MFG473304

The Evolution of a Digital Factory

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Learning Objectives

- Learn the approach for creating a digital factory.
- Attendees will be able to demonstrate the complete workflow from concept to the commissioning of the factory.
- Attendees will be able to take informed decisions on the factory floor using a Digital Mockup.
- Attendees will be able to leverage building data to create a discrete Process Layout.

Description

To maintain competitive advantage, more and more Factory Layout planners and designers are trying to find ways to improve decision making for a Factory. This class will explore how Autodesk Factory design Utilities combined with Infraworks and REVIT software is proving to be a integrated solution that lets Layout planners and designers capitalize on their knowledge of AutoCAD for Factory Layout Planning. You will also learn how to use 3DS Max Interactive to take your 3D Factory design to Virtual Reality for the purpose of improved decision making.

You will then learn how to create the 3D factory and connect it to the elements of infrastructure such as the building and approach roads. This class will also show how the bidirectional sync between AutoCAD and Inventor lets you bring any Layout changes into the 3D factory Design to further connect with REVIT, Infraworks and 3DS Max Interactive.

Speakers

Keerti Malavooru is a mechanical engineer graduate with 15+ years of Industry experience in design and thermal management. At Autodesk, he is responsible for the overall technical strategy to support sales effort in ensuring customer success.

Sanjeev Ghosh is a experienced Technical Evangelist with a demonstrated history of working in Manufacturing and Computer software industry. He has in-depth knowledge of product design and manufacturing processes particularly in the FMCG packaging industry, the injection molding process and tool design and manufacturing

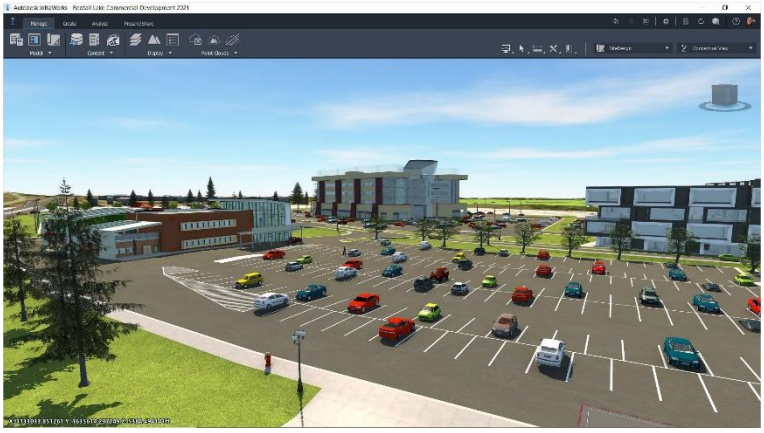
Veera Pandian is a Senior Technical Specialist at Autodesk for India & SAARC countries with 20 years of experience in the Manufacturing Industry. In his current role at Autodesk, he works with Manufacturing OEMs and Vendors to assess their current Design, Engineering & Manufacturing processes and put together the right set of solutions to help them improve and implement best practices.

Introduction to Autodesk Infraworks

InfraWorks® civil infrastructure conceptual design software lets AEC professionals' model, analyze, and visualize their design concepts within a real-world context of the built and natural environment —improving decision making and project outcomes.

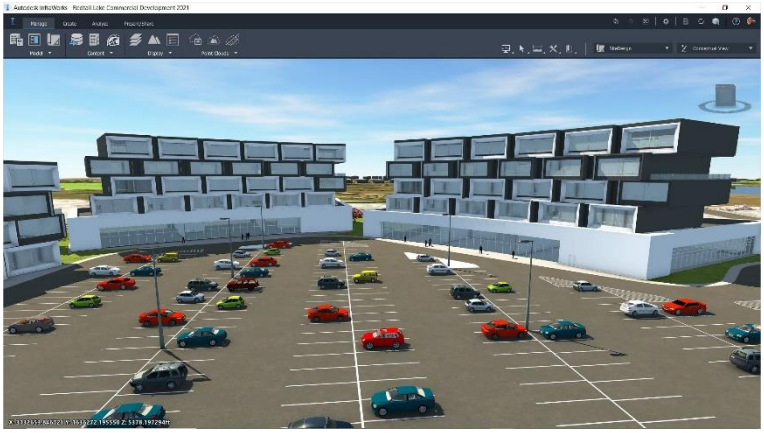
Site design

Generate a base model from various sources, including survey-grade terrain data. Lay out parcels, grading, coverages, city furniture, and more to complete your design concepts.



Revit model integration

Generate a view of a Revit model that is geolocated in Infraworks. Analyze and present Revit models within the broader context of the project’s existing conditions.

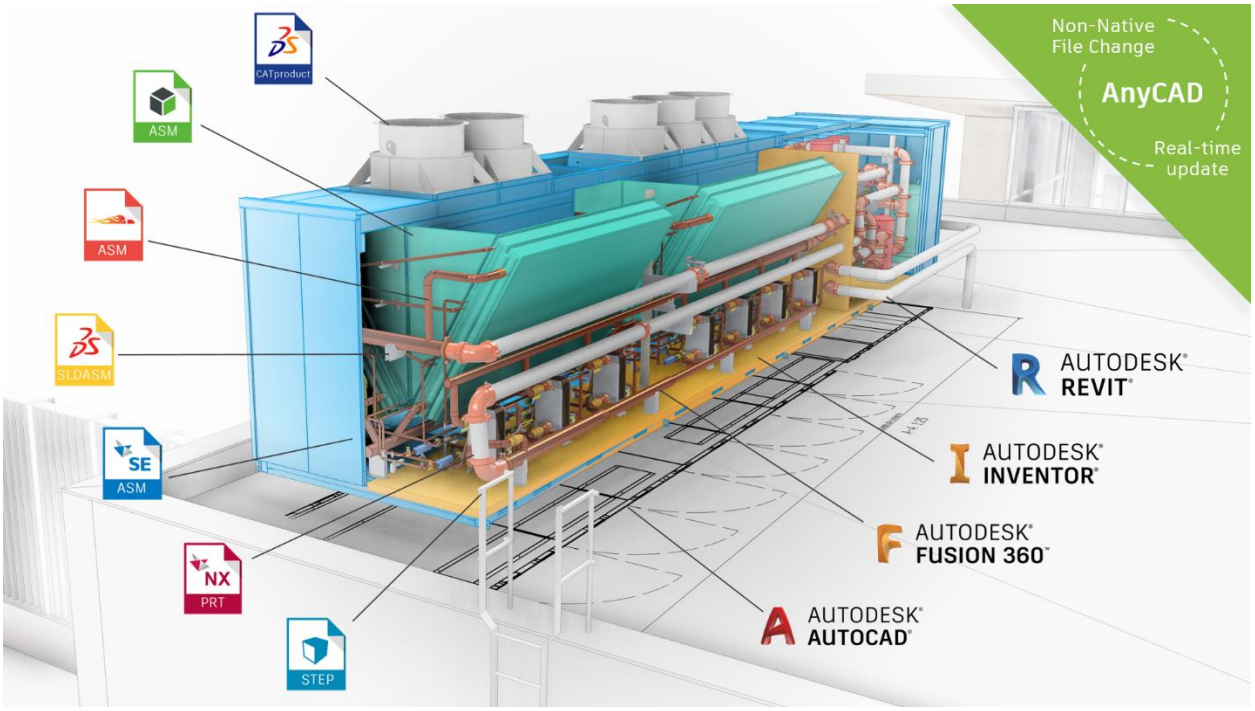


Animations

Export InfraWorks models to 3ds Max to generate stunning visual experiences of your project designs
https://videos.autodesk.com/zencoder/content/dam/autodesk/www/products/infraworks/fy21/visualization-industry-page/features/animations-video-1920x1080.mp4

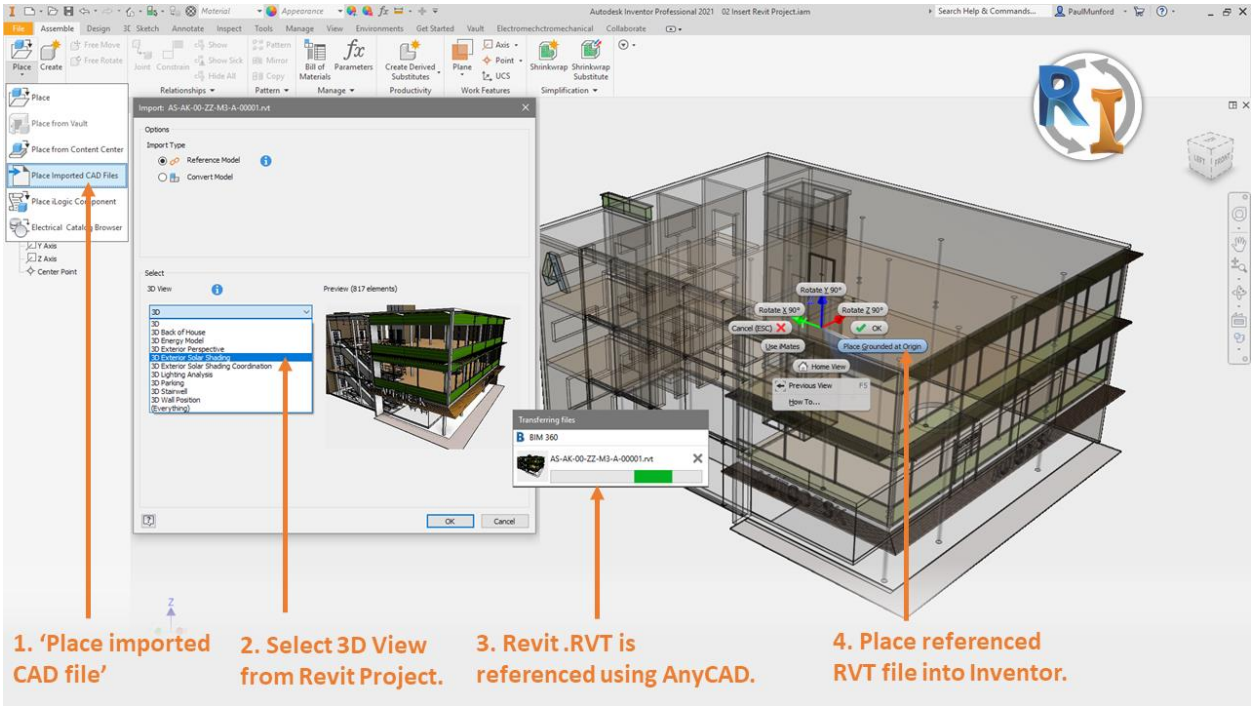
Building Design Integration – Introduction to Inventor AnyCAD for Revit

'AnyCAD', is a technology that allows us to reference CAD files into Inventor from other CAD systems without file translation. This means that a .RVT file can be edited in it's original authoring tool, and when it's saved – an update will trigger inside Autodesk Inventor. The benefit is that you can collaborate with designers who are using Autodesk Revit without having to convert files from one format to another. It also means that you can link to geometry in the referenced Revit file in Inventor, confident that when the AnyCAD file is updated, you're inventor model will update as well.



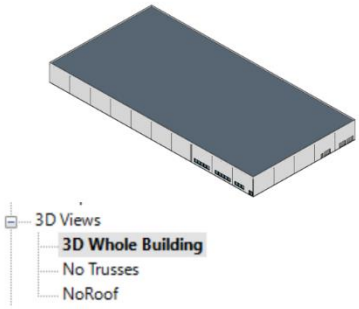
How does it work?

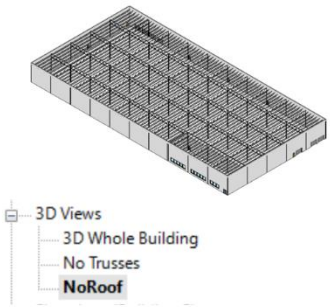
The Revit project file can be shared with Inventor simply as a file, or via BIM360 docs. The Revit project is referenced into Inventor, and the Architects design intent is/are replaced with the manufacturing model. This guarantees that the manufacturing model is coordinated with the design model. When the manufacturing models are positioned and sized correctly, we will see how they can be exported as a Native Revit or BIM neutral IFC file for further coordination and review.

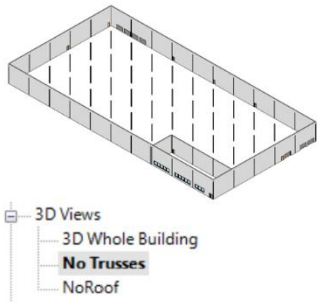


Step-by-step procedure

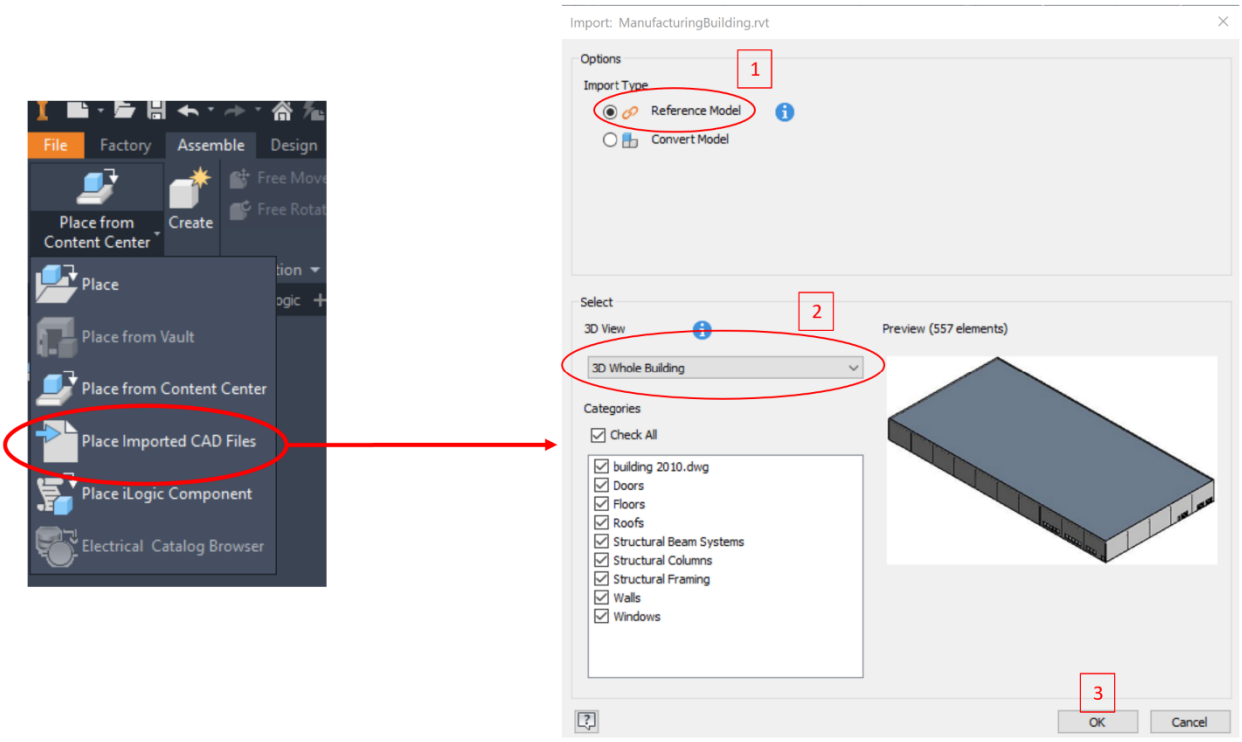
1. Open the Revit project in Revit to add or modify 3D views to control the information that goes into Inventor



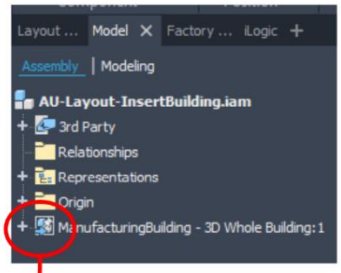




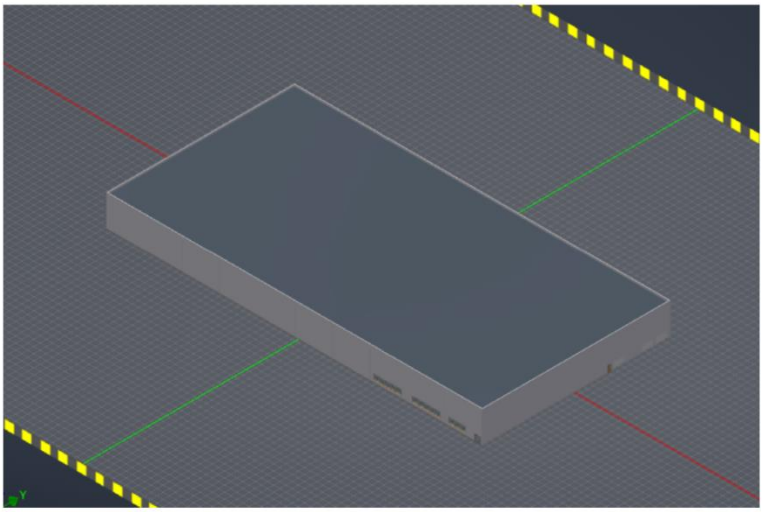
2. Import the Revit file in Inventor and use the reference option in the AnyCAD dialog



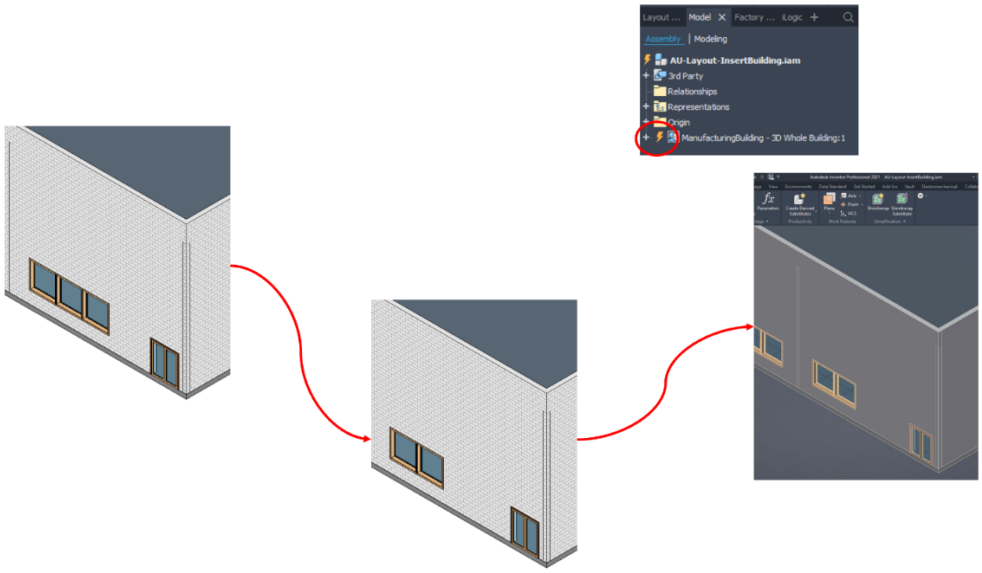
3. The Revit model is inserted “Grounded at Origin” to make sure that the coordinates of the Revit project match the coordinates in Inventor.



A small blue arrow icon – this indicates that the Revit model has been linked into this Inventor Assembly using AnyCAD



4. Making a change in Revit model also updates the Revit reference model in Inventor. Once changes are saved in Revit and when you switch back to Inventor, you will see the “Orange” lightining symbol next to Revit file name in Inventor browser. Upon clicking the local update button the Revit model inside Inventor also updates to reflect the change made in Revit

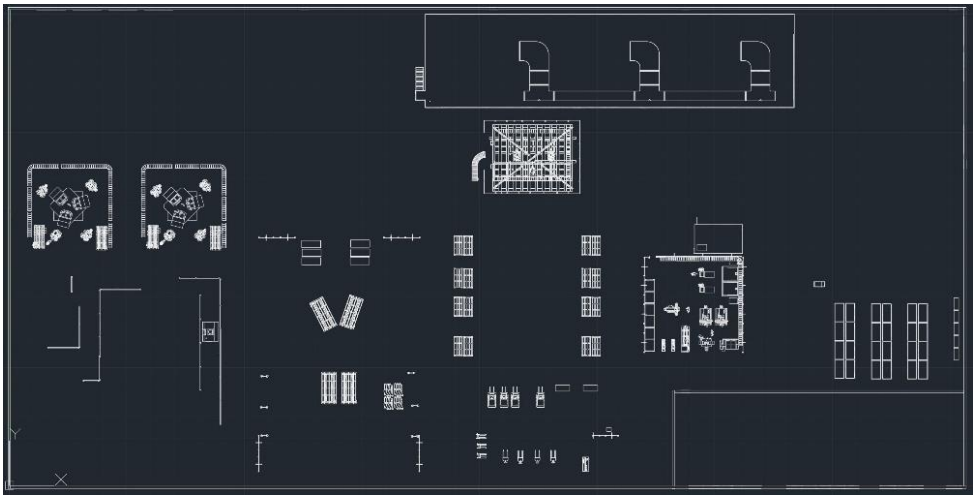


Factory Layout

From initial concept layout development to ongoing operational improvement, Factory Design Utilites bring the entire production team together to help you plan, build, and manage a highly efficient factory.

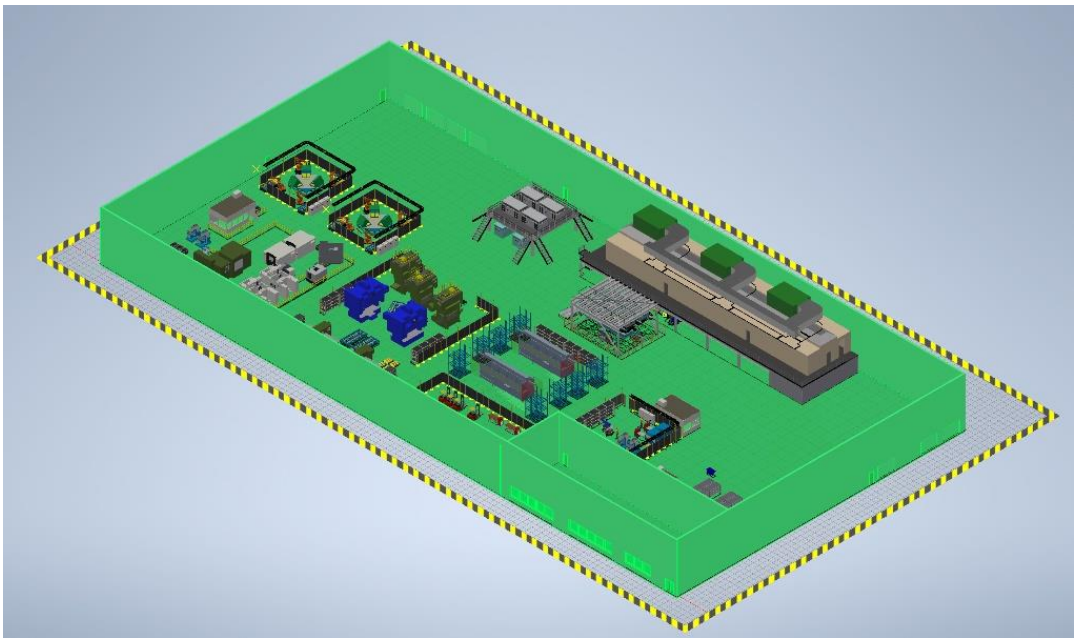
Accelerate planning layout with AutoCAD

Generate a 2D layout in AutoCAD to easily create a rough layout of a work cell and populate different sub-layouts/workcells using Asset library.



Detailed design in 3D

Using 1:1 Bi-Directional associativity between AutoCAD and Inventor generates a 3D model of the layout in Inventor. Integrate production lines into your BIM model of the facility and update/modify assets using Asset library as and when required.



Robust Design review in Navisworks

Review all Factory data together

- Multi-CAD & point cloud support
- Visual fly-/walk-through
- Clash detection and clearance analysis
- 4D simulation of installation sequence