

Every Point Cloud Has a Silver Lining When You Use Autodesk® InfraWorks™

Presenter Keith Warren
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Co-Presenter Mark Dwillis
Senior Designer

range sensors

laser scanning

scan to BIM

feature recognition

point survey

photogrammetry

mesh healing

hybrid modeling

survey control

augmented reality

measurement

time delta analysis

machine controlled grading

3d printing

reverse engineering

metrology



Reality Computing

Civil 3D, Navisworks, 3Ds Max, ReCap Pro & Infraworks

Capture

Manipulation

Realization

Analysis

range sensors

laser scanning

scan to BIM

feature recognition

point survey

photogrammetry

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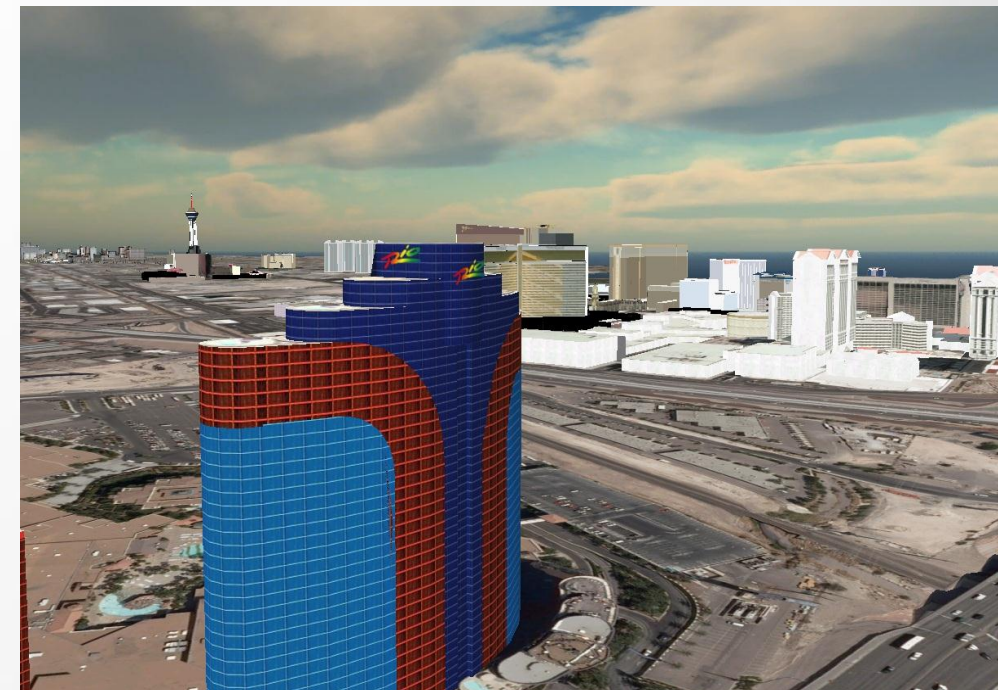
metrology

3d printing



Class summary

This session will show how VTN Consulting is using Autodesk Infrastructure Modeler[®] to create and communicate conceptualizations of 3D city designs, with real engineering data compiled from Point Cloud Scans, GIS, CAD, 3D Models, and civil engineering cad files. Than share the models with Autodesk Infraworks 360[®] for team collaboration in the cloud.



Autodesk Labs

“Autodesk Labs is home to innovative new technologies and collaborative development. Its mission is to involve you, the customer, in the progress of design technology solutions. We’re not a beta program (although Autodesk does have an active beta community), or a usability team, because the technology we work with is too new to be a product. The user feedback that you provide to Labs is really on product ideas, while they’re still in an early conceptual stage.”

- Project Galileo Before it became (Autodesk Infrastructure Modeler®)

Web Site: <http://labs.autodesk.com/>

Autodesk Labs



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SCOTT SHEPPARD



November 05, 2013

Mercedes Benz Biome Car Appears In Mercedes Benz Commercial

I am an Autodesk Gallery Ambassador. One of our exhibits that I have blogged about is:

April 02, 2013

Autodesk Gallery Powers of Design Exhibit: 10**0 Biome Concept Car

I work out of our office on One Market Street in San Francisco. My standup-desk is right across from our Gallery at One Market. One of our newer exhibits is called *Powers of Design*. It was first featured at the Technology Entertainment & Design (TED) conference last year. *Powers of Design* depicts the size of everything from the inconceivably small to the mind-blowingly large. I thought I'd cover the exhibit elements, one at a time, over the next few months. I started small and am working my way up.



Physical prototype of Biome concept car. Image courtesy of Mercedes-Benz

Autodesk Labs

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Stay informed of Changes

//LABS_LATEST

Project Sci-Viz for 3ds Max graduates from Autodesk Labs	11/01/13
New technology preview: Project Dalton for pipe flow simulation and analysis	10/31/13
Former ADN Plugin of the Month, Digital Signature Stamp for AutoCAD, retired from Autodesk Exchange Apps	10/31/13
Defect corrections based on your feedback: new Project Miller download now available	10/30/13
Update: Project Memento now exports geometry and textures to OBJ format	10/23/13
Improvements based on feedback: updated Leap Motion Controller Plug-in for Autodesk MotionBuilder	10/21/13
Defect correction update based on your feedback: Project Miller	10/17/13
The Innovation Genome Project	10/17/13
New technology preview: Project Miller for fixing/viewing before 3D printing	10/11/13
Autodesk App Exchange version of DWF Batch Publish for AutoCAD now maintained by JTB World	10/10/13

//LABS_BLOG

Project Sci-Viz for 3ds Max Graduates from Autodesk Labs	11/04/13
Project Dalton Now Available on Autodesk Labs	11/01/13
AU CAVE: And now for something completely different...	10/31/13
Happy Halloween from Autodesk	10/31/13

Key learning objectives

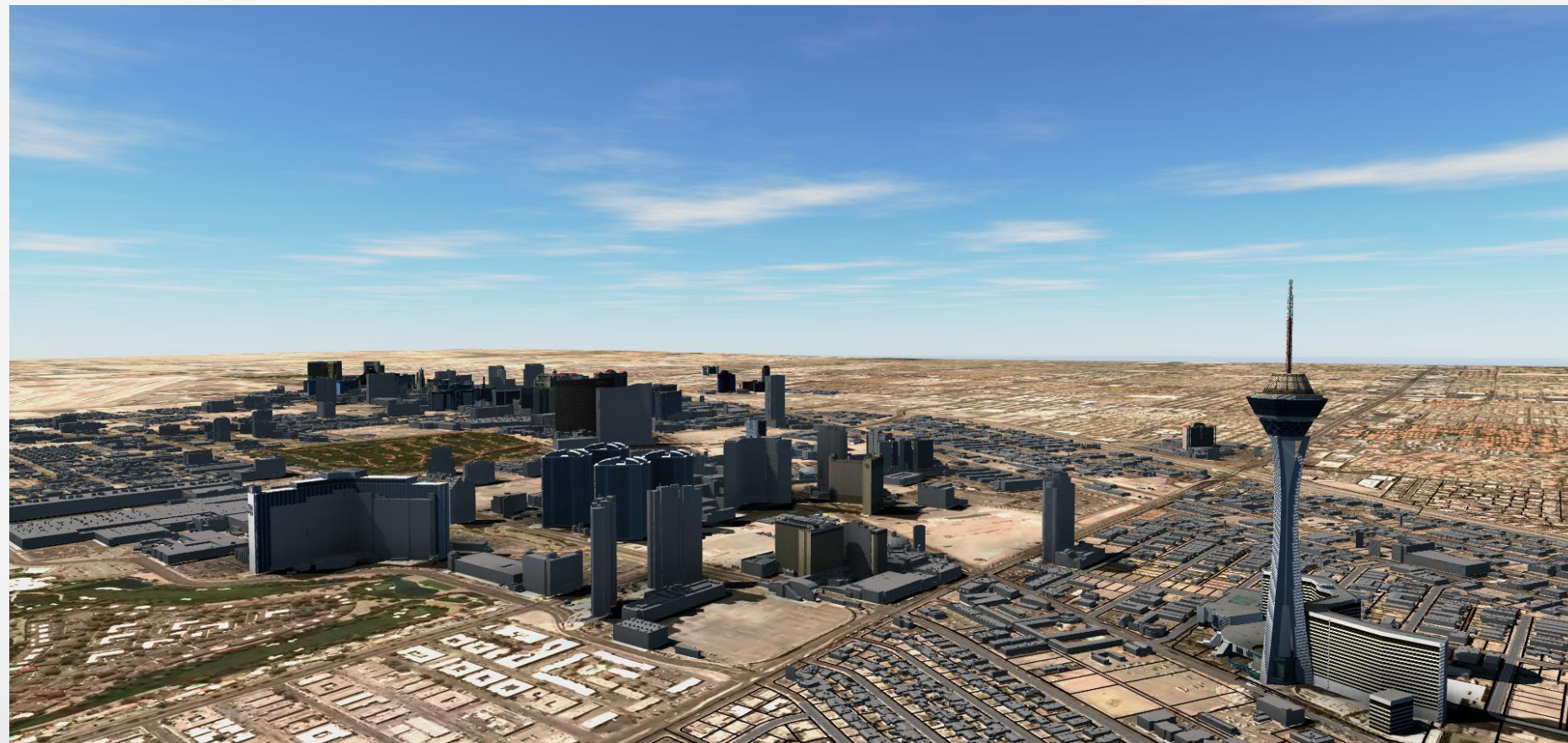
At the end of this class, you will be able to:

- Find data to create compelling models
- Setup model file with coordinate system
- Create Surface and drape aerial photo
- Add models (building, power poles, street signs, etc.)
- Exporting from Civil 3D
- How to share data with cloud services
- Create compelling stories for your stakeholders



Solutions

- ✓ 3D Geospatial Data (GIS)
- ✓ 3D Intelligent Modeling
- ✓ Urban Planning and Design
- ✓ Space Planning



Integration of:

- ☐ Engineering Design and As-Built
- ☐ Construction Data
- ☐ Architecture Design Data
- ☐ Survey Field Data / Point Cloud Data (HDS)
- ☐ Coordinate Reference System (CRS)
- ☐ GIS – Parcels, Zoning, Future Land Use, Flood Zones, Etc.
- ☐ Emergency Response

Where do I get the data?

Free data sources:

- ✓ USGS for Terrain & Imagery <http://viewer.nationalmap.gov/viewer/> (formerly Seamless)
- ✓ Municipalities for GIS data
- ✓ Open Street Maps
- ✓ Tiger Data (Streets)
- ✓ Trimble 3d Warehouse for buildings

How do I get started?

Terrain

Terrain, or an elevation model, is required to get started using Infraworks. GeoTiffs, DTMs, and DEMs are freely available from a variety of sources. USGS is the first place to start.

Aerial

Aerial or satellite photos provide color, texture, and orientation to the model, but no depth. They also provide a stencil for tracing city features such as buildings, trees, or roads.

Roads

Roads also provide context to the model, as well as a data source to display road names via tooltips in the model.

Class Demo

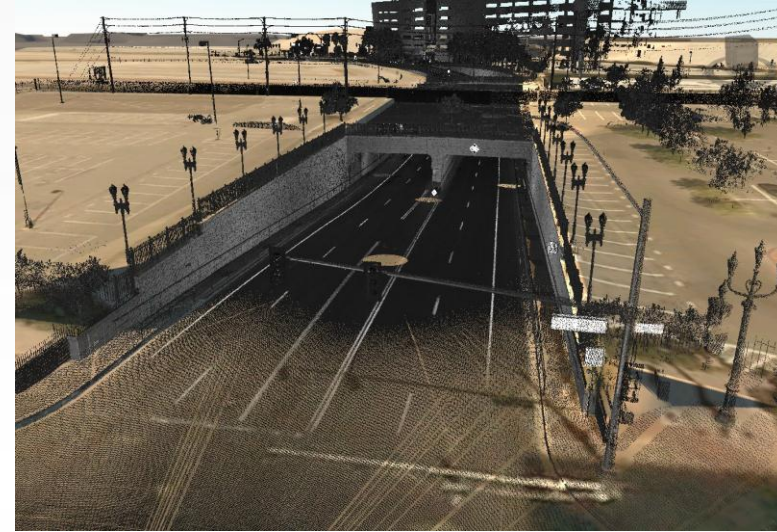
Utility Infrastructure



City Planning



Point Cloud Scan



Mobile App Cloud Serves





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