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Steel Structures

**New version of program STEELCON 2016.320**



Dear colleagues,

A new version of the “**STEEL CONNECTIONS**” program for the design of bolted and welded steel connections has been released which now has the capability of IFC-Export.

STEELCON supports the widespread open protocol of the Industry Foundation Classes (IFC) data model.

IFC is a platform neutral, open file format specification that is not controlled by a single vendor or group of vendors. It is an object-based file format with a data model developed by buildingSMART (formerly the International Alliance for Interoperability, IAI) to facilitate interoperability in the architecture, engineering and construction (AEC) industry, and is a commonly used collaboration format in Building Information Modeling (BIM) based projects. The IFC model specification is open and available. It is registered by ISO and is an official International Standard.

## **Current Export**

The user designs the connection with STEELCON. The program can export a DXF detail drawing of the connection, and the user is able to edit and print this drawing using a CAD program like Autocad. This file limits the user to accept the 2D drawing as exported from STEELCON and has no access to the 3D model of the connection.

## **New, IFC-Export**

Now, from the release of the 2015.120 version of the program, the user can export an **‘.ifc’** file in which the connection geometry is stored using IFC2x3 protocol, so it can be imported to any program that imports IFC data as a 3D model.

This protocol is describing very well the geometric parameters of all the elements of the connection, but it is not capable to describe more than one to one element connection relationship. A connection in STEELCON contains a lot more Features and in order to keep this information available we need another data model between STEELCON and IFC. An additional tool for processing our data for this intermediate layer has been developed by using an Open Source Web Based Database.

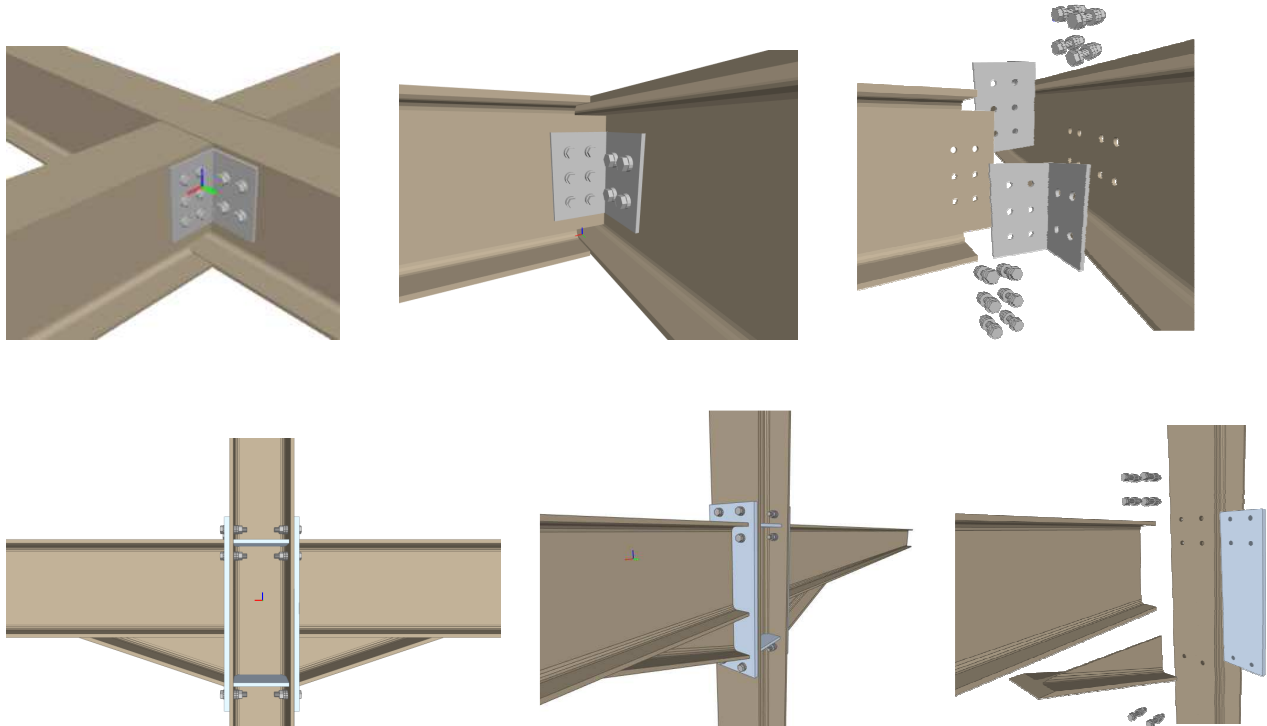
The procedure is very simple, just press File -> Export - > Export IFC step file.

The program asks for the filename of the file to be exported (default is the folder of the project file).

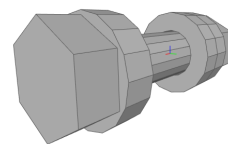
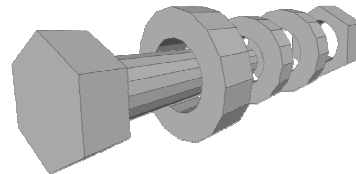
After selecting the filename the program creates the file and tries to open it with the default program that handles .ifc files, if any. This program can be an ifc viewer such as ‘solibri’.

## Interoperability

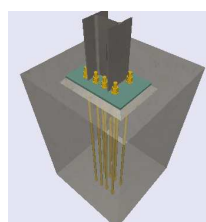
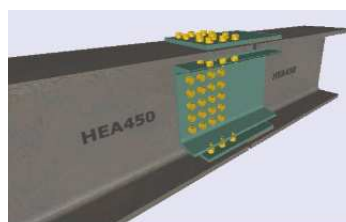
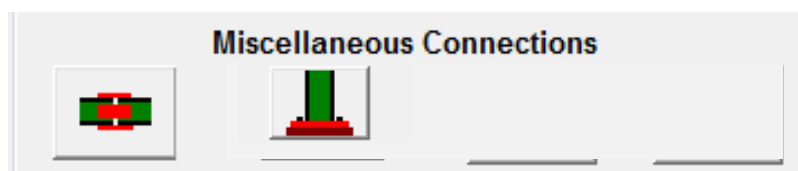
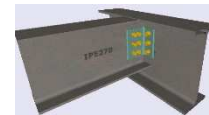
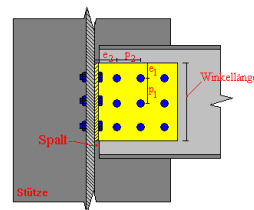
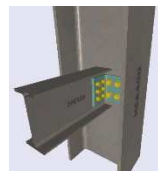
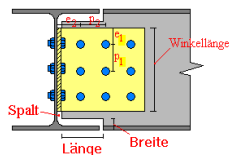
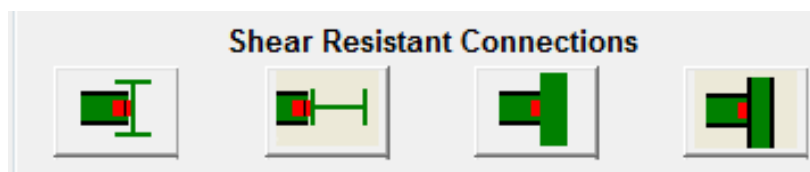
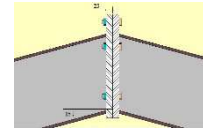
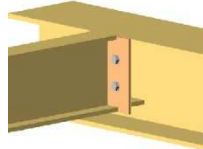
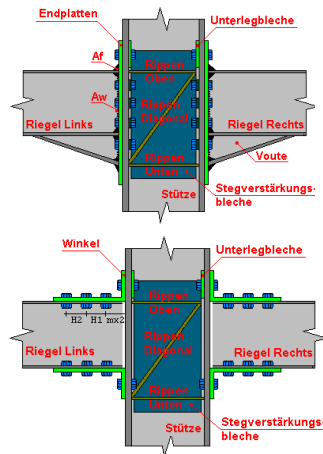
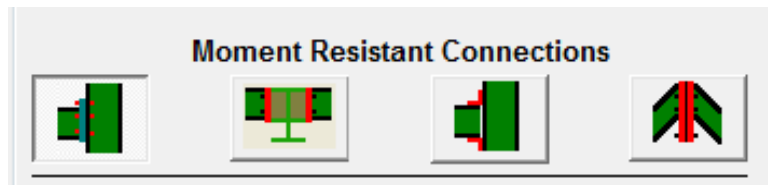
This file can be also imported to all programs that can import ifc files, for example the program Revit of Autodesk as seen below.



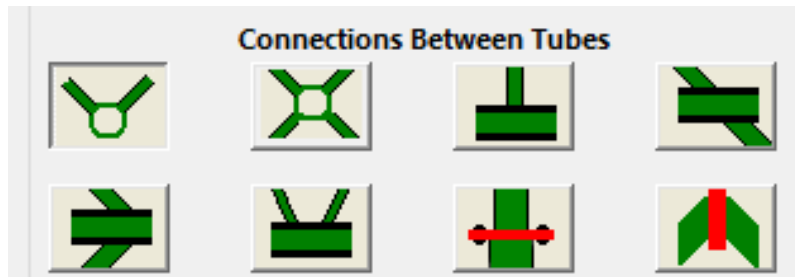
IFC Structure				
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	<input checked="" type="checkbox"/>	Site	Site	
	<input checked="" type="checkbox"/>	Building	Building	
	<input checked="" type="checkbox"/>	Building Storey	Building Storey 1	
	<input checked="" type="checkbox"/>	Beams		
	<input checked="" type="checkbox"/>	Beam	Beam left	
	<input checked="" type="checkbox"/>	Beam	Hunch left	
	<input checked="" type="checkbox"/>	Beam	Beam right	
	<input checked="" type="checkbox"/>	Beam	Column	
	<input checked="" type="checkbox"/>	Beam	Hunch right	
	<input checked="" type="checkbox"/>	Combined		
	<input checked="" type="checkbox"/>	Component Element	Bolt Assembly	
	<input checked="" type="checkbox"/>	Component Element	Bolt Assembly	
	<input checked="" type="checkbox"/>	Mechanical Fastener	Washer	
	<input checked="" type="checkbox"/>	Mechanical Fastener	Nut	
	<input checked="" type="checkbox"/>	Mechanical Fastener	Washer	
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	<input checked="" type="checkbox"/>	Mechanical Fastener	Washer	
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	<input checked="" type="checkbox"/>	Component Element	Bolt Assembly	
	<input checked="" type="checkbox"/>	Plates		
	<input checked="" type="checkbox"/>	Plate	Stiffners up	
	<input checked="" type="checkbox"/>	Plate	End plate left	
	<input checked="" type="checkbox"/>	Plate	Stiffners down	
	<input checked="" type="checkbox"/>	Plate	Stiffners up	
	<input checked="" type="checkbox"/>	Plate	End plate right	
	<input checked="" type="checkbox"/>	Plate	Stiffners down	



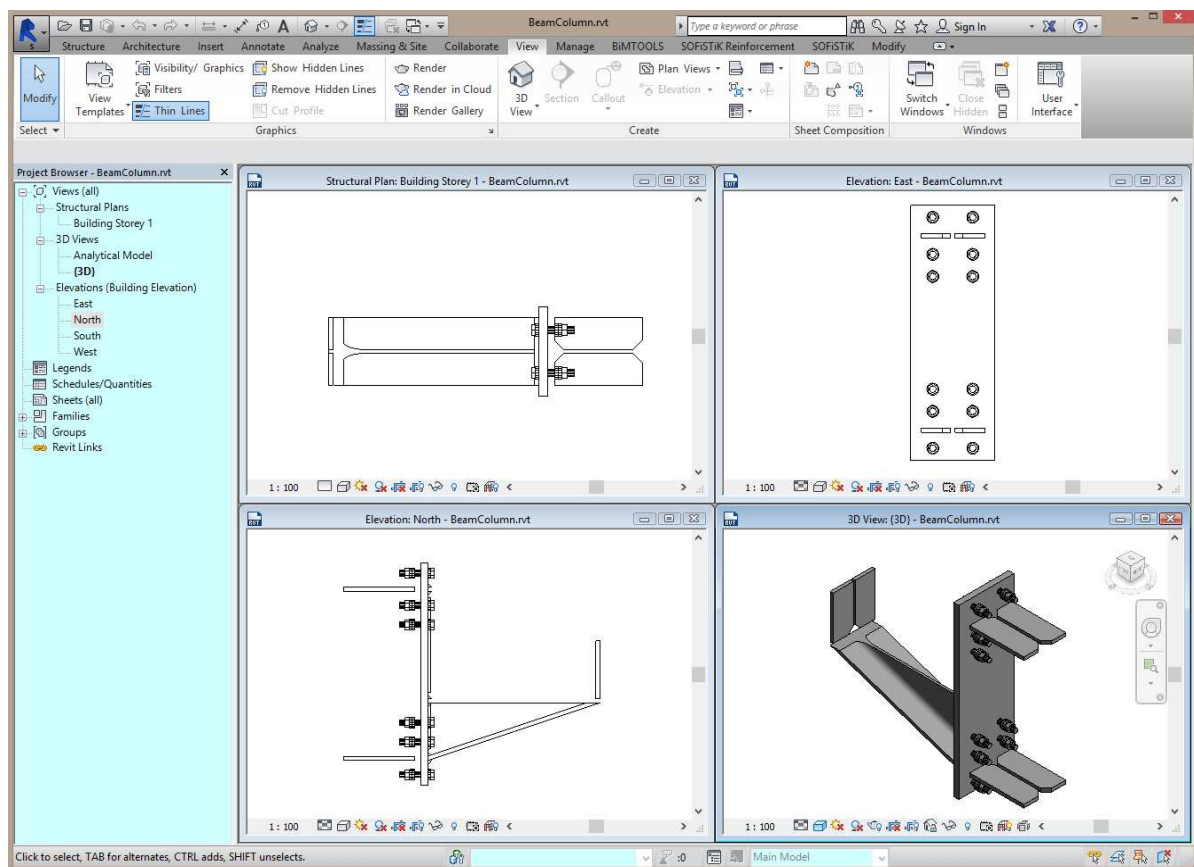
## Connections that can be exported to IFC

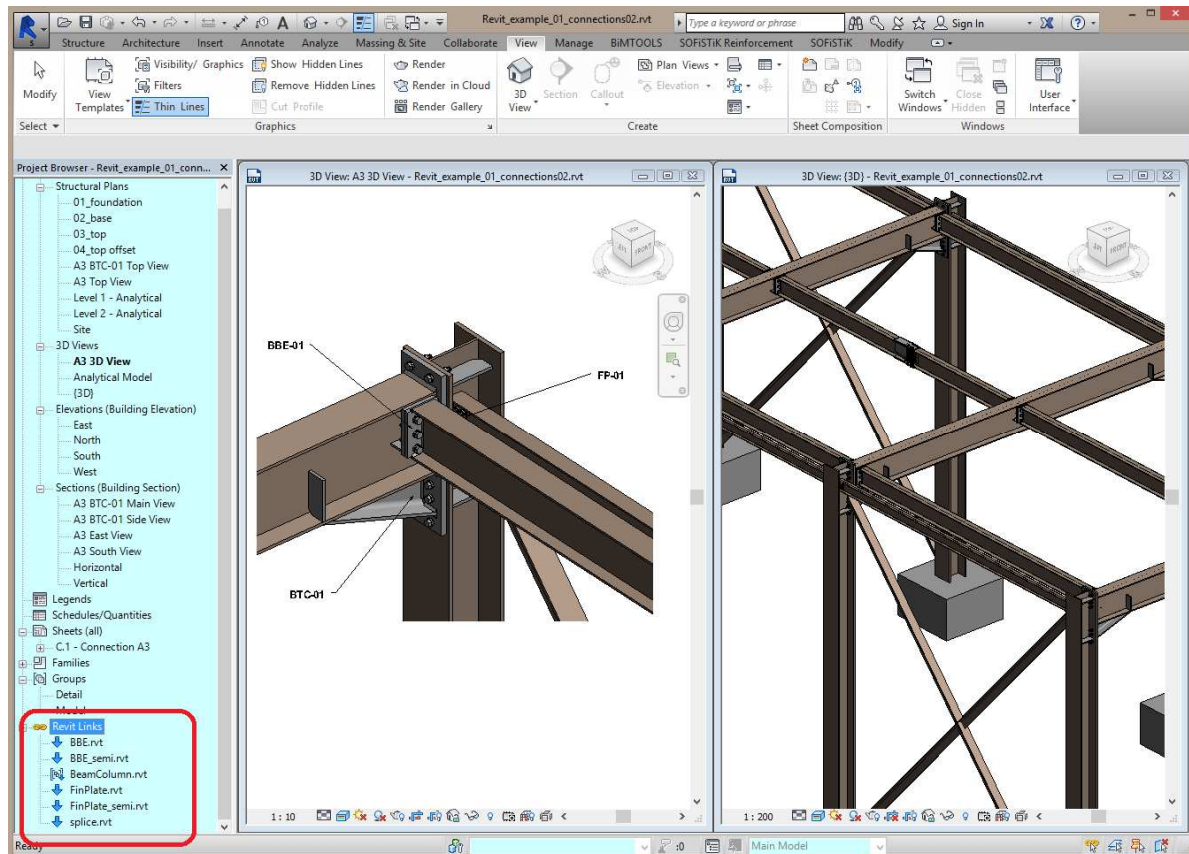


\*\* The Anchors of Column Base Connections are transmitted always as straight bolts

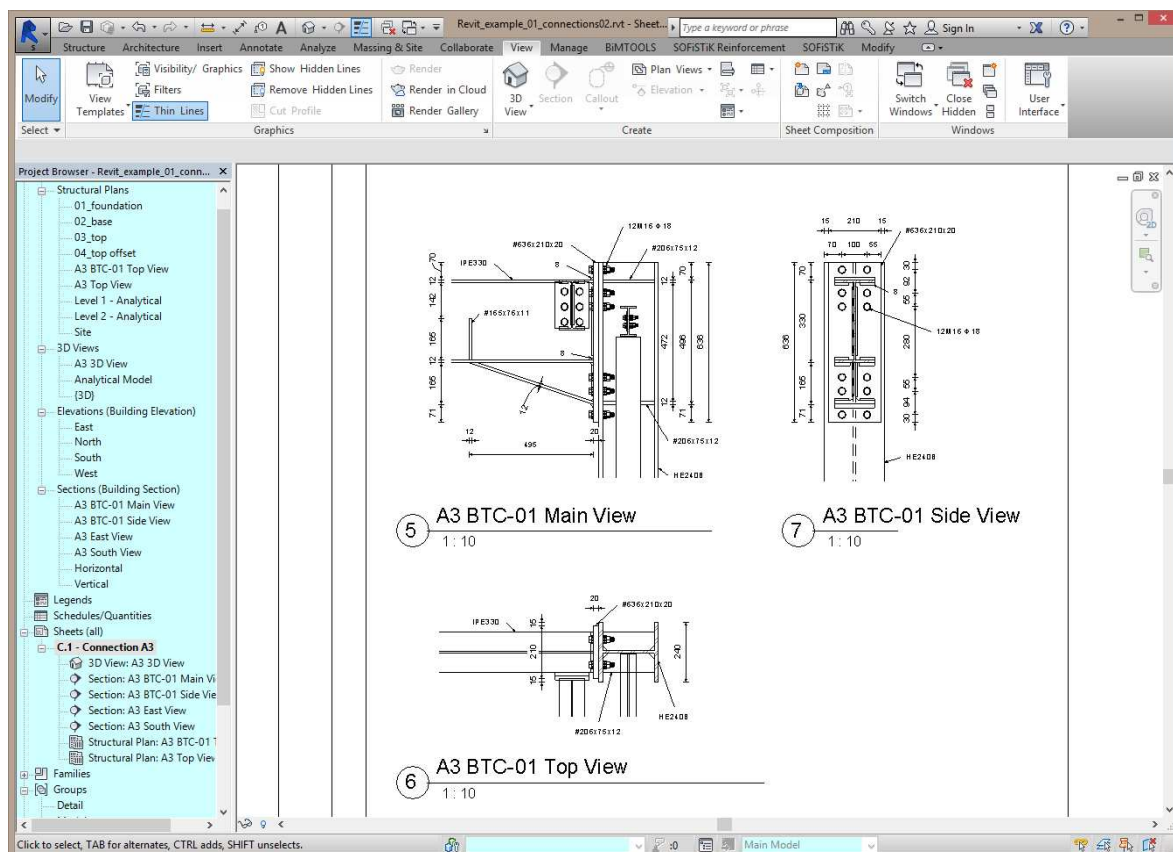


### Example, Export of Beam to Column Connection to IFC for Revit





## Detail Drawings in Revit



SteelCON is SOFiSTiK Version 2012, 2014 as well as Version 2016 compatible and can be operated within the SSD integrated SOFiSTiK environment. All geometrical and topological data as well as forces can be imported from the overall structure. Connection design results are then a part of the SOFiSTiK Output Report.

10.12.2016, Munich Germany