AUTODESK **UNIVERSITY** 2014

Discover the Benefits of Advance Steel, BIM Software for Steel Detailing and Fabrication

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Come to this class and discover the benefits of Advance Steel software, the Building Information Modeling (BIM) software product specifically designed for steel detailers and fabricators who require easy-to-use structural software for automating drawing creation, documentation and fabrication.

Learning Objectives

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

- Collaborate more easily with designers using Revit software or Robot Structural Analysis software
- Create faster a fully detailed structural model with steel connections and stairs & railings
- Employ ready-to-use templates to generate high-quality shop drawings and bills of materials
- Collaborate more easily with contractors using Navisworks software or BIM 360 Glue software

About the Speaker

Philippe Bonneau is the technical marketing manager for Advance Steel software at Autodesk. Prior to joining Autodesk, Philippe spent 20 years filling various roles in the structural industry, including working as a steel detailer in steel detailing companies for 4 years and then working as a product manager for Advance Steel at Graitec SA. Philippe attended the University du Maine in Le Mans, France, and he is a mechanical engineer. He is based in Paris, France.

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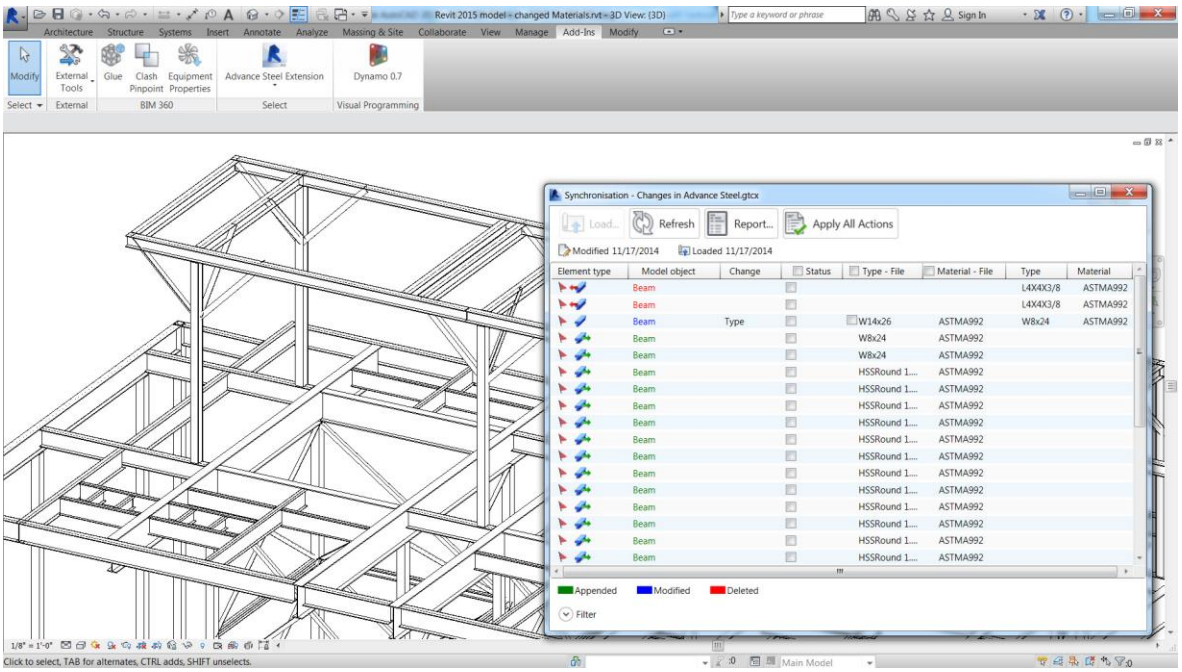
Collaborate more easily with designers using Revit software or Robot Structural Analysis software

Connecting Revit and Advance Steel to eliminate redraw

The interoperability of Advance Steel with design software like Autodesk® Revit® software makes it easier for detailers and fabricators to collaborate and manage project changes with architects and structural engineers, and become an integrated part of the BIM process.

Advance Steel features bidirectional integration and model synchronization with Autodesk Revit software thanks to the Advance Steel Extension for Revit.



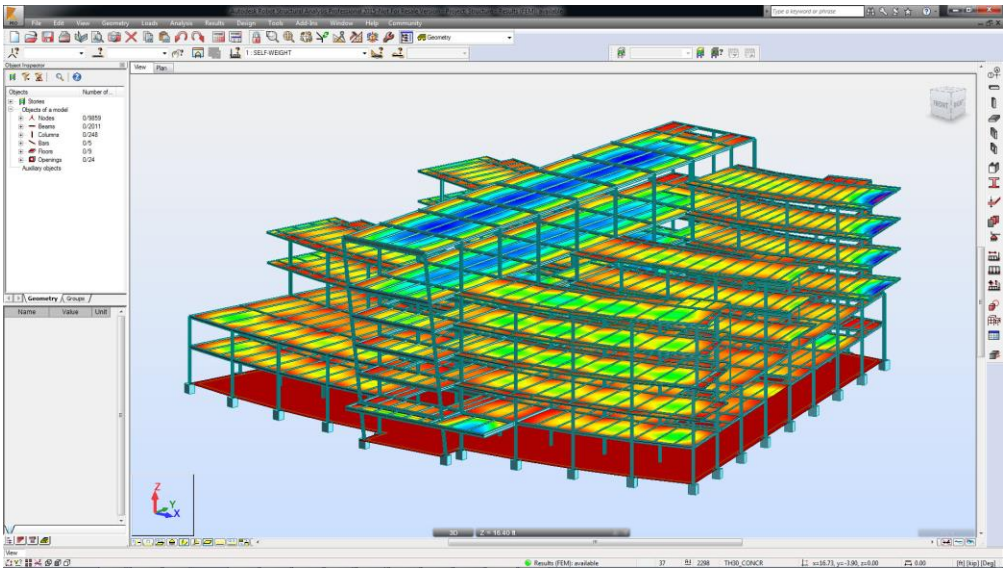
A dialog box highlights color-coded differences when synchronizing Advance Steel and Revit models

This level of interoperability allows you to compare original and updated models and be alerted (for example) to new, changed, or deleted structural members. This helps reduce the risk of potential errors when design changes occur.

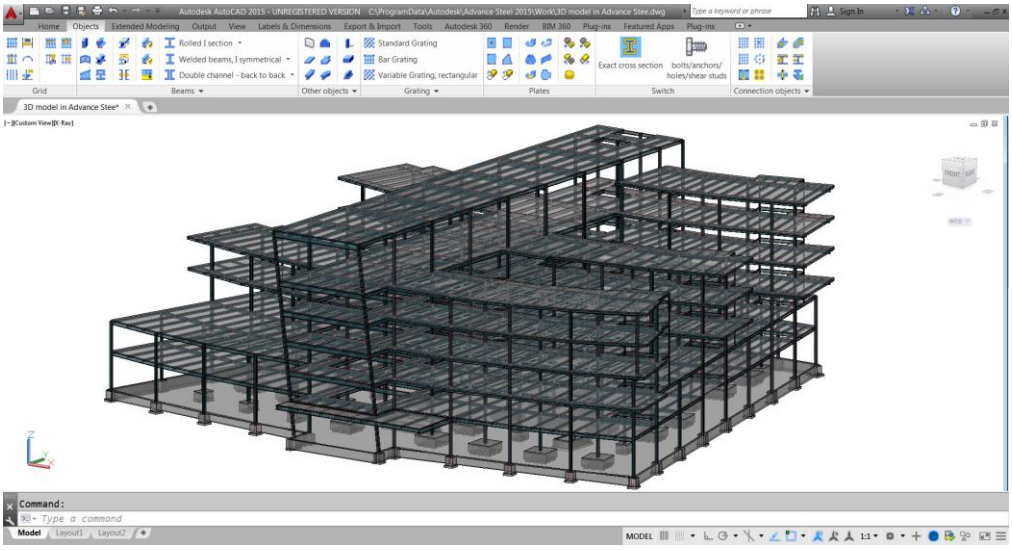
The “Advance Steel extension for Revit” exchanges data between Autodesk Revit and Advance Steel for a more connected BIM workflow from design through fabrication to construction. This workflow avoids duplication modeling work. This allows an engineer to design the building in Autodesk Revit and complete the model by inserting steel connections and miscellaneous steel components using Autodesk Advance Steel. This provides great benefits in terms of coordinating between the different teams.

Connecting structural analysis and detailing with Advance Steel

The link offered by Autodesk between Advance Steel and Robot Structural Analysis is a fully bidirectional link. This link streamlines structural engineering workflows by facilitating the coordination of design documentation with structural analytical design information. This design process helps to guarantee safety and cost optimization of the structure.



Integrate design and analysis with Robot Structural Professional with bidirectional links.

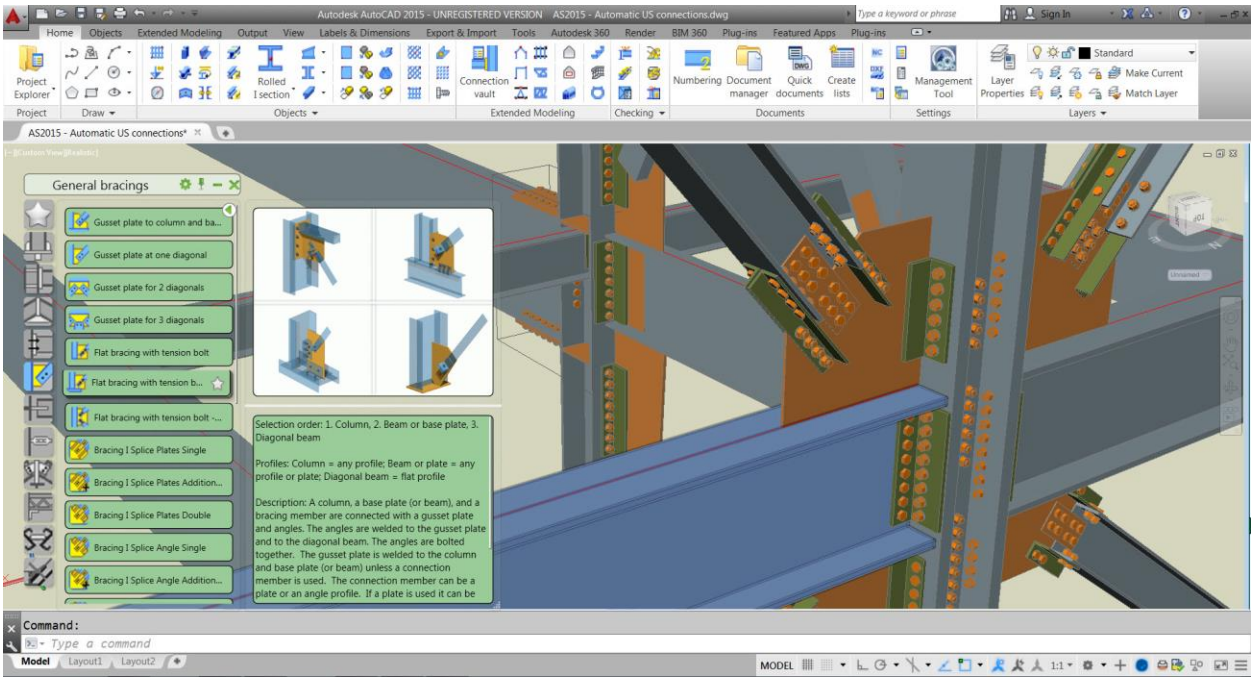


Create faster a fully detailed structural model with steel connections and stairs and railings

Extensive library of automatic & intelligent steel connections

Advance Steel includes comprehensive libraries of materials, sections, and bolts based on different steel codes and standards from around the world to suit your particular project needs.

The Advance Steel Connection vault gives you access to different types of ready-to-use parametric steel connections. The comprehensive, user-friendly library enables you to access simple and complex structural connections, and when member size changes are made, connections are automatically updated.



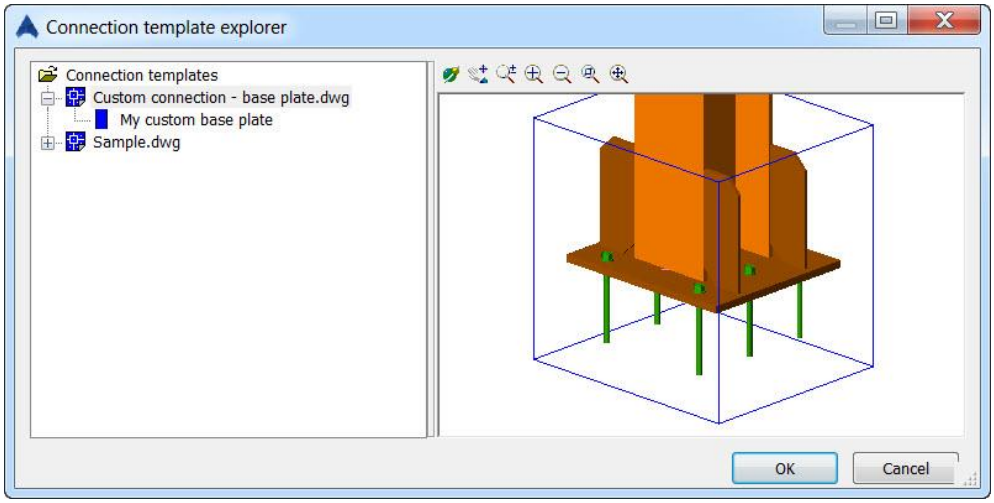
Advance Steel helps improve productivity by providing a parametric library of steel connections.

Dedicated tools to create your own custom connections

The Connection vault provides a huge library of automatic and intelligent steel connections. But there might be some situations where the provided connections do not cover your situation. This is why Advance Steel offers the possibility to create, save and then reuse custom connections which suit your needs.

For example, a conservatory manufacturer wants to have concealed connections between members and designs a special joint for this purpose. Although this special joint is not part of the Connection Vault they want to use the joint frequently. Therefore, they create a custom connection.

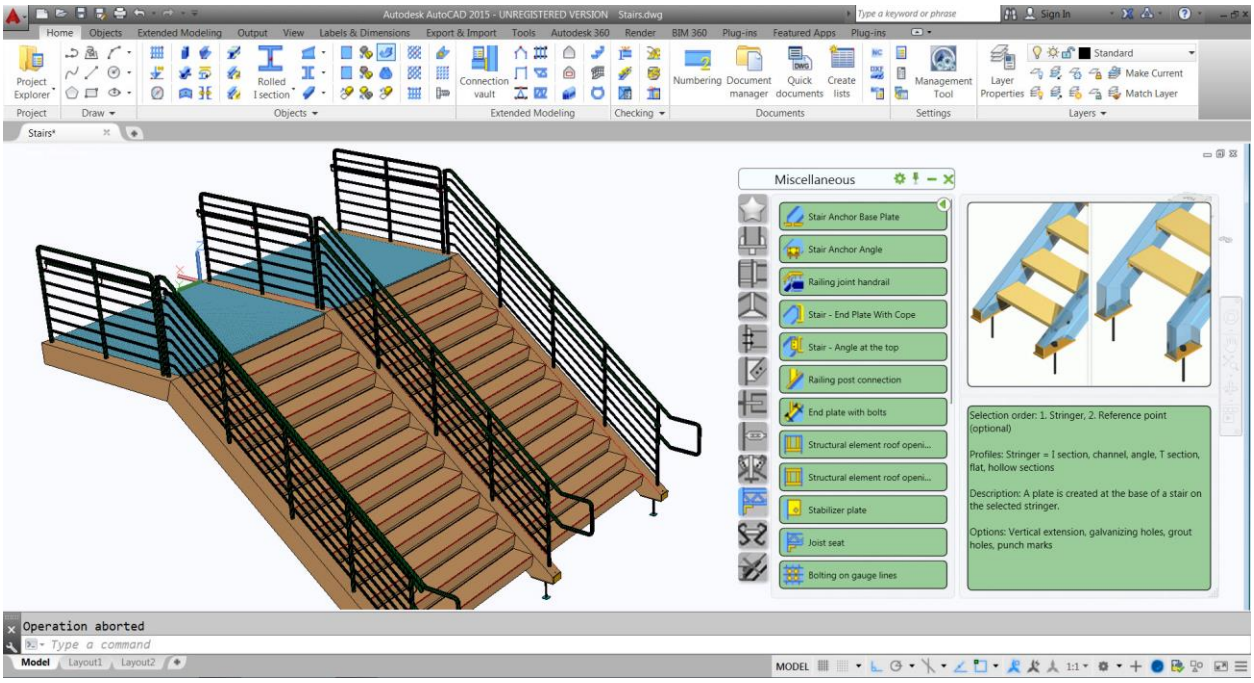
To speed up the modeling of custom connections, the Advance Steel offers different types of sub steel connections which can be used separately or together. Once the custom connection is created, it is easy to save it and get it available in the custom connection template explorer so that you can apply it in the same model and in different other models.

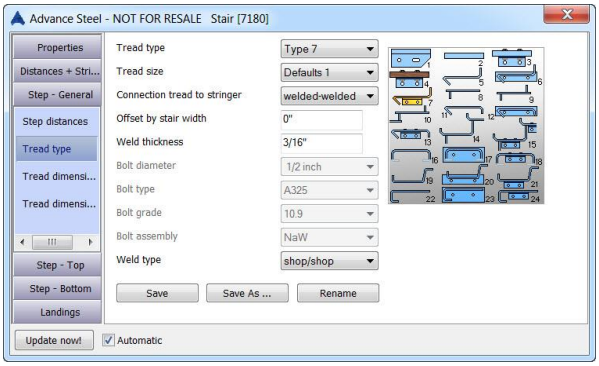


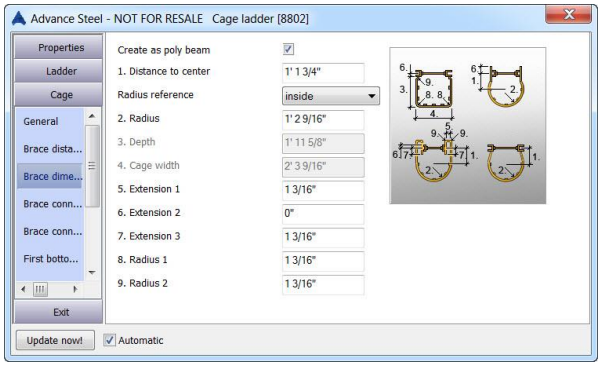
Advance Steel helps speed up the modeling phase by providing tools to create and save custom connections.

Available macros for quick modeling of miscellaneous steel

Advance Steel also has powerful tools for miscellaneous steel creation. Create more accurate stairs and railings with the use of special wizards. These dedicated wizards save more time by helping you quickly generate straight and spiral stairs, straight and curved railings, and cage ladders. Once created, you can more easily modify the properties using a large selection of customizable parameters to suit the needs of your project.





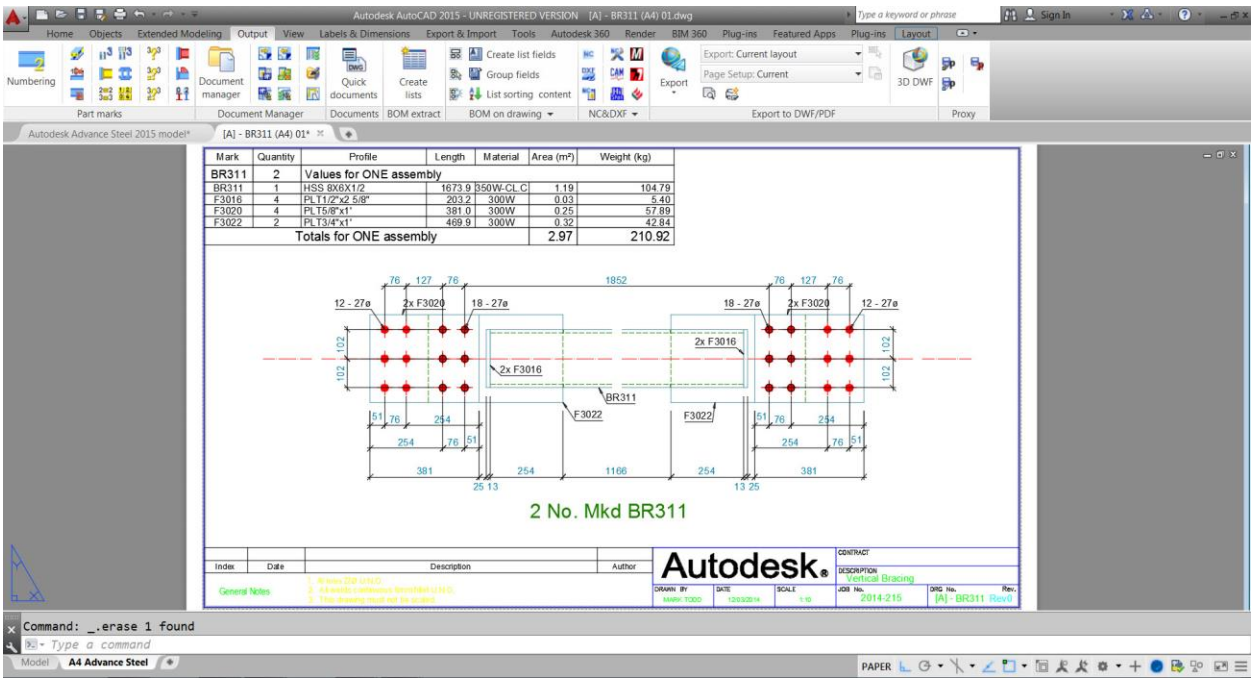


Advance Steel provides dedicated tools for stairs, railings and cage ladders.

Employ ready-to-use templates to generate high-quality shop drawings and bills of materials

Drawing styles to get shop drawings and general arrangement drawings

Advance Steel software helps to improve the steel detailing process by providing ready-to-use templates that aid the creation of high-quality shop drawings.



Example of an automatically generated shop drawing.

Shop drawing templates can be used to create more accurate single part and assembly drawings at any time. These can be labeled and dimensioned to your requirements and expectations, so the process can fit in your with shop needs. The shop templates are easily customizable so that they can be refined to fit in with your current business needs.

You can also produce general arrangement drawings for use during erection at the jobsite. These clear drawings can be quickly created in isometric, top, elevation, and anchor views, and automatically dimensioned and labeled by using the customizable drawing styles.

BOM templates to generate different types of reports

Material lists are automatically generated using templates that extract information directly from the data within the 3D model, helping to reduce creation time and supporting a higher degree of accuracy.

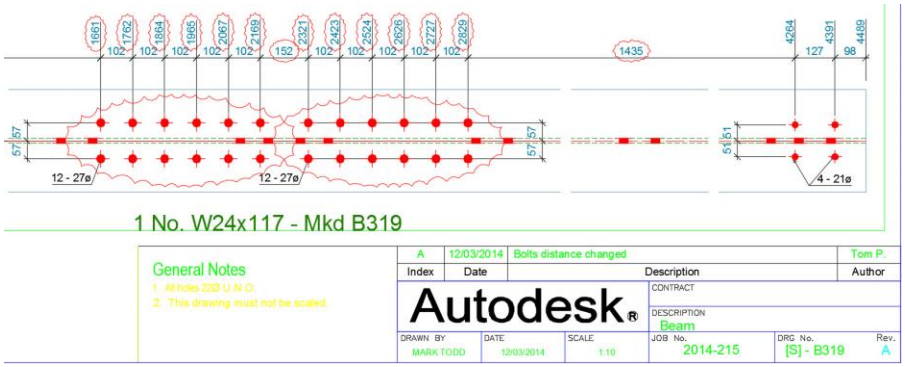
Mark	Description	Grade	Saw length (mm)	Amount	(Degree) (mm)	Web	(Degree) (mm)	(Degree) (mm)	Flange	(Degree) (mm)
BR601	HSS 10X10X5/16	350W-CL.C	8,192.00	13	30.00 147.00		30.00 147.00	0.00 0.00		0.00 0.00
BR602	HSS 10X10X5/16	350W-CL.C	8,224.00	1	35.00 178.00		35.00 178.00	0.00 0.00		0.00 0.00
BR603	HSS 10X10X5/16	350W-CL.C	8,222.00	1	30.00 147.00		30.00 147.00	0.00 0.00		0.00 0.00
C601	W8x48	350W	3,044.00	15	0.00 0.00		-30.00 125.00	0.00 0.00		0.00 0.00

CNC data compatible with most machine manufacturers

Model-based Advance Steel helps you reduce errors and waste in the shop and field because the drawings and CNC data are all derived from a common, coordinated steel model. The software automatically outputs CNC files via DSTV format for a wide variety machines, as well as XML DSTV files for controlling welding robots.

Automatic update of shop drawings and construction documents in case of modifications

One of the most important features of Advance Steel is the ability to accommodate design changes during the steel detailing process. The software's model-based steel detailing approach means that when design changes occur, you just update the model and all affected deliverables are updated automatically, from shop drawings to CNC data. The software also includes an integrated revision control feature that creates revision clouds on updated drawings automatically.

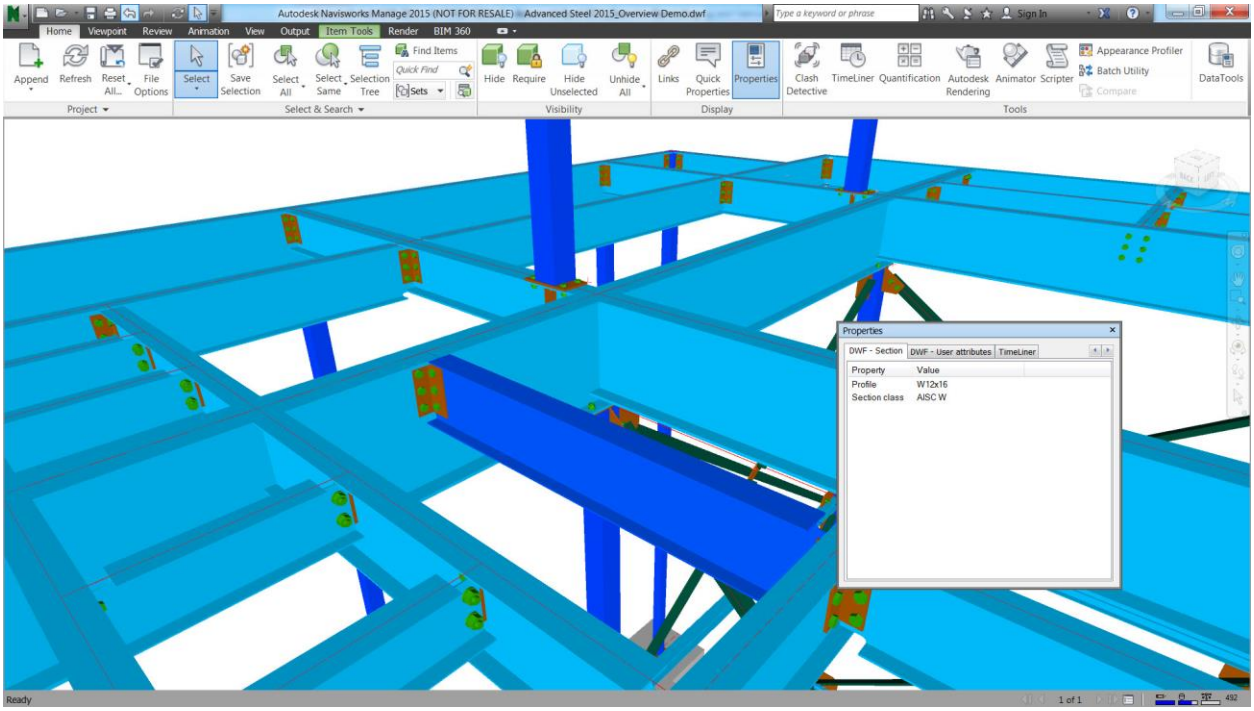


Integrated revision control feature that creates revision clouds on updated drawings automatically

Collaborate more easily with contractors using Navisworks software or BIM 360 Glue software

Export your Advance Steel model to Navisworks for multidiscipline collaboration

Advance Steel models can be exported into Navisworks software for multidiscipline collaboration, construction simulation, and whole-project analysis, enabling specialists to work more closely and efficiently with other project stakeholders to help reduce the risk of unexpected issues at the job site.



Export to BIM360 Glue for cloud-based BIM management and collaboration

Advance Steel models can be exported into Autodesk BIM 360 Glue software, which is a cloud-based BIM coordination and management service that provides anywhere access to BIM projects and data, accelerates multi-discipline coordination and improves project efficiency.