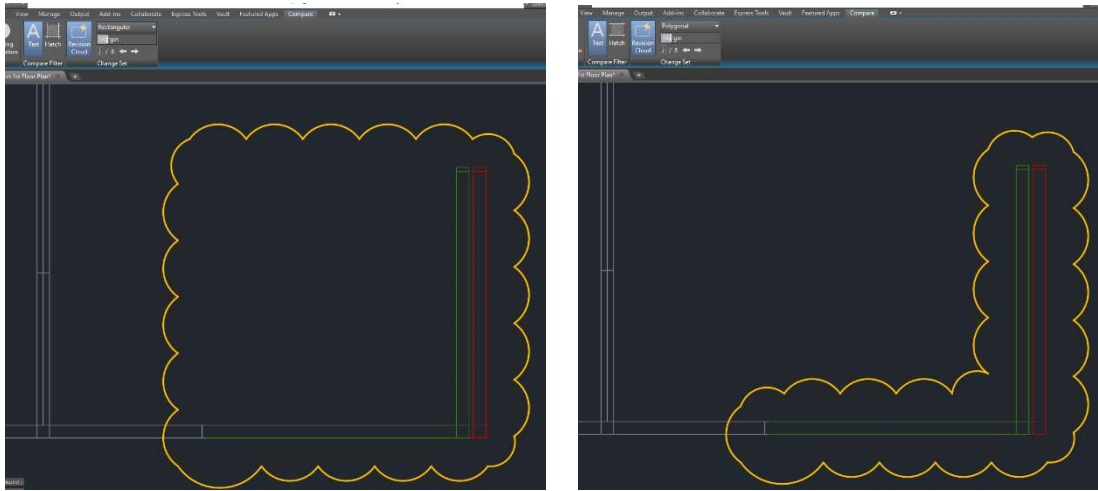
Revision Clouds

If you want to use the comparison result as a communicate document, the automatic revision cloud probably can help. These revision cloud are automatically generated in compare result drawing by default.
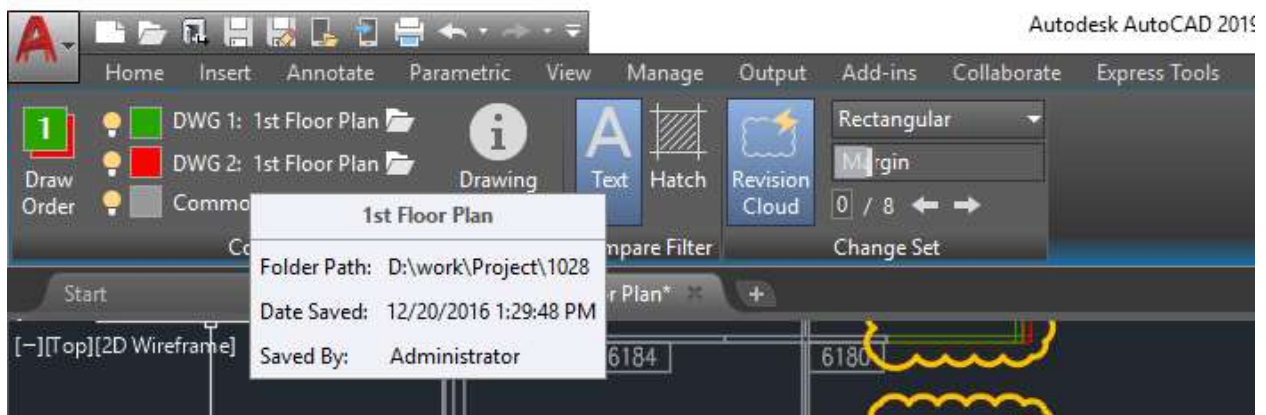

From the Change Set panel, you can
- Turn automatic revision clouds on and off
- Control revision cloud shape to be rectangular or polygonal
- Control the margin of revision clouds to be tighter or looser around change
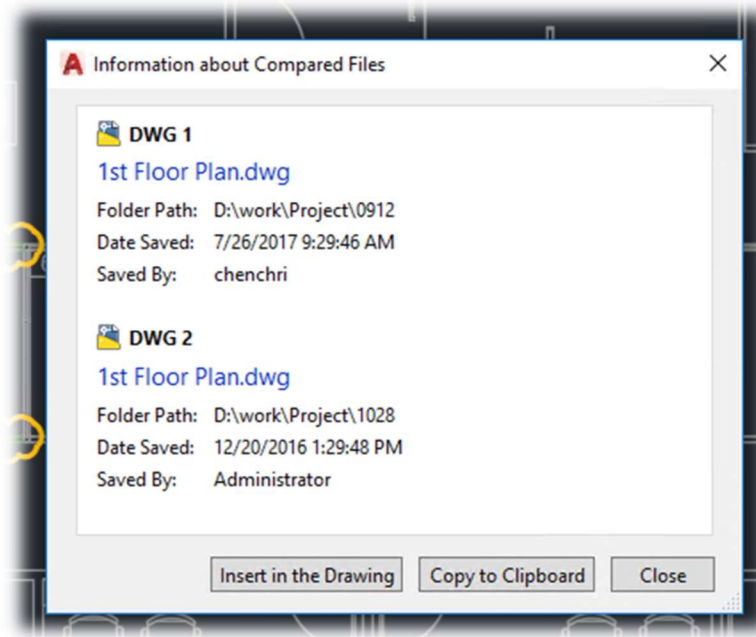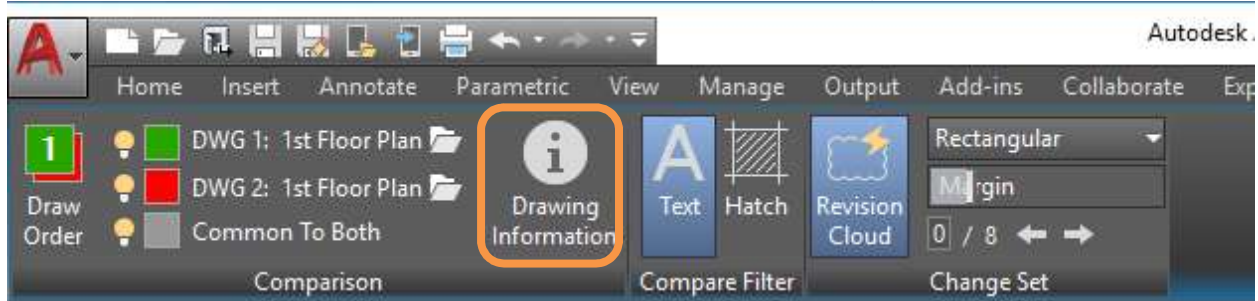- Navigate to each Change Set using the "next" and "previous" arrows

Drawing Information

Information about the drawings used in the comparison is available as tooltips when you hover over the drawing names.

If you want this information to be available in your change document, you can click the *Drawing Information* button to display the *Information about Compared* Files dialog, then choose to insert the information into the drawing as table or copy the information into Clipboard.
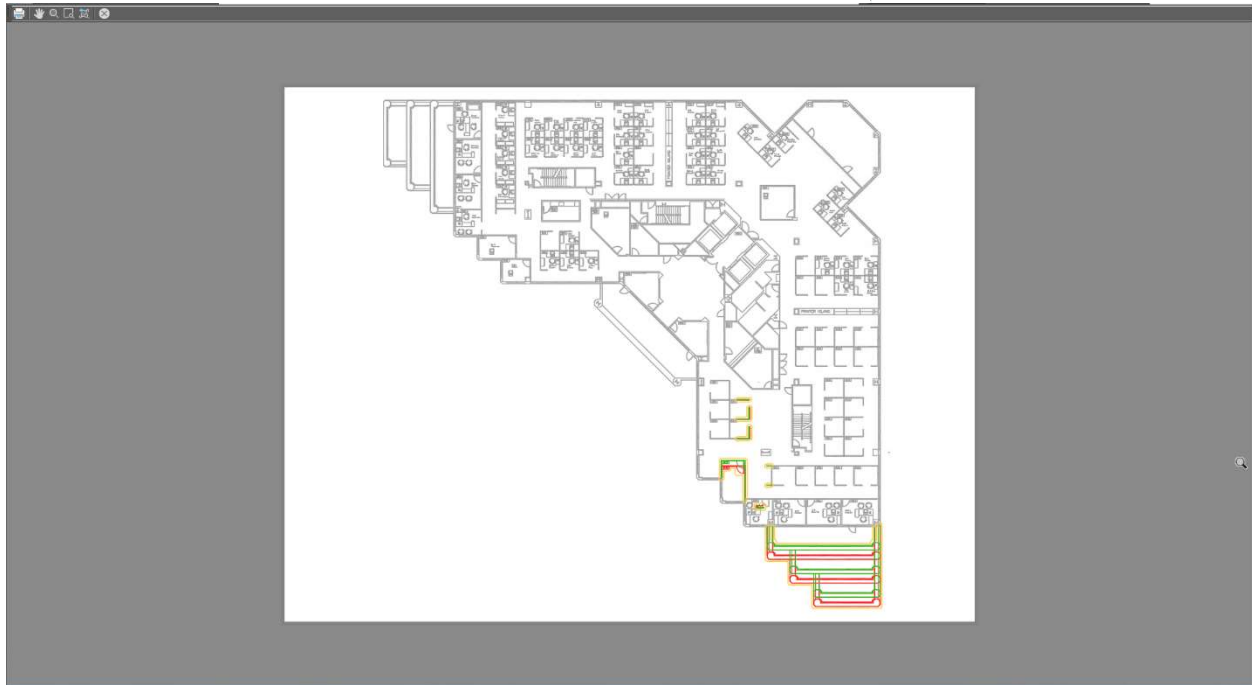
Save, Plot, and Shared View

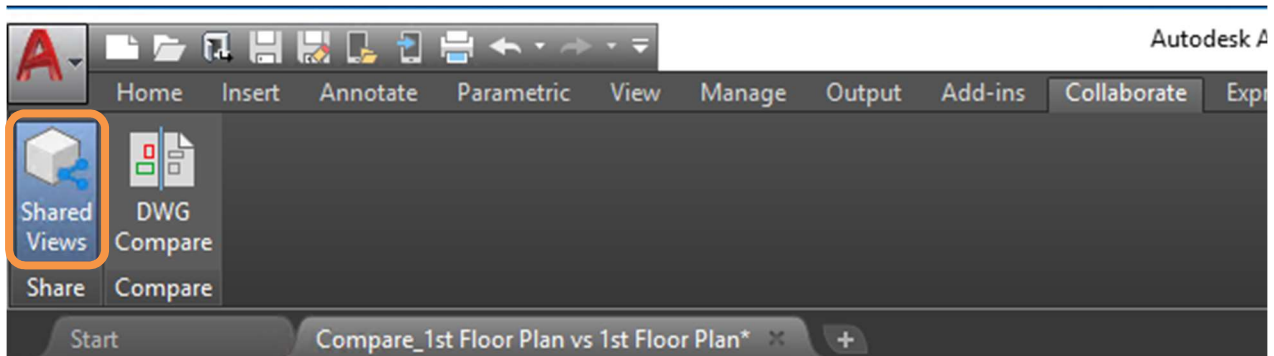There are a few ways to archive the compare result.

First, of cause, is to save the DWG file. When the compare result is generated, it is hosted in a new drawing with default file name *Compare_<DWG1> vs <DWG2>*. You can just save this DWG file. The saved compare result DWG can be opened in AutoCAD 2019 and still have compare functionalities. Prior AutoCAD releases can open and view the compare result DWG, but don't have access to compare functionalities.

You can also plot the compare result. In plot result, the three compare colors will override current color of object or in plot style.
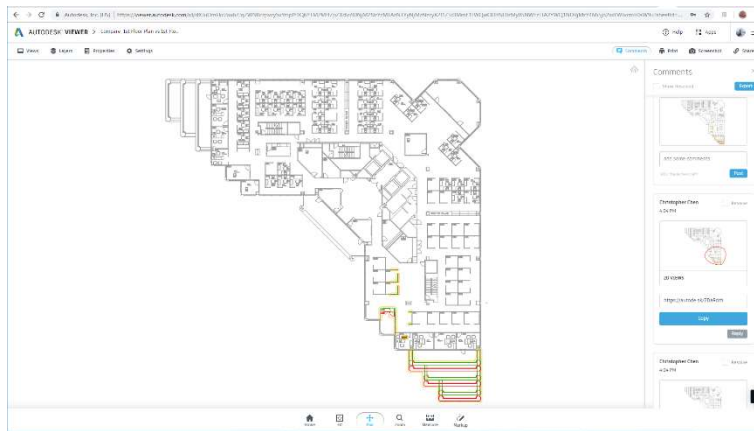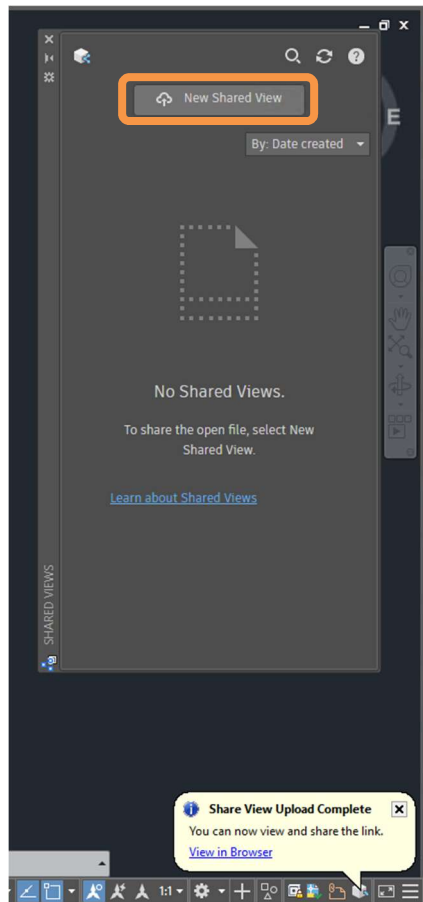
Another way to share the drawing view is through Shared Views. It can share an online visual representation of the view of the model or design to your colleberator.

When you create a shared view, a pop-up window provides the link to the shared view in Autodesk Viewer. This makes it easy for you to send the link to your collaborators. Your collaborators do not need an Autodesk product. Collaborators can review and post comments directly in Autodesk Viewer. The shared view expires by default after 30 days.

Note: Subscribe to AutoCAD or AutoCAD LT to upload a shared view.

Use DWG Compare in Drafting

DWG Compare can also be used to help your drafting. One of the way to do this in AutoCAD 2019 is by using NCOPY command.

- In compare result drawing, NCOPY the objects you want from the block
- Copy paste the objects into the drawing

DWG Compare Tips and Tricks

Now here are a few advanced tips and tricks for DWG Compare.

Comparing Basic Properties

To control whether a change in an object's property is identified as a change between two drawings revisions, you can set COMPAREPROPS system variable before starting the

comparison. By default, properties are not compared. COMPAREPROPS is a bitcode type variable. For example, if you want to compare color and layer, you can set it to 3.

Value	Description
0	Object property changes are not included in the drawing comparison
1	Color
2	Layer
4	Linetype
8	Linetype scale
16	Lineweight
32	Transparency
64	Thickness

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Compare Tolerance

COMPARETOLERANCE system variable specifies the tolerance used when comparing two drawing files — objects are considered identical if they are below or equal to a specified decimal point value.

Compare Limitation

The DWG Compare in AutoCAD 2019 has a few limitations.
- Compare colors are only available in 2D Visual Style

- You can compare 3D objects, but revision clouds are generation in the view the model is compared. Changing view direction will make revision clouds invalid.
- Objects in paper space are not participating in compare.

Compare Script

-COMPARE is the command line version of the compare command. It can be used if you want to use command by script, for example, use batch script to compare DWGs in two folders.