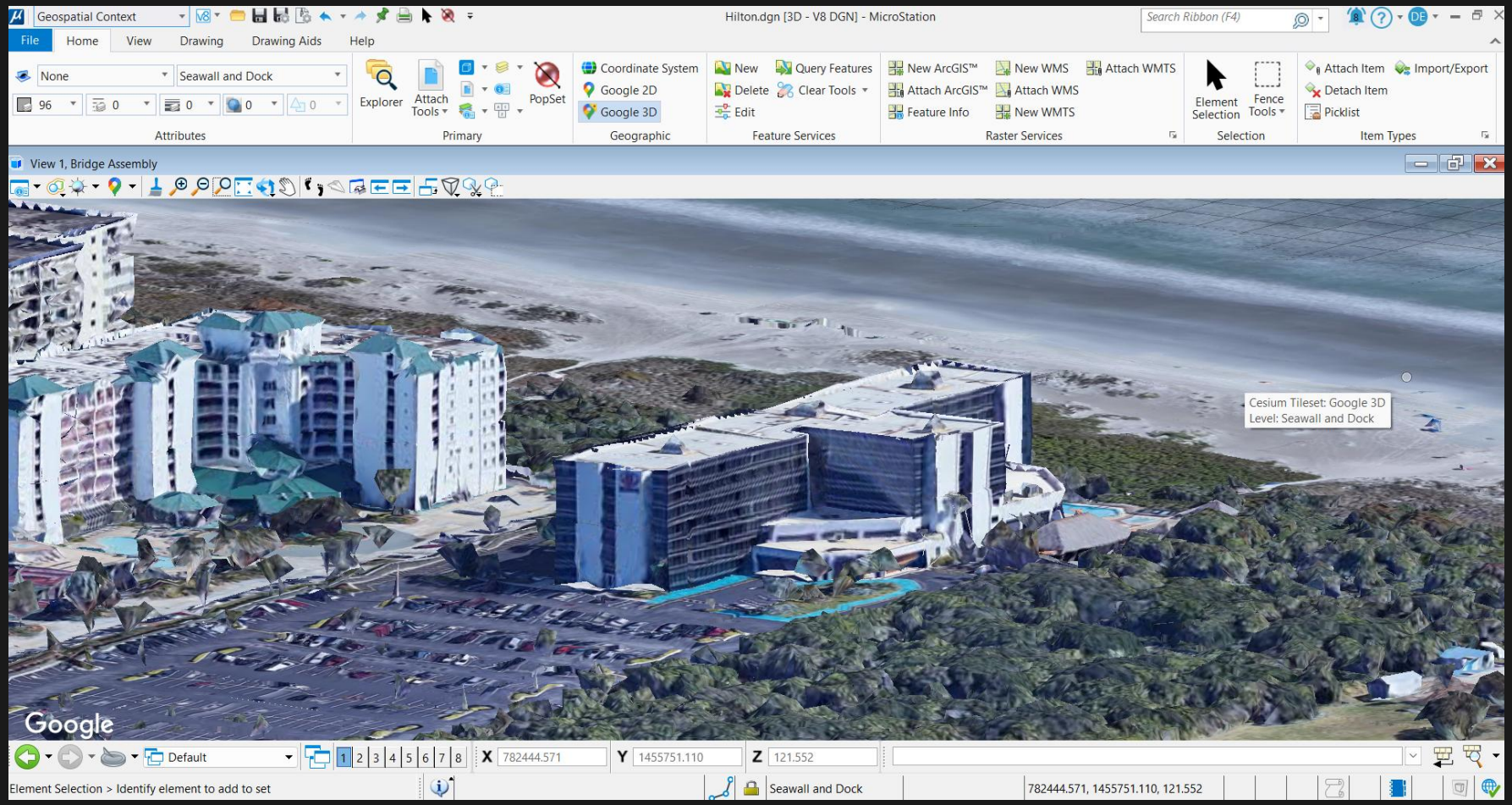
Geospatial 101: Design in context



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MicroStation’s Geospatial capabilities

Dan Eng - Product Expert

Tamicca Sellars – MicroStation Product Manager

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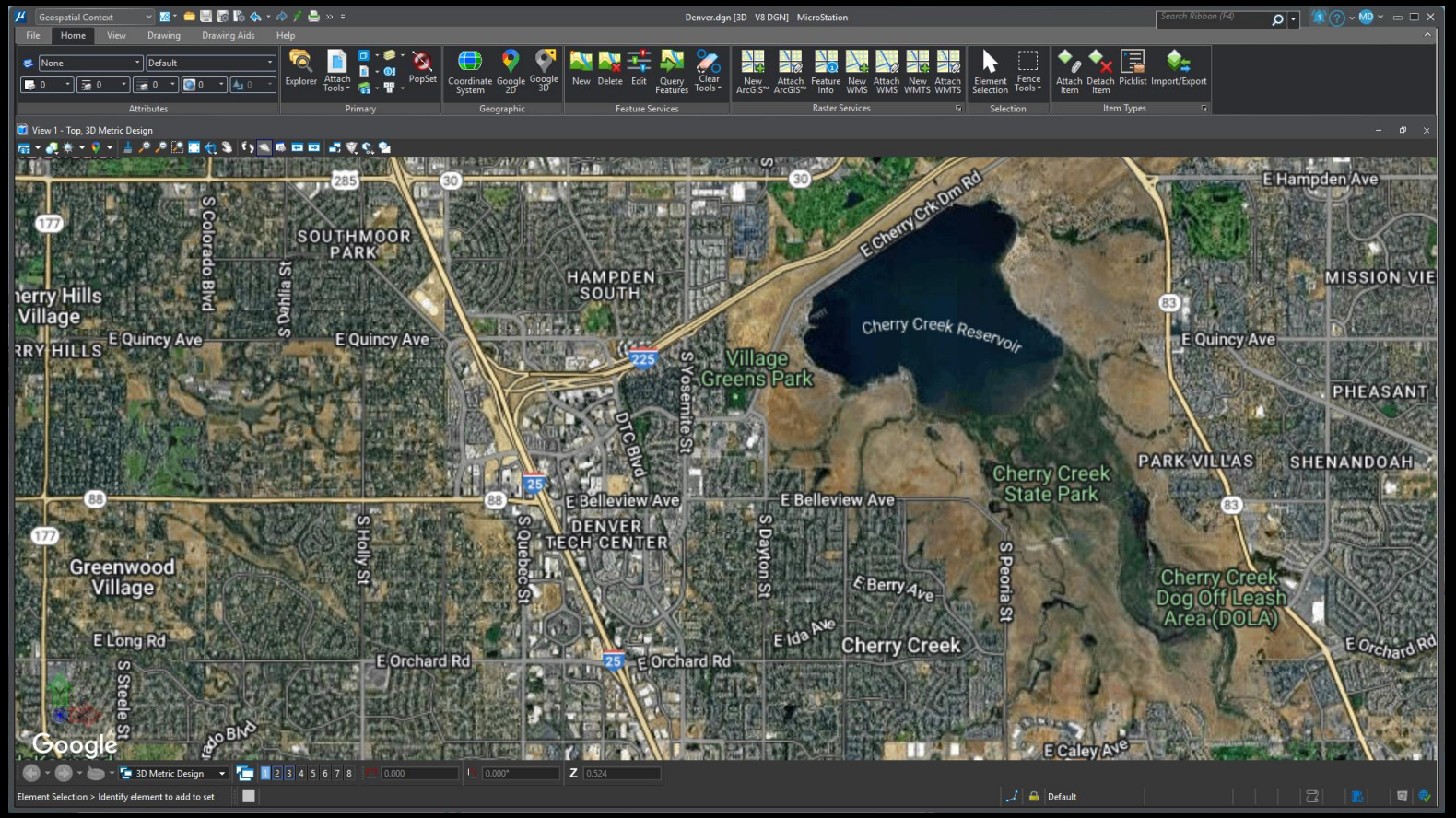
Presenters

Tamicca Sellars
MicroStation Product Manager

Dan Eng
MicroStation Product Expert

Agenda

- Introduction: What is Geospatial
- Why designing in context?
- Importance of Coordinate Systems
- What’s new in MicroStation 2025
- Q/A We want to hear from you



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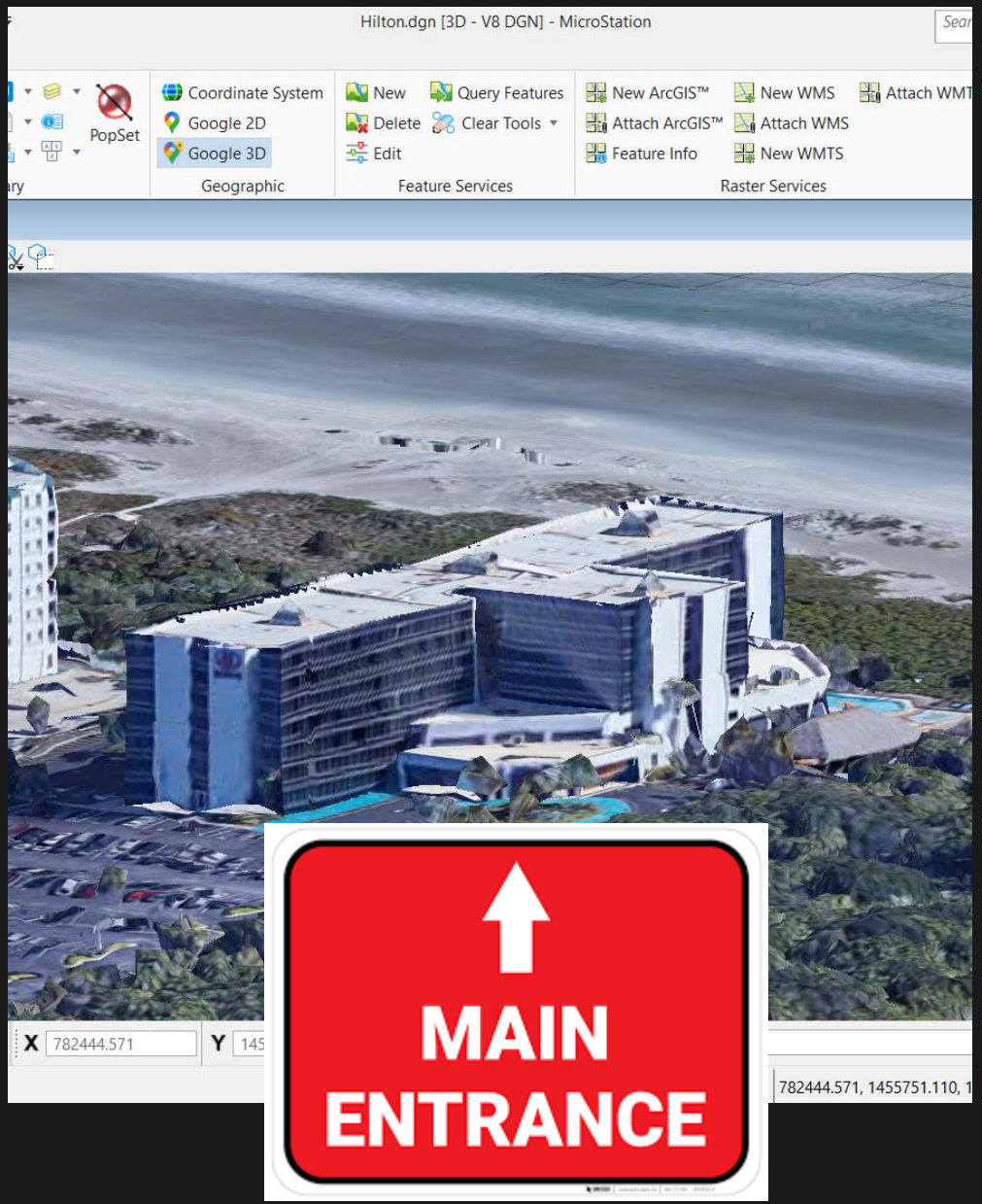
We are here!

FLUG

40TH ANNIVERSARY

FLORIDA LOCAL USERS' GROUP



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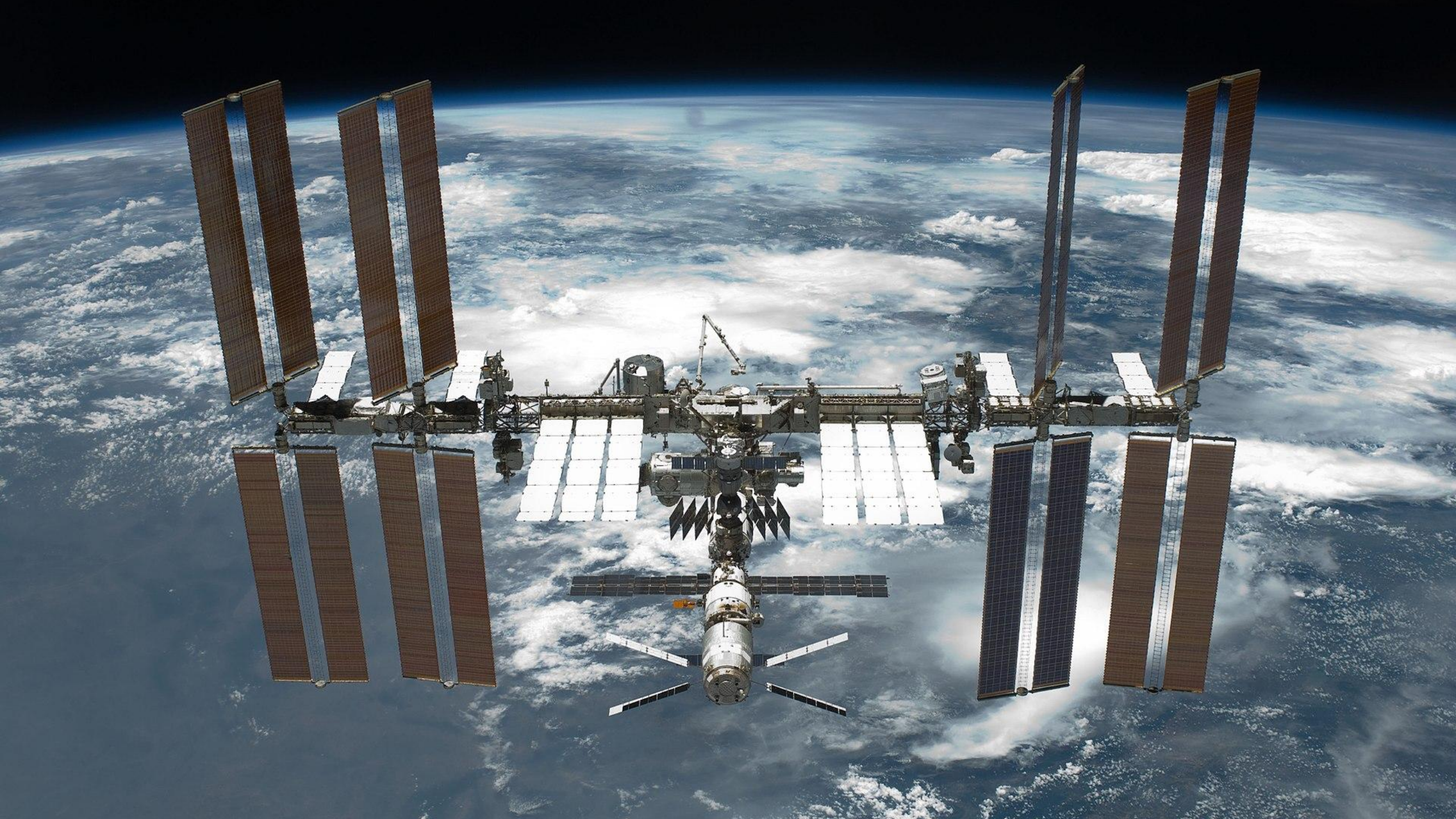

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Designing without understanding your surroundings is like working with blinders on!

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Why Designing in Context with Geospatial data?

Bring informed contextual data to your designs

Expand the depth and breadth for evaluating your file and the environment around you

Feature rich data to help communicate your design

Evaluate your design with its surroundings

Aid with Informed decisions

Insights into you location

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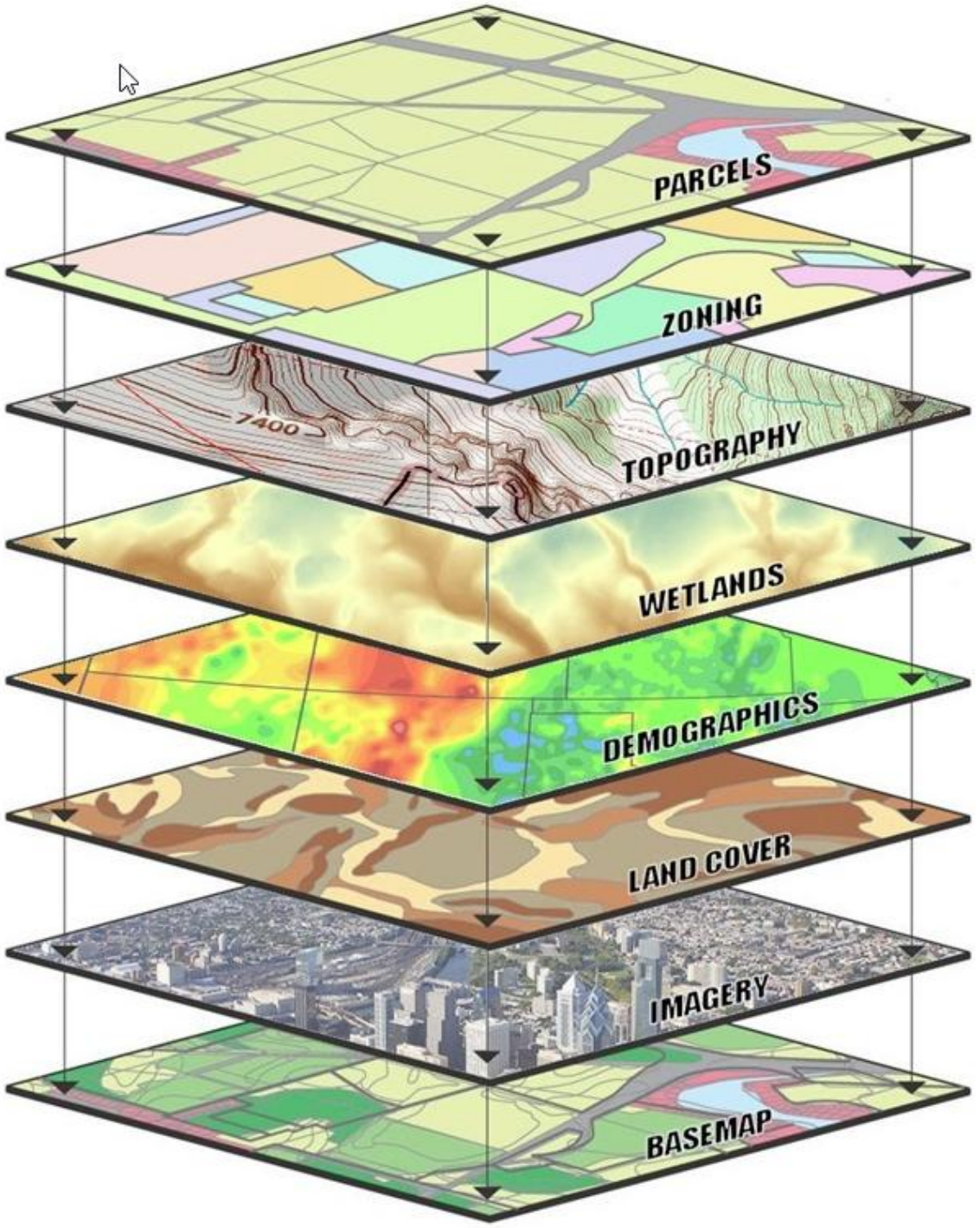
What is Geospatial Data?

Information that includes geographic component (objects, structures, event or real-world phenomena), associated with a location on the Earth.

It is also called geospatial data, georeferenced data, as well as geodata or context data.


3M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ZONING
7400
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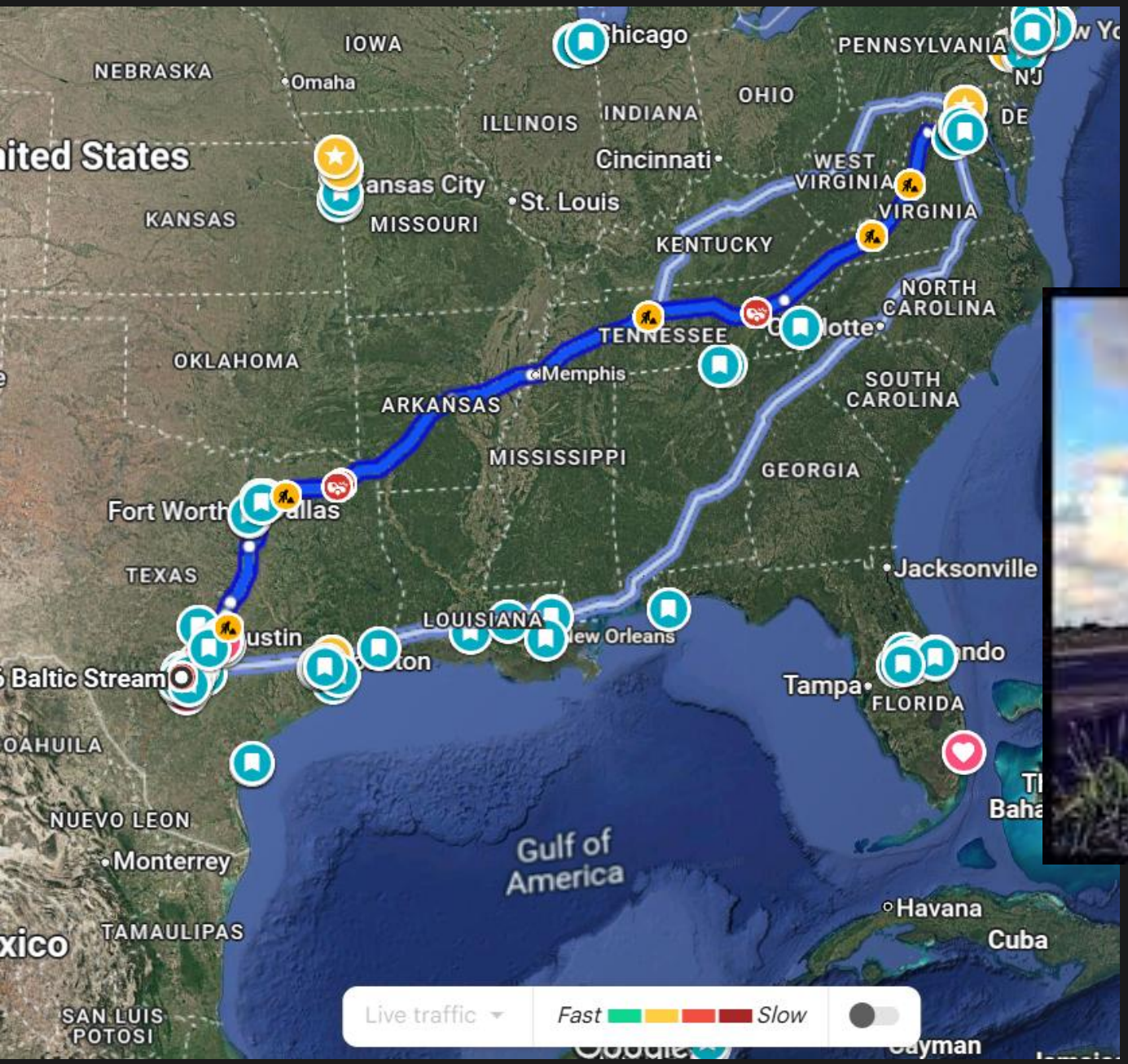
WETLANDS
DEMOGRAPHICS
LAND COVER
IMAGERY
BASEMAP

Who should use Geospatial tools?

Anyone who:

- wants to bring greater contextual information to their Infrastructure model
- wants to communicate their design better
- wants to expand their understanding of their design and the impact on the surrounding environment
- needs to plan based on historical geographical data



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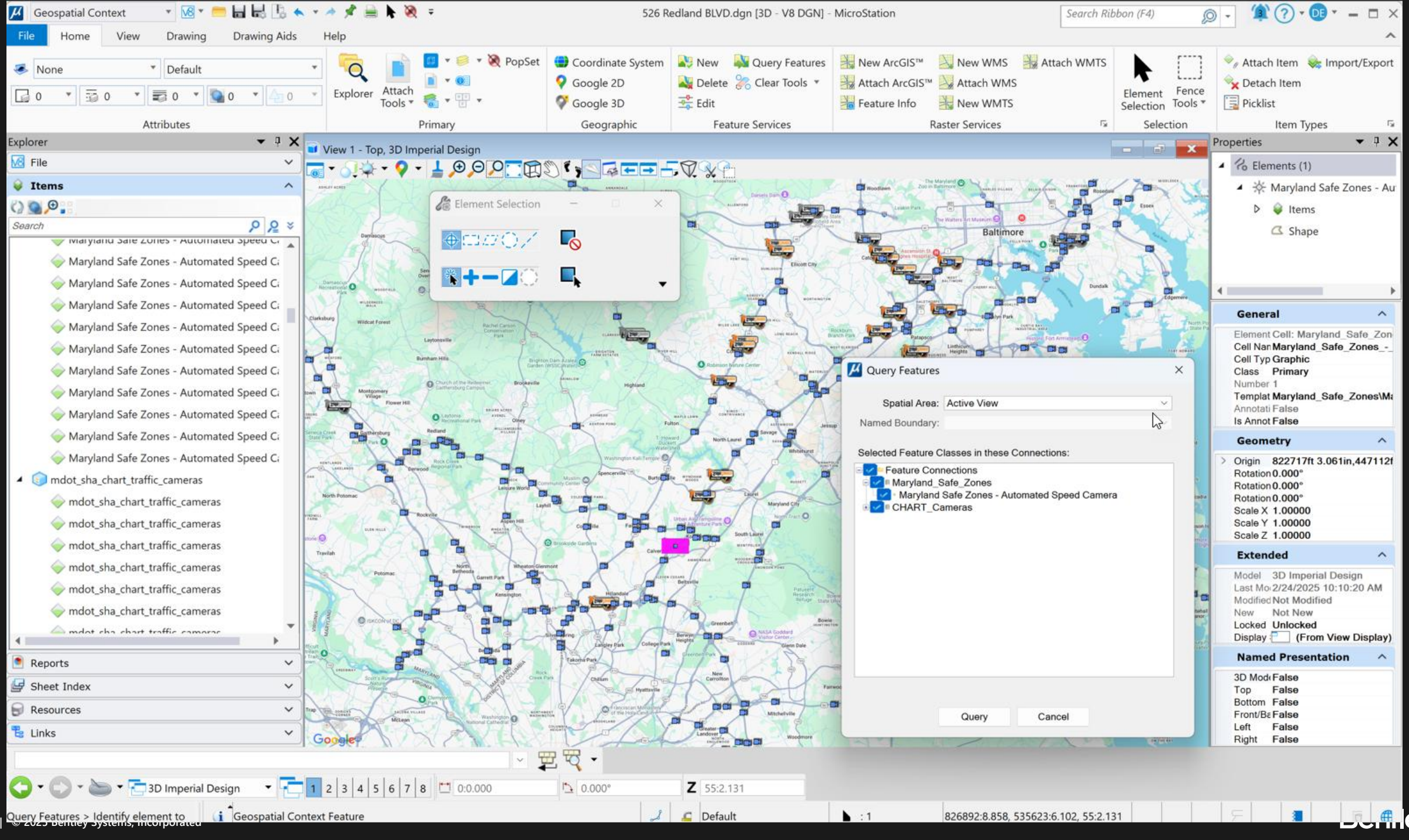
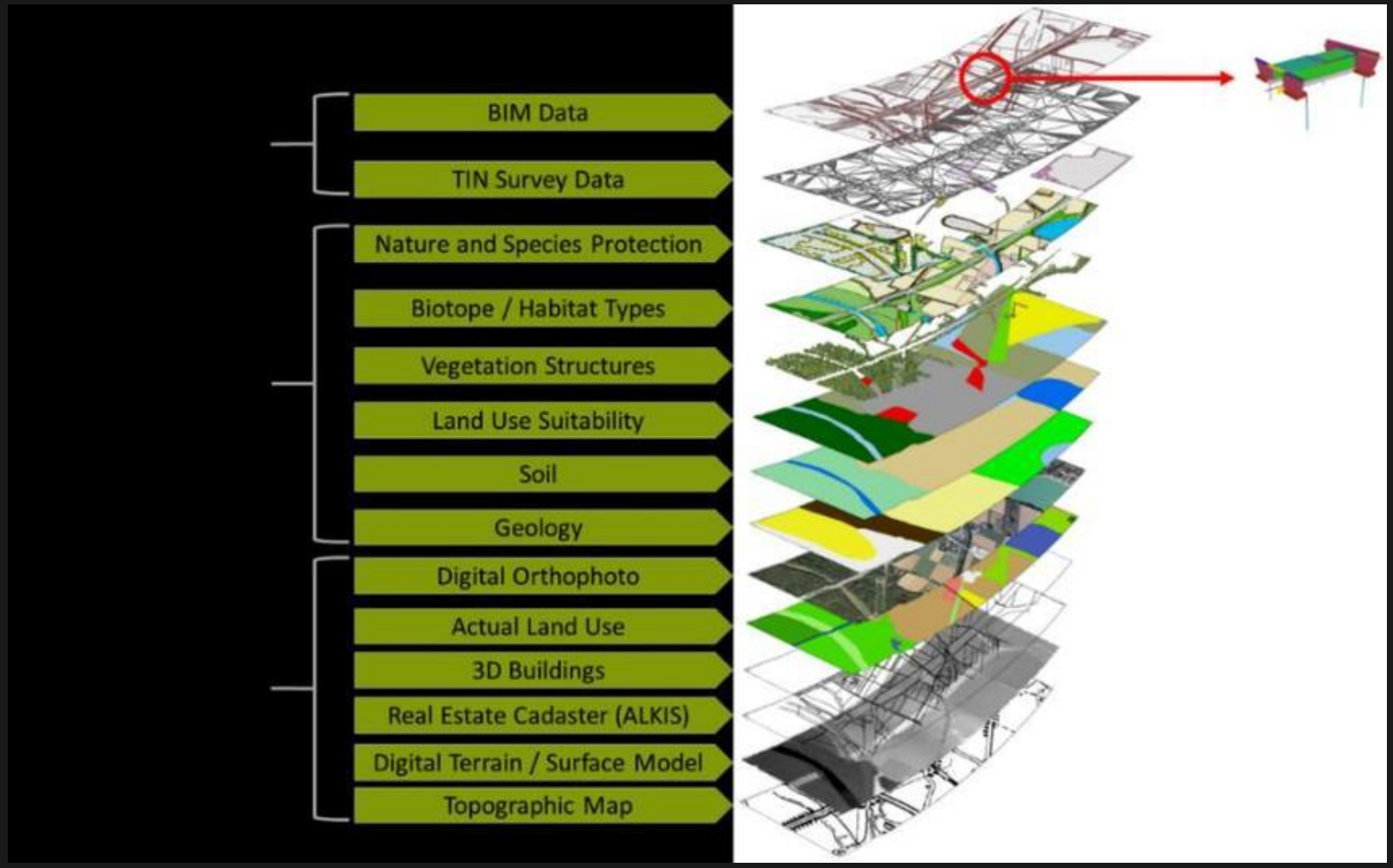


Importance of Coordinate Systems

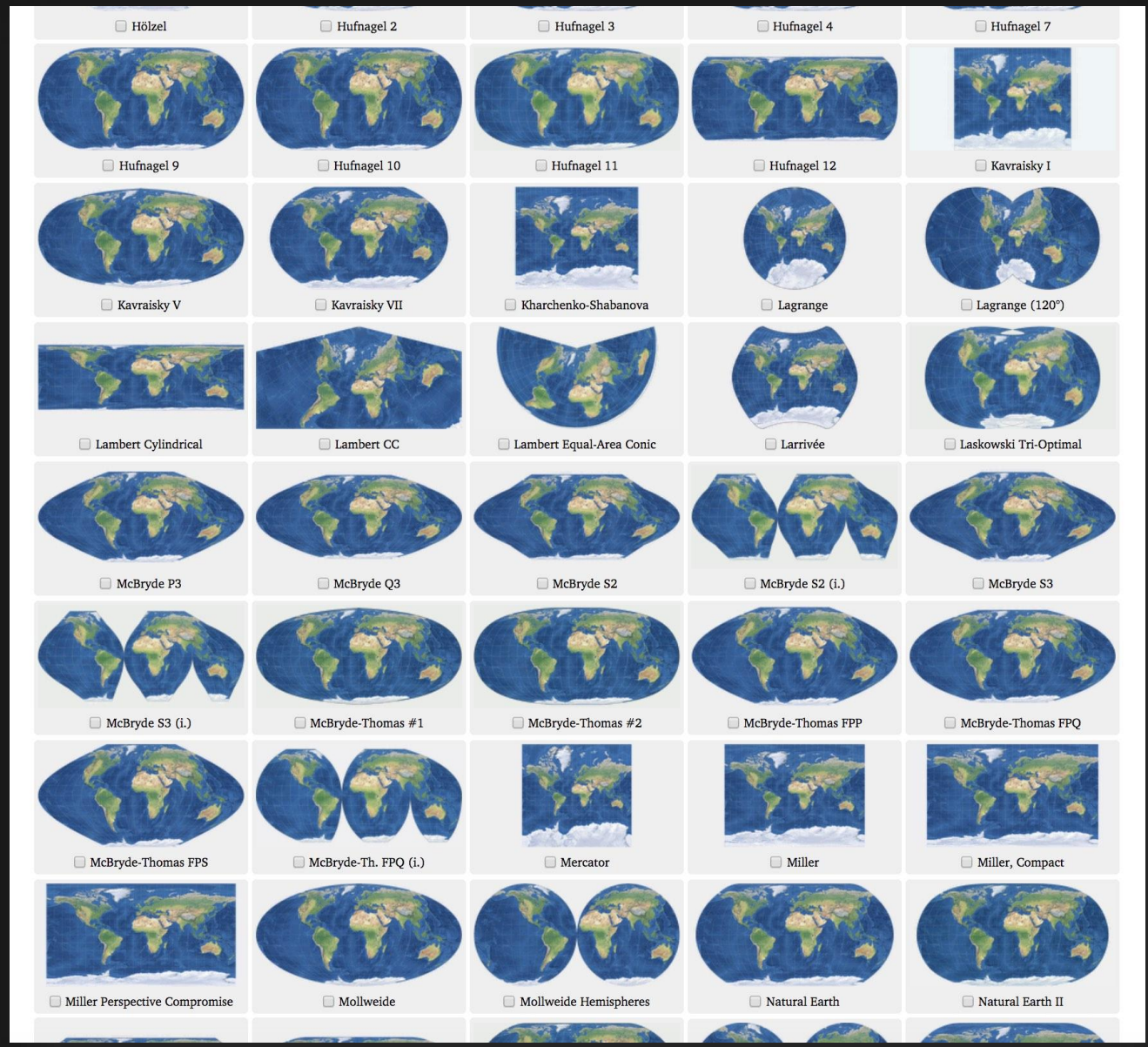
Design in Context: Importance of Coordinate Systems



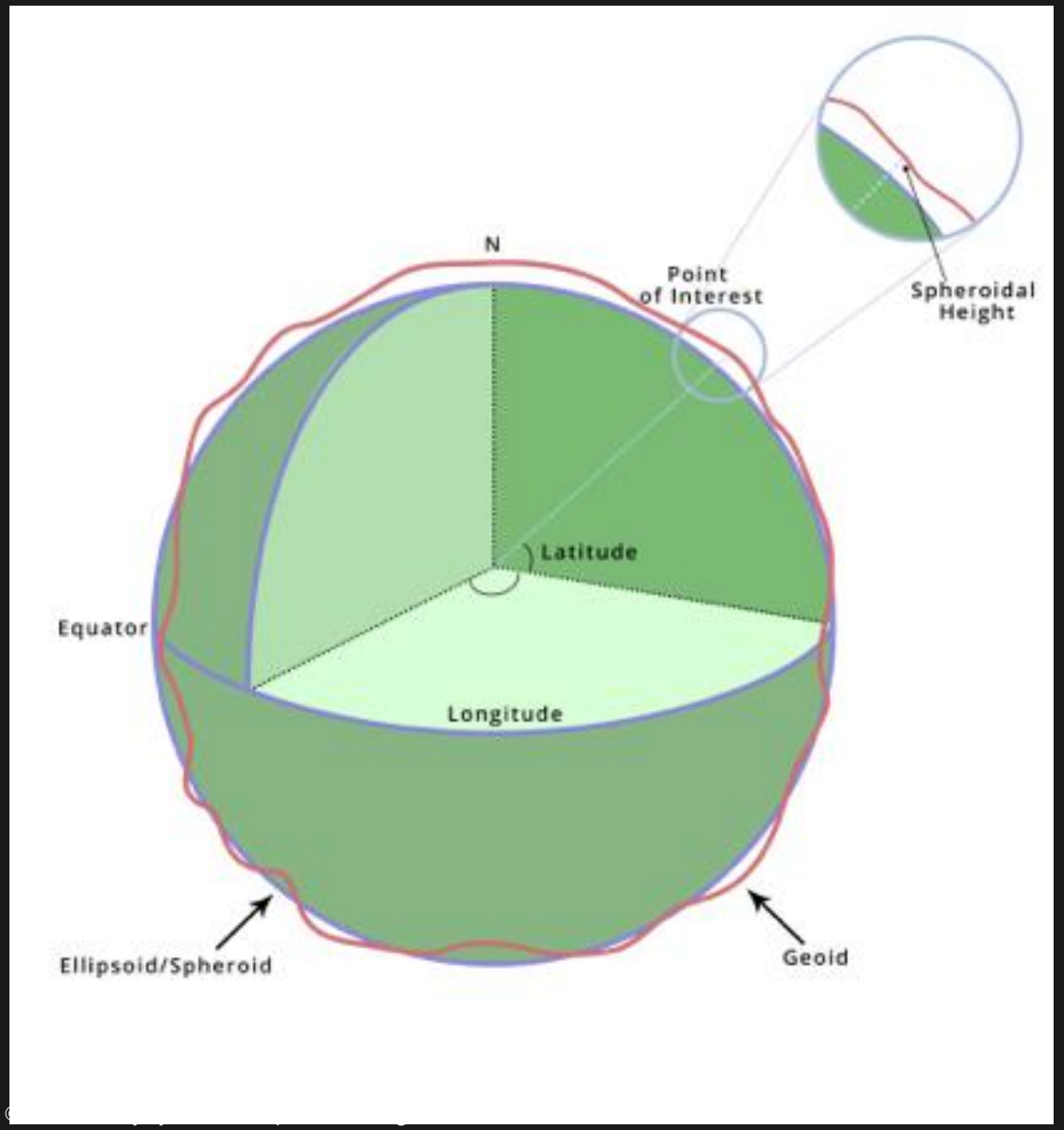
Combining data from various sources, leveraging coordinate systems, units, file formats, is the path to proper design in context and create digital twin.

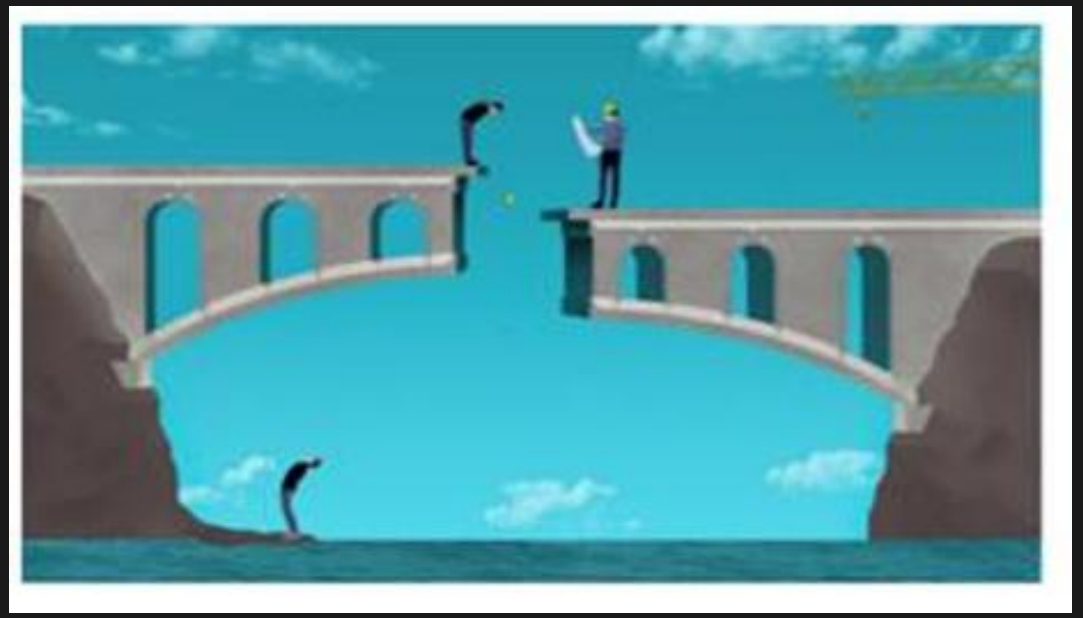
The Earth is not flat!

Projection methods: none is perfect



Importance of Vertical Datum





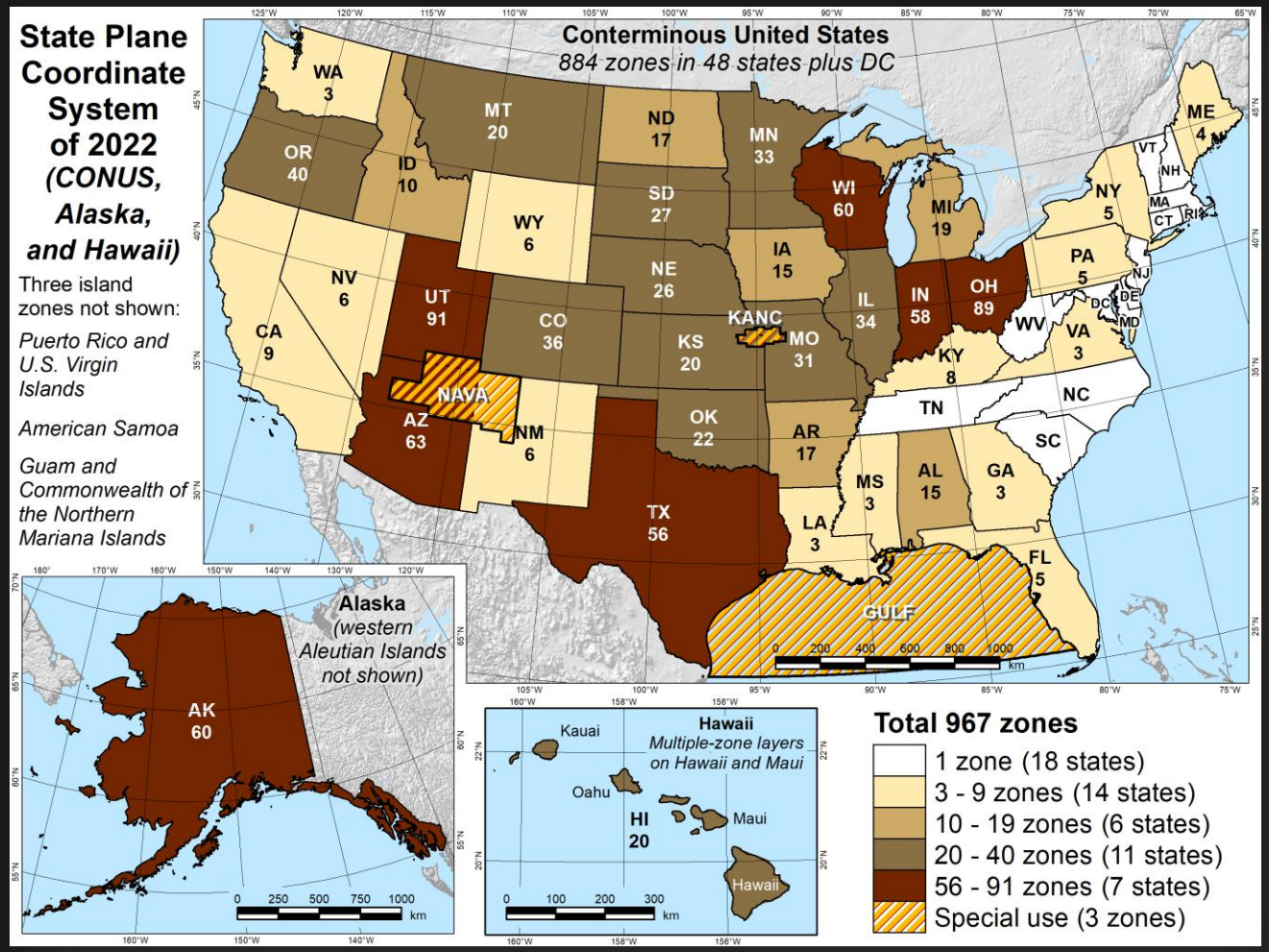
A datum is a reference system that defines the shape of the Earth (using an ellipsoid) and the origin and orientation of latitude and longitude lines. Essentially, it provides a framework for accurately measuring locations and elevations on the Earth's surface.

You think it is done? It's not!

National Geodetic Survey

Positioning America for the Future

The National Geodetic Survey (NGS) is in the process of modernizing the National Spatial Reference System (NSRS). NGS plans to replace all three North American Datum of 1983 (NAD 83) frames and all vertical datums of the NSRS, including the North American Vertical Datum of 1988 (NAVD 88), with four new terrestrial reference frames and one new geopotential datum to which all geodetic coordinates and derived coordinates within the NSRS will be referenced.



Need for custom coordinate systems

Idea MSR-I-1017

Promote | Details > | ··· | ×

Add Amtrak Coordinate System EPSG 20050 to Library of Coordinate Systems

Created by Daniel Olausen in MicroStation Ideas Portal on Aug 31, 2022

Request the addition of ACS2021 (Amtrak Coordinate System 2021) to the Library of Coord
Systems within Microstation. This coordinate system is a requirement for surveys along Am
Northeast Coridoor from Washington DC to Boston MA.

Add RH2000 to the list of vertical coordinate systems

In Sweden the RH2000 (EPSG:5613) is used extensively. Could it please be added to the list of verical coordinate systems?

Idea MSR-I-1595

Promote | Details > | ··· | ×

A new NTv2 file for incorporation in to the Bentley GCS

Created by Steven Cooper in MicroStation Ideas Portal on Apr 3, 2024

Hi, we have a new NTv2 for inclusion in the GCS from Network Rail. The attach function below does not recognize a .zip. What is the best way to share the files with you? Kind Regards Steve.

Home / All ideas / MSR-I-2026

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VOTE

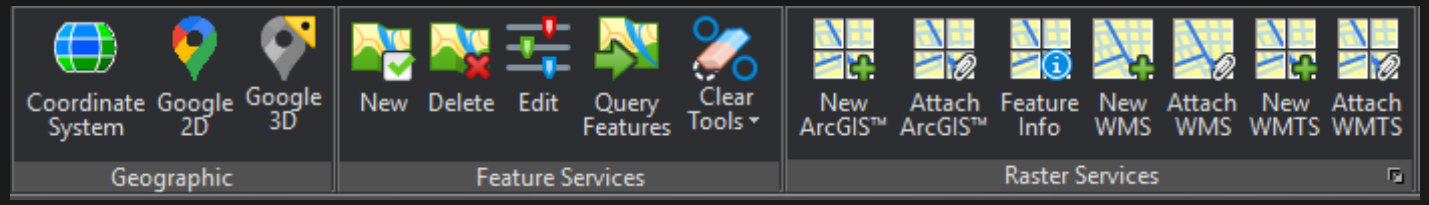
Status	Future consideration
Categories	3D Modeling
Created by	Guest
Created on	Aug 6, 2025

Add 5709 to the list of vertical coordinate systems

In the Netherlands 5709 (EPSG:5709) is used extensively. Could it please be added to the list of vertical coordinate systems?

Hor:	EPSG: 28992	https://epsg.io/28992
Vert:	EPSG: 5709	https://epsg.io/5709
Combined:	EPSG: 7415	https://epsg.io/7415

Geospatial Context tools in MicroStation



Integrating Geospatial Context with MicroStation®

Upgrade Your CAD Designs with MicroStation's Geospatial Context Workflow

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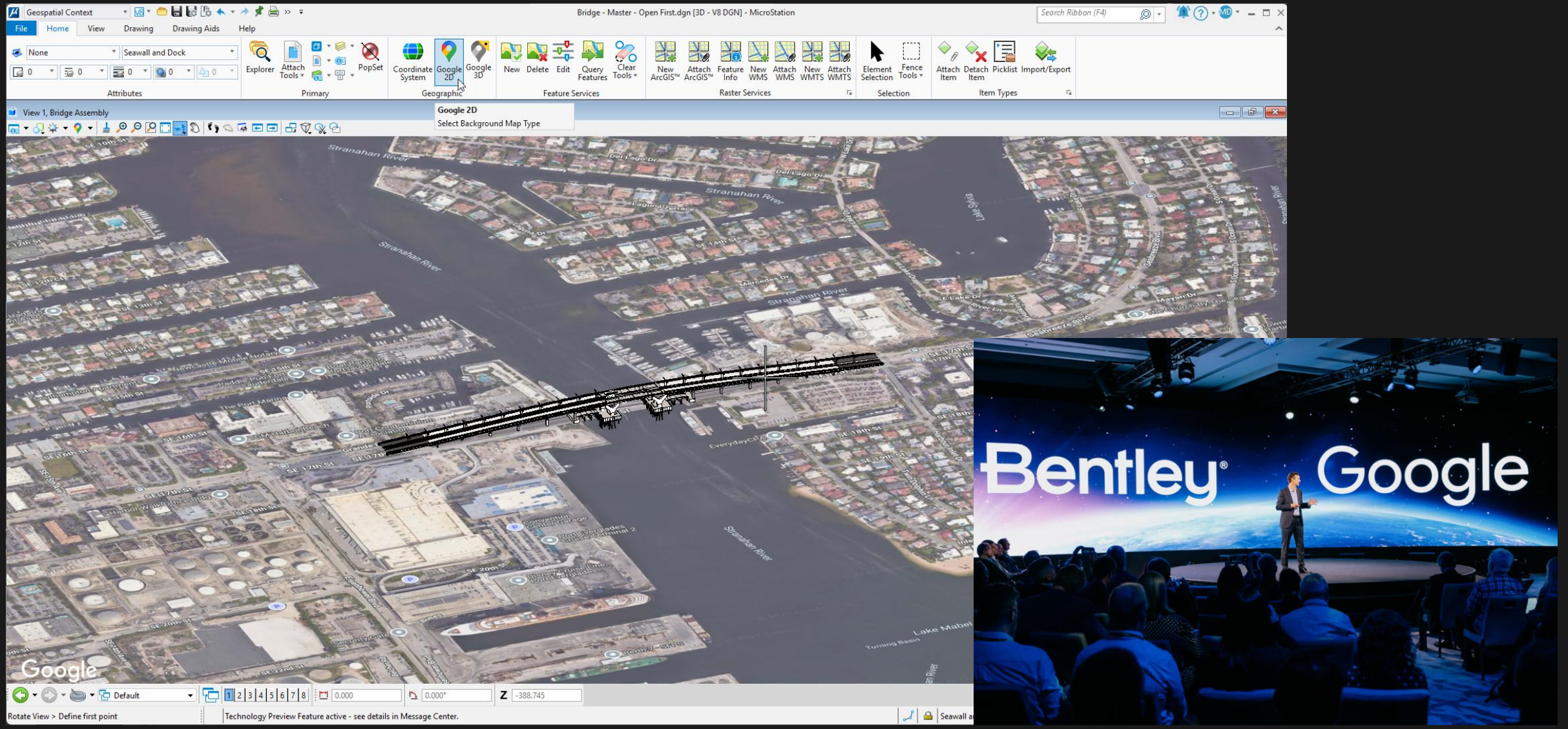
Geospatial Context: What's New in MicroStation 2025

- Google Maps Integration
- Google Photorealistic 3D Tiles Support (Tech Preview)
- Geospatial Context in Python API
- Esri File Geodatabase Support
- Cell Fixed Size
- OGC 3D Tiles Support
- New Vertical Datum
- New GCS icon for quick access to Coordinate Systems
- OGC API Feature Service (Tech Preview)

Google Maps Integration



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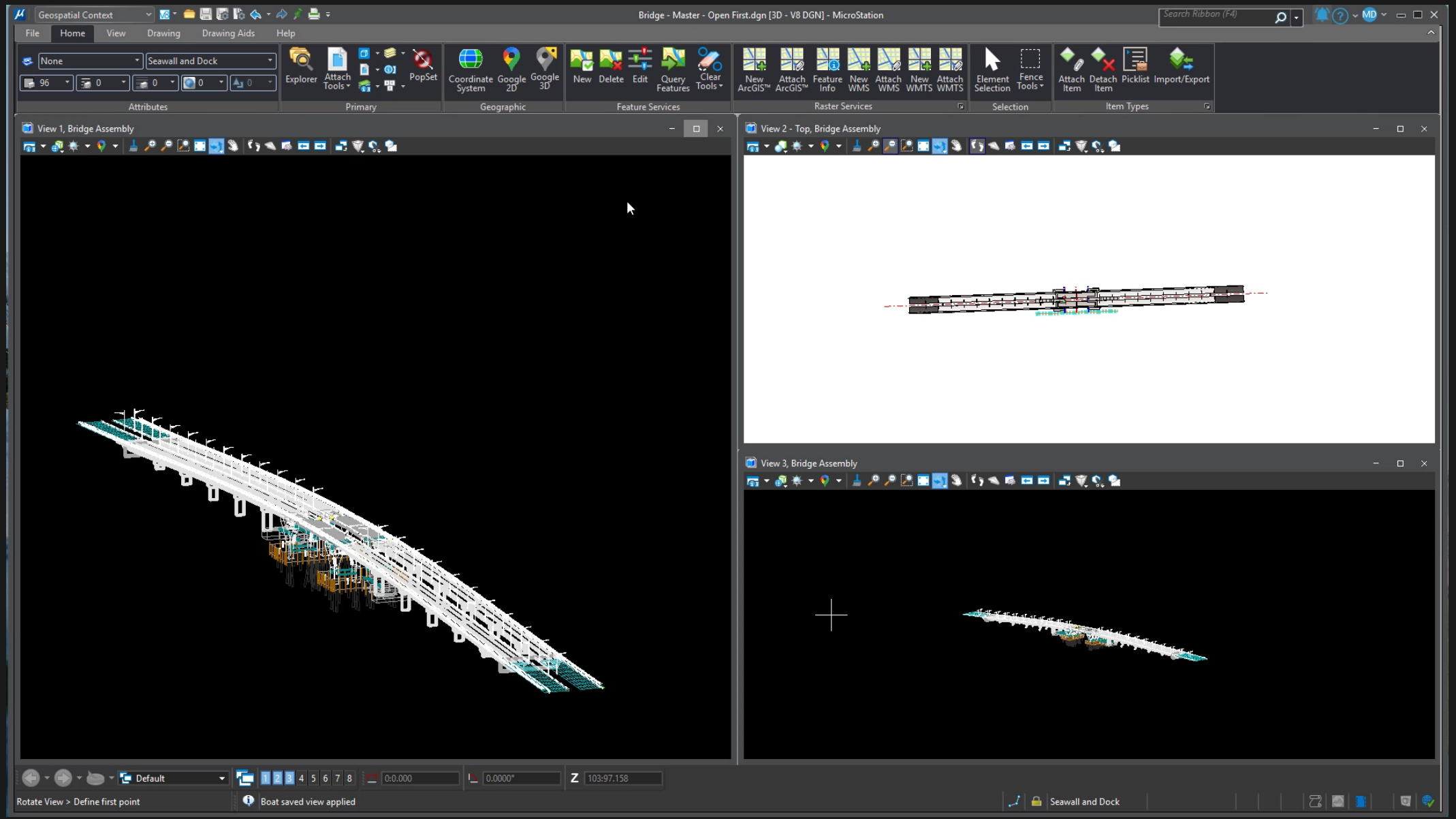
Google Photorealistic 3D Tiles Support *(Tech Preview)*



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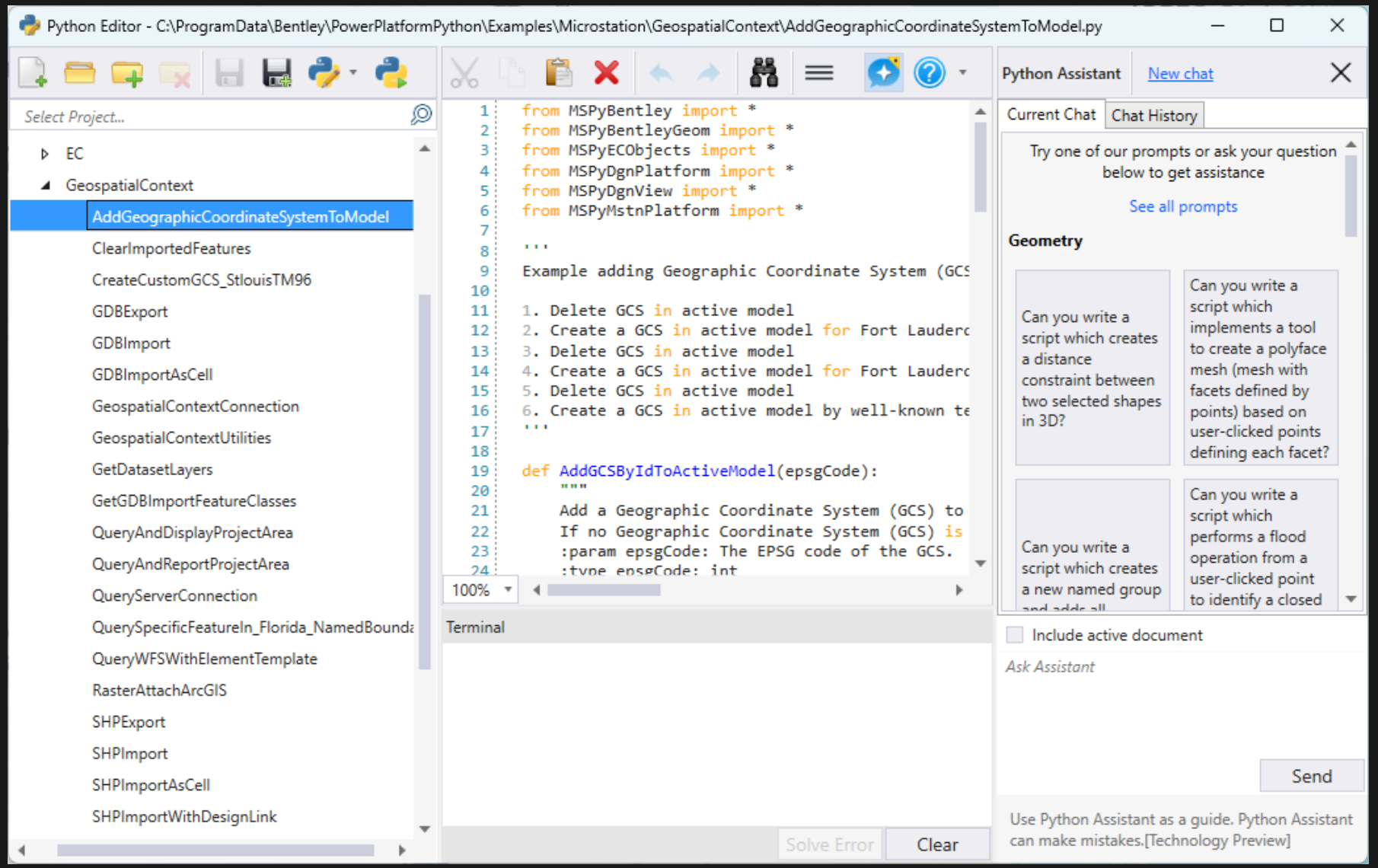
Geospatial Context Python API – Delivered Examples



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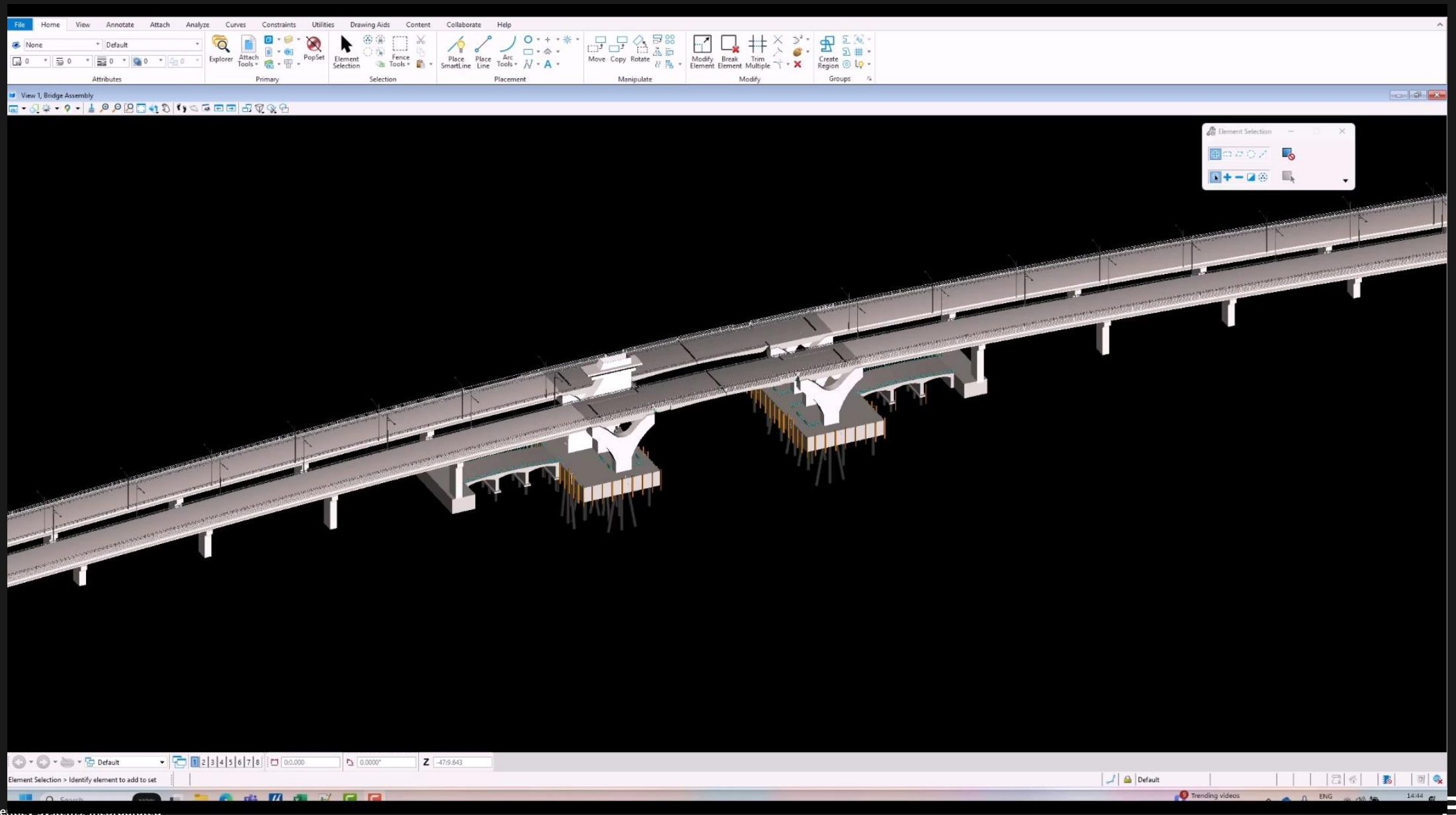
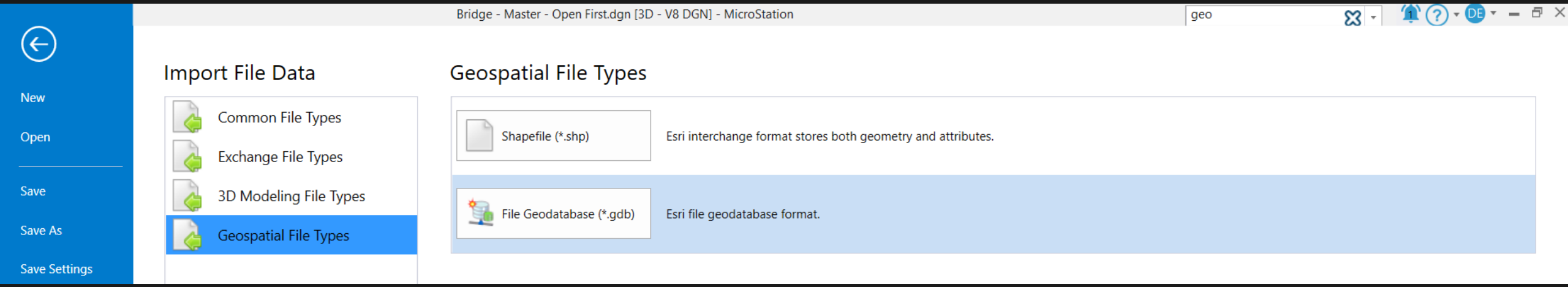
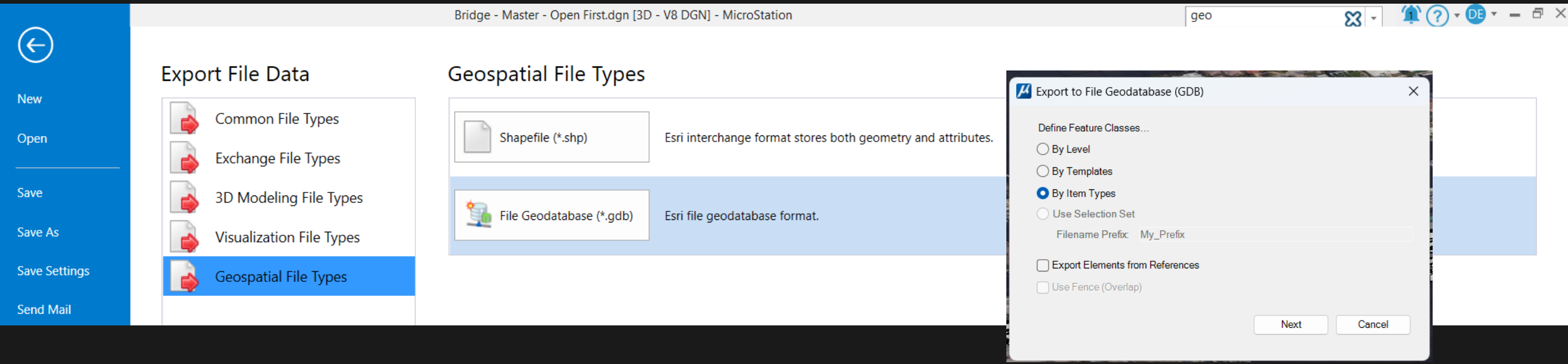
Geospatial Context Python API – Demo video

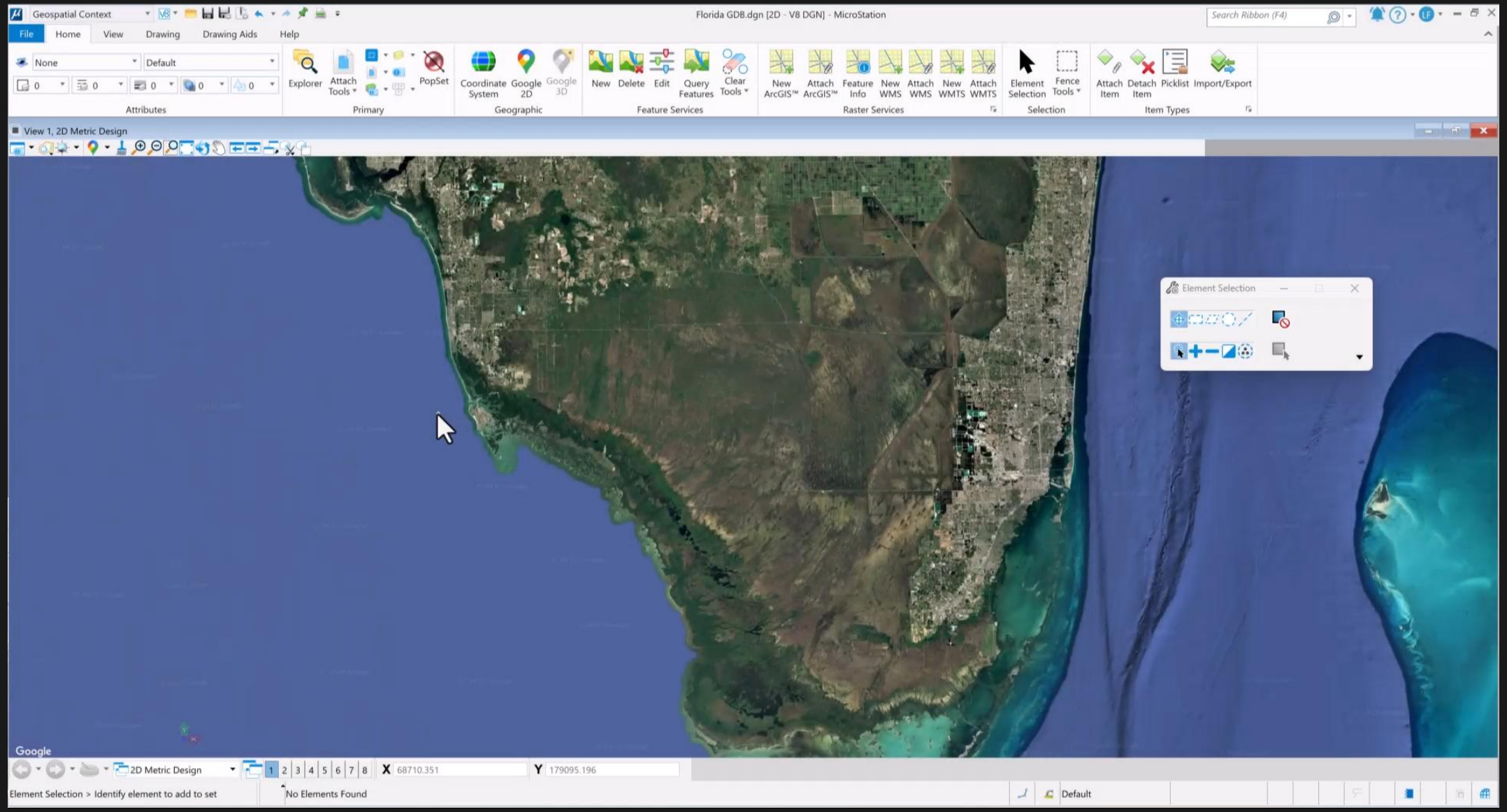


Esri File Geodatabase Support – Import/Export





Esri File Geodatabase – Demo / Video



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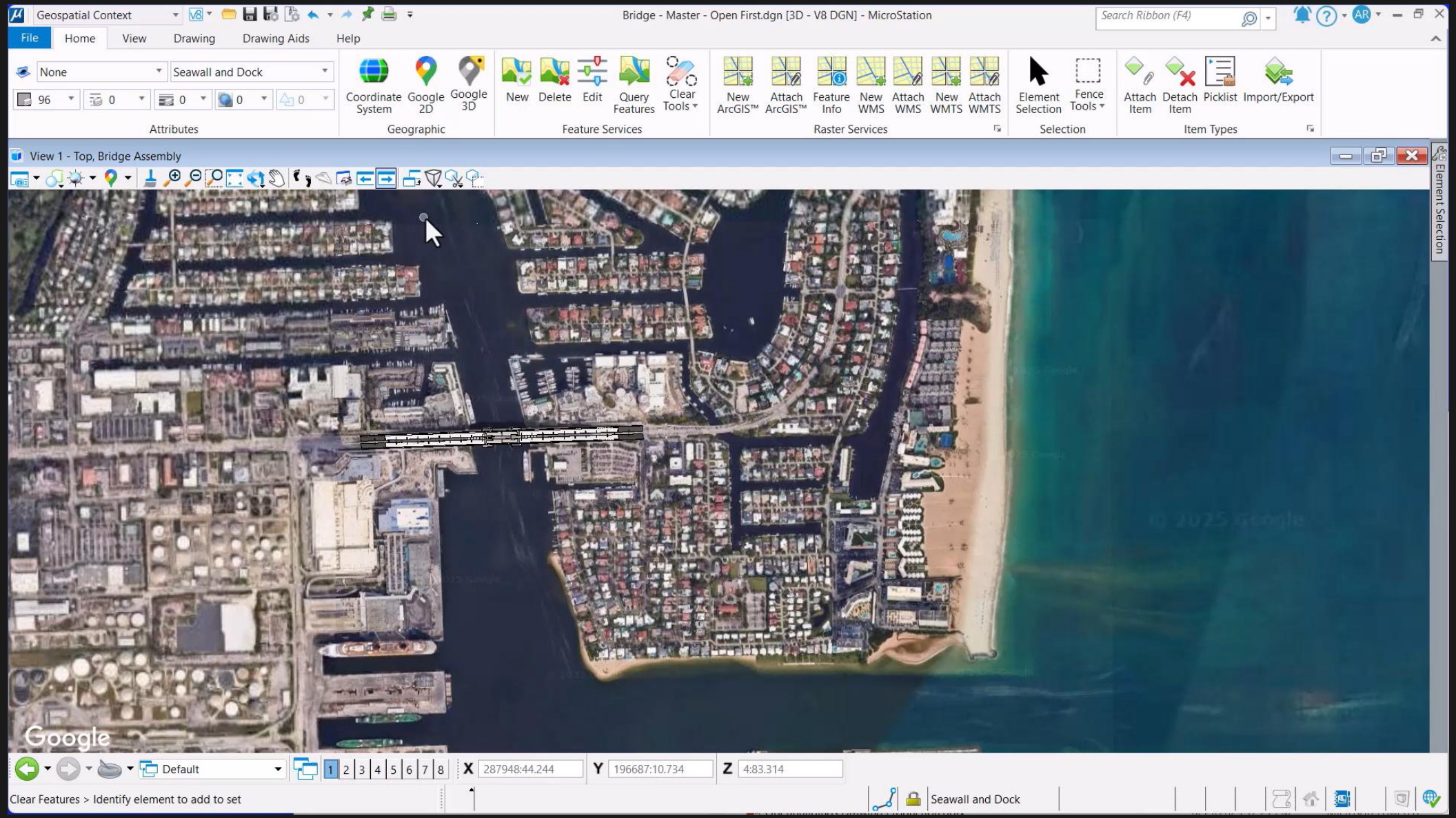

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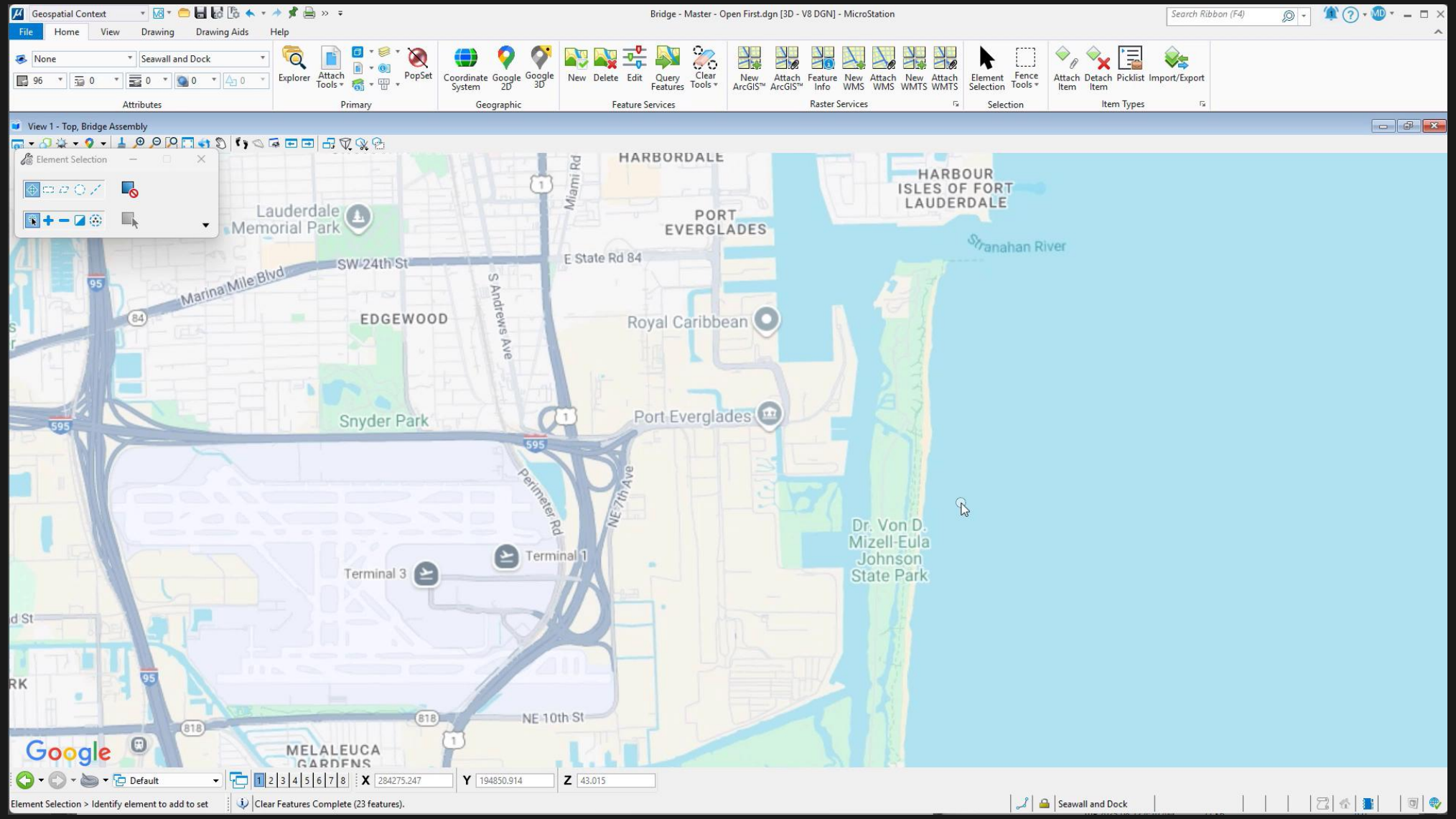
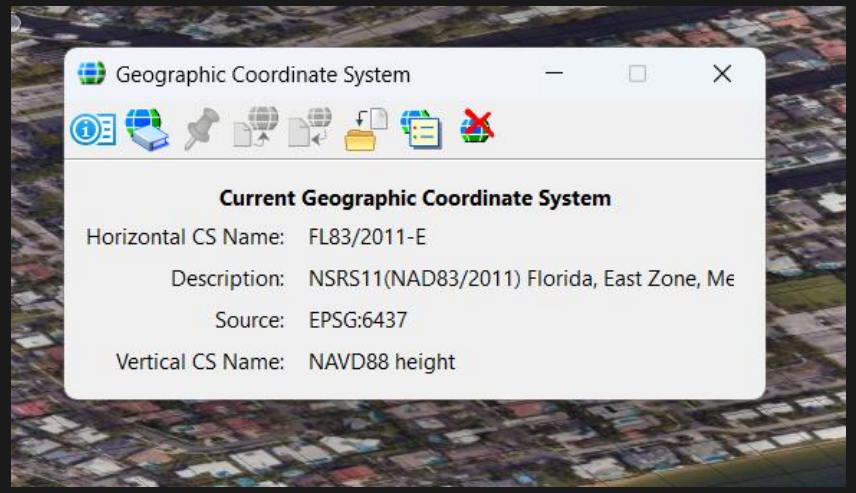
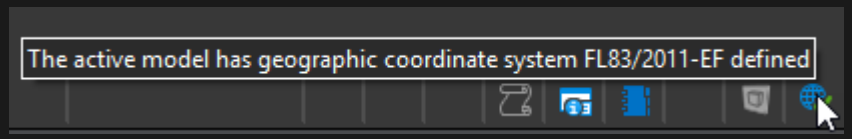
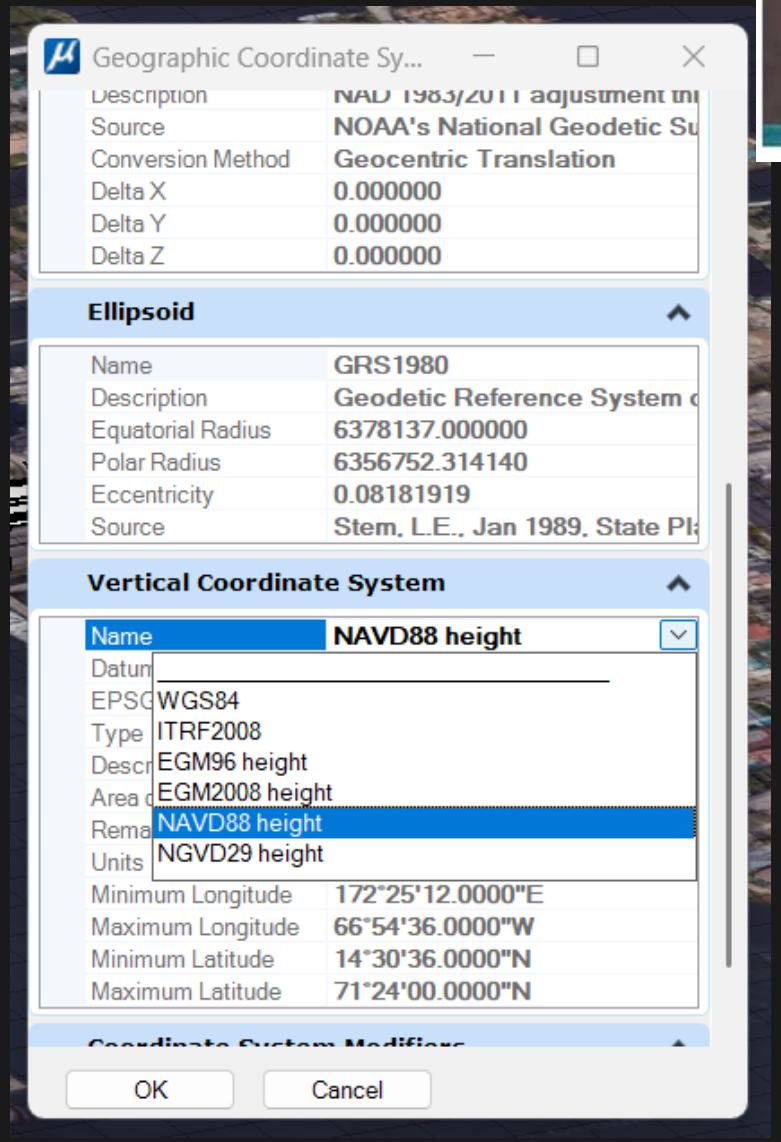
2025.00.00.01.62 - WFS Blyncsy integration



New Vertical Datums







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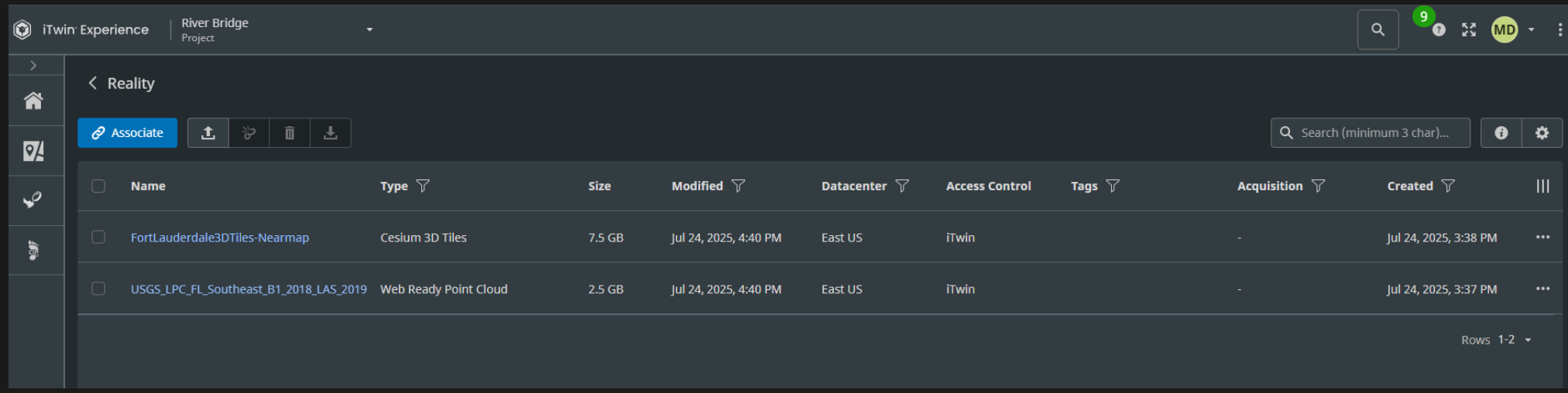
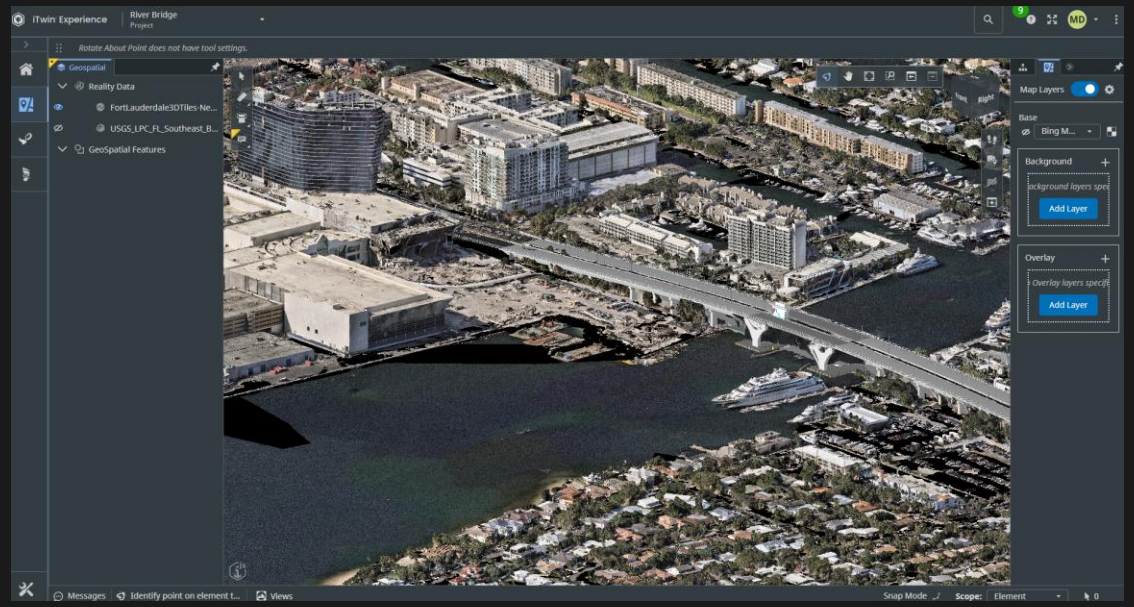
OGC API Feature Services *(Tech Preview)*

OGC API Features is the new, RESTful standard developed by the Open Geospatial Consortium (OGC) for accessing and managing geospatial feature data over the web. It is considered the evolution of the older Web Feature Service (WFS) standard.

Support OGC 3D Tiles format – The open standard for massive, 3D geospatial datasets

The 3D Tiles specification, an open standard initially developed by Cesium, is used for streaming and rendering large-scale 3D geospatial datasets like buildings, terrain, and point clouds.





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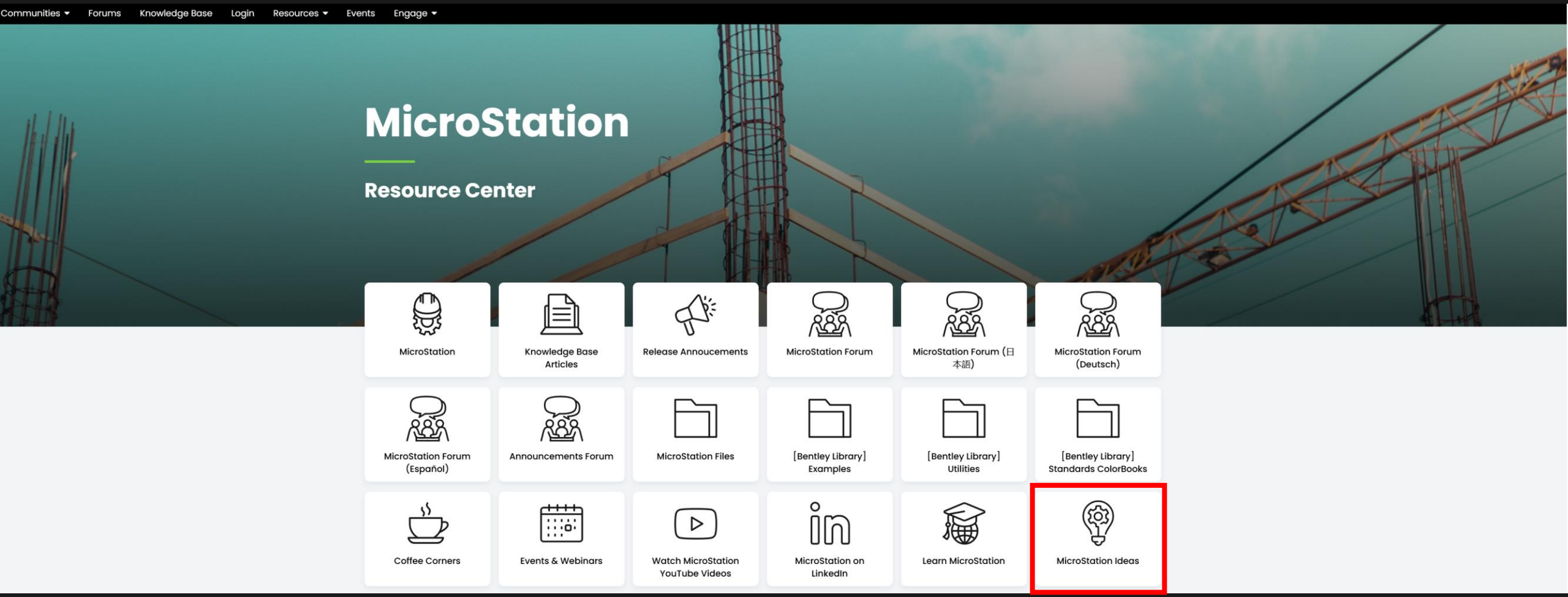
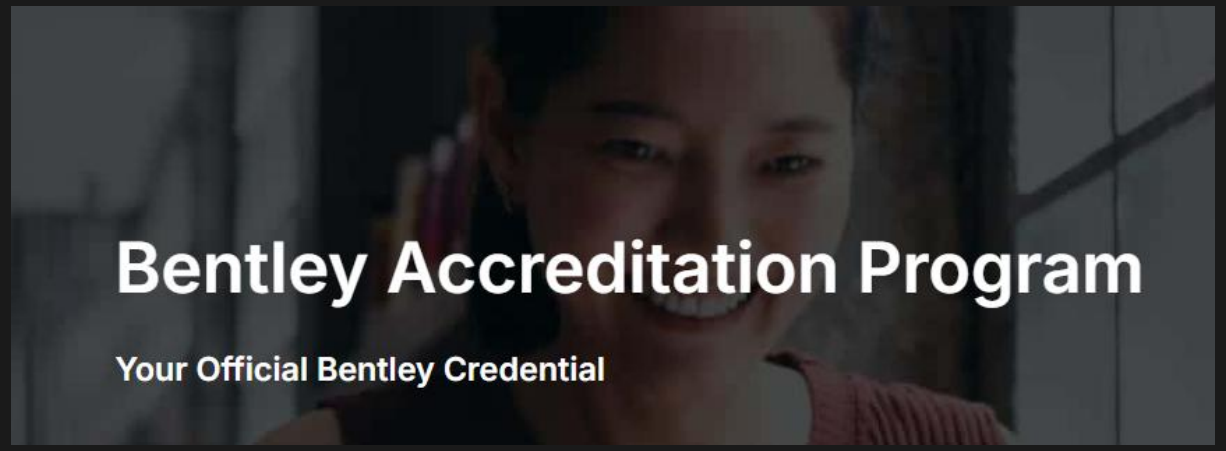
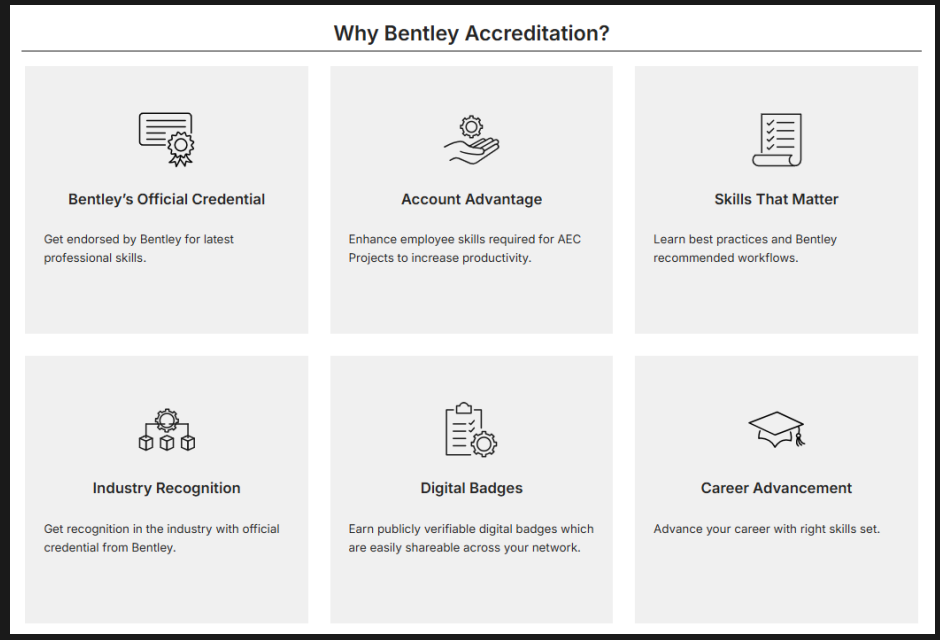
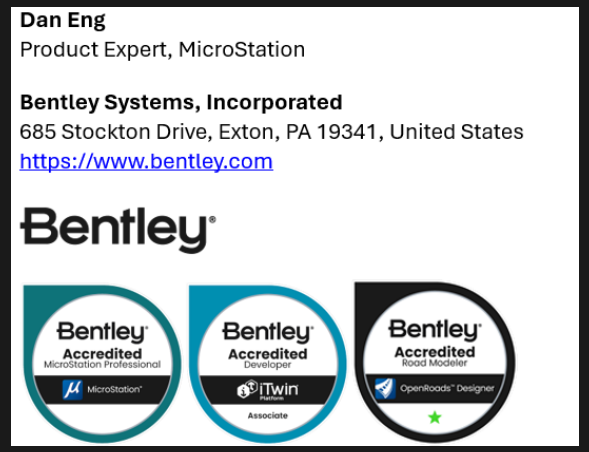
MicroStation Ideas Portal

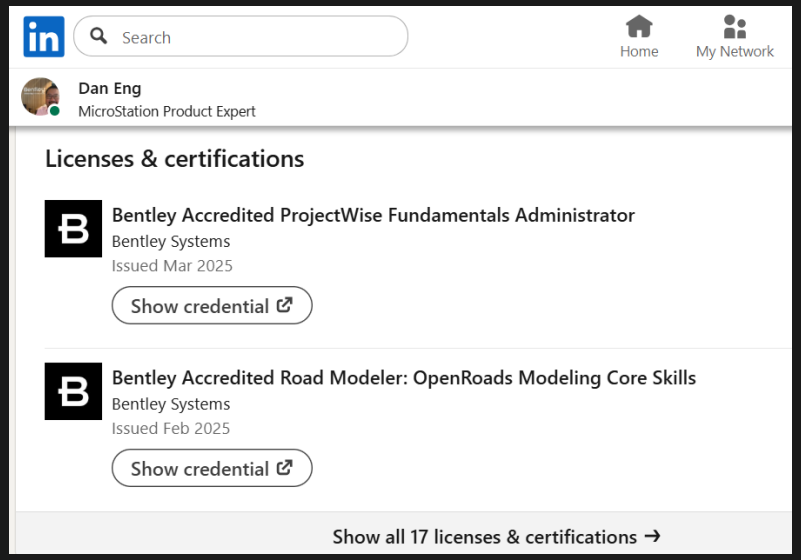


Accreditation



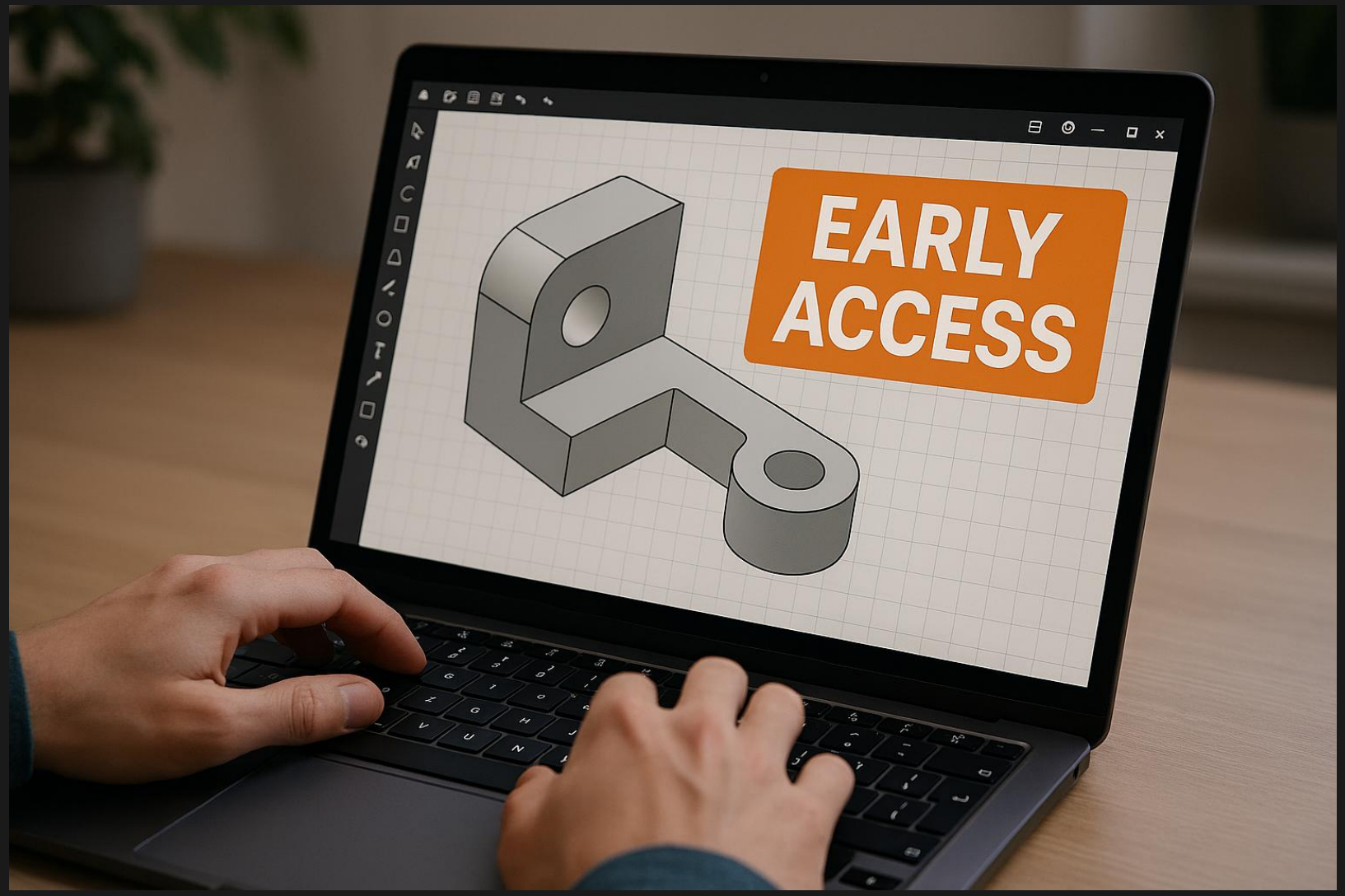






Ways to Participate and interact with the MicroStation Team

- Early Access Program
  - Non-disclosure Agreement (NDA)
  - Must have a MicroStation license
  - Able to access Nutanix environment



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Help Shape The Experience Of The Bentley Products You Use

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Why Product Research?

The challenges of infrastructure can be complex, but its software doesn't have to be. You are the expert in your field, and we need your help to stress-test our solutions against YOUR reality.

How Does It All Work?

The first step is to simply tell us you're willing to participate. If there is a match between your expertise and an upcoming product research activity, we'll contact you and arrange a time to meet with a researcher. You'll attend the online session, try out the product, and provide your feedback. Our product teams then use your input to improve the experience of the product you use.

What Will We Do?

Product Research sessions are virtual 1-on-1 sessions between a user and a researcher. A typical session lasts ~45 minutes and might include testing a prototype or exploring workflows. No preparation required!

What Is In It For You?

Your voice influences what gets built into the products you use. Be heard, share your feedback with the product team and get a glimpse of potential solutions.

Interested? Join Us In A Lab.

Join Now

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