

Coordinating Civil 3D and Revit with Shared Reference Points

Michael Hurtado

Designated Support Specialist



About the speaker

Michael Hurtado, EIT

Michael is a Designated Support Specialist that has been working at the Autodesk Boston Drydock office for a little over 5 and a half years. He earned his Bachelor's in Civil Engineering from Northeastern University where he specialized in Transportation. While at Northeastern, he worked as a surveyor for the Department of Public Works in Cambridge, and later at two large Civil Engineering firms that his team helps support in his current role. In his current role, Michael works with Enterprise Accounts to integrate the latest technology into their workflows while simultaneously ensuring they're receiving the support required to be successful. This is Michael's third time taking part in AU and the second time presenting.

Downloads

- If you'd like this dataset or the latest worksheet, it's hosted on OneDrive which can be accessed via the following QR code or link [HERE](#).
- This dataset is the same one I'll be using during the in-product demo. Feel free to download it and follow along!
- Will expire after 30 days. If it has expired, feel free to reach out for the files.



Learning Objectives

UNDERSTANDING HOW CIVIL 3D AND REVIT HANDLE COORDINATE SYSTEMS

Why are we all here in the first place? This will lay the groundwork for what will be covering later in class. We'll also be introduced to the tools available that will help with model coordination and where to find them.

LEVERAGE BIM 360 TO IMPORT CIVIL 3D SURFACES INTO REVIT

We've gotten our Revit model into Civil 3D but what if we want to go the other way? We'll walk through using BIM 360 to get our Civil 3D data into Revit.

USE THE SHARED REFERENCE POINT TOOL TO IMPORT REVIT MODEL INTO CIVIL 3D

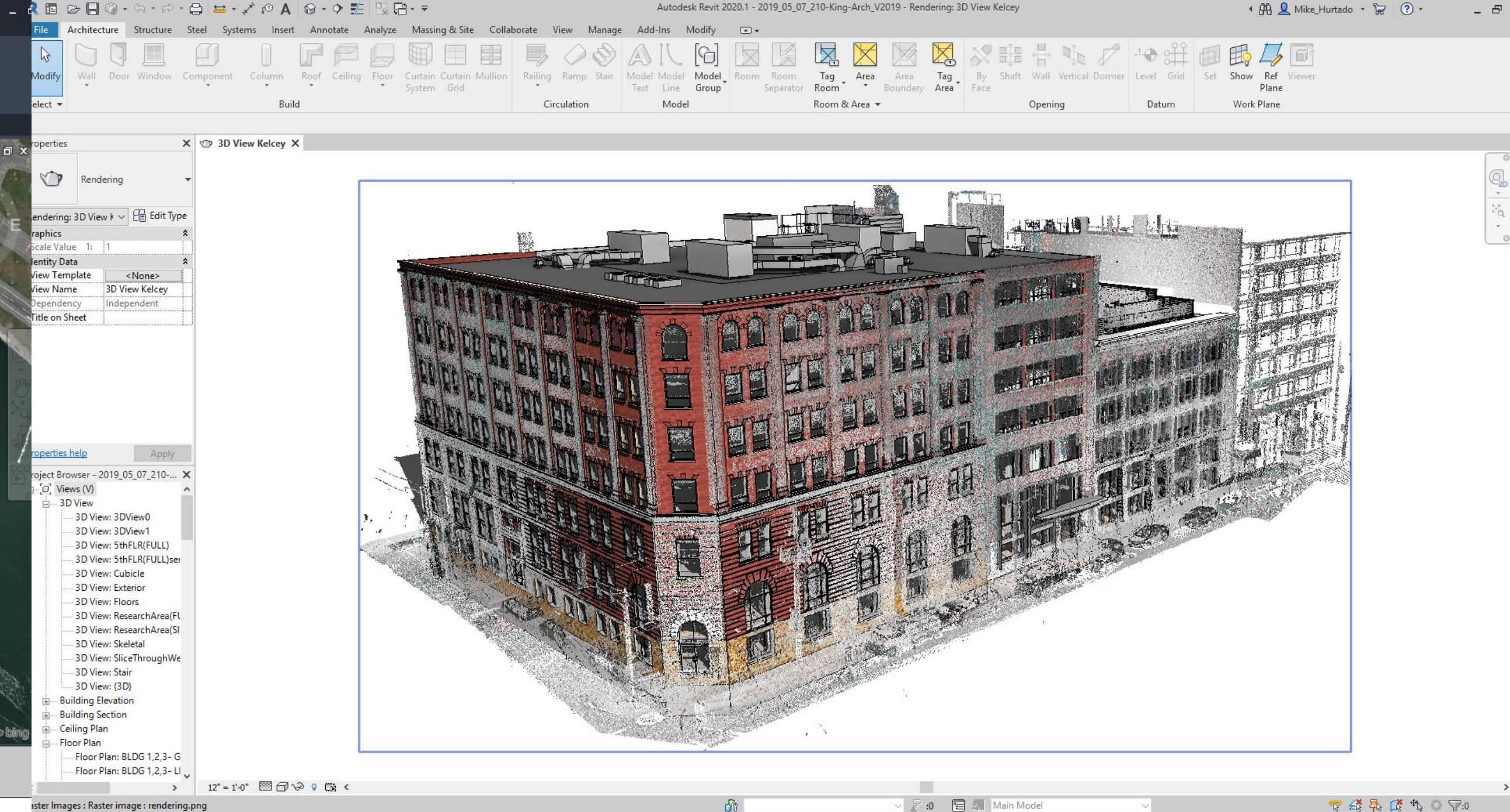
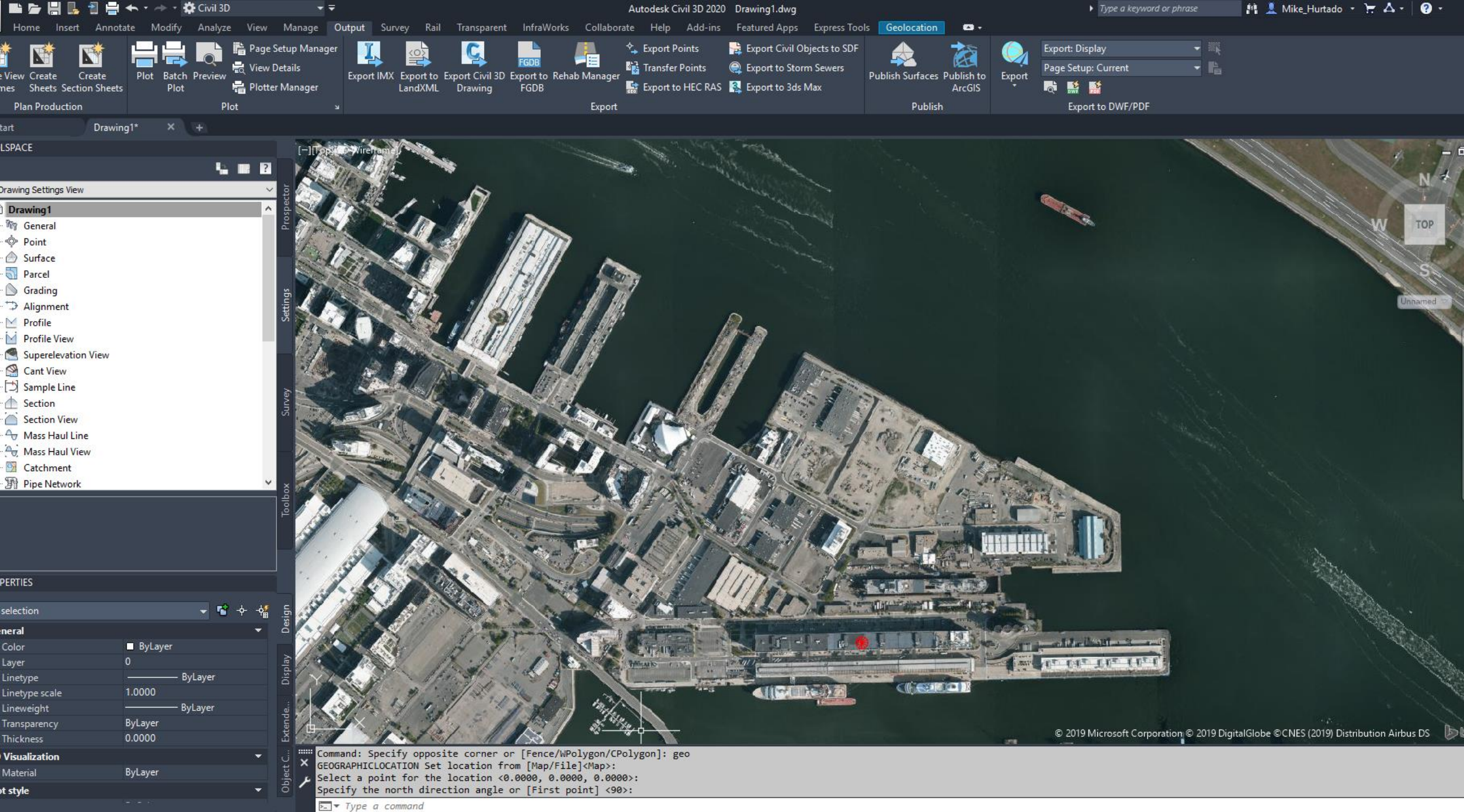
Time to jump into the software. We'll start by creating a shared reference point and cap it off by importing a Revit model into our Civil 3D site.

SETTING UP A DWG TO IMPORT INTO REVIT

We've got our topography imported into Revit, but what if we want additional information from the DWG imported? We'll go through the process of preparing a DWG for Revit import.

Understanding How Civil 3D and Revit Handle Coordinate Systems







Civil 3D

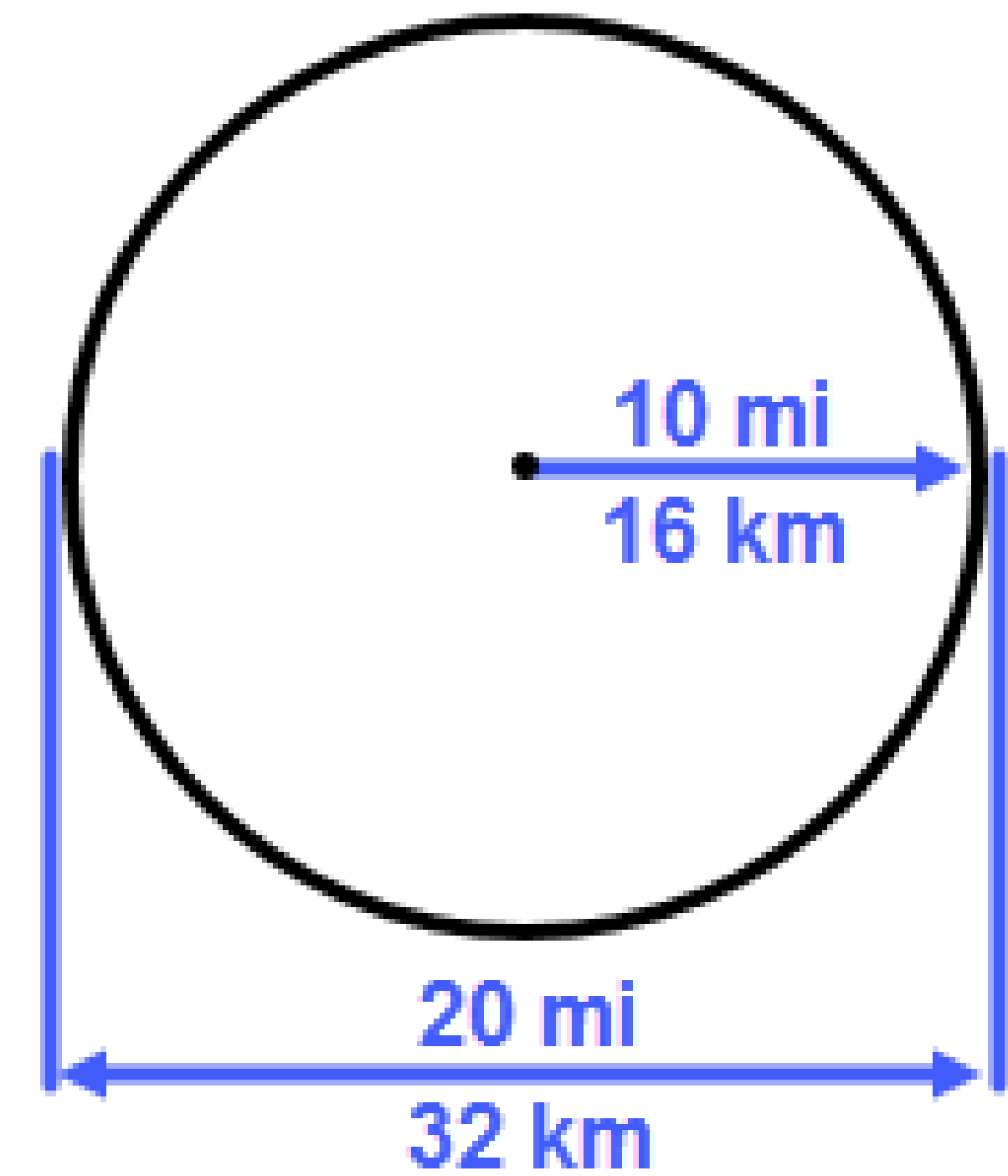
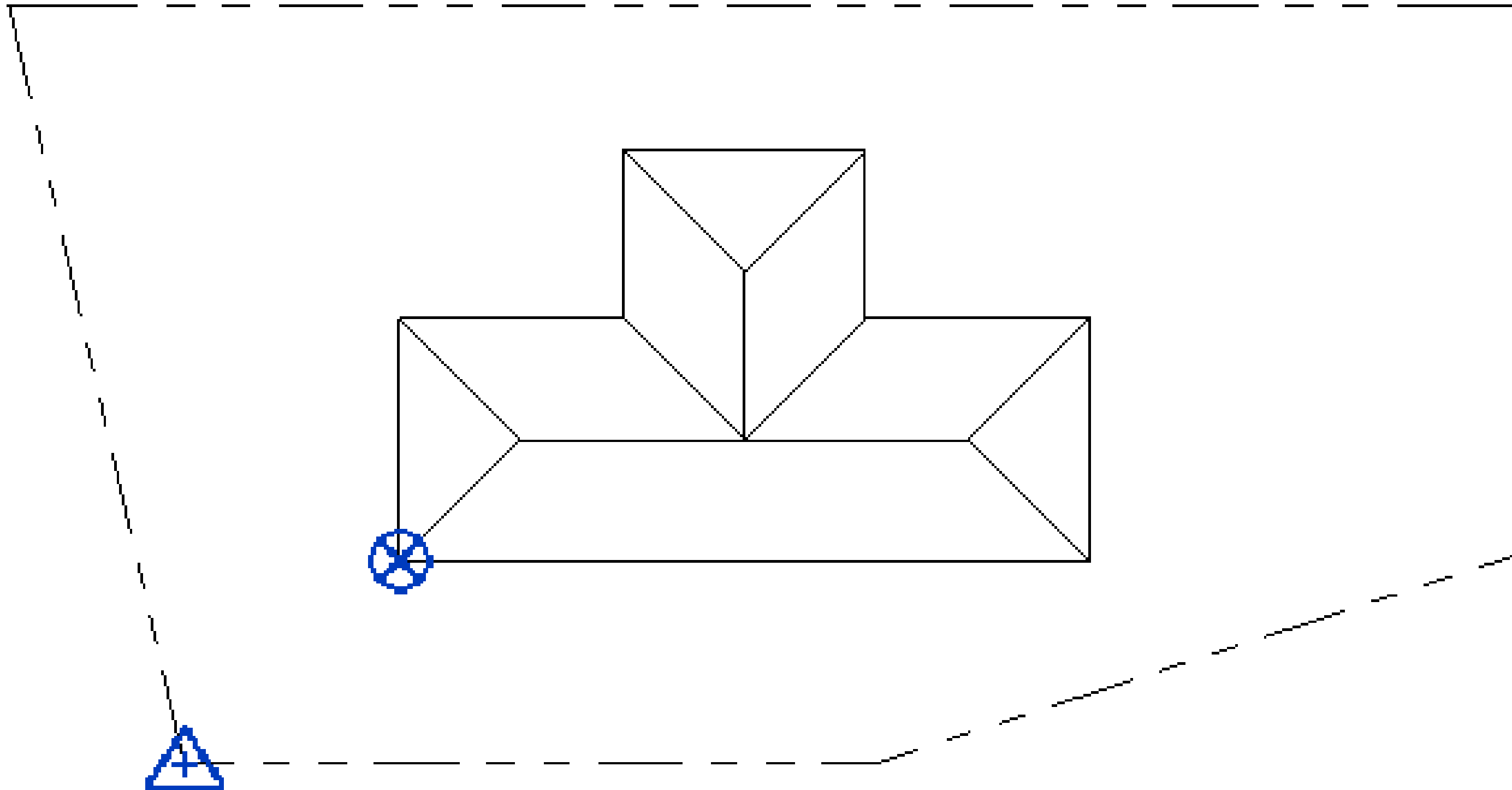
- Preloaded with a vast library of coordinate systems
- Can handle data that is far from the drawing origin.
- Can create site that are georeferenced (tied to real-world locations)
- Bing maps can be turned on as a reference tool

Revit

- Doesn't come preloaded with any coordinate systems
- Can't handle data far from the drawing origin

Revit (Cont.)

- Revit has a 20 mile/ 32 kilometer work plane.
- Uses a Project Base Point  to help coordinating within the model and a Survey Point  to tie the model to the real world



What tools are available and
where can we find them?



Shared Reference Point Tool



What does it do?

- User selects a point that is shared between Civil 3D and Revit. A second point is then selected to help determine model rotation.
- Information is taken and exported to an XML file.
- The XML file is then imported into Revit and used to move the Survey Base Point. A new site is created in the Revit model that is tied back to the Civil 3D DWG.

Select Units and Confirm ✕

Selected Coordinates in WCS:

Origin:
X = 315309.0903
Y = 4834399.5583
Z = 77.6507

Rotation in XY Plane:
287.2779 (degrees)

Select DWG Units:

☐ Millimeters (MM) ☐ Feet (FT)
☐ Centimeters (CM) ☐ Inches (IN)
☒ Meters (M)

OK Cancel

Productivity Tools for AutoCAD Civil 3D 2018

Aug 29 2018 | Download

SHARE ADD TO COLLECTION

Productivity Tools for Autodesk® AutoCAD® Civil 3D® 2018 software includes a collection of tools and content to support regional or industry-specific workflows that can be downloaded and installed by Civil 3D subscription customers. Each tool is named in way that reflects the region or country that the tool applies, user interface language, OS, and description of the tool.

Download

	Global - Autodesk Batch Save Utility (Standalone) English (exe - 7.05MB)
	Global - Autodesk Batch Save Utility (Readme) English (htm - 28KB)
	Australia & New Zealand - Autodesk® Data Extension for 12d® English (msi - 5.13MB)
	Australia & New Zealand - Autodesk® Data Extension for 12d® (Readme) English (htm - 29KB)
	Global - Autodesk® Import-Export Extension for GENIO 64-bit English (msi - 5.41MB)
	Global - Autodesk® Import-Export Extension for GENIO (Readme) English (htm - 29KB)
	Global - Autodesk® Shared Reference Point installer for Civil 3D 64-bit - English (msi - 3.13MB)
	Global - Autodesk® Shared Reference Point installer for Revit 3D 64-bit - English (msi - 3.10MB)
	oint (Readme) (htm - 31KB)

Waiting for accounts.autodesk.com...

Product Updates

Select all | None Download Ignore

Sort by Date Filters

4 results for shared reference

Older updates (4)

	Shared Reference Point for Autodesk Revit 2020 Shared Reference Point for Autodesk Revit 2020 Released: Sep 13, 2019 Severity: Medium	Download
	Shared Reference Point for Autodesk Civil 3D 2020 Shared Reference Point for Autodesk Civil 3D 2020 Released: Sep 13, 2019 Severity: Medium	Download
	Shared Reference Point for Autodesk Revit 2019 Autodesk® Shared Reference Point Installer for Revit® 2019 Released: Sep 10, 2018 Severity: Medium	Download
	Shared Reference Point for Autodesk Civil 3D 2019 Autodesk® Shared Reference Point Installer for Civil 3D® 2019 Released: Aug 23, 2018 Severity: Medium	Download

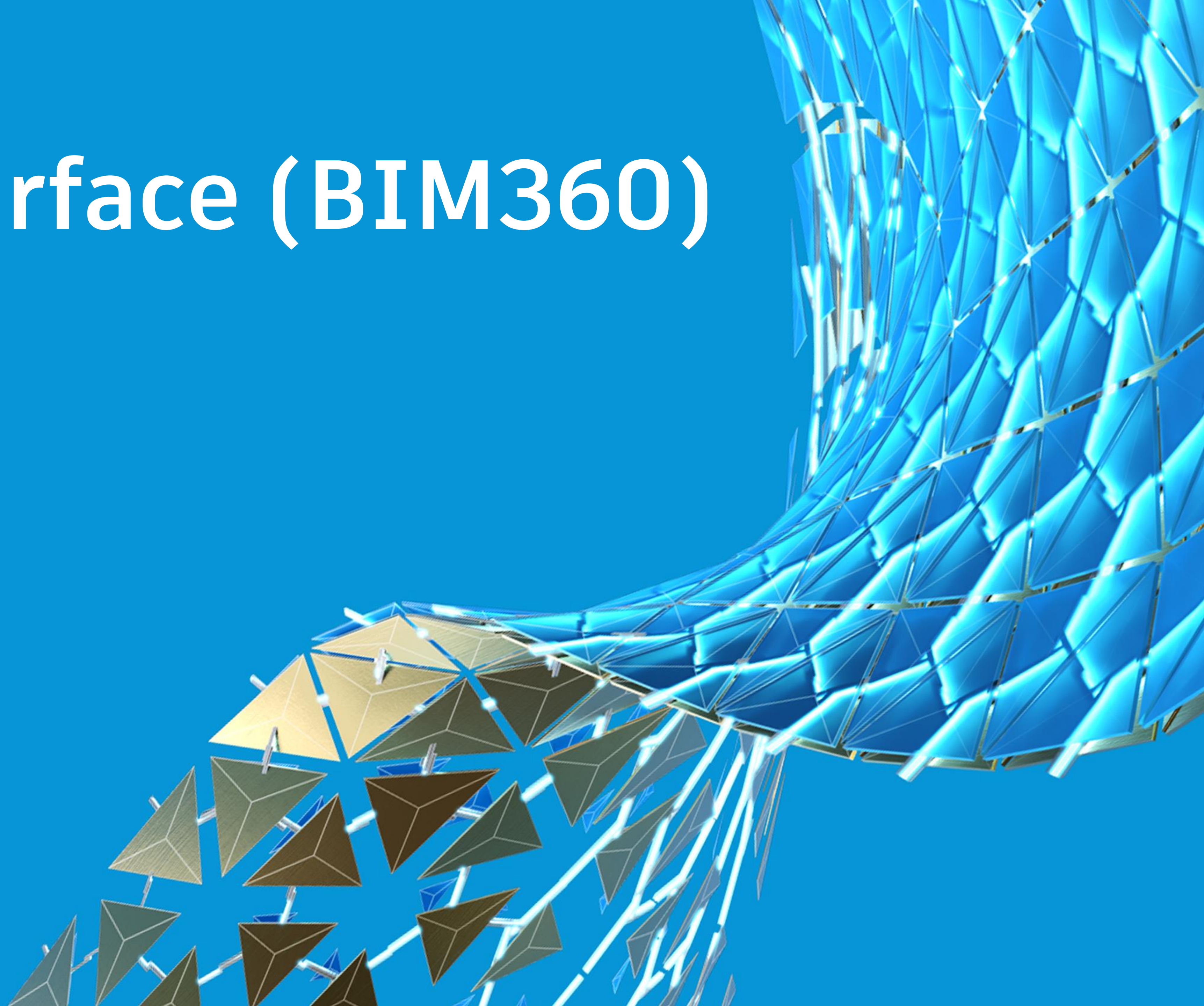
2018 and older

The tool can be found in the Productivity Tools page for each respective release in the Autodesk Knowledge Network: [2015](#) / [2016](#) / [2017](#) / [2018](#)

2019-Present

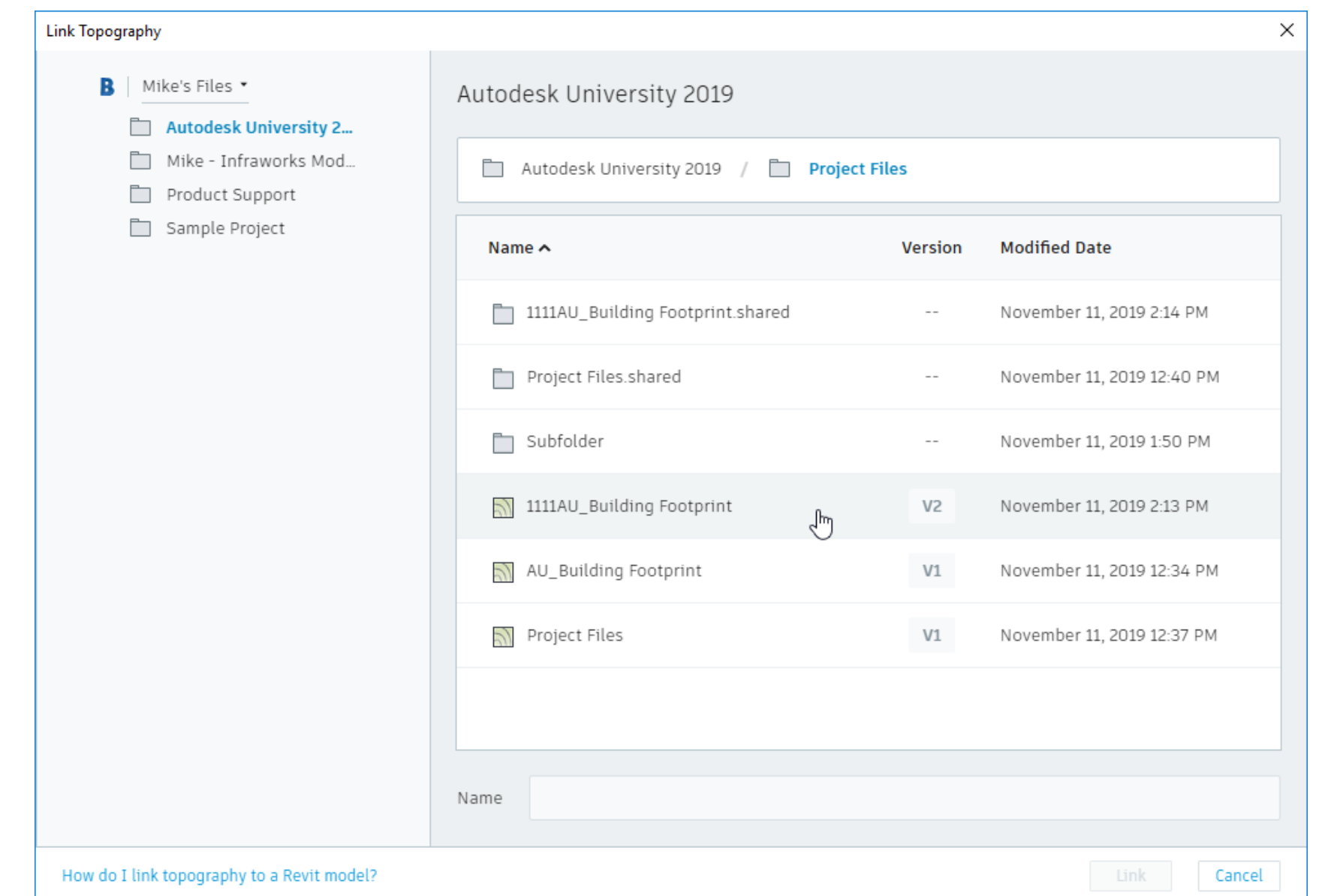
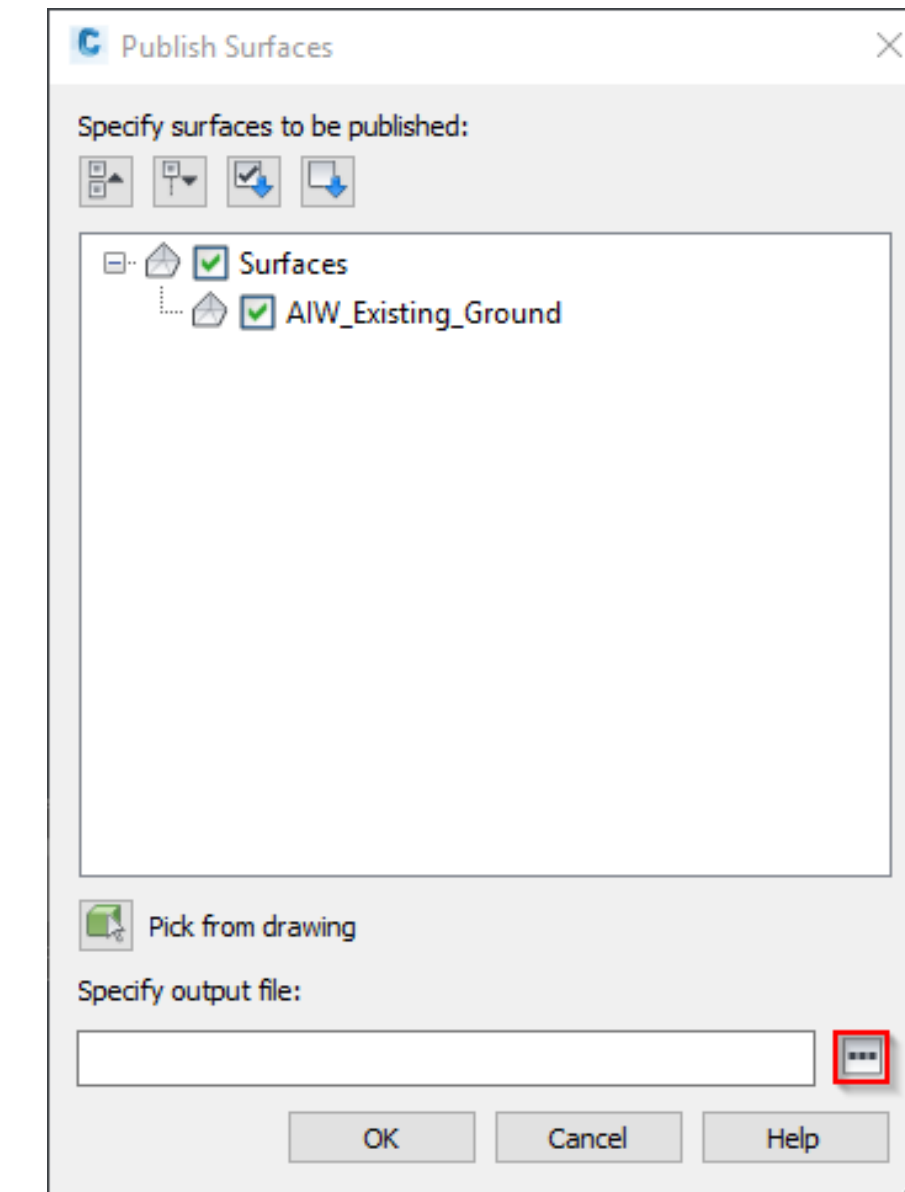
Moved to the Autodesk Account Page. It can be found in the Updates and Add-ons section of each of the respective products, but can also be conveniently found in the Product Updates section.

Publish Surface (BIM360)



What does it do?

- Publishes a Civil 3D surface to BIM 360 where magic happens
- Once the surface is done being processed, it can be linked into a Revit model as Topography.
- If changes are made to the Civil 3D surface and updated, it will be updated in the Revit model.
- All this is made possible by the desktop connector



Let's dive into the software!



Thank you!



Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2019 Autodesk. All rights reserved.

