AUTODESK UNIVERSITY

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Weapon of Mass Production: Harnessing the Power of the AEC Industry Collection

Jeff Bartels - Infrastructure Technical Specialist - Autodesk, Inc.
Jerry Bartels - Sr. Civil Technical Specialist - Autodesk, Inc.

Learning Objectives

- Leverage the power of the expanded AEC toolset
- Adopt workflows using several applications in the AEC collection
- Transition data between multiple AEC applications
- Increase productivity & reduce errors and omissions

Description

The Architecture, Engineering & Construction Collection represents a powerful BIM package for building, civil infrastructure, and construction projects. In this session we will demonstrate how these tools work together to tackle several common workflows associated with land development projects. When it comes to design, collaboration and construction, the AEC Industry Collection represents the ultimate "secret weapon" you can deploy on all of your projects! During this session PowerPoint will be kept to a minimum so we can spend our time working live in the applications!

About the speakers

Jeff.Bartels@autodesk.com
For 20 years Jeff has worked in the civil infrastructure industry. As a member of Autodesk's Transportation team, he provides support, training & implementation services for DOT's & large municipalities. Since 2008, he has published 25+ titles on AutoCAD and Civil 3D.

Jerry.Bartels@autodesk.com
For more than 25 years, Jerry has worked in all areas of civil engineering, surveying, and mapping, providing clients with services in CAD management, implementation, and network administration. He also has more than 10 years of experience teaching Autodesk products, as well as developing curriculum. At Autodesk, Jerry specializes in civil engineering, surveying, and mapping solutions, and currently provides presales, training, and support services throughout the country. He has received several awards from Autodesk for his presentations.

Jerry and Jeff are also authors on an Autodesk Infrastructure Industry Blog where they post weekly Tips, Tricks and Workflows. http://www.civilimmersion.typepad.com

The "Hand-out" for this session consists of numerous bite size recordings as well as a complete recording of the entire AU session.

Jeff and I believe that recorded content is the best way to disseminate information in that nothing is lost in the translation. In other words, you see specifically which commands are used, where they are located in the interface and the workflow required to get the desired results.

All recordings are (and will be) available on our Blog site:
http://www.civilimmersion.typepad.com

As for the AU session, the entire recording will be posted within 48 hours of the completion of the course. If possible, we will email attendees with a direct link to access the recording once it is posted.

Understanding this, in the event you are looking for more specifics on the kinds of things we will be covering during our 90 min. session, I am including that detail below. First, keep in mind that our session today is covering a very broad topic. (Leveraging the AEC Collection on a land development project) There will be many detailed sessions during AU that will drill down into great detail on all of the topics we will be reviewing today. However, during our time together we will focus more on a higher level view of the many valuable workflows available when using the AEC Collection.

Finally, Jeff and I are firm believers in leveraging the software live during our presentations. In other words we don't run videos unless absolutely necessary and keep our usage of PowerPoint to a minimum.

Presentation Scenario: (This is a fictional project)
The scenario we are using for today's presentation is that of a typical Civil Engineering firm responsible for executing a site plan / land development project. This firm currently uses Civil 3D and is interested on how the AEC Collection can assist them on this project.

The specific project includes a new Fast Food restaurant chain currently called "Chicken and Waffles". The project owner has selected a potential project site in a suburban community currently zoned for commercial use. Several immediate challenges exist on the site include working closely with an adjacent business owner as well as close proximity to single family housing.

To complete this project, we expect to use more than 10 tools within the AEC Collection. These include:

InfraWorks 360   *AutoCAD*
AutoCAD Map 3D   *AutoCAD Civil 3D*
AutoCAD Raster Design   *Navisworks Manage*
ReCap 360 Pro   *Cloud Storage*
Cloud based rendering   *3DS Max*
Vehicle Tracking   *AutoCAD 360 Pro*

The tools we leverage and the order they are utilized will be presented in a typical project workflow approach rather than jumping from tool to tool. In other words we will cover the "Why" behind why the tools are helpful in addition to "How" they are used.

Develop Concept Plan:

We will begin in the project conceptual stage where we will use **InfraWorks 360** to quickly build a 3D model of the existing conditions. From there we will perform some preliminary analysis as well as begin developing our Project Concept. At the same time, we will supplement our model by incorporating a Point Cloud created using **ReCap 360 Pro**. Along the way we will work with **Map 3D** and **Civil 3D** to refine and enhance our concept by adding lot lines and sizing our proposed parking lot. After completing our concept, we will run it by the city as well as project owner before proceeding.
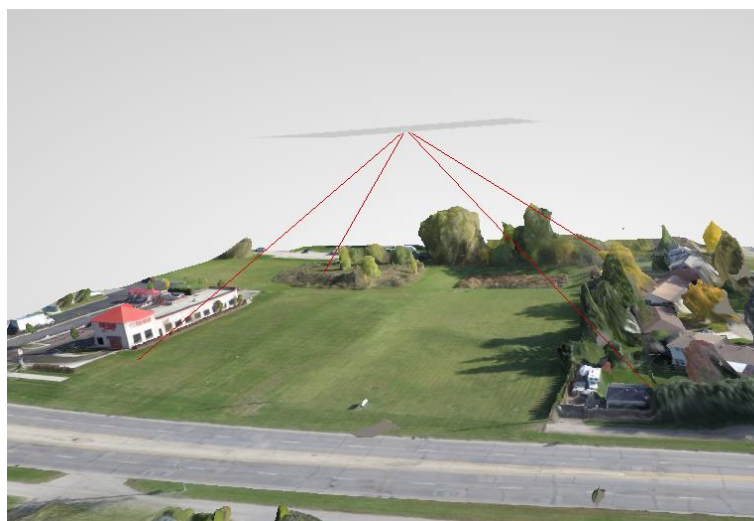
Preliminary Engineering Plan:

During this stage we will begin by locking down the existing site conditions using **Civil 3D**. We will then confirm the proposed parking lot will accommodate the required service vehicles by running some simulations using **Vehicle Tracking**. From there we will make revisions to the design and generate a parking lot report to confirm we meet city requirements. To enhance our project presentation to the community, we will use **AutoCAD** to model the proposed restaurant building such that we can better convey our project in the context of the existing conditions.
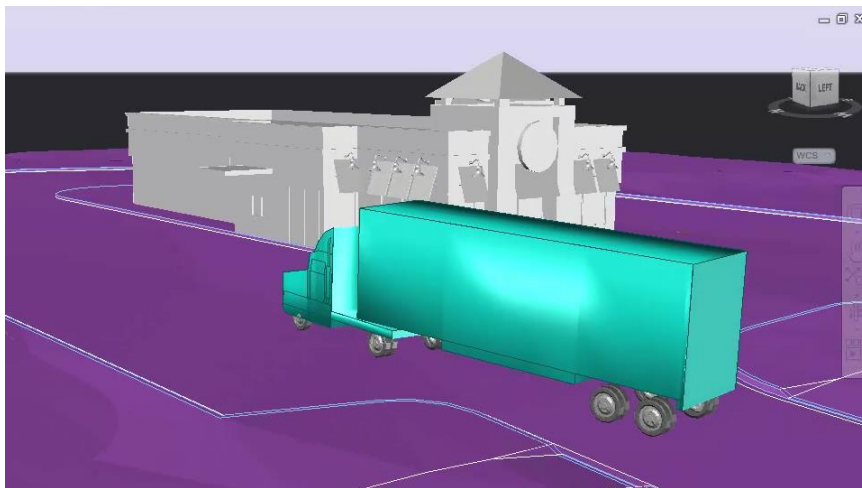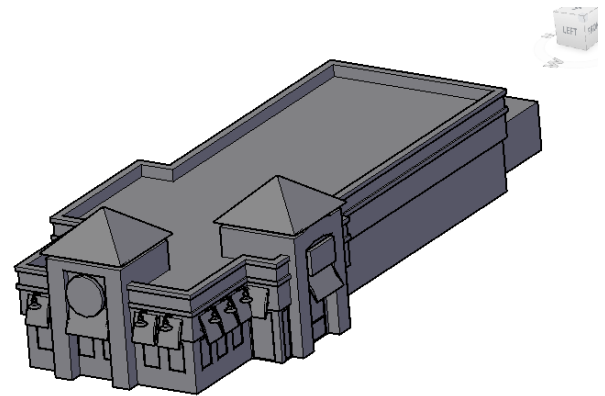
Project Approval:

To increase the chances of getting our project approved, we will bring our **Civil 3D** model back into **InfraWorks 360** and generate still frame renderings and animations to present to the recommending body and public.

Because people will not approve or support a project they do not fully understand, we are going to leverage **NavisWorks Manage** and **Cloud Based Rendering** to create a stereoscopic rendering to supplement the presentation of our project. Using this, we can deliver a no cost virtual reality experience which we believe will help us reach a favorable recommendation especially when it comes to the nearby residents.

Final Engineering Stage:

With our project approval in hand, we will complete the final design using **Civil 3D**. This will include computing quantities as well as site grading. Along the way we will leverage tools like **Raster Design** to vectorize some scanned content to be included on our construction documents. We will also leverage **AutoCAD** to finalize several details that will be required for successful construction. Finally we will provide remote access to our models using **AutoCAD 360 Pro** such that we can share our progress with team members when in the field.
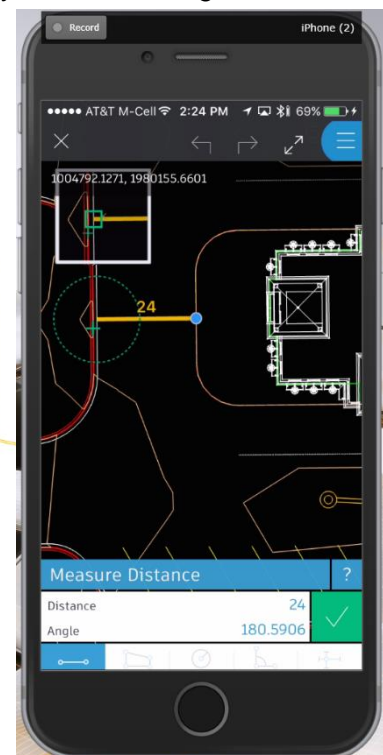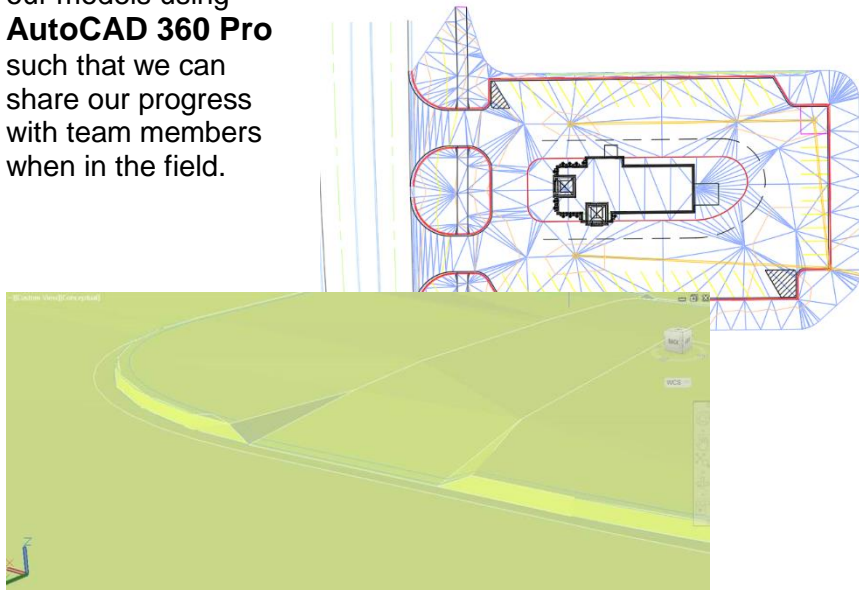
Marketing:

Our presentation will conclude in **3DS Max** where we will enhance our final project model and produce some renderings that can be used by the project owner to market the project.