Coordinating Civil 3D and Revit with Shared Reference Points and Desktop Connector

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About the speaker

Michael Hurtado, EIT

Michael is an Enterprise Support Specialist that has been working with Autodesk out of the Boston office for a little over 4 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 he helps support in his current role. Outside of his normal duties, he’s regularly publishing solutions on the Autodesk Knowledge Network, spends time helping users on the Autodesk Forum, and has presented webinars on AutoCAD and Civil 3D. This is Michael’s second time at AU, and first time presenting.

Learning Objectives

UNDERSTANDING HOW CIVIL 3D AND REVIT HANDLE COORDINATE SYSTEMS

Why are we all here in the first place? This will lay down the groundwork for what we'll be covering later in class.

WHAT TOOLS ARE AVAILABLE FOR MODEL COORDINATING AND WHERE TO FIND THEM

We know what needs to get done to coordinate between the two applications. Now we'll go over the tools to get the job done and where to find them.

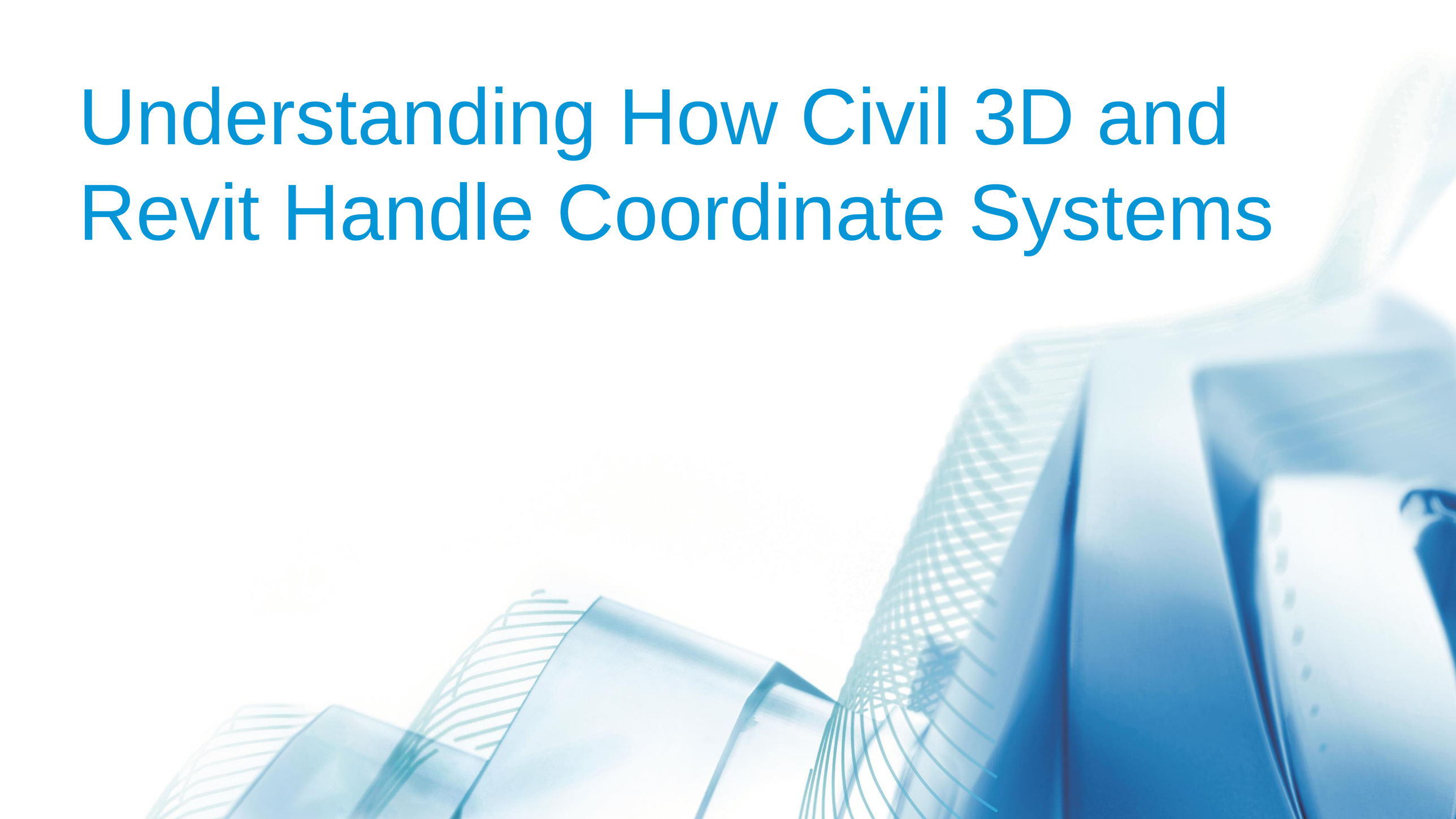
USE THE SHARED REFERENCE POINT TOOL TO IMPORT REVIT MODEL INTO CIVIL 3D

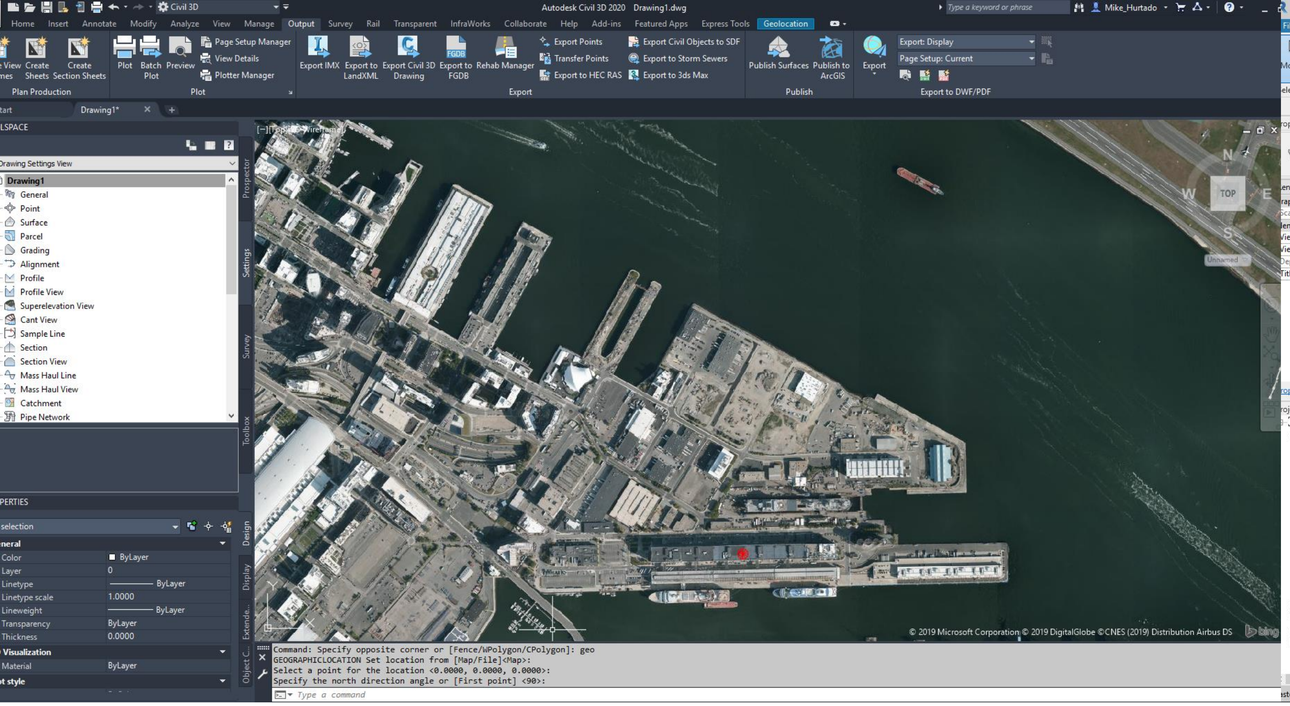
Time to jump into the software. We'll start by creating a shared reference point and cap it off by importing a Revit model into our Civil 3D site.

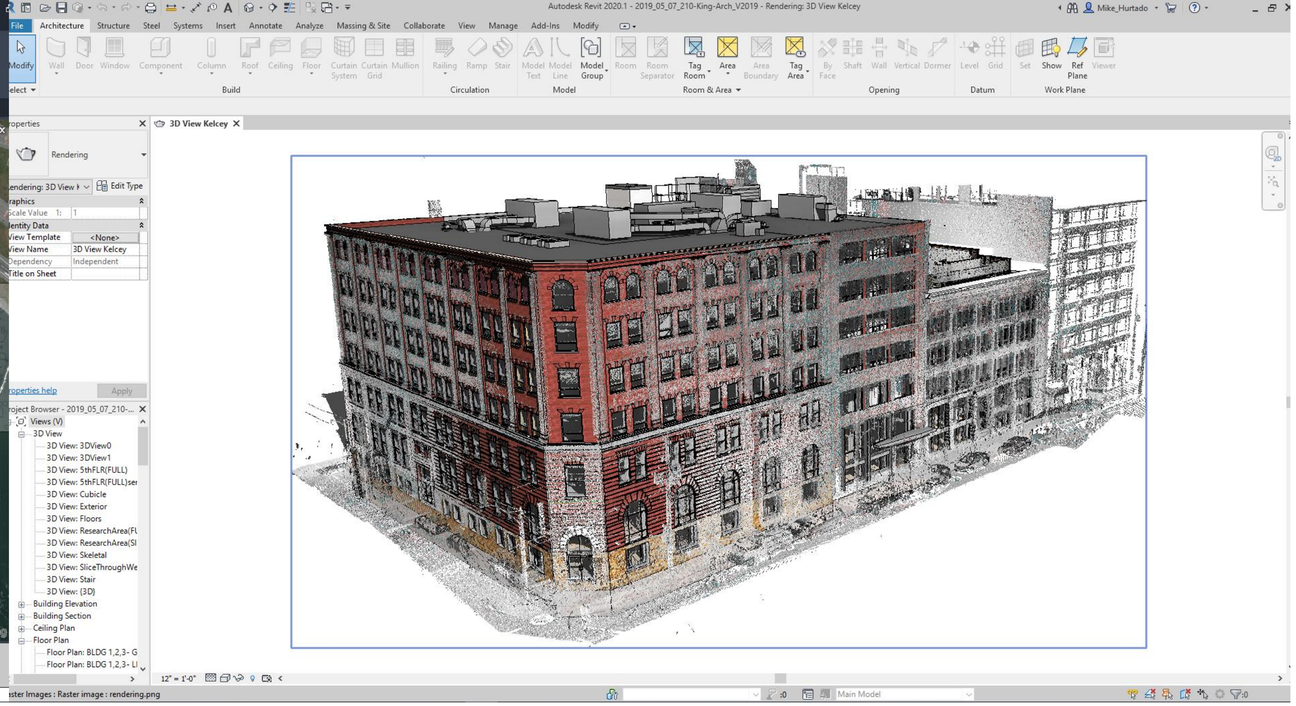
LEVERAGE BIM 360 TO IMPORT CIVIL 3D SURFACES INTO REVIT

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.

Understanding How Civil 3D and Revit Handle Coordinate Systems







Civil 3D

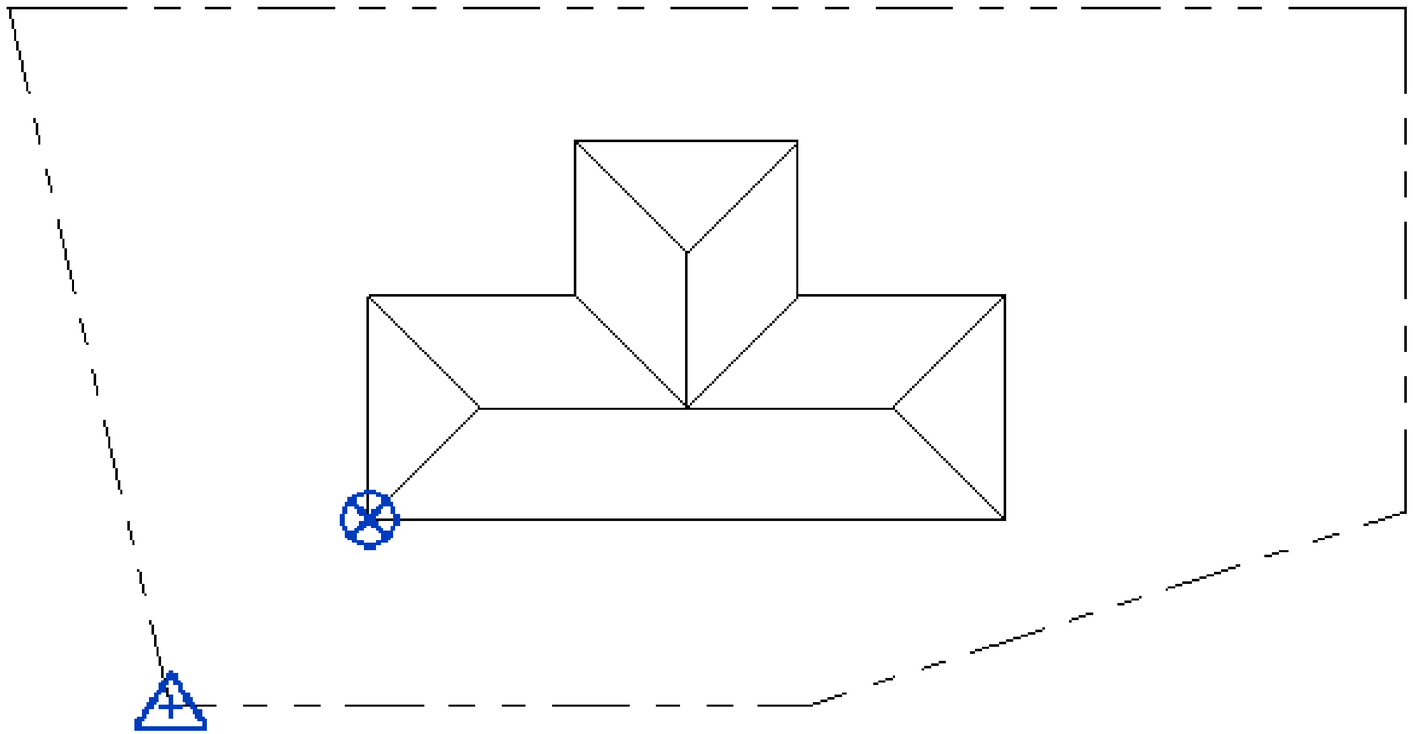
- Preloaded with a vast library of coordinate systems
- Can handle data that is far from the drawing origin.
- Can create site that are georeferenced, or tied to real-world locations.
- Bing maps can be turned on as a reference tool

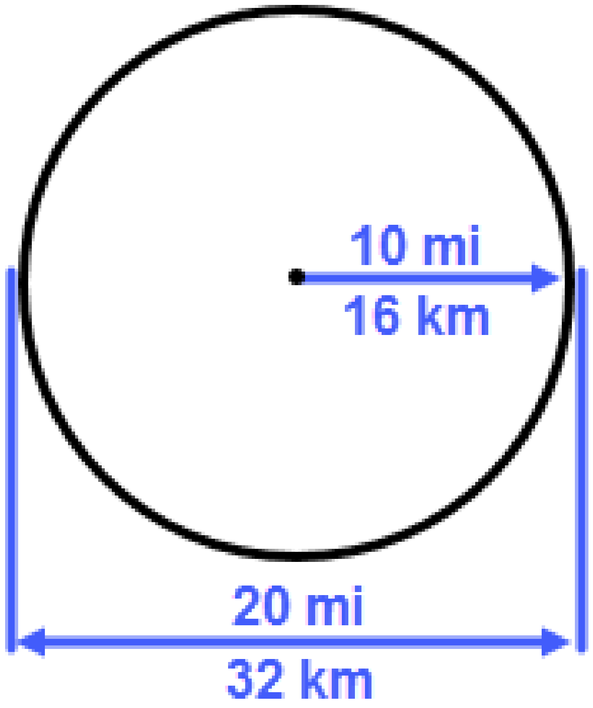
Revit

- 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



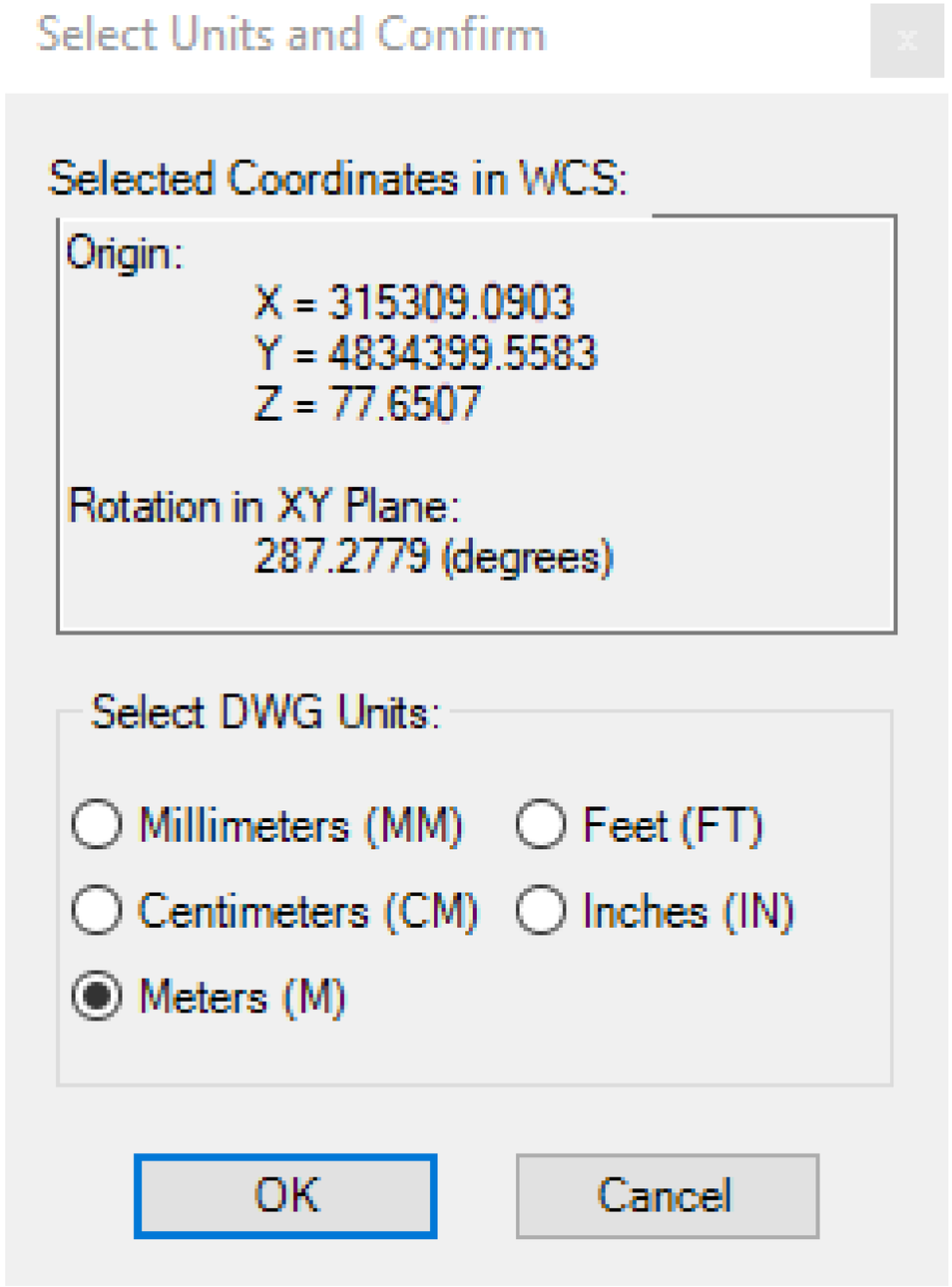


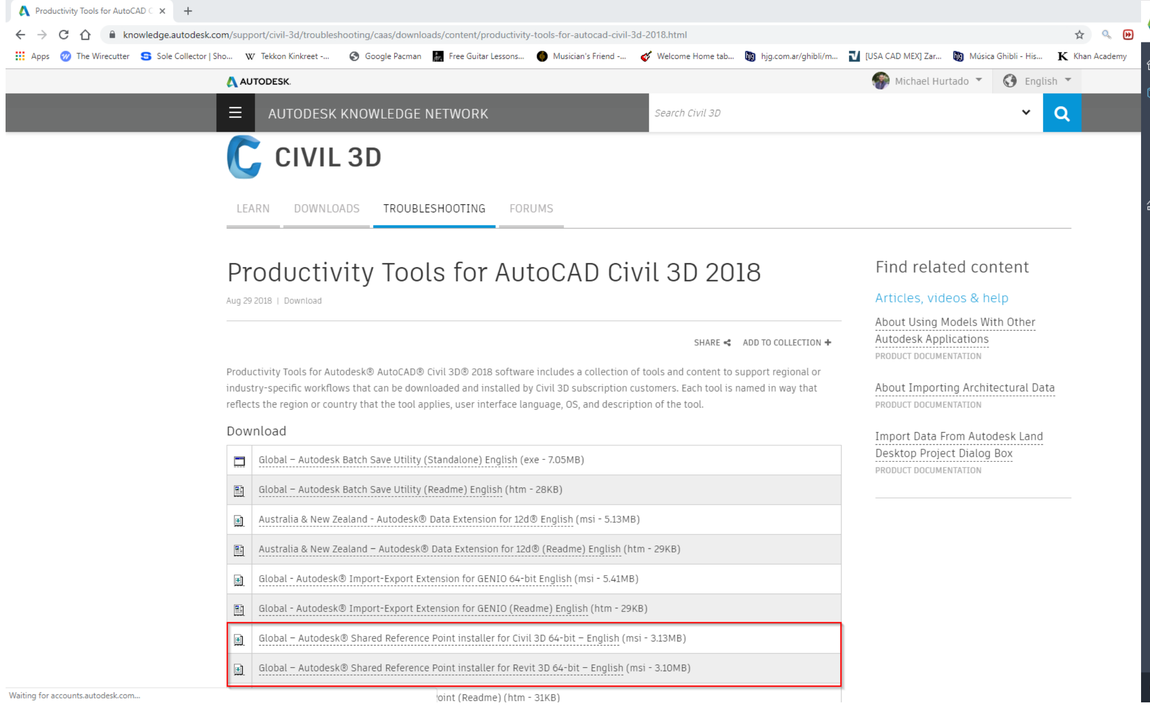
What tools are available and where can we find them?

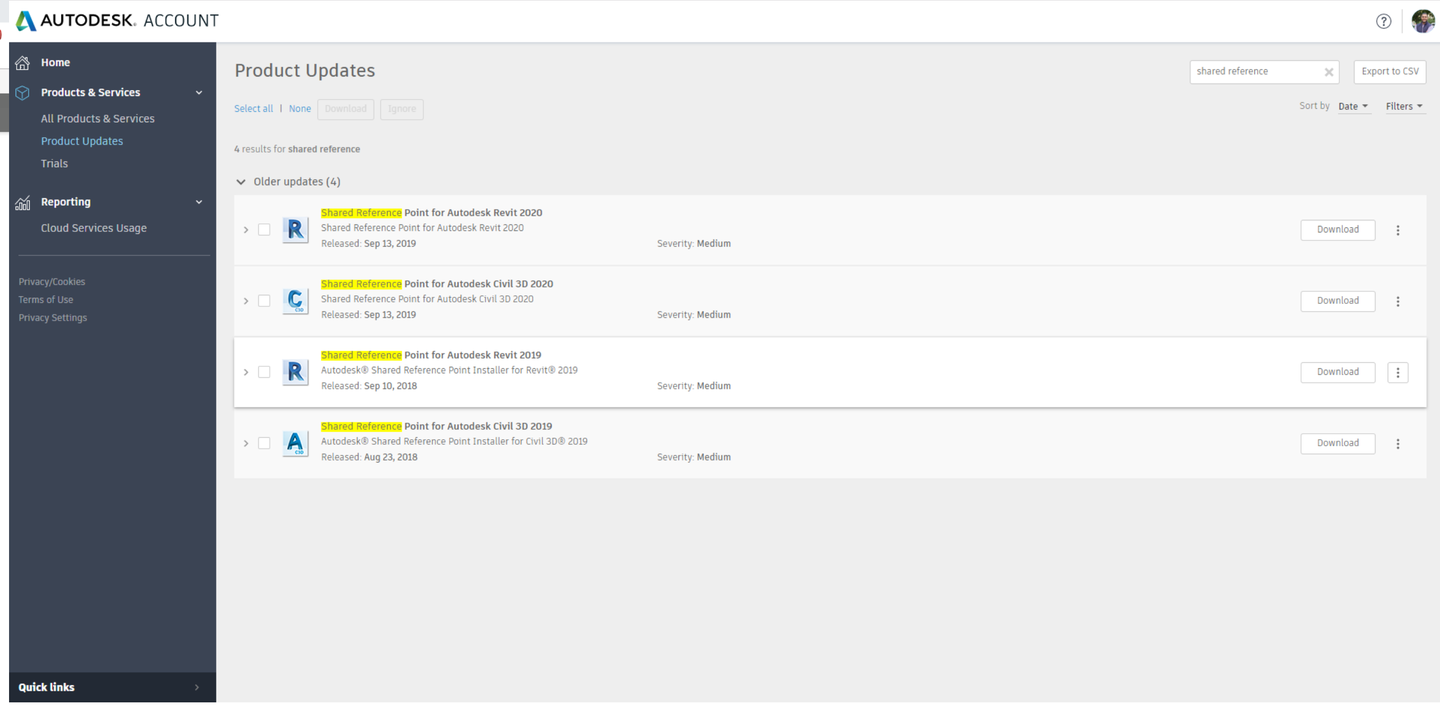
Shared Reference Point Tool

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 populate the Survey Base Point. A new site is created in the Revit model that is tied back to the Civil 3D DWG.







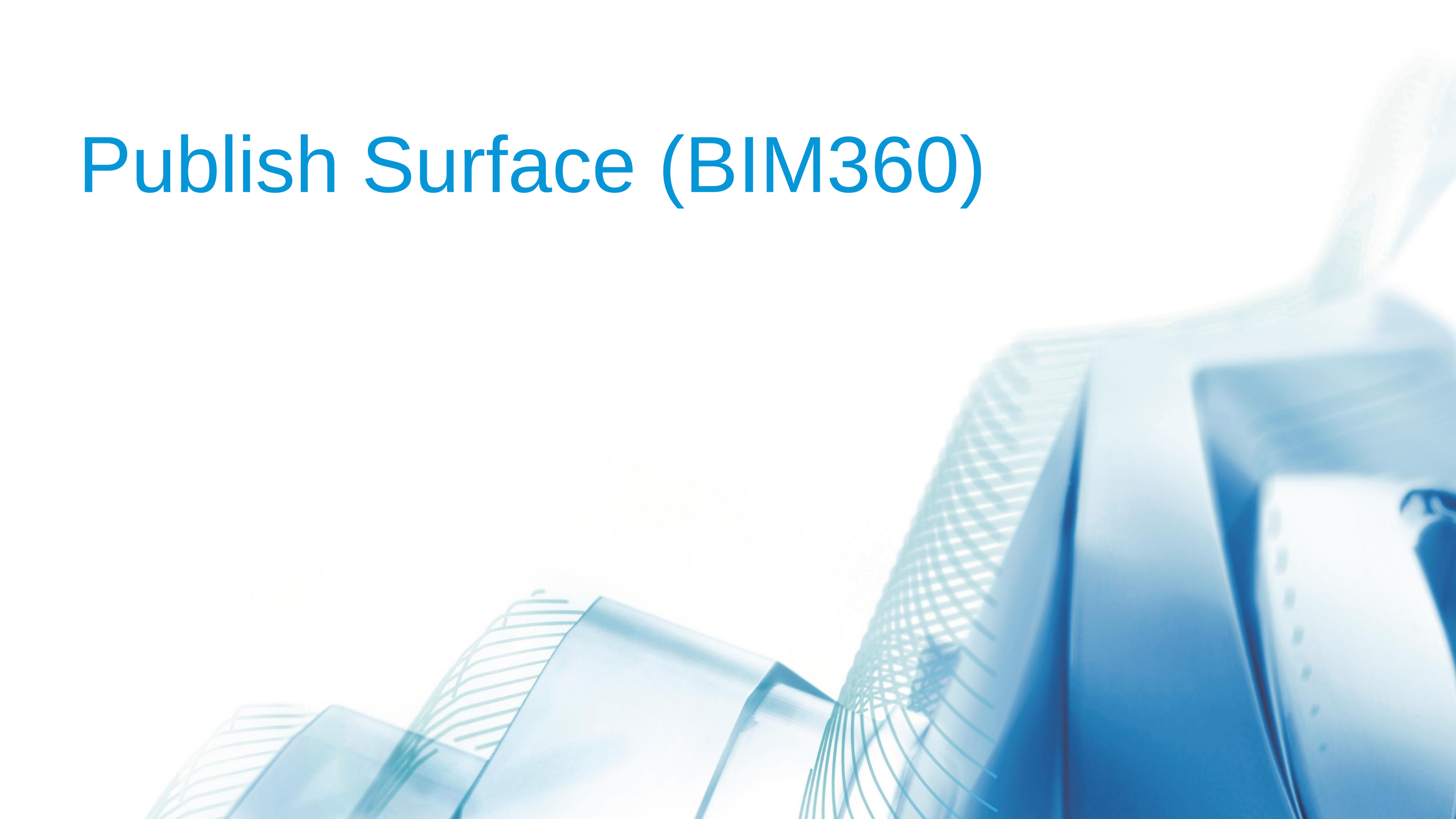
2018 and older

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

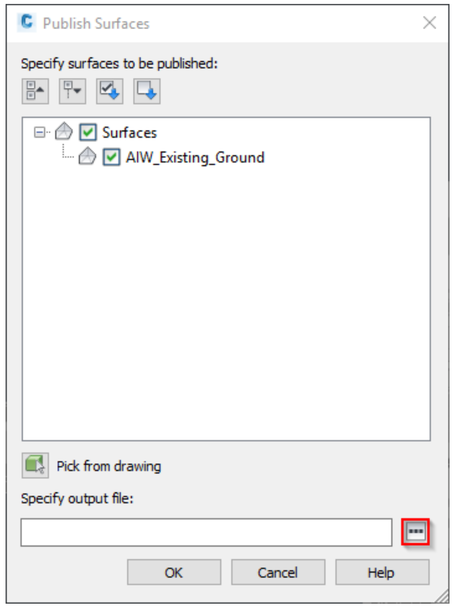
Moved to the Autodesk Account Page. It can be found in the Updates and Add-ons section of each of the respective products, but can also be conveniently found in the Product Updates section.

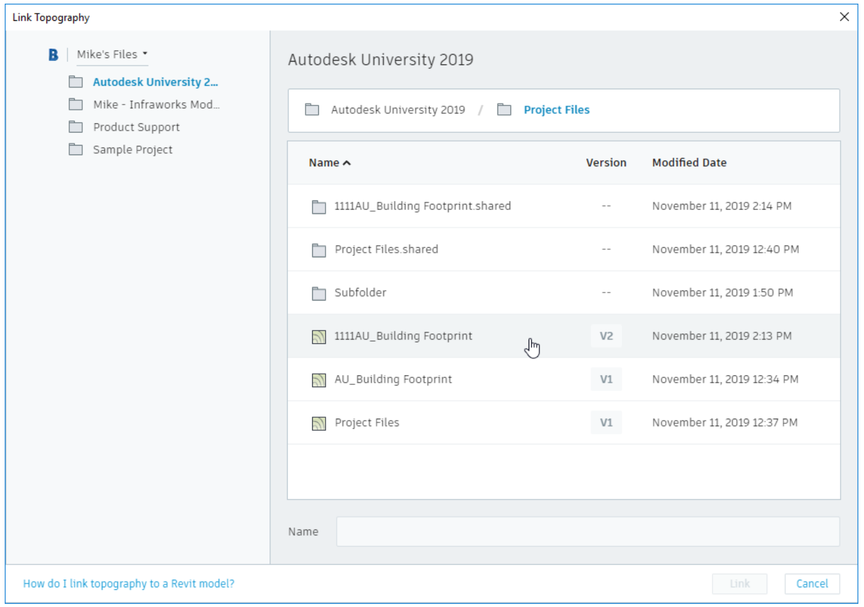
Publish Surface (BIM360)

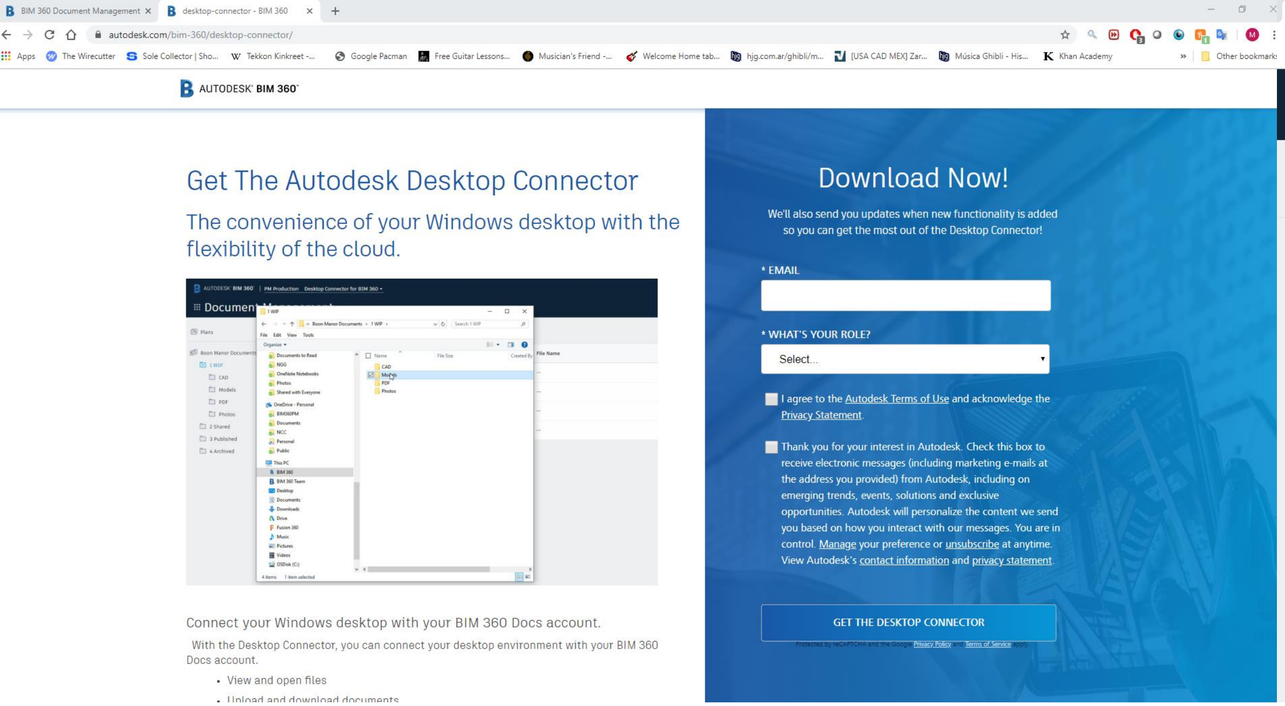


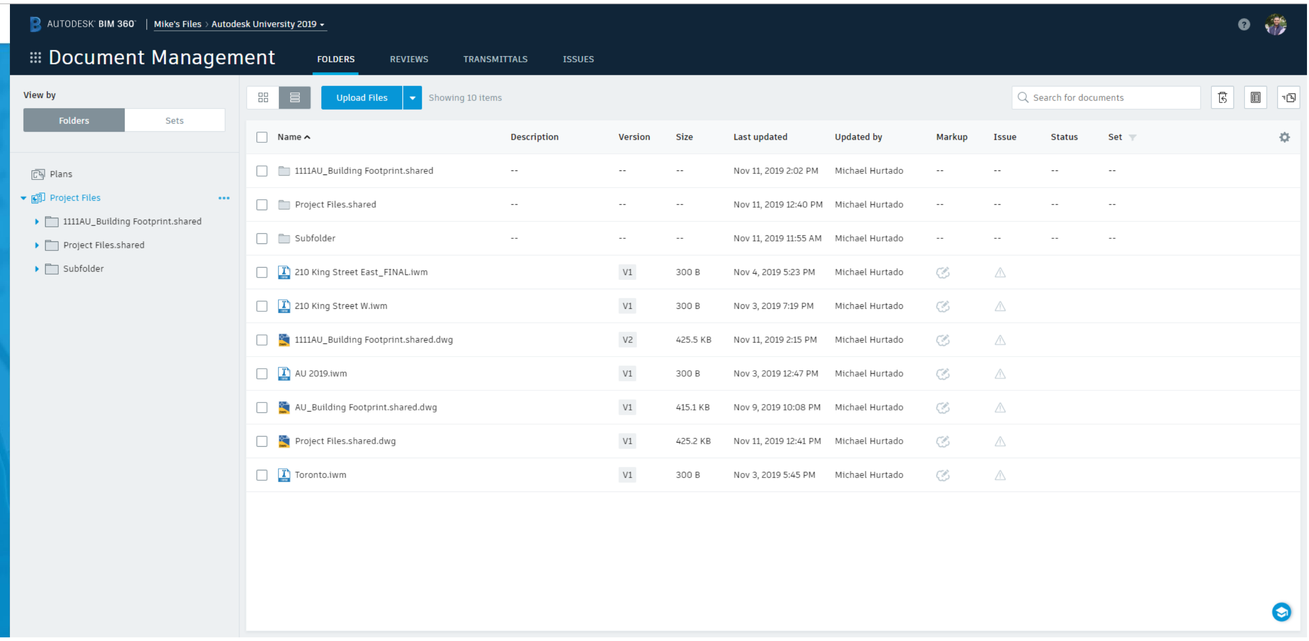
What does it do?

- 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 Topograpy.
- 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









Desktop Connector

Can be found on the Autodesk Desktop Connector Site or on the Autodesk Knowledge Network

BIM 360 Docs

The Desktop Connector will need a project to upload to. For this you'll need to have BIM 360 Docs access.

Let’s dive into the software!

Thank you!

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