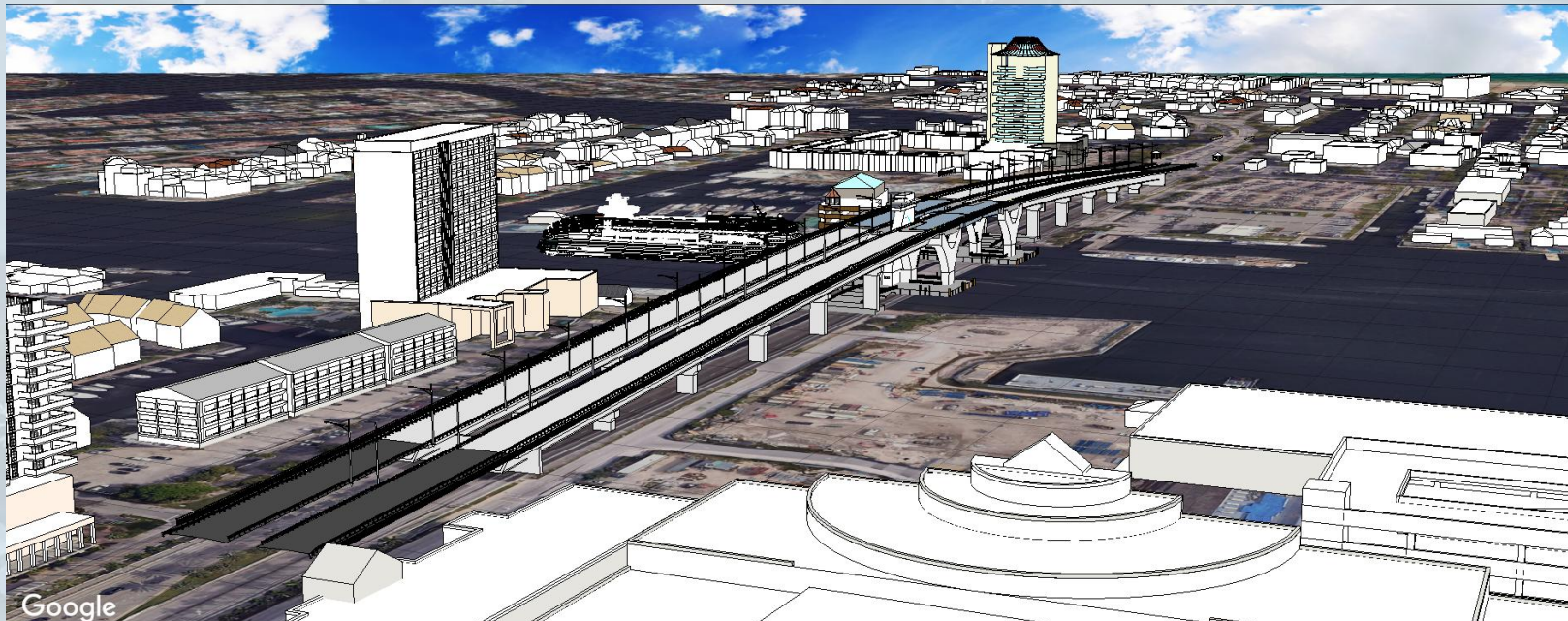




MicroStation 2025

Workshop What's new in MicroStation 2025





Objectives

In this workshop, you'll learn what's changed in the latest version of MicroStation.

Gain insight into how the latest improvements and features can help you in your daily workflow.

Stay up-to-date on the latest technological developments and understand how these features shape your professional field.



Agenda

- User onboarding improvements
- Geospatial context improvements
- Productivity improvements
- Interoperability
- AI automation



MicroStation 2025 - Powerful, Intelligent, Automated

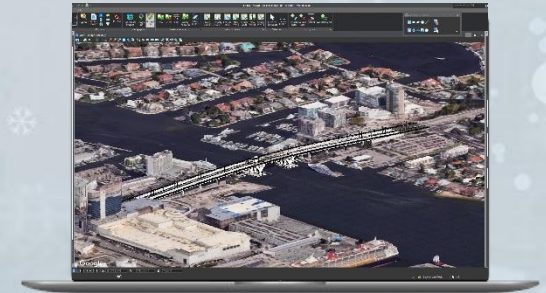
MicroStation 2025 continues the transformation of 2D and 3D modeling and design processes. Infrastructure professionals now enjoy superior geospatial context, automation and performance.



3D Geospatial Context
gives deeper understanding of
geographic information about
projects.



Python Assistant
makes it easier to create
automations and streamline
repetitive tasks.



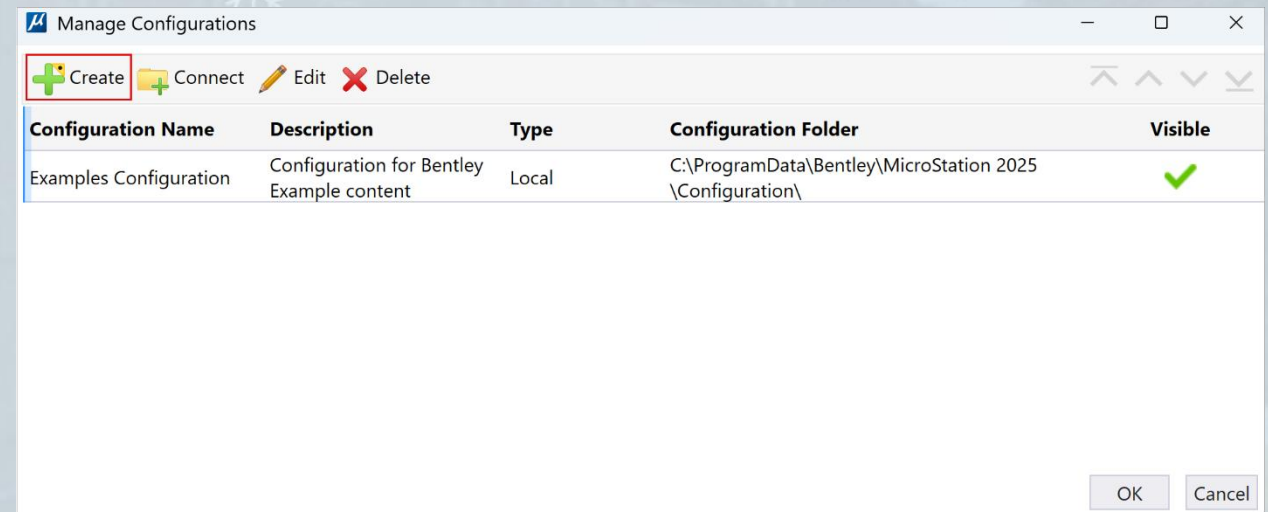
**Interoperability & Productivity
Enhancements**
mean greater design flexibility and
improved project deliverables.



Productivity Enhancements

Create a new configuration

- Ability to create a new configuration directly within the product.
No need for manual work.

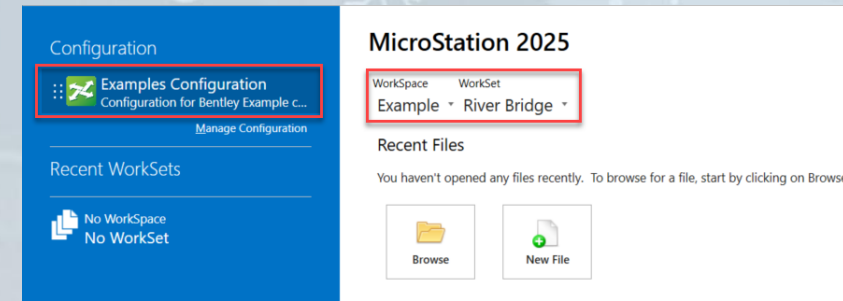


MicroStation out of the box

Configuration: Examples Configuration

WorkSpace: Example

WorkSets: MetroStation and River Bridge



Customization:

- Include your own configuration.xml:
- Hide button Manage Configuration:

MS_CONFIGURATIONXML_PATH

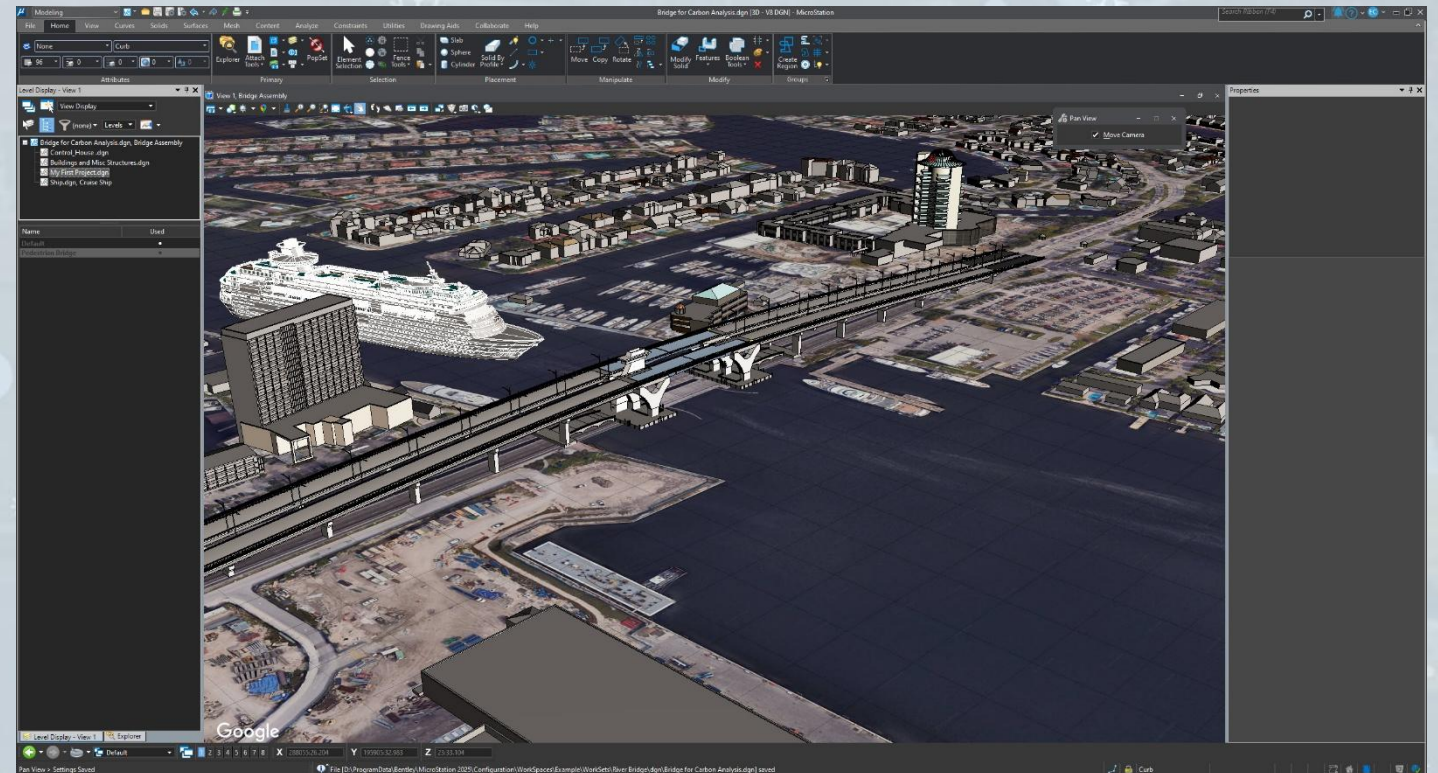
_USTN_RESTRICT_MANAGE_CONFIGURATION = 1



User Onboarding Enhancements

New dataset and material to improve user onboarding experience

- New Sample model delivered with the product

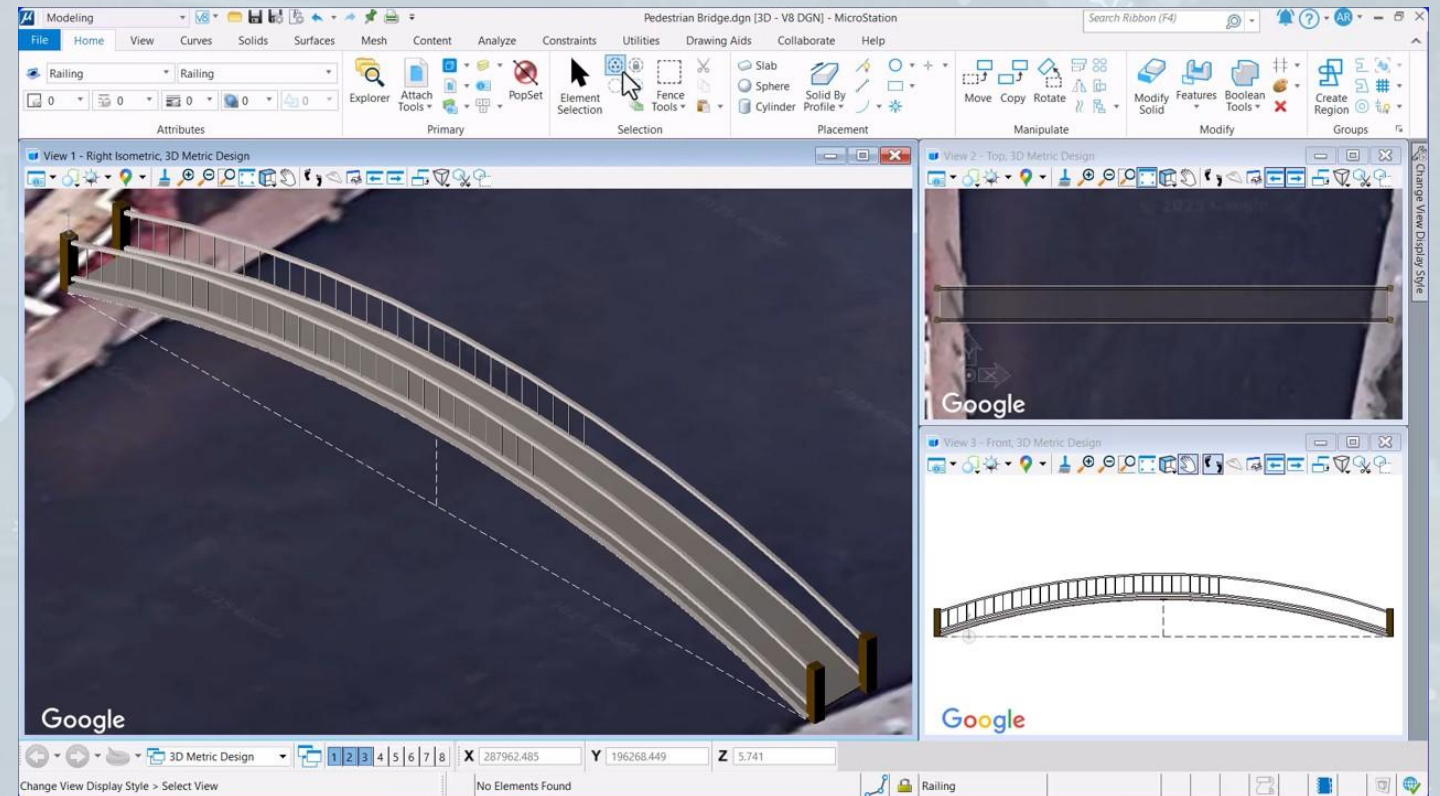




User Onboarding Enhancements

New dataset and material to improve user onboarding experience

- New [Onboarding Video Guide](#)





Hands-On-Exercise



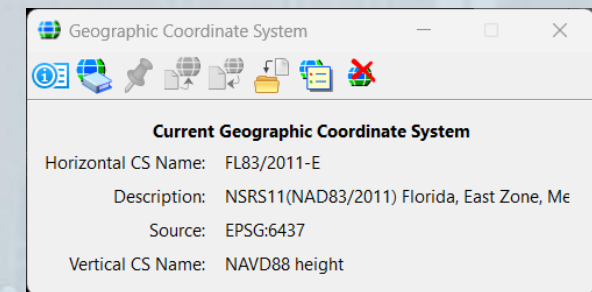
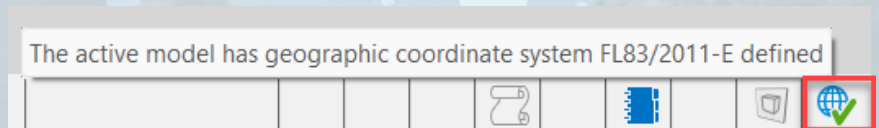
- Explore the new Sample model delivered with the product
 - Select Configuration *Examples Configuration*
 - Pick WorkSpace *Example* and WorkSet *River Bridge*
 - Open DGN file *Bridge - Master - Open First.dgn*
- Create a new configuration directly within the product
 - Click *Manage Configuration* and then *Create*
 - Type Configuration Name *TMC Winterschool*
 - Browse Configuration Folder and select *C:* and click OK
 - Create a new WorkSpace *Workshops* and a new WorkSet *MS_2025*
 - Click *New File* and create a new DGN file based on Seed 3D Metric Design.dgn
 - Open the new file in MicroStation



Geographic Coordinate Systems

GCS icon in status bar

- Status bar will show the assigned GCS to the active model and Geographic Coordinate System dialog can be open clicking in the icon

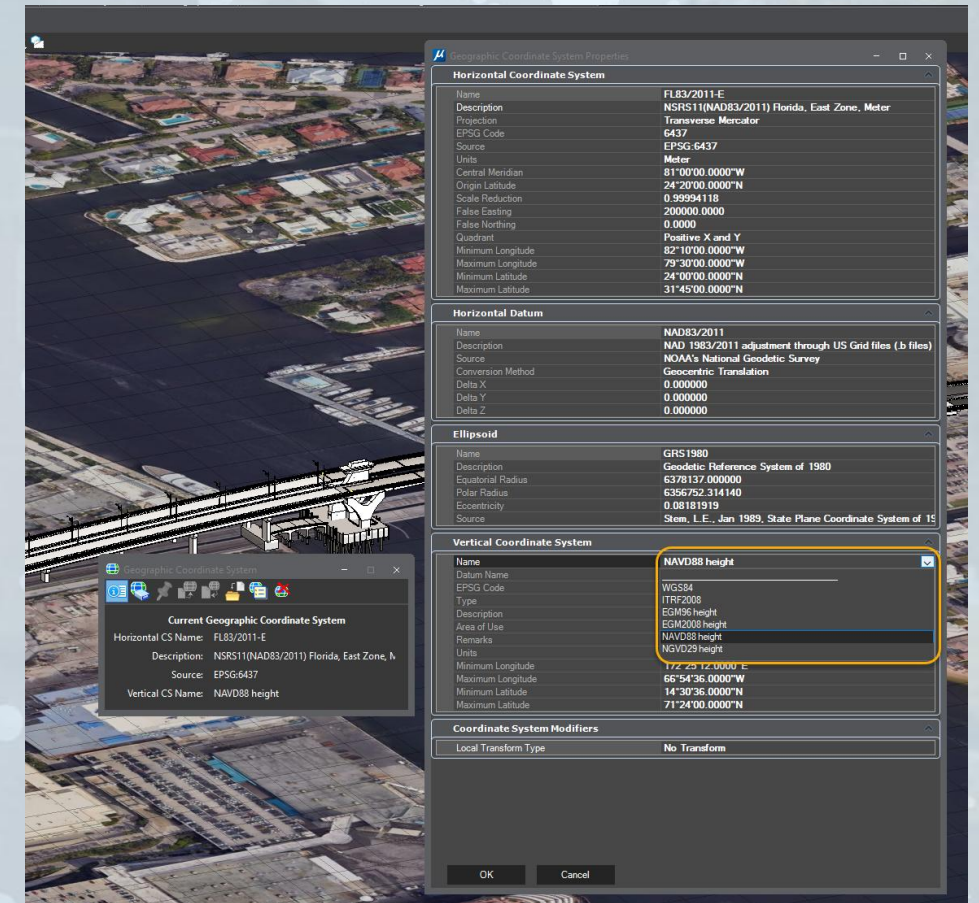




Geographic Coordinate Systems

Vertical Coordinate System

- Vertical Datum is renamed to Vertical Coordinate System
- A named Vertical Coordinate System can be selected after choosing a Horizontal Coordinate System





Geographic Coordinate Systems

Amersfoort2018-RDNew - GCS

- For Dutch users it is good to know that the new Dutch GCS is available in MS 2025.
- The GCS Amersfoort2018-RDNew is based on RDNAPTRANS2018.
- In this GCS Amersfoort2018-RDNew you can select a vertical coordinate system: NAP2018.

Geographic Coordinate System Properties

Horizontal Coordinate System

Name	Amersfoort2018-RDNew
Description	RD/Netherlands new based on RDNAPTRANS2018
Projection	Oblique Stereographic
EPSG Code	28992
Source	European Petroleum Survey Group
Units	Meter
Origin Longitude	05°23'15.5000"E
Origin Latitude	52°09'22.1780"N
Scale Reduction	0.99990790
False Easting	155000.0000
False Northing	463000.0000
Quadrant	Positive X and Y
Minimum Longitude	02°30'36.0000"E
Maximum Longitude	07°36'00.0000"E
Minimum Latitude	50°30'36.0000"N
Maximum Latitude	55°42'00.0000"N

Horizontal Datum

Name	Amersfoort2018
Description	RD based on RDNAPTRANS2018 NTv2 for Netherlands
Source	EPSG:6289 operation EPSG:9282 with 9281 fallback
Conversion Method	Grid Shift Files
Format	NTv2
Direction to WGS84 or equivalent	Direct
Grid File Name	./Netherlands/rdtrans2018.gsb

Ellipsoid

Name	BESSEL
Description	Bessel, 1841
Equatorial Radius	6377397.155000
Polar Radius	6356078.962820
Eccentricity	0.08169683
Source	US Defense Mapping Agency, TR-8350.2-B, December

Vertical Coordinate System

Name	NAP2018
Datum Name	NAP 2018 height to EVRF2019 height (1)
EPSG Code	5709
Type	GEOID
Description	Normaal Amsterdams Peil I height
Area of Use	Netherlands - onshore and offshore.
Remarks	Use has been extended from Netherlands onshore to N
Units	meter
Minimum Longitude	02°31'48.0000"E
Maximum Longitude	07°13'12.0000"E
Minimum Latitude	50°45'00.0000"N
Maximum Latitude	55°46'12.0000"N

Coordinate System Modifiers

Local Transform Type	No Transform
----------------------	--------------

OK Cancel



Hands-On-Exercise



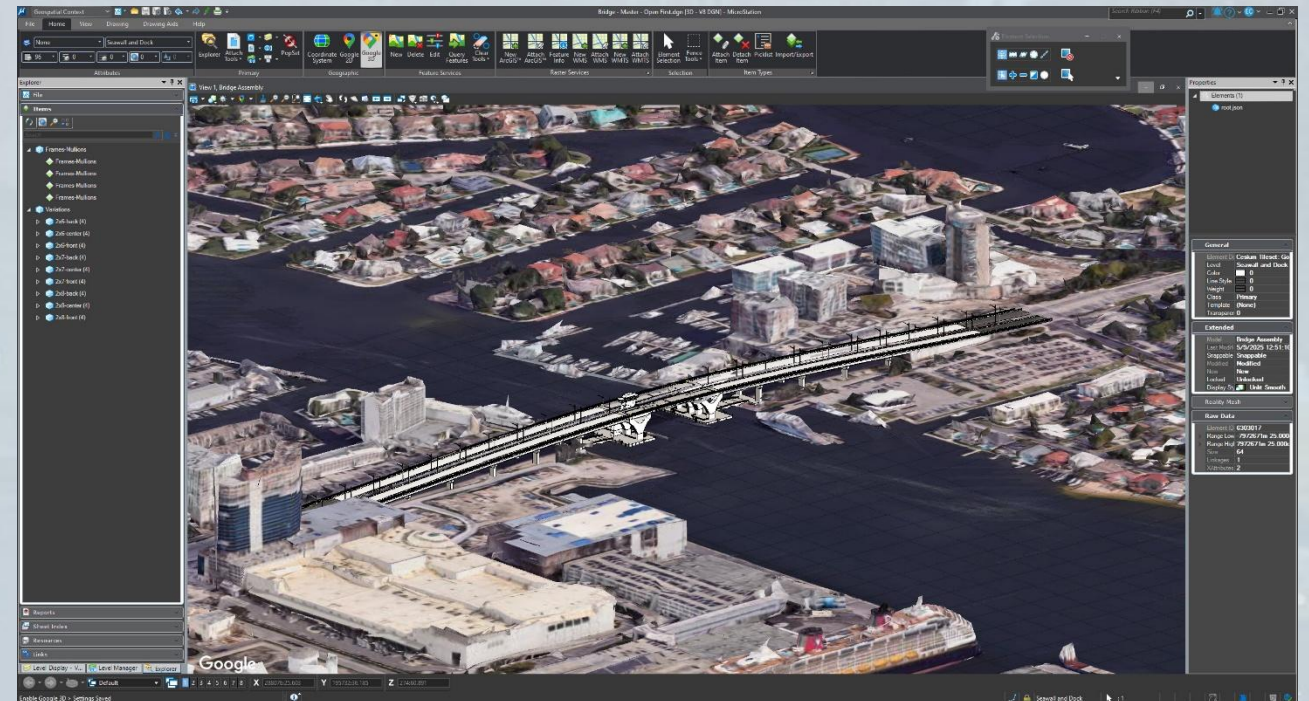
- Using a GCS
 - What GCS is attached to the new DGN file?
 - Open GCS dialog and attach GCS [Amersfoort2018-RDNew](#)
 - Select GCS as the active ACS
- Background Map
 - Open [View Attributes](#) and search Background Map options
 - Use [View Controls](#) to apply a background map
 - [Place a circle](#) with radius 10m at coordinates [4.8885,52.0860](#)
 - Fit view and zoom out to see where we are
 - Select Workflow Geospatial Context and activate Google 3D



Geospatial Context

Geospatial Context features and data improved to give a deeper understanding of geographic information about projects

- Geographical Coordinate Systems Enhancements
- Google 2D Maps replacing deprecated Microsoft Bing Maps
- Google Photorealistic 3D Tiles (Tech Preview) for a better geospatial experience
- 3D Tiles supported by Point Clouds and Reality Mesh attachment tools

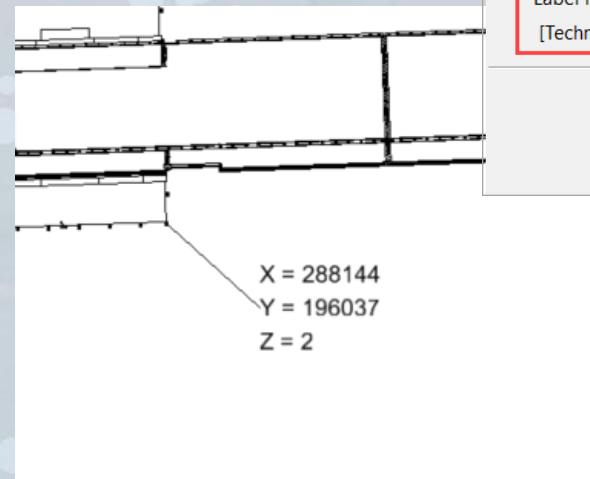




Productivity Enhancements

Label Point Coordinate tool

- Label Point with Leader checkbox in toolsettings window
- connect a line to the coordinate point you intend to label



Label Point Coordinate

Coordinate Option:

Order:

Units:

Accuracy:

Separator:

View:

X Prefix:

Y Prefix:

Z Prefix:

Label Point with Leader: ☒ [Technology Preview]

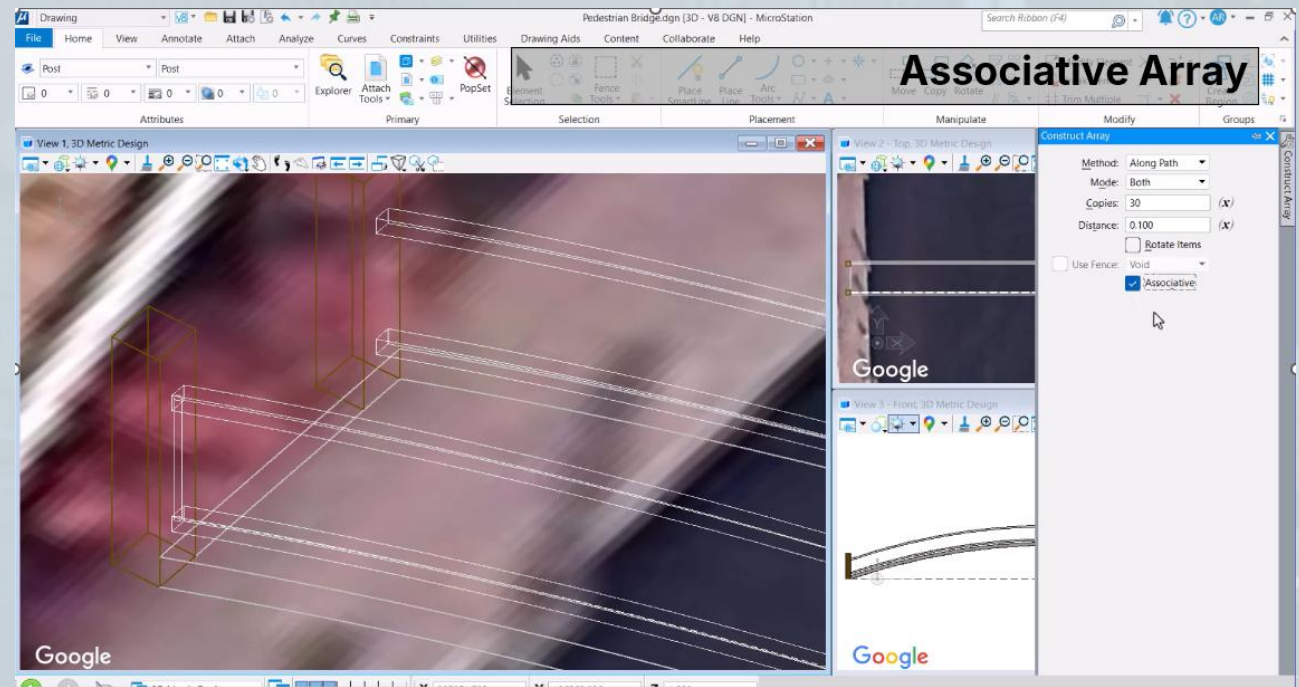
X=310
Y=-103
Z=0



Productivity Enhancements

Associative Array

- Associative Array creates an association between the child element(s) and the parent element in an array
- Manage array properties in Properties dialog
- Assign variables to array properties

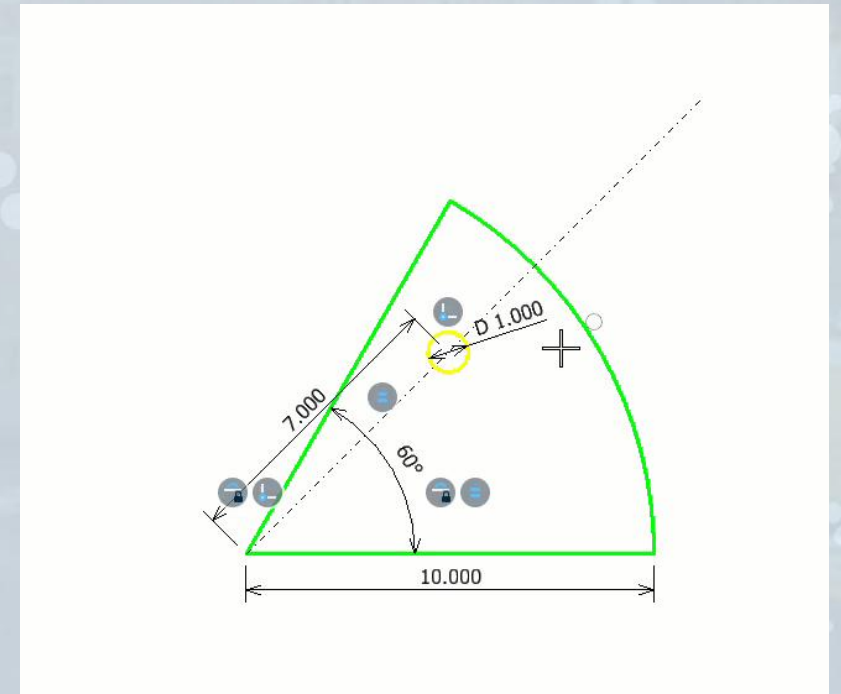




Productivity Enhancements

Equal Angle Constraint

- Equal Angle Constraint is applied to the elements
- Angles between elements will be equal, if one of the angles is modified, the other angle will update to match the new value



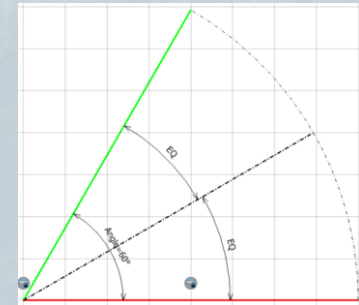
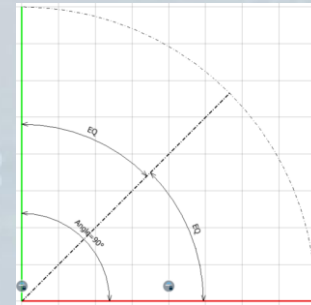
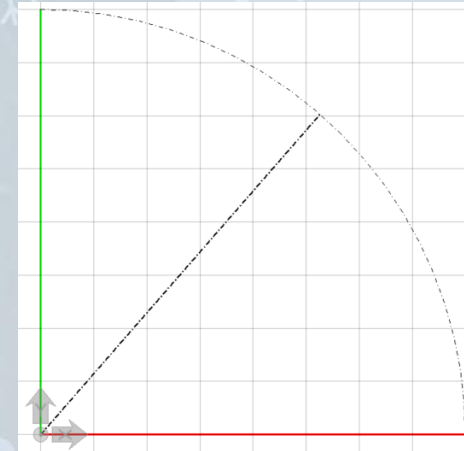
Hands-On-Exercise



- Label Point Coordinate
 - Start *Place Text* tool, set font to *Arial Narrow* and text height to *2m*
 - Start *Label Coordinates* tool and activate checkbox *Label Point with Leader*
 - Label coordinates for the circle in the center of Kasteel Woerden
- Associative Array
 - Draw a *SmartLine* along *Defensie-Eiland* road
 - *Copy* the circle to the startpoint of that SmartLine
 - Start *Construct Array* tool and select option *Along Path* from toolsetings
 - Set Mode to *Both*, Copies to *10* and Distance to *20*
 - Optional: create a *new variables* for Copies and Distance
 - Follow the prompt and select the circle and than the path to *create the array*
 - Use Element Selection tool to *modify the path*

Hands-On-Exercise

- Equal Angle Constraint
 - Draw 3 lines and an arc like shown here
 - Apply a Fixed constraint to the red line
 - Apply the Equal Angle Constraint between the 3 line elements
 - Rotate the green line and see what happens to the center line line
- Optional:
 - Apply variables to drive the angle between the red and green lines, and the sweep angle of the arc
 - Apply constraints to keep the red line horizontally

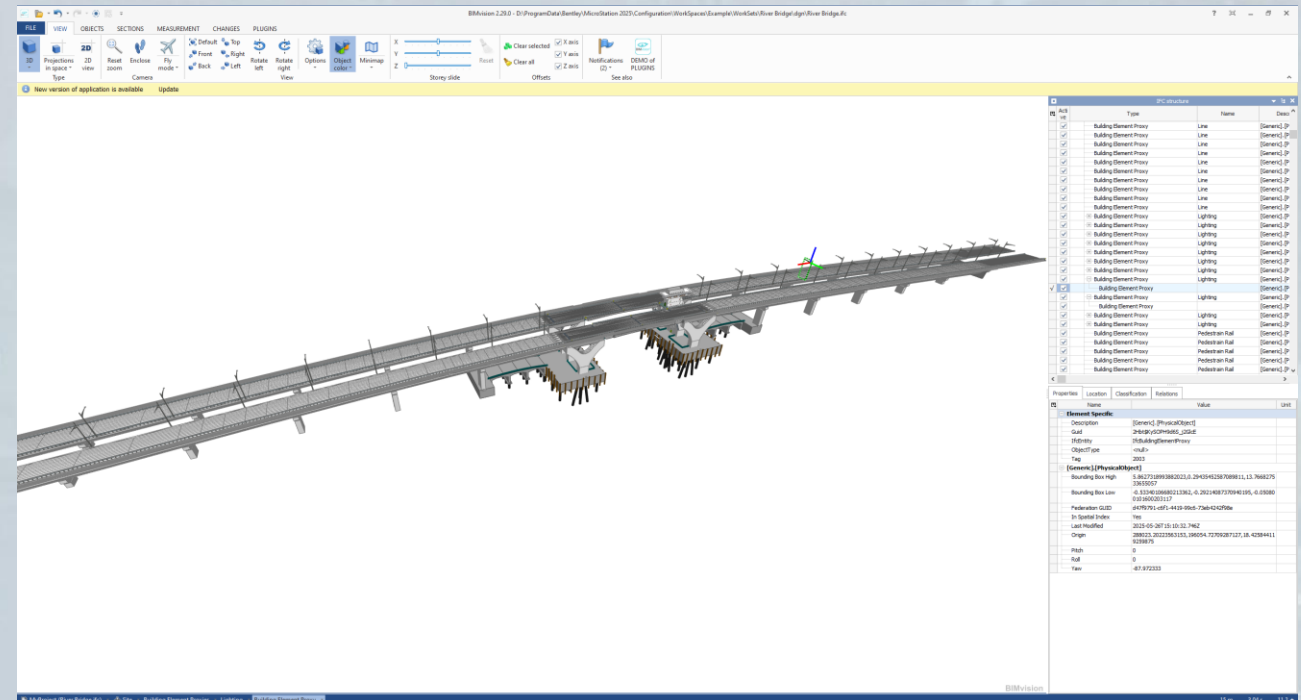




Interoperability

Improved interoperability as part of our commitment to offer the best way to manage user data and increase collaboration

- **RealDWG 2026 Support**
- Generate **IFC files** directly from MicroStation, allowing CAD models to be part of the OpenBIM workflows
- Share designs into **ESRI Geodatabase file**

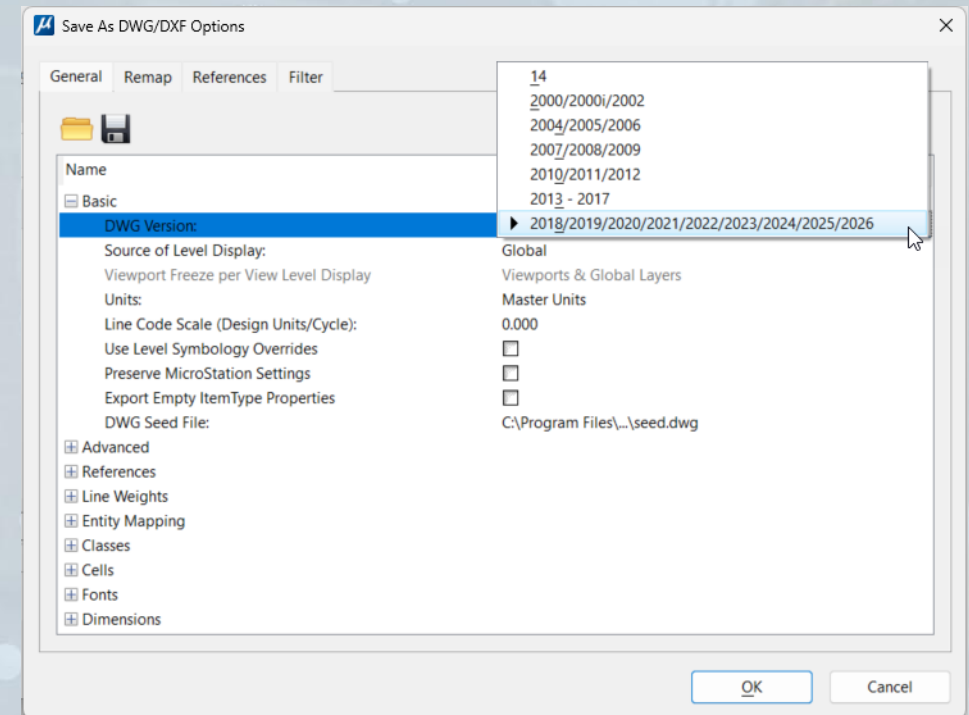
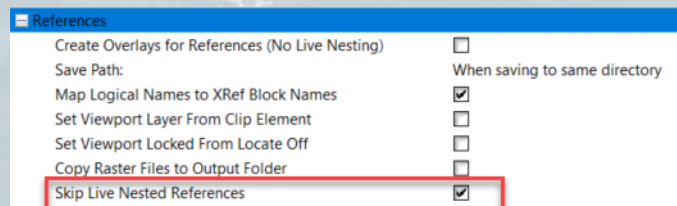




Interoperability

RealDWG 2026 Support

- Support of RealDWG 2026, the latest RealDWG engine for best compatibility
- Custom objects and object enablers are also supported
- In the References section, you can now use the Skip Live Nested References setting

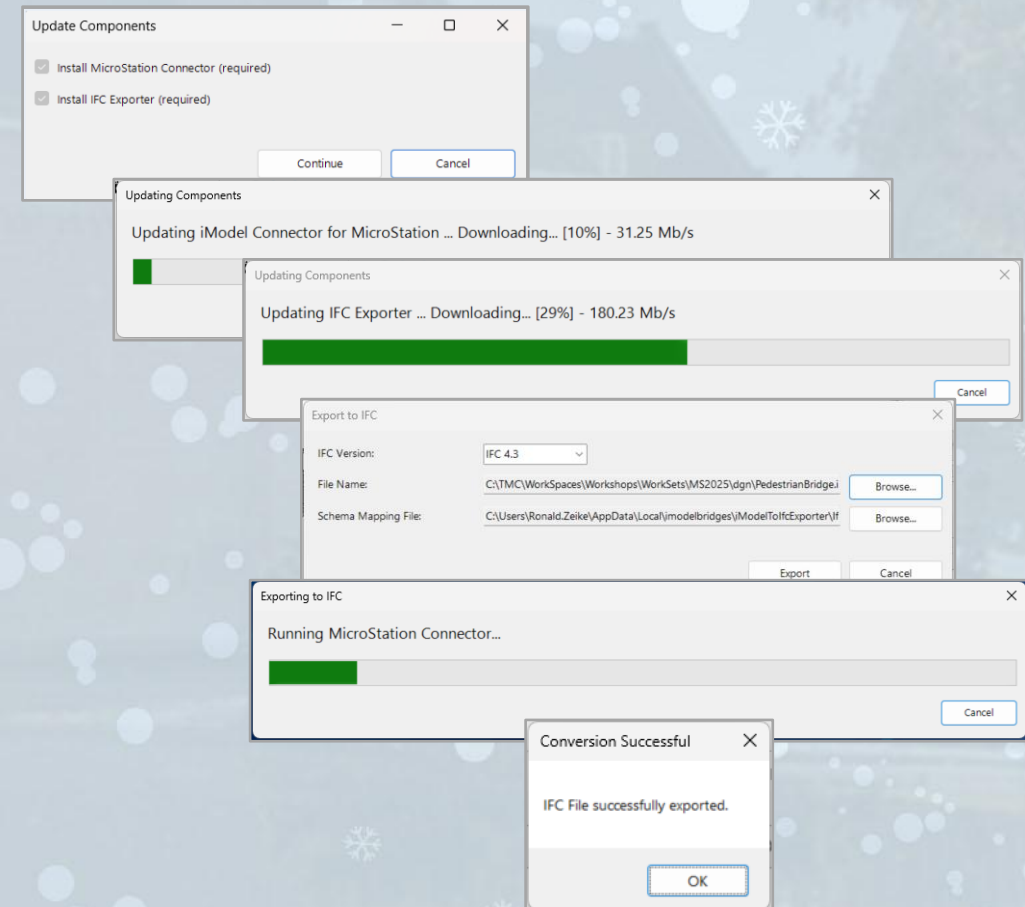
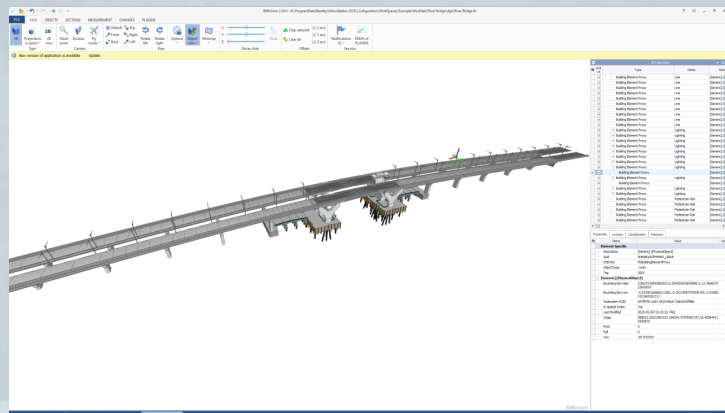




Interoperability

Generate IFC files

- Generate IFC files directly from MicroStation, allowing CAD models to be part of the OpenBIM workflows





Interoperability

ESRI Geodatabase file

- Import designs from ESRI Geodatabase file
- Share designs into ESRI Geodatabase file

Import File Data

- Common File Types
- Exchange File Types
- 3D Modeling File Types
- Geospatial File Types**

Geospatial File Types

- Shapefile (*.shp) Esri interchange format stores both geometry and attributes.
- File Geodatabase (*.gdb)** Esri file geodatabase format.

Export File Data

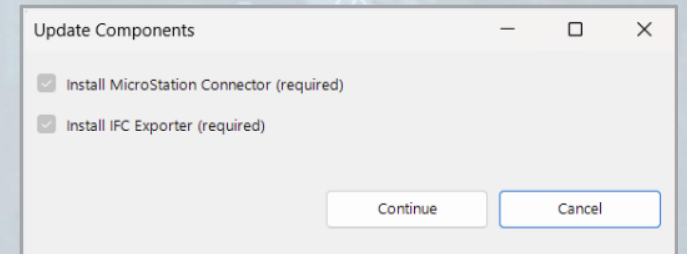
- Common File Types
- Exchange File Types
- 3D Modeling File Types
- Visualization File Types
- Geospatial File Types**

Geospatial File Types

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Hands-On-Exercise

- Generate IFC files
 - Select Configuration *Examples Configuration*
 - Pick WorkSpace *Example* and WorkSet *River Bridge*
 - Open DGN file *Bridge - Master - Open First.dgn*
 - From File tab (backstage) select *Export > Exchange File Types > IFC*
 - DO NOT UPDATE components, only if MS asks to install them
 - Select IFC version 4.3
 - Browse File Name and select/create a folder on your local hard drive
 - Click *Export*
- Create a new 3D DGN file and attach GCS *FL83/2011-E*
- *Attach IFC file* as a reference

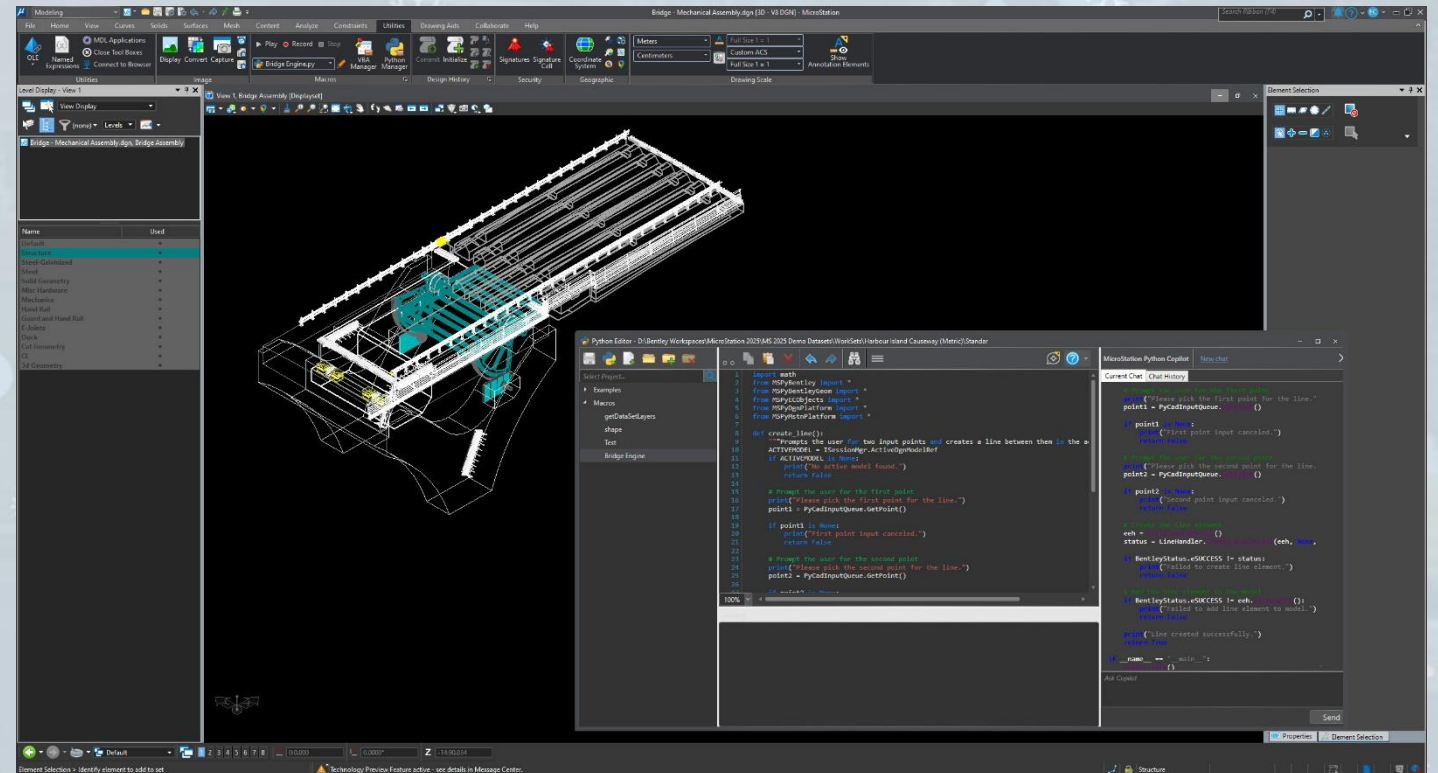




AI Automation

Use Python in MicroStation with a scripting interface or via Python Assistant

- Python gives users unlimited ability to create whatever they want in MicroStation
- Python Assistant (Tech Preview) to extend capabilities beyond MicroStation core features
- Increase the number and speed of tasks completed and maximize profitability
- Use Python Assistant to create, customize and automate design workflows to improve your daily tasks





Hands-On-Exercise



- Python API
 - Open file *Bridge - Master - Open First.dgn*
 - Select *Edit Feature Services* – no connection
- Open Python Editor
- Expand Examples > MicroStation > GeospatialContext > GeospatialContextConnection
- Create new Python project *FSConnection*
- Copy content of GeospatialContextConnection example to FSConnection
- Change URL to https://ca.dep.state.fl.us/arcgis/rest/services/OpenData/DWM_STCM/MapServer/5
- Run FSConnection
- Query features *Storage Tank Contamination Monitoring* for Active View
- Open Manage Templates and review Cell Settings > *Fixed Size option*



Hands-On-Exercise

- Python Assistant
 - Create a new DGN file
 - Open Python Editor
 - Create new Python project *AttachGCS*
- Ask Python Assistant using this prompt:
“Add a Geographic Coordinate System (GCS) to the active DGN model for the EPSG code 6439”
- Copy content from Python Assistant to AttachGCS
- Run AttachGCS and look at GCS dialog





MicroStation 2025 - Powerful, Intelligent, Automated

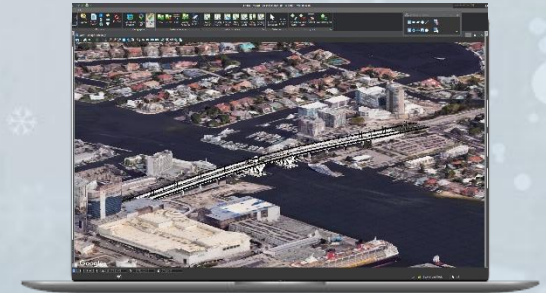
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