

Steel Fabrication Transfer from Revit to Advance Steel, *Under the Hood*

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UNIVERSITY





About the Presenter

MY BACKGROUND

John Bennett has a structural engineering and fabrication background. He worked as a steelwork detailer then progressed to CAD manager and then moved into the role of application engineer/CSM for Advance Steel software training, sales, and implementation. He has recently been working with various companies for the integration of Advance Steel into plant engineering and structural markets.



Steel Elements Transfer Revit to Advance Steel:

Advance Steel Extension



Advance Steel Extension Revit 2020

New Extension version for 2020.

Available via Autodesk Account.

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2 results for advance steel extens

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4. [Advance Steel Extension for Revit 2020]

Product	Type	Severity
Revit	Other	Medium

Product: Revit
Status: Live
Version: 2020

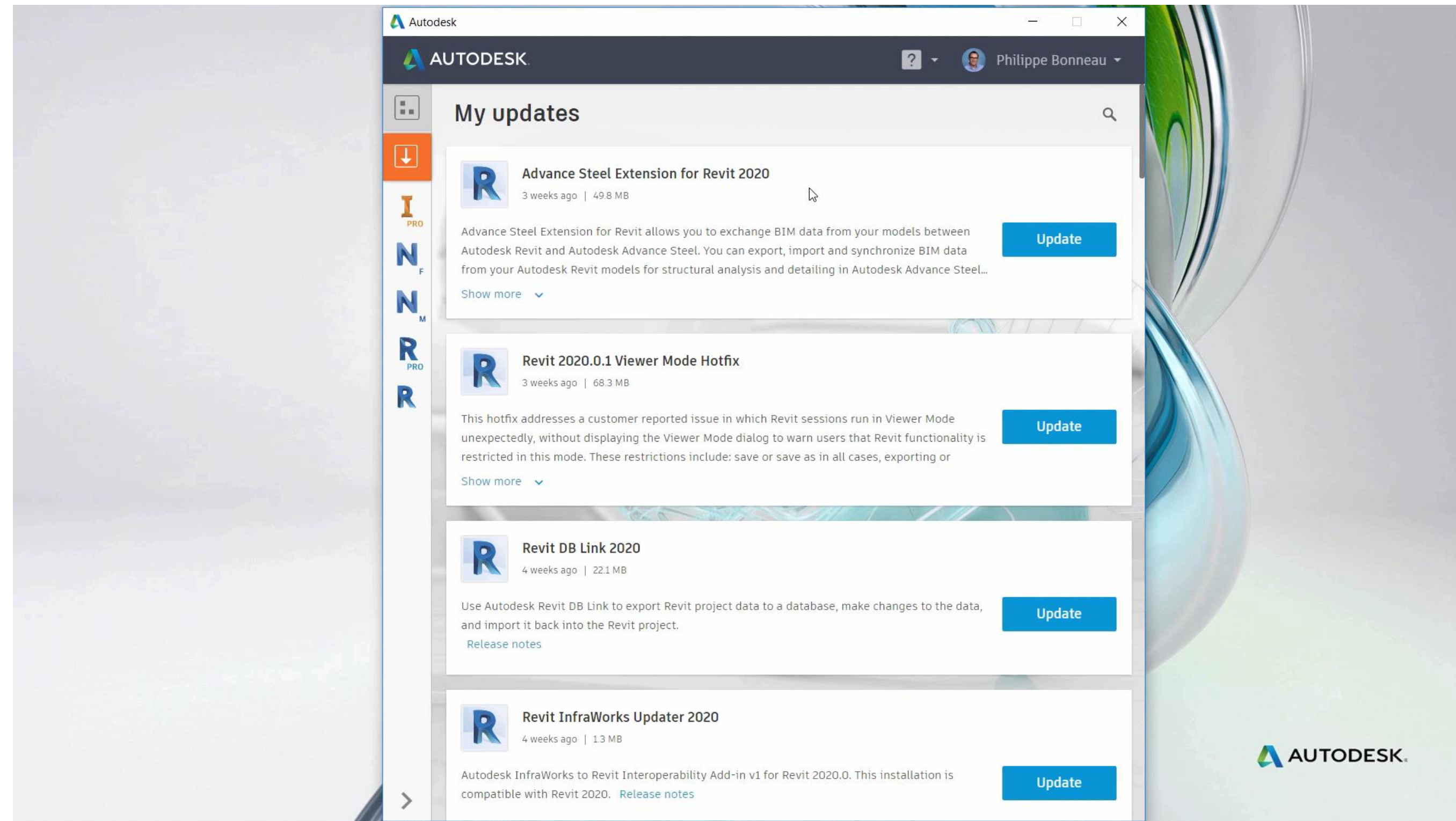
Type: Other
Size: 49.77MB
Update ID: {6357EDD5-5634-42AA-9A2C-4785AE3A5D8D}

Description
Advance Steel Extension for Revit allows you to exchange BIM data from your models between Autodesk Revit and Autodesk Advance Steel. You can export, import and synchronize BIM data from your Autodesk Revit models for structural analysis and detailing in Autodesk Advance Steel.
[View release notes](#)

[Help page link: Advance Steel - Revit File Transfer](#)



Advance Steel Extension Installing



Steel Elements Transfer Revit to Advance Steel:

How does it work?



Revit Advance Steel Extension. – Mechanism -1

- **Sections Mapping – based upon Expression rules from object shape references.**
 - Sections Mapping –Use the object shape references for the profile transfer, use a Formulae entry
 - These entries are stored in the Advance steel GTC mapping database, under two tables.
 - **GTC_Profile_Conversion table & Profile_Exports_Conversion**

Key	Standard	Section	GTC Standard	GTC Section	ObjectType	Application	UseReqEx	Country	Version
365	Sections_square_cold BS EN10219-2 1997	\bSHScf(\d{2,3})X(\d{1,2})(?!\d{1})?)	UK Square Cold	UK SHScf %1X%2	1	1	1	NULL	NULL
366	Sections_square_cold BS EN10210-2 1990	\bSHS(\d{2,3})X(\d{1,2})(?!\d{1})?)	UK Square Warm	UK SHS %1X%2	1	1	1	NULL	NULL
367	Sections_square_cold BS EN10210-2 1990	\bSHS(\d{2,3})X(\d{1,2})(?!\d{1})?)	UK Square Warm	UK SHS %1X%2	1	1	1	NULL	NULL
368	Sections_square_cold BS EN10210-2 1990	\bSHS(\d{2,3})X(\d{1,2})(?!\d{1})?)	UK Square Warm	UK SHS %1X%2	1	1	1	NULL	NULL
369	Sections_square_cold BS EN10210-2 1990	\bSHS(\d{2,3})X(\d{1,2})(?!\d{1})?)	UK Square Warm	UK SHS %1X%2	1	1	1	NULL	NULL
370	UK_BS_Square	\bSQ(\d{1,2})							
371	Sections_StructuralTeesUB BS EN10210-2 1990	\bUBT(\d{1,2})							
372	Sections_StructuralTeesUC BS EN10210-2 1990	\bUCT(\d{1,2})							
373	Universal Beam BS EN10210-2 1990	\bUB(\d{1,2})							
374	Universal Beam BS EN10210-2 1990	\bUB(\d{1,2})							
375	UniversalColumn BS EN10210-2 1990	\bUC(\d{1,2})							
376	UniversalColumn BS EN10210-2 1990	UK UC							
377	UniversalBearingPiles BS EN10210-2 1990	\bUBP(\d{1,2})							

Key	GTC Standard	GTC Section	Standard	Section	ObjectType	Application	UseReqEx
6672	UK Square Sections Cold Formed	\bSHScf(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,4})	UK Square Sections Cold Formed	SHScf%1x%2x%3	1	0	1
6673	UK Square Sections Cold Formed	\bSHScf(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,4})(?!\d{1,3})?)	UK Square Sections Cold Formed	SHScf%1x%2x%3	1	0	1
6674	UK Square Sections Warm Formed	\bSHS(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,4})	UK Square Sections Warm Formed	SHS%1x%2x%3	1	0	1
6675	UK Square Sections Warm Formed	\bSHS(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,4})(?!\d{1,3})?)	UK Square Sections Warm Formed	SHS%1x%2x%3	1	0	1
6676	UK Structural Tees UB	\bUBT(\d{1,4})[x-xX-X](\d{1,4})[x-xX-X](\d{1,4})	UK Structural Tees UB	UBT%1x%2x%3	1	0	1
6677	UK Structural Tees UC	\bUCT(\d{1,3})[x-xX-X](\d{1,3})[x-xX-X](\d{1,3})	UK Structural Tees UC	UCT%1x%2x%3	1	0	1
6678	UK Universal Beams	\bUB(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,5})	UK Universal Beams	UB%1x%2x%3	1	0	1
6679	UK Universal Bearing Piles	\bUBP(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,5})	UK Universal Bearing Piles	UBP%1x%2x%3	1	0	1
6680	UK Universal Columns	UC152x152x30n	UK Universal Columns	UC152x152x30n	1	0	0
6681	UK Universal Columns	\bUC(\d{1,4})[x-xX-X](\d{1,4})[x-xX-X](\d{1,4})	UK Universal Columns	UC%1x%2x%3	1	0	1
6682	UK Advance Angle - Equal	\bUKEA(\d{1,4})[x-xX-X](\d{1,4})[x-xX-X](\d{1,3})	UK Advance Angle - Equal	UKEA%1x%2x%3	1	0	1
6683	UK Advance Angle - Unequal	\bUKUA(\d{1,4})[x-xX-X](\d{1,4})[x-xX-X](\d{1,4})	UK Advance Angle - Unequal	UKUA%1x%2x%3	1	0	1
6684	UK Advance Beams	\bUKB(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,5})	UK Advance Beams	UKB%1x%2x%3	1	0	1
6685	UK Advance Bearing Piles	\bUKBP(\d{1,4})[x-xX-X](\d{1,4})[x-xX-X](\d{1,4})	UK Advance Bearing Piles	UKBP%1x%2x%3	1	0	1
6686	UK Advance Columns	\bUKC(\d{1,5})[x-xX-X](\d{1,5})[x-xX-X](\d{1,5})	UK Advance Columns	UKC%1x%2x%3	1	0	1

[Rules based Transfer Help link](#)

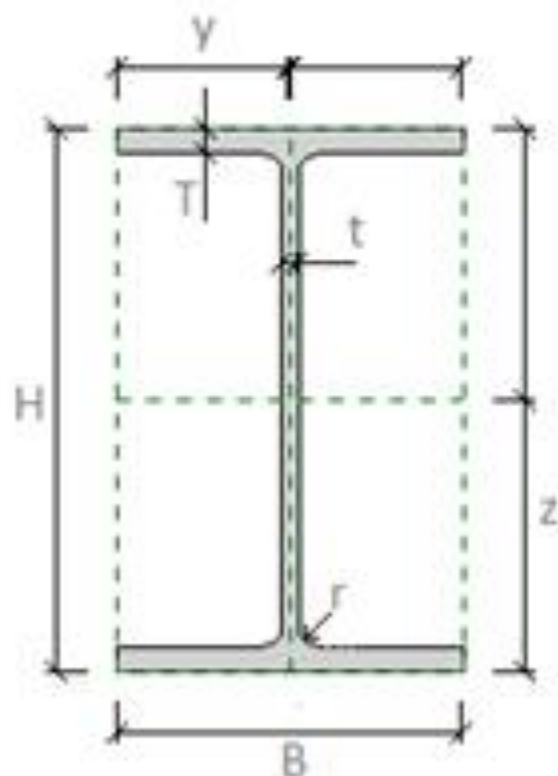


Revit Advance Steel Extension. – Mechanism -1.2

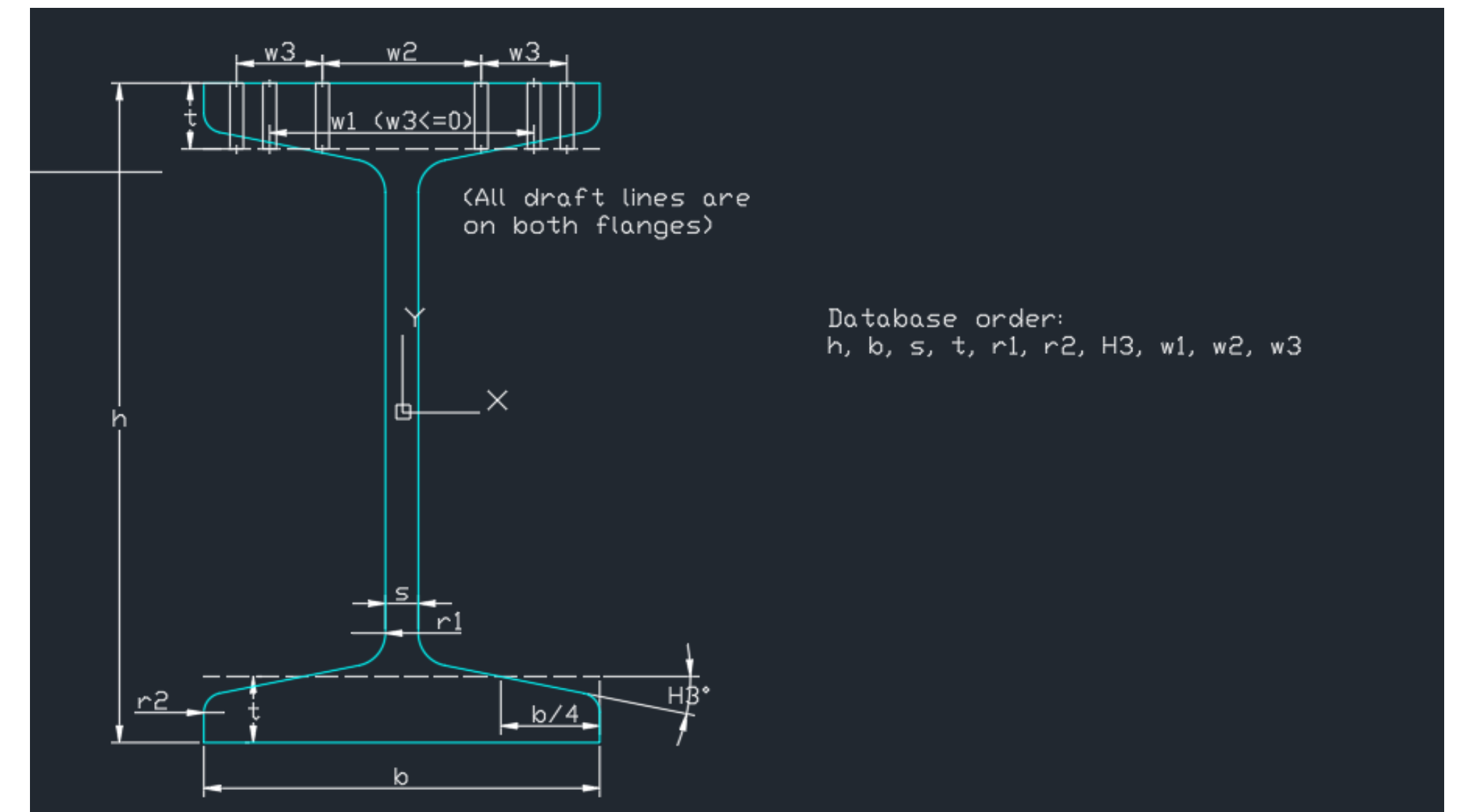
- **Sections Mapping** – based upon rules from object shape references.
 - **Sections Mapping** –Use the object shape references for the profile transfer, use a Expression Formulae entry
 - **Rule based mapping**, where a certain rule (using tokens) will allow the mapping of an entire class in one definition line.

Key	Standard	Section	GTC Standard	GTC Section	ObjectType	Application	UseReqEx
373	Universal Beam BS EN10210-2 1990	$\backslash\text{bUB}(\backslash\text{d}\{3\})\text{X}(\backslash\text{d}\{2,3\})\text{X}(\backslash\text{d}\{2,3\})$	UK Structural UB	UK UB %1X%2X	1	1	1

I-shape Parallel Flange



- B. Width: the external width of the section shape.
- H. Height: the external height of the section shape.
- T. Flange Thickness: the distance between the exterior surfaces of the flange in the section shape.
- t. Web Thickness: the distance between the exterior surfaces of the web in the section shape.
- r. Web Fillet: the radius of the fillet between the web and flange.
- y. Centroid Horizontal: the distance from the centroid of the section shape to the left extremities along the horizontal axis.
- z. Centroid Vertical: the distance from the centroid of the section shape to the lower extremities along the vertical axis.



Revit Advance Steel Extension. – Mechanism -1.3

- **Sections Mapping – 1 To 1 References.**
 - **1 to 1 mapping**, where each section size is mapped individually.
 - All manual mappings requested by Advance Steel or Revit during import are saved in the database for further use as one to one mapping.
 - Mapping configuration can be made country-dependent; this allows specific selectable country mapping during import / export.

Key	Standard	Section	GTC Standard	GTC Section	ObjectType	Application	UseReqEx	C
3388	CISC Tube Shapes-Column	HS102x51x8.0	CISC HSS	HSS 127X50.8X7.94	3	10	0	NL
3389	CISC Tube Shapes-Column	HS89x64x8.0	CISC HSS	HSS 88.9X63.5X7.94		10	0	NL
3390	CISC Tube Shapes-Column		CISC HSS			10	0	NL
3391	CISC Tube Shapes-Column	HS70x31x3.2	CISC HSS	HSS 76.2X30.8X3.18	3	10	0	NL
3392	CISC Tube Shapes-Column	HS51x25x4.8	CISC HSS	HSS 50.8X25.4X4.76	3	10	0	NL
3393	CISC Angle Shapes	L51x38x3.2	CISC Angle unequal	L51X38X3.2	2	10	0	NL
3394	CISC Angle Shapes	L64X64X13	CISC Angle equal	L64X64X12.7	2	10	0	NL
3395	CISC Angle Shapes	L76X51X13	CISC Angle unequal	L76X51X12.7	2	10	0	NL
3396	CISC Angle Shapes	L76X64X13	CISC Angle unequal	L76X64X12.7	2	10	0	NL

*Tip : In order for the country column to be used in the transfer, the version column must be filled with a value, inside the **GTC_Profile_Conversion** and **Profile_Export_Conversion** tables of the **GTCMapping** database.*



Revit Advance Steel Extension. – Mechanism - 2

- Revit Family based section mapping (up to RVT 2019)
- This process uses the **internal Section name** inside Advance Steel links it to the Approved Revit Family.
- The link is via the Section class and the key is the **“Name”**
- These families contain 2 parameters:
 - **Family Name Key ,Section Name Key**
- Table inside AstorProfiles database, called RevitASProfileConversion

Specify Types

Family: W Shapes.rfa

Type	Plastic Modulus strong axis	Plastic Modulus weak axis	Torsional Moment of Inertia	Warping Constant	Principal Axes Angle	Section Name Key
W44X335	1620.00 in ³	236.00 in ³	74.70 in ⁴	535000.000 in ⁶	0.000°	W44x335
W44X290	1410.00 in ³	205.00 in ³	50.90 in ⁴	461000.000 in ⁶	0.000°	W44x290

Type Properties

Family: UC-Universal Columns-Column

Type: UC203x203x46

Parameter	Value
Warping Constant	143000.000 cm ⁶
Shear Area strong axis	
Shear Area weak axis	
Principal Axes Angle	
Structural Section Geometry	
Width	20.36 cm
Height	20.32 cm
Flange Thickness	1.10 cm
Web Thickness	0.72 cm
Web Fillet	1.02 cm
Centroid Horizontal	10.18 cm
Centroid Vertical	10.16 cm
Identity Data	
Type Comments	
Assembly Code	
Type Image	
Keynote	
Model	
Manufacturer	
Type Mark	
OmniClass Number	
OmniClass Title	
Code Name	BS 5950-1:2000

Advance Steel Beam [1]

Section & Material

Section: UK Universal Column > UC203x203x46

Positioning

Unfold profile

Material: Steel > S275JR

Coating: None

Galvanizing

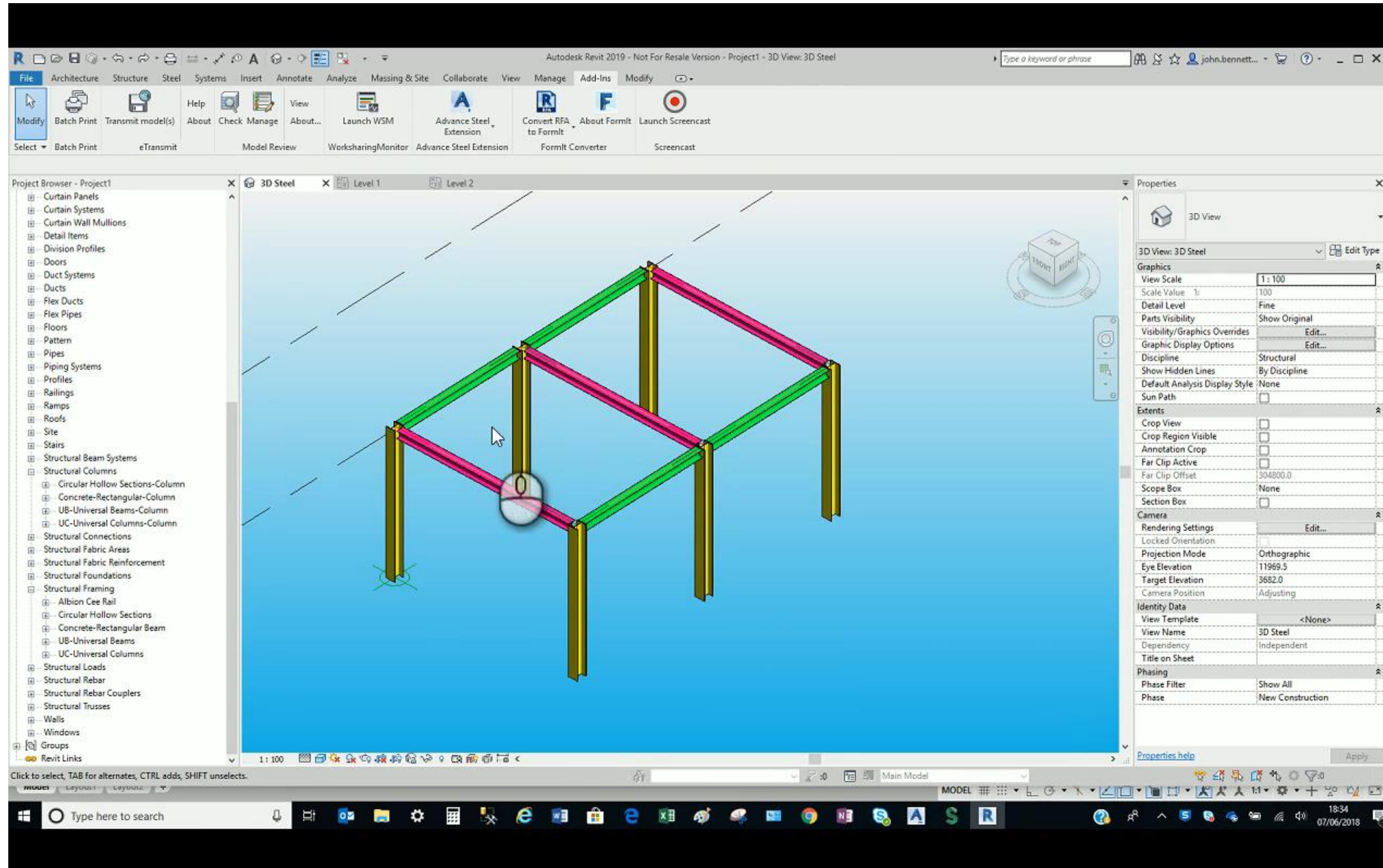
Section Name Key	UC203x203x46
Assembly Description	

Tip : if the Revit project uses Structural Steel, Try first to use the designated approved Families provide by Autodesk, this makes collaboration workflow smoother.

[Revit Family based mapping help link](#)



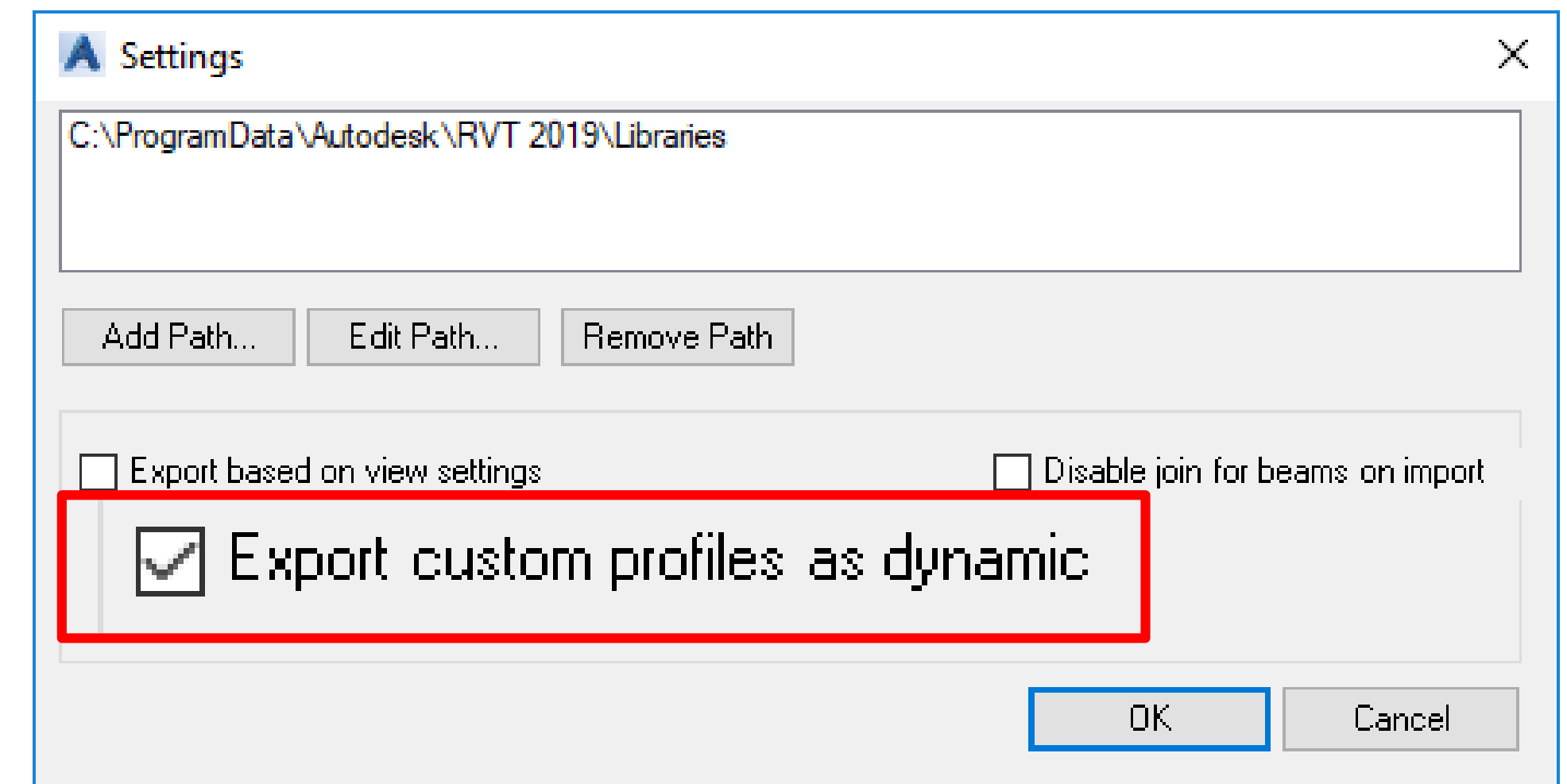
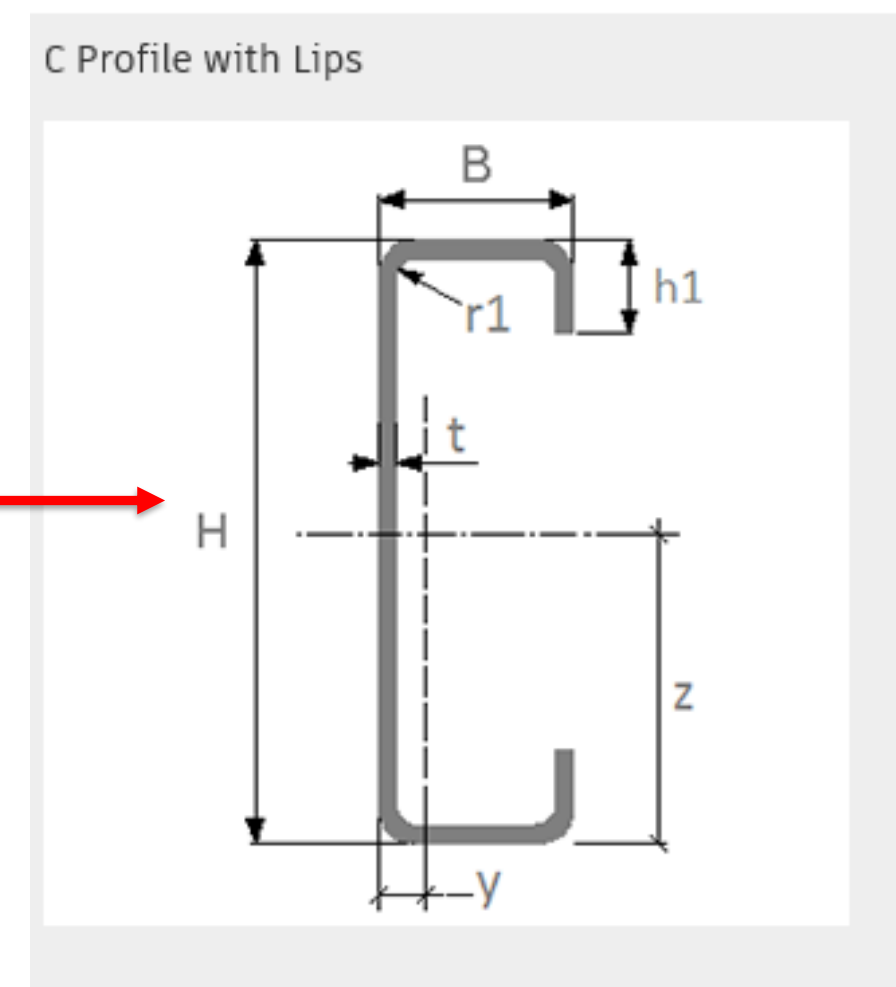
Revit to AS – Basic Section Transfer (2019)



Revit Advance Steel Extension. – Mechanism – 3

- **Custom Profiles Mapping as Dynamic (Upto RVT 2019)**
 - This is for profiles that are from approved Structural family shape references, but do not exist in Advance steel, the Profile is mapped as Dynamic type.
 - This method places a profile inside advance steel model, it is not added to the Advance steel database.
 - **2019 Change**, this mechanism is used as the basis for the Steel Fabrication Format introduced for connection and fabrication elements like plates, welds and bolts. Along with new cuts and copes.

Type	Description
C	Channel Cold Formed
CEx	Channel with Fold, Cold Formed
F	Flat
H	Rectangular Hollow Section
I	I Shape
IAsym	I Shape Asymmetrical
LA	Angle Cold Formed
LZ	Zed Cold Formed
R	Circular Hollow Sections (Pipe)
S	Round Bars
T	Tees
U	Channel
W	Angle

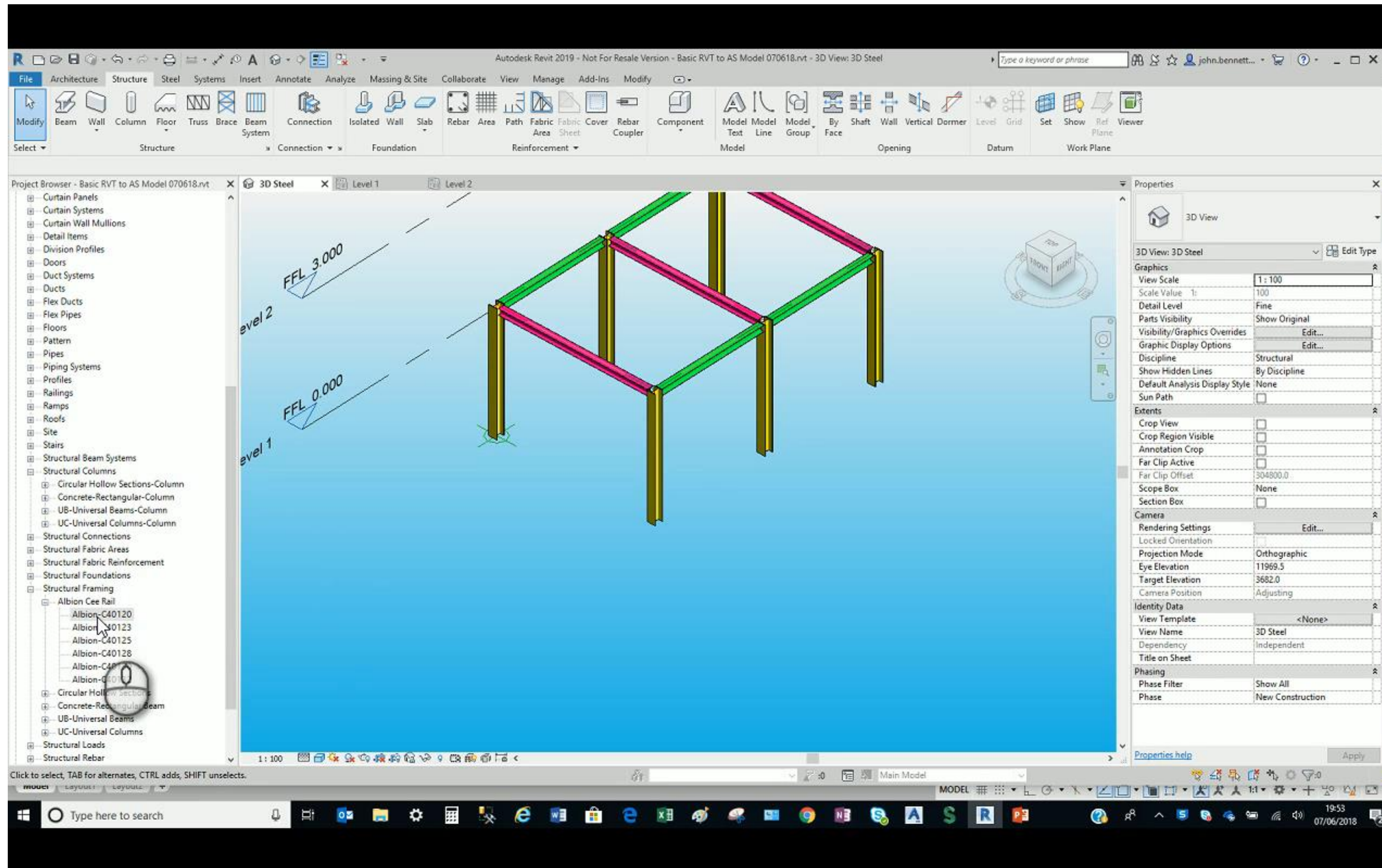


Tip : Dynamic profiles are transferred in Advance Steel and saved inside the model. There are no entries created inside the AstorProfiles.mdf

[Revit Dynamic Profile Transfer help](#)



Revit to AS – Dynamic Transfer - 2019



Steel Elements Transfer Revit to Advance Steel: *Materials and Families in RVT/AS.*

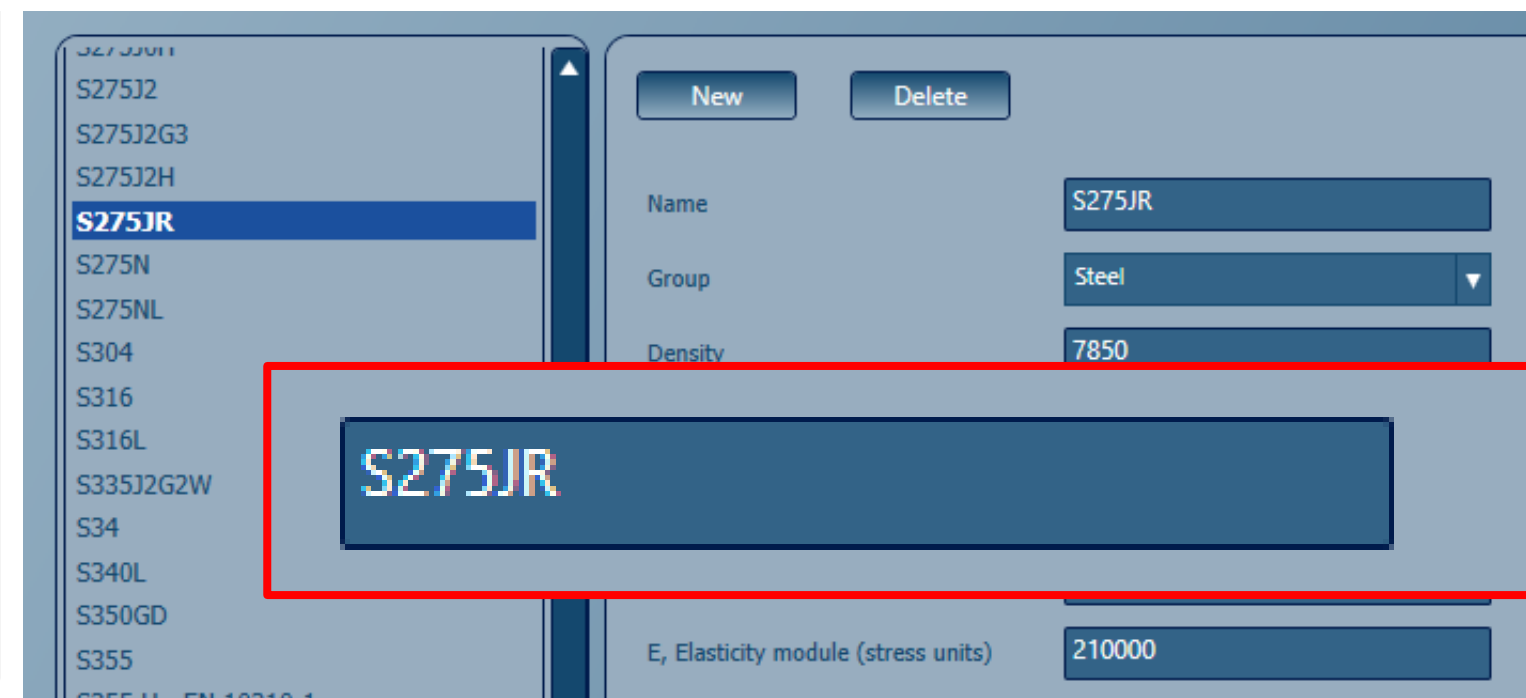
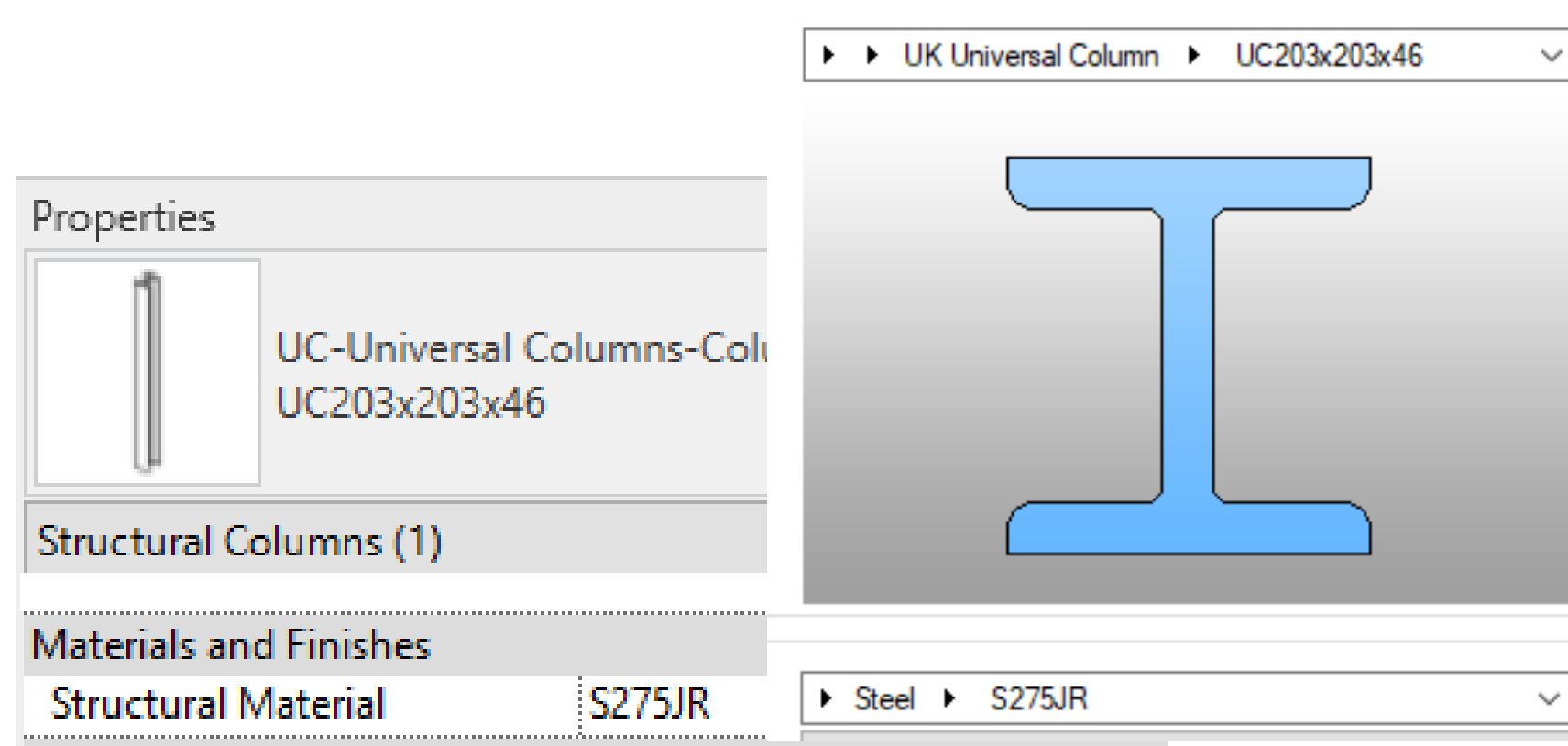
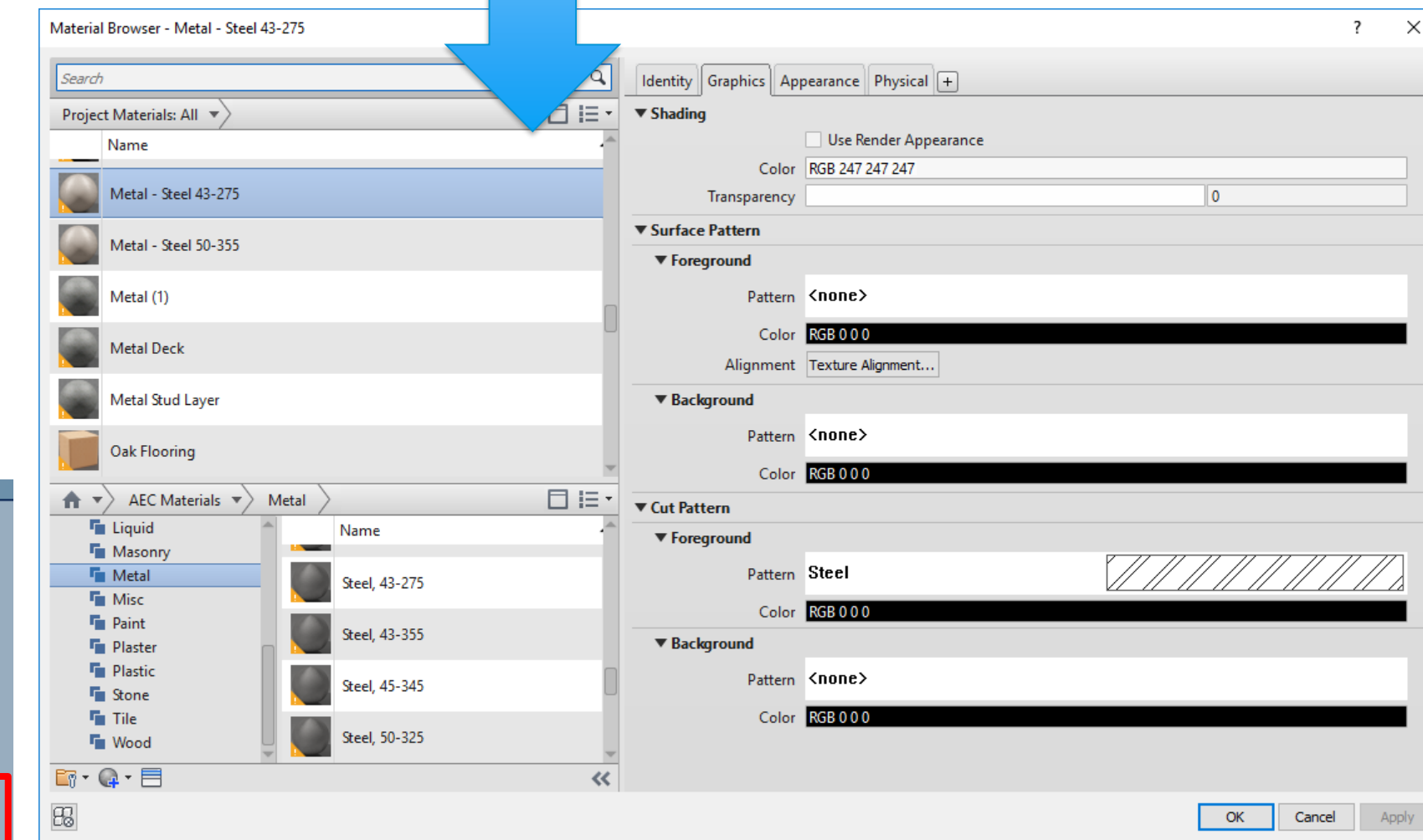
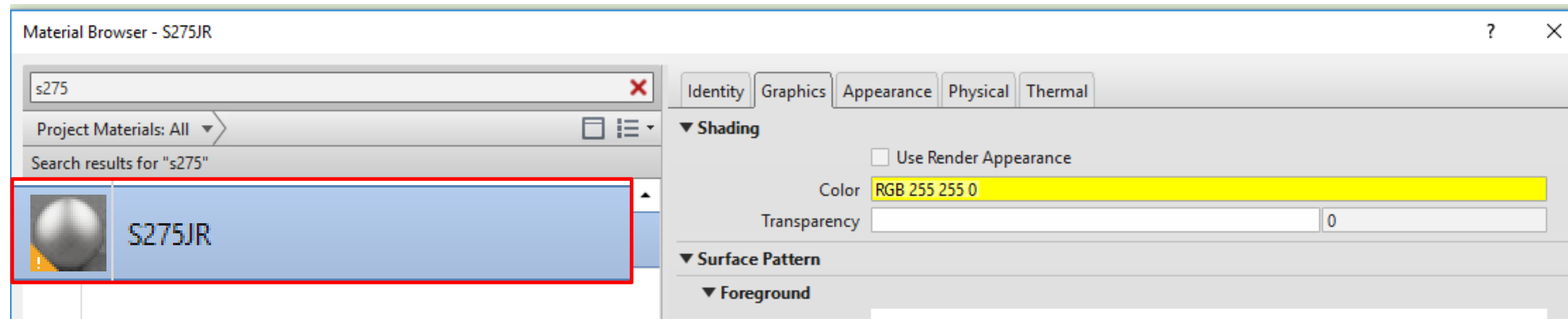


Revit Advance Steel Extension. – Materials

MATERIALS MAPPING

- Materials Mapping – uses the AEC materials in Revit as a Basis.
- Link is via a materials table in the GTC Database inside AS.
- New materials can be created and then mapped between platforms.

Key	Material	GTC Material	Application
20057	Steel 64-460	64-460	10
20058	Steel 55-450	55-450	10
20059	Steel 55-430	55-430	10
20060	Steel 55-415	55-415	10
20061	Steel 51-275	51-275	10
20062	Steel 50-355	50-355	10



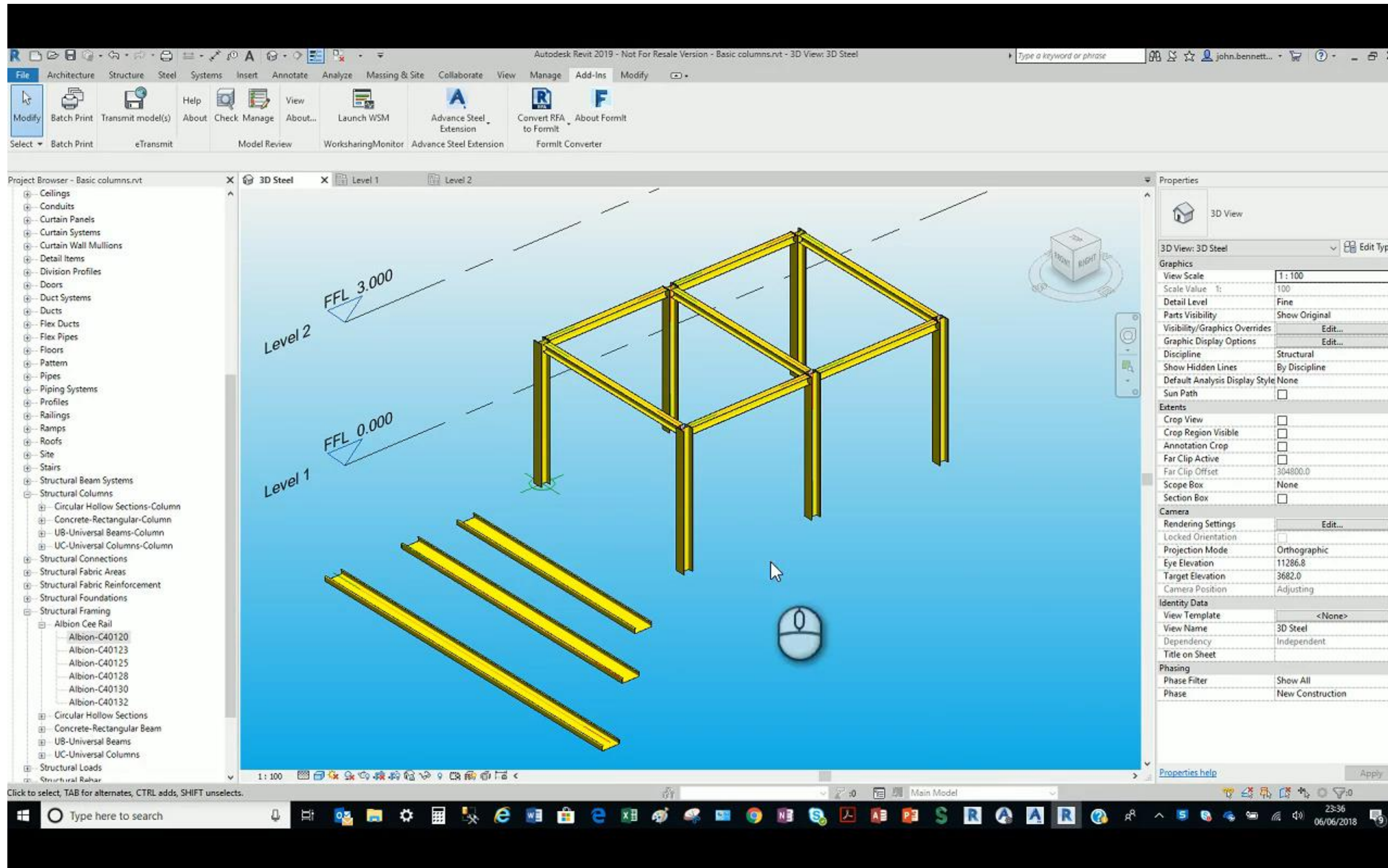
Note : AS to Revit will create a material if not found in Revit Material browser

Tip : Materials Mapping – creating new material in Revit, note that and explain to detailer, they can create corresponding materials in Advance steel, to help the mapping dialog. Use **the Key Name in AS** if known, make **key name same as Revit MATLs.**

[Revit AS Extension Mapping help link](#)



Revit to AS – Materials Mapping



Revit Approved Families

FAMILIES LOCATIONS - 2018

- These are the ones with the Section keys.
- Linked to standard structural shapes in Revit and Advance Steel
- Approved families found via blog link, to into Revit 2018.1
 - Revit 2018.1 update

FAMILIES 2019/20

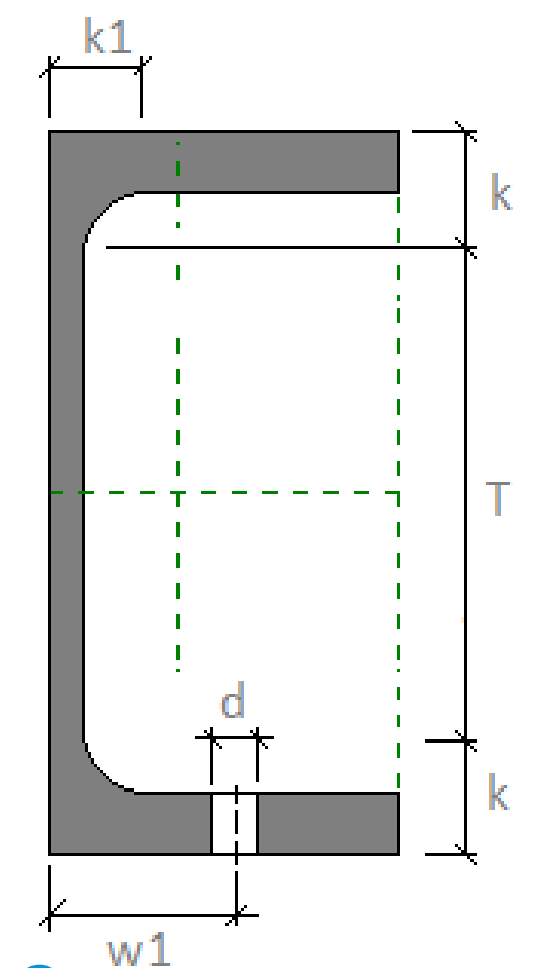
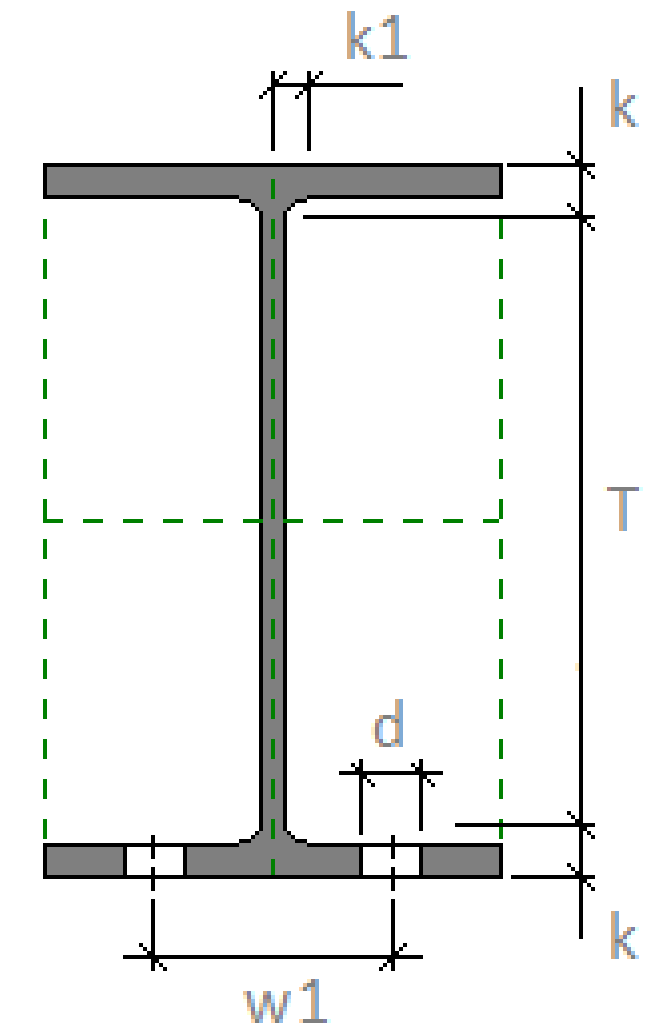
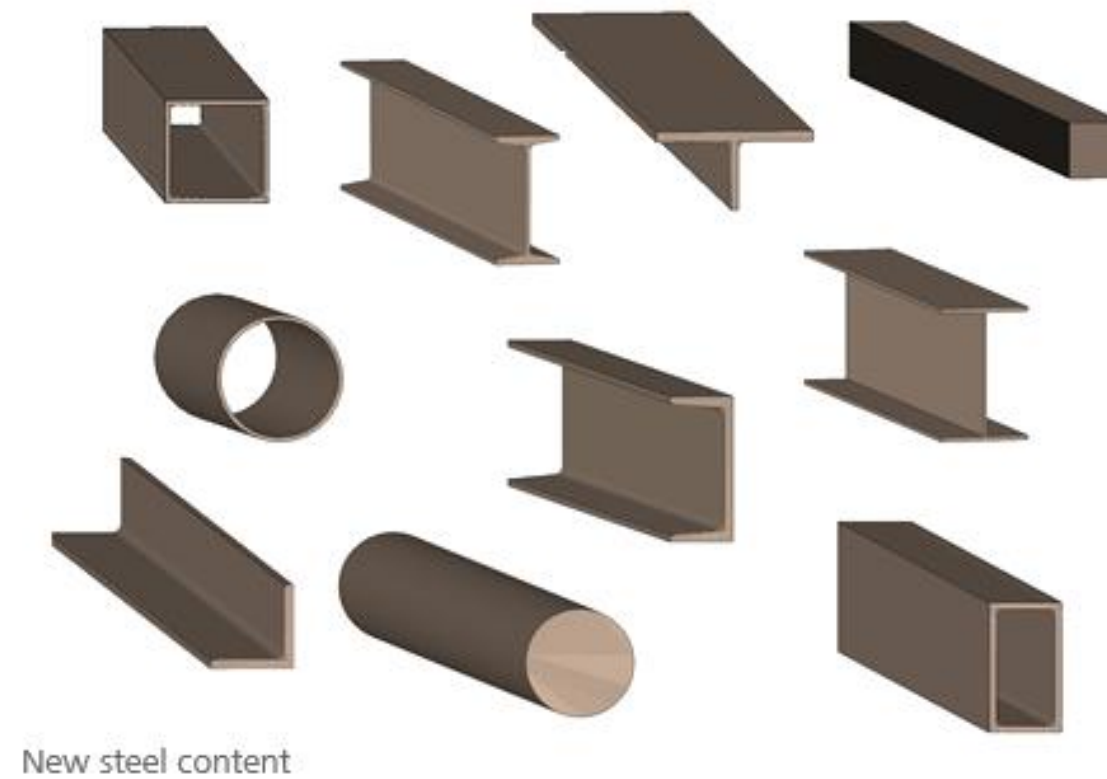
- Only Structural steel columns and framings are supported in the Steel fabrication workflow.
- Framing Elements need to meet a series of requirements for the steel fabrication workflow
 - Material for Model Behaviour parameter - must be set to Steel.
 - Section Shape parameter must be set to a supported shape.

Supported Structural Steel Shapes and Families for Steel Fabrication 2019 Steel Shapes 2020

Tip : Try To use the approved families for Revit Structural beams and columns , these are the only ones with the Section keys.

Help: Family And Category

Structural Section Shapes in Revit



Revit Family Creation – Slide 1

Revit structural family creation

Ensure Structural Framing & Columns are created exactly as shown in the following links

[Hot rolled steel shape dimensions](#)

[Cold formed steel shape dimensions](#)

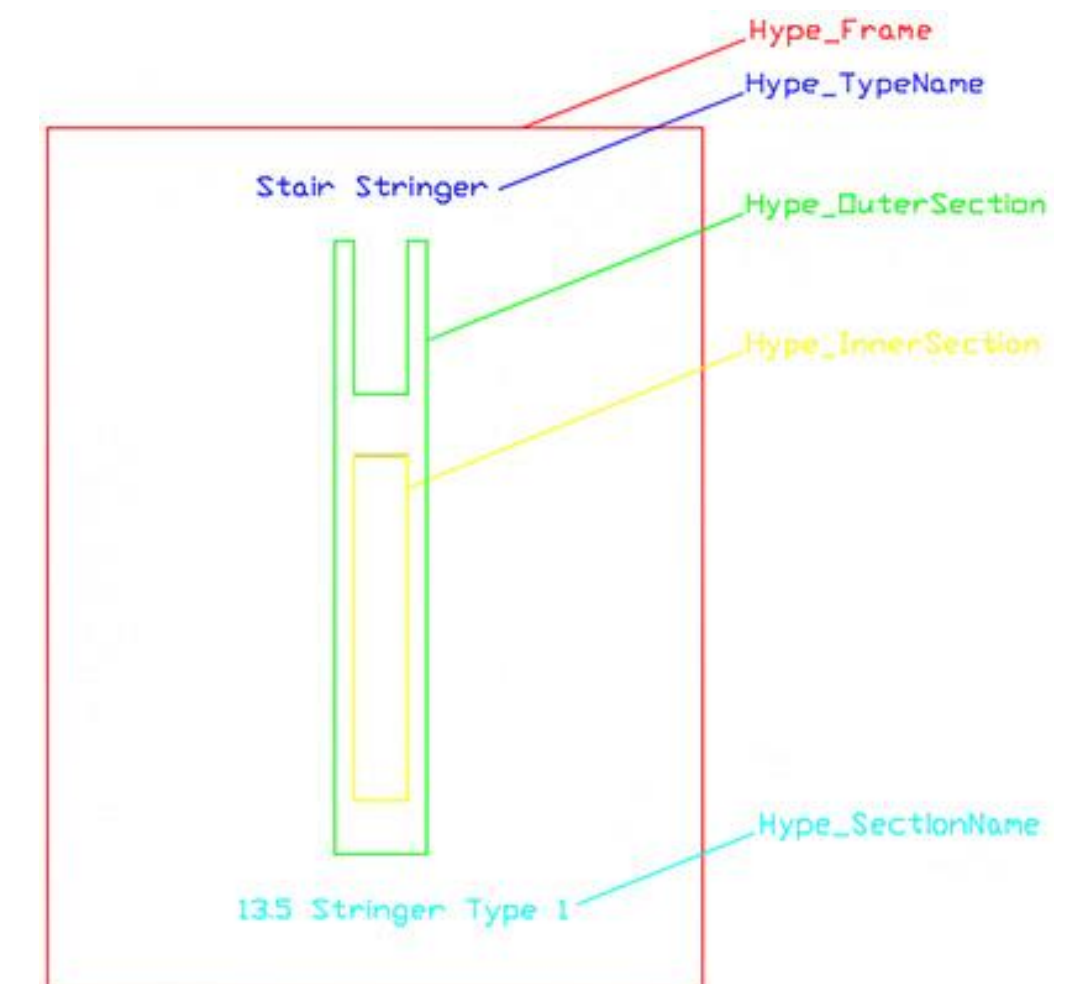
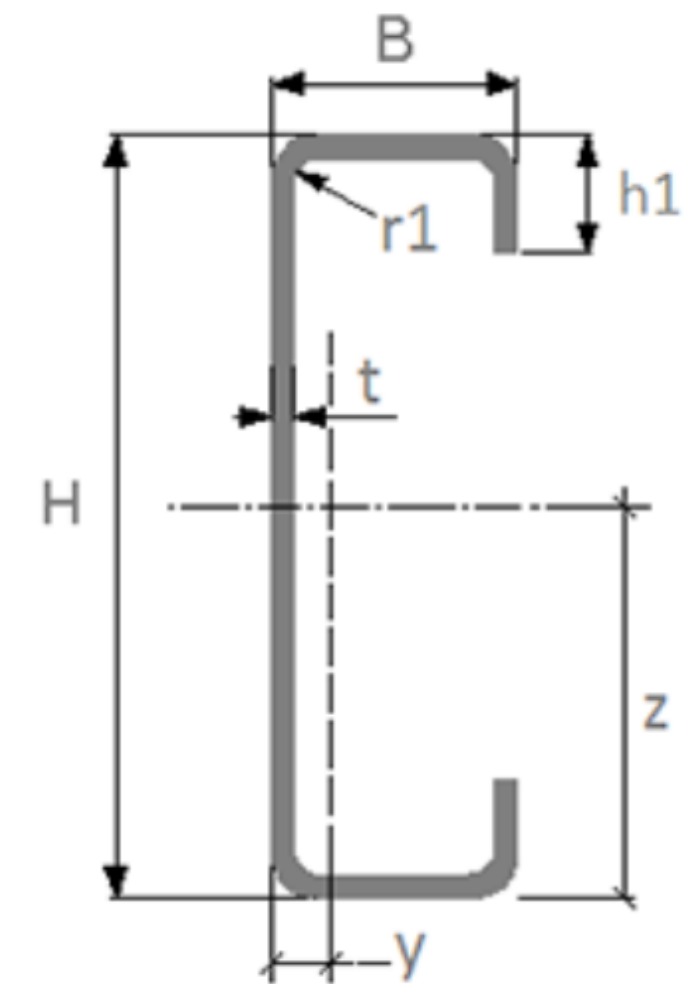
[Steel \(other\) section shape dimensions](#)

Advance Steel user section creation

Create user sections as the link below, we recommend matching the orientation of the Revit families

[Creating user sections](#)

C Profile with Lips

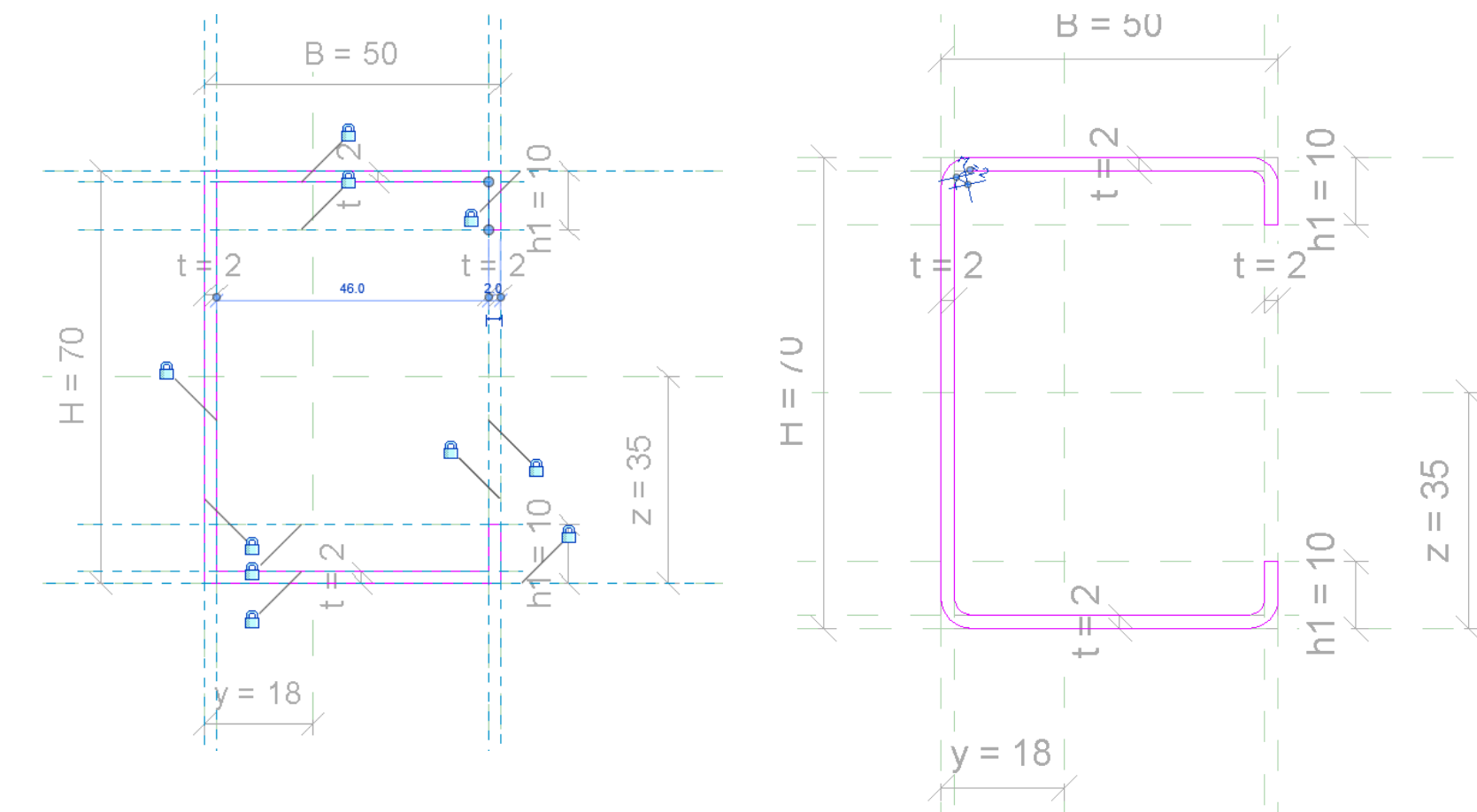
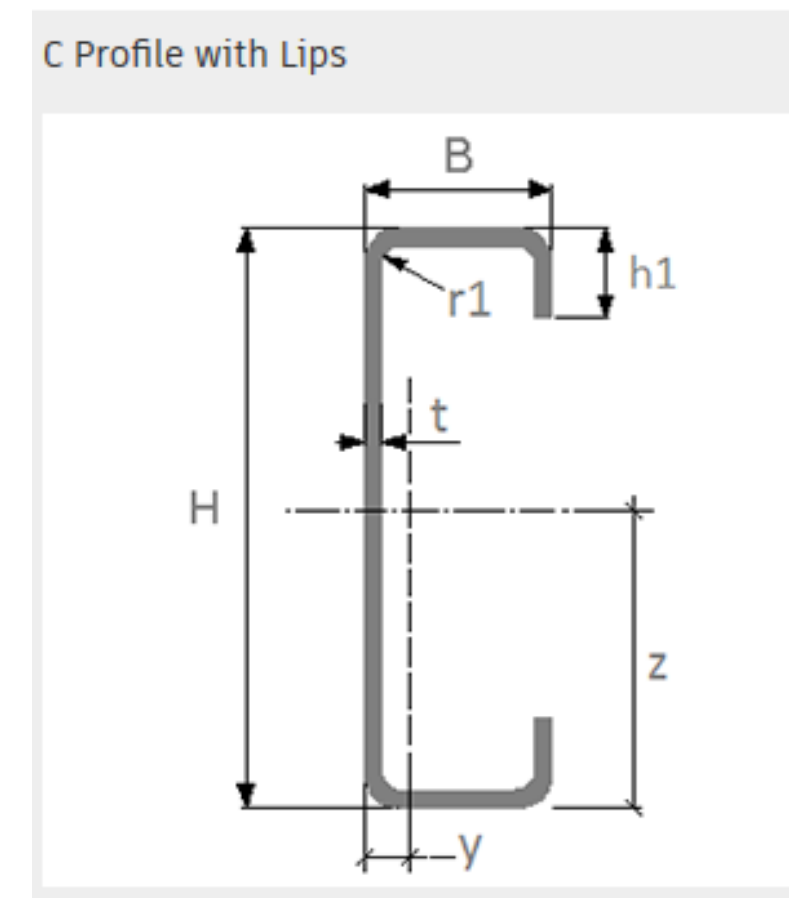


Revit Family Creation- Slide 2

PROFILE DEFINITION

Using CEE with Lips as example:

Please ensure that all sketches are created Exactly as shown in image, for example in the cold rolled section "C Profile with lips" the width (B) is defined horizontally, your sketch must define with width horizontally otherwise when exported to Advance Steel the section will be rotated.

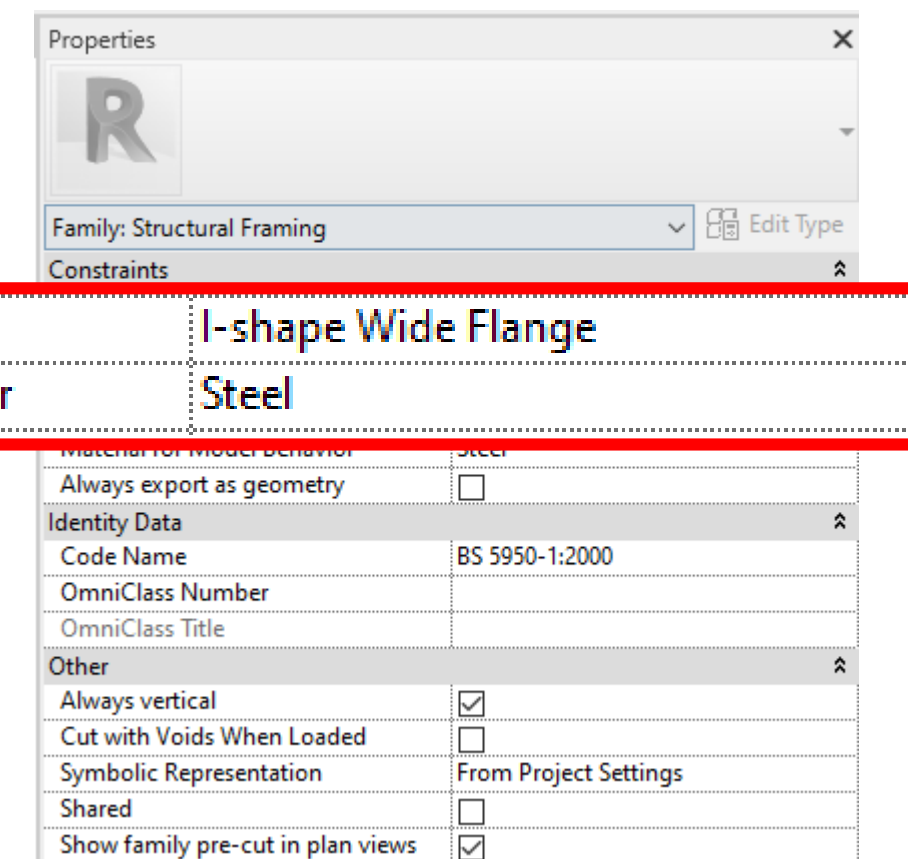


MATERIAL BEHAVIOUR

In The properties definition , ensure that the material for

Model Behaviour is set to **Steel**

[Revit Help: Specify Family Category and Parameters](#)



FAMILY STRUCTURAL GEOMETRY

The dimensions will be populated automatically, to allow steel connections and the dynamic export to Advance Steel to work the Structural Section Geometry needs to be defined. We can link these to the dimensions by inputting the dimension parameter into the Structural Section Geometry formula

Materials and Finishes		
Structural Material (default)		
Dimensions		
B	50.0	=
H	70.0	=
h1	10.0	=
r1	2.0	=
t	2.0	=
y	18.3	=
z	35.0	=
Wall Design Thickness		
Structural Analysis		
Section Area		
Perimeter		
Nominal Weight		
Moment of Inertia strong axis		
Moment of Inertia weak axis		
Elastic Modulus strong axis		
Elastic Modulus weak axis		
Plastic Modulus strong axis		
Plastic Modulus weak axis		
Torsional Moment of Inertia		
Torsional Modulus		
Warping Constant		
Shear Area strong axis		
Shear Area weak axis		
Principal Axes Angle		
Structural Section Geometry		
Width	5.00 cm	= B
Height	7.00 cm	= H
Wall Nominal Thickness	0.20 cm	= t
Inner Fillet	0.20 cm	= r1
Centroid Horizontal	1.83 cm	= y
Centroid Vertical	3.50 cm	= z
Lip Length	1.00 cm	= h1
Other		

Steel Elements Transfer Revit to Advance Steel:

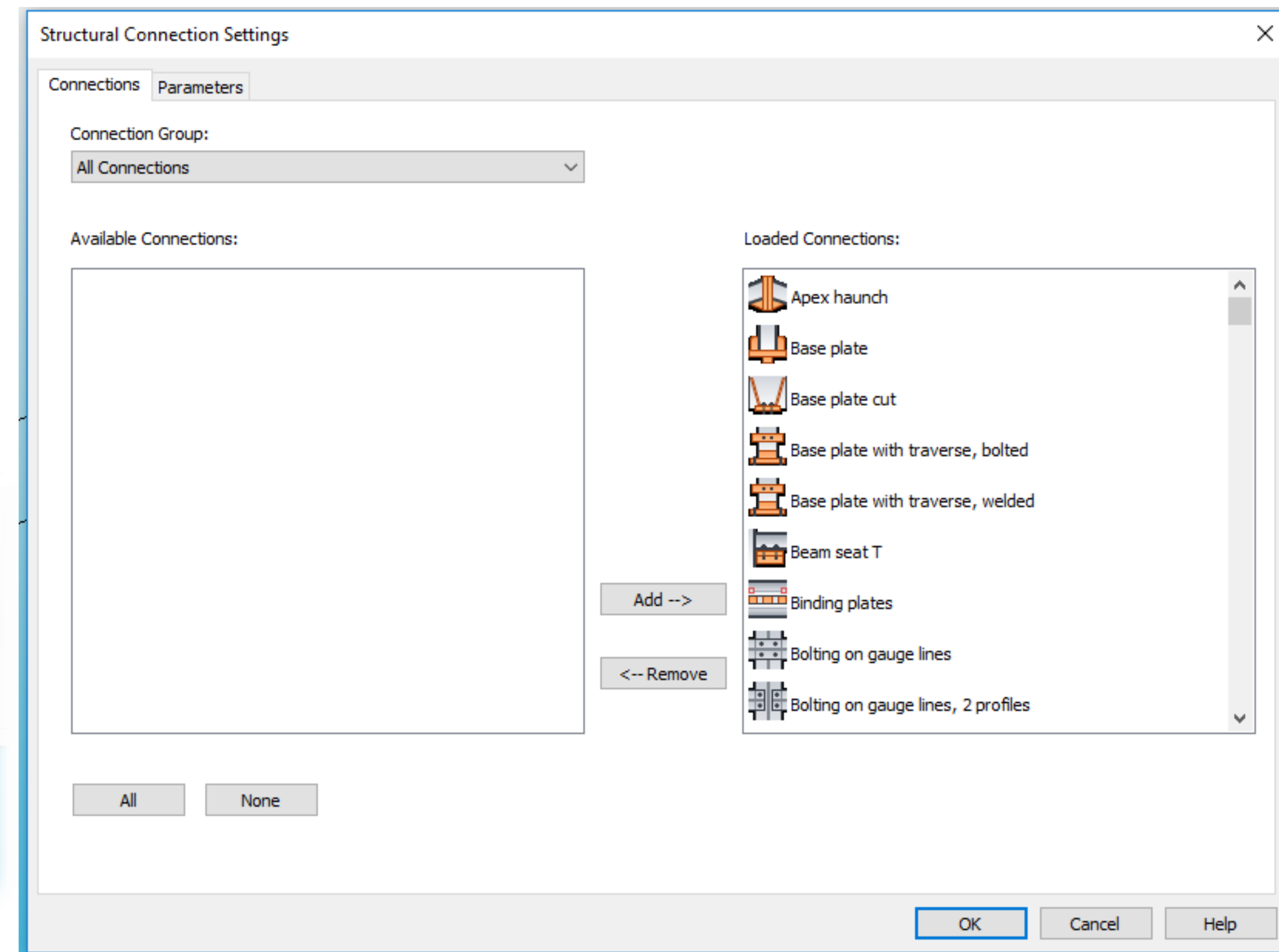
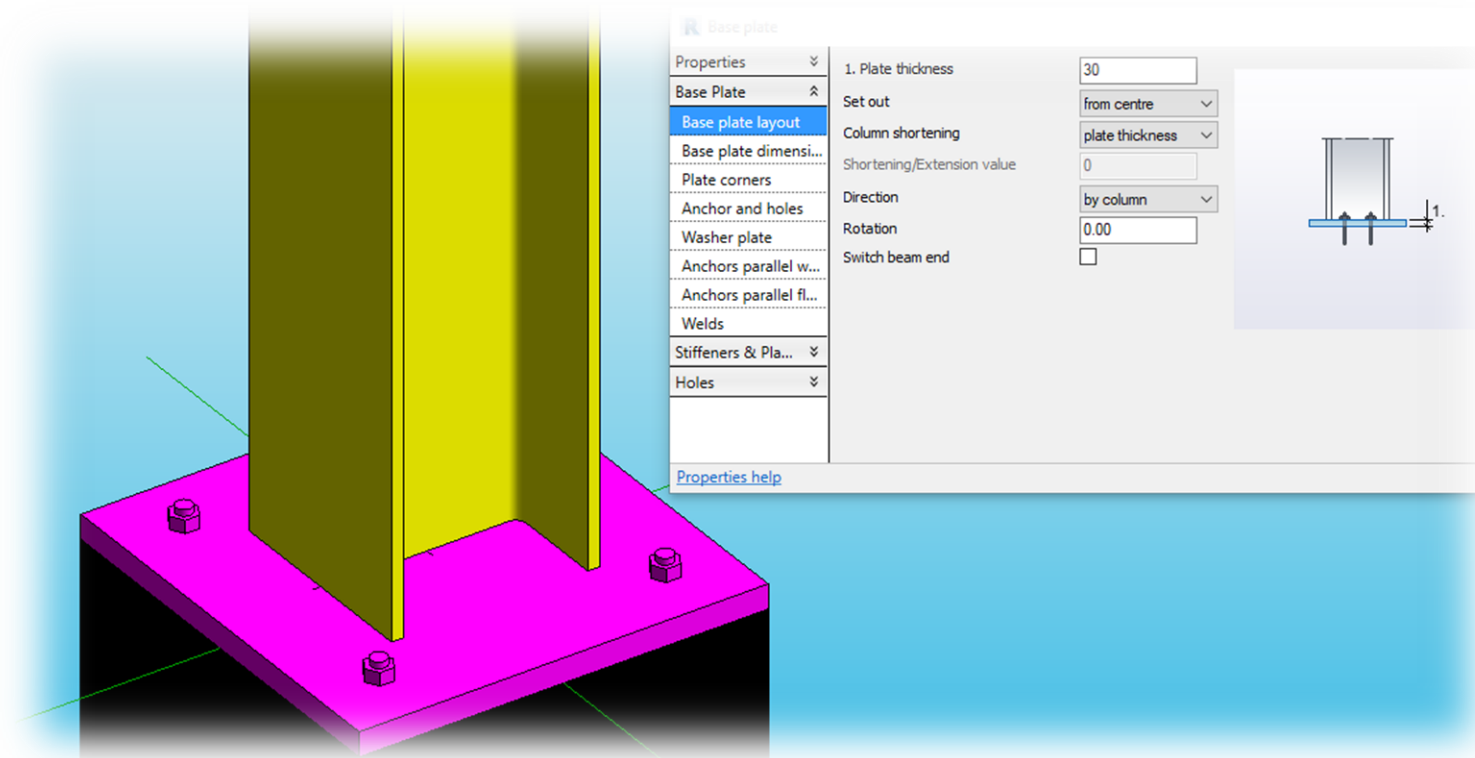
Steel Tools in Revit.



Revit – Steel Connections – 2017/8/9/20

- **Steel connections**
- Available as a additional download and install to the Revit 2018 platform, from your Autodesk account
- **Revit 2019/20 – Steel connections are installed with the delivery.**
 - Now found on the **Steel Ribbon tab.**
 - Also on the Structure Tab.
 - 130 no standard connections

- **Transfer as part of the SMLX.** (We see the new “steel Fabrication format” come into play.)

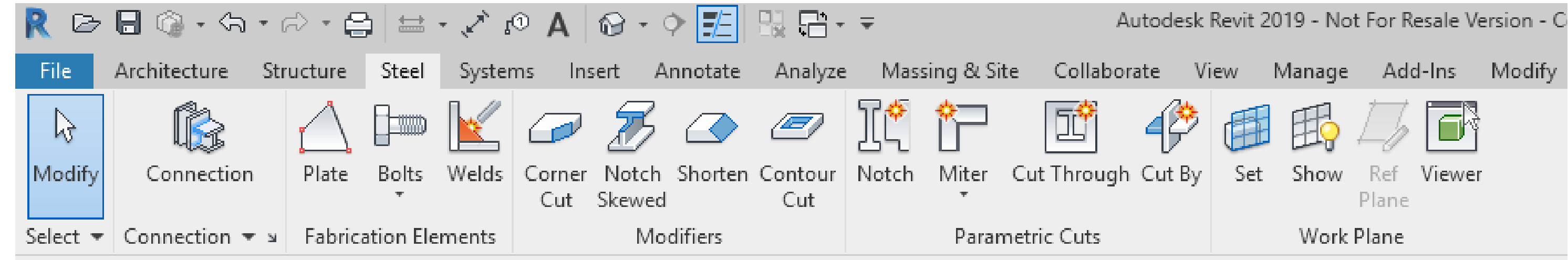


[Revit Structural connections help](#)

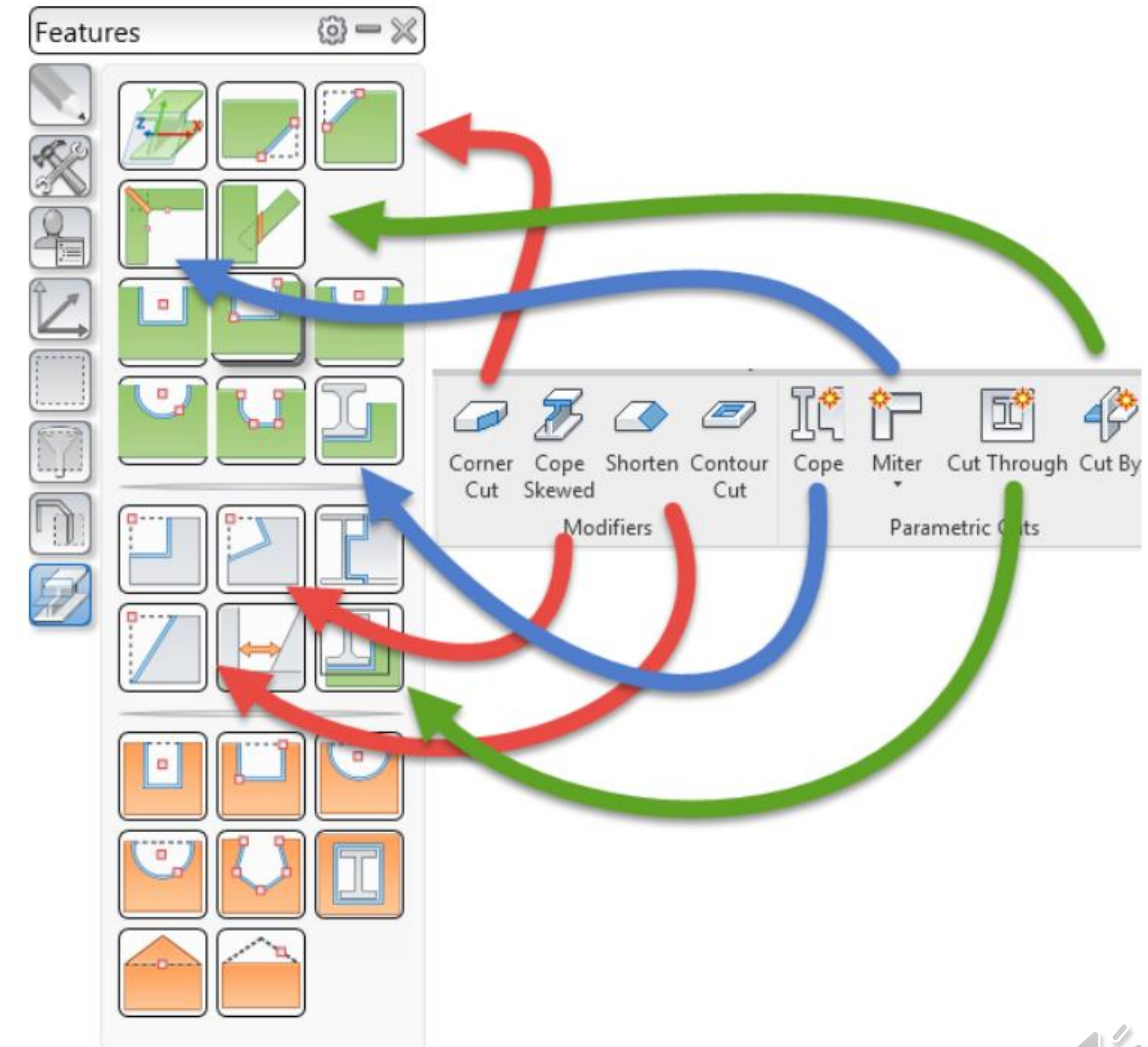
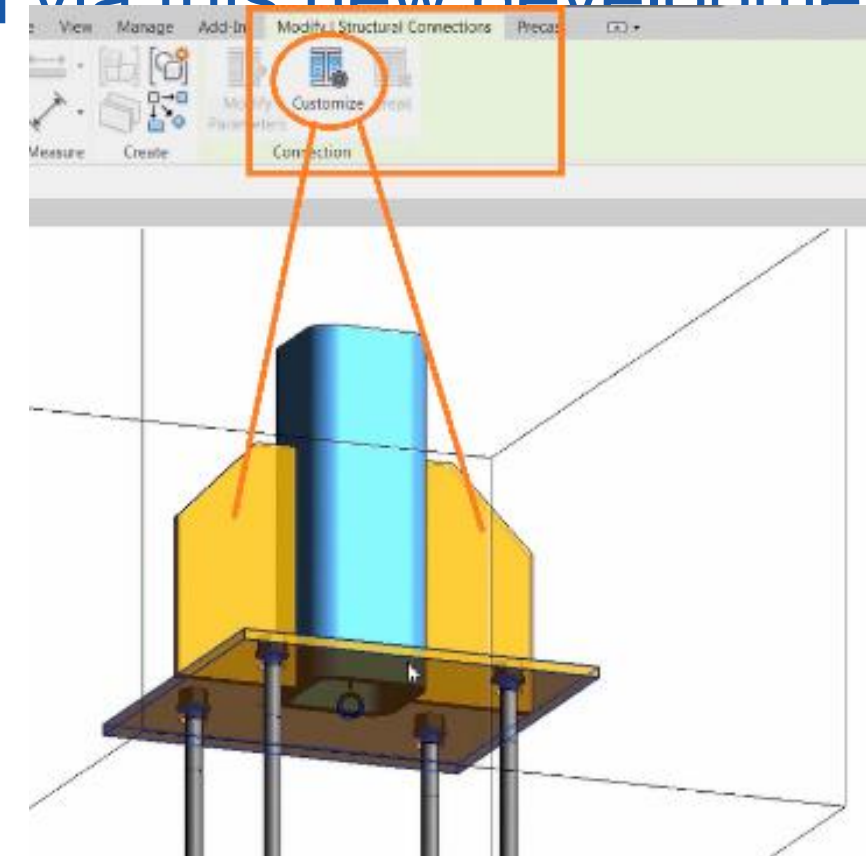
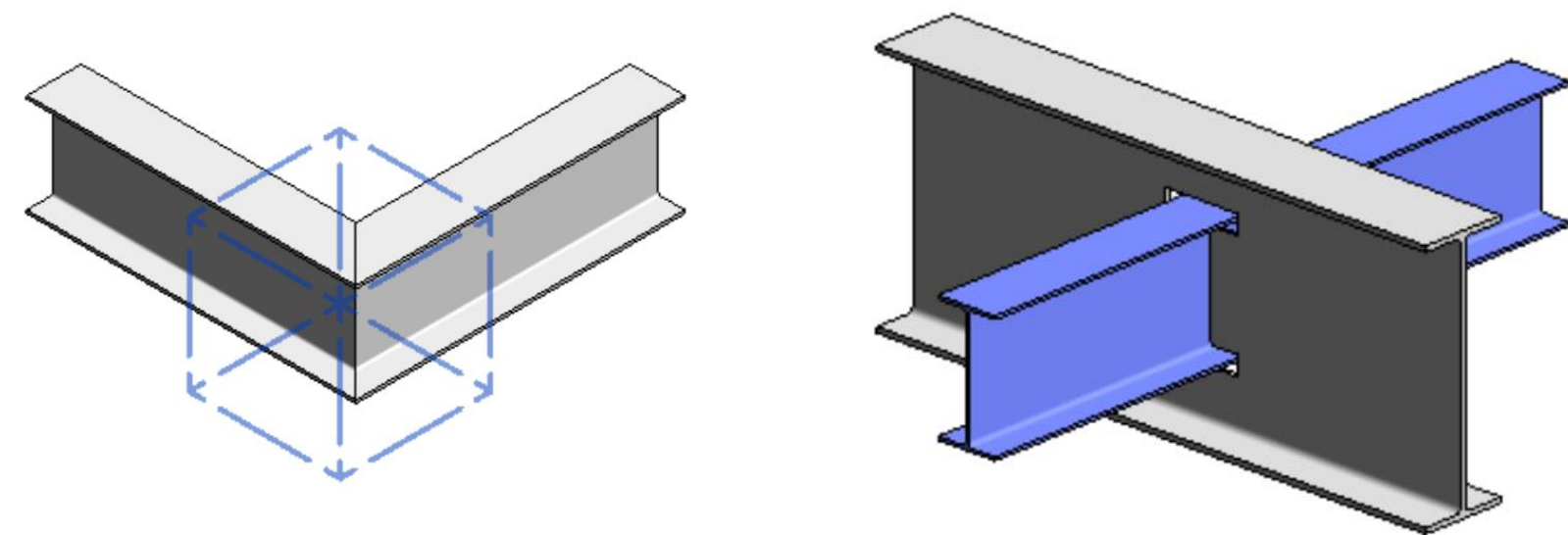


Revit – Steel Tools – 2019/20

STEEL TOOLS 2019/20



- New Steel Ribbon. With Tools for **NOTCH** (Cope), Miter, shorten, and many other options
- Revit Elements change when using these Tools to **Steel Fabrication format**.
- With 2019, these New tools, replicate the tools that we already have inside AS, a clear message for connection collaboration.
- Also the Ability for custom connections now added via this new development.

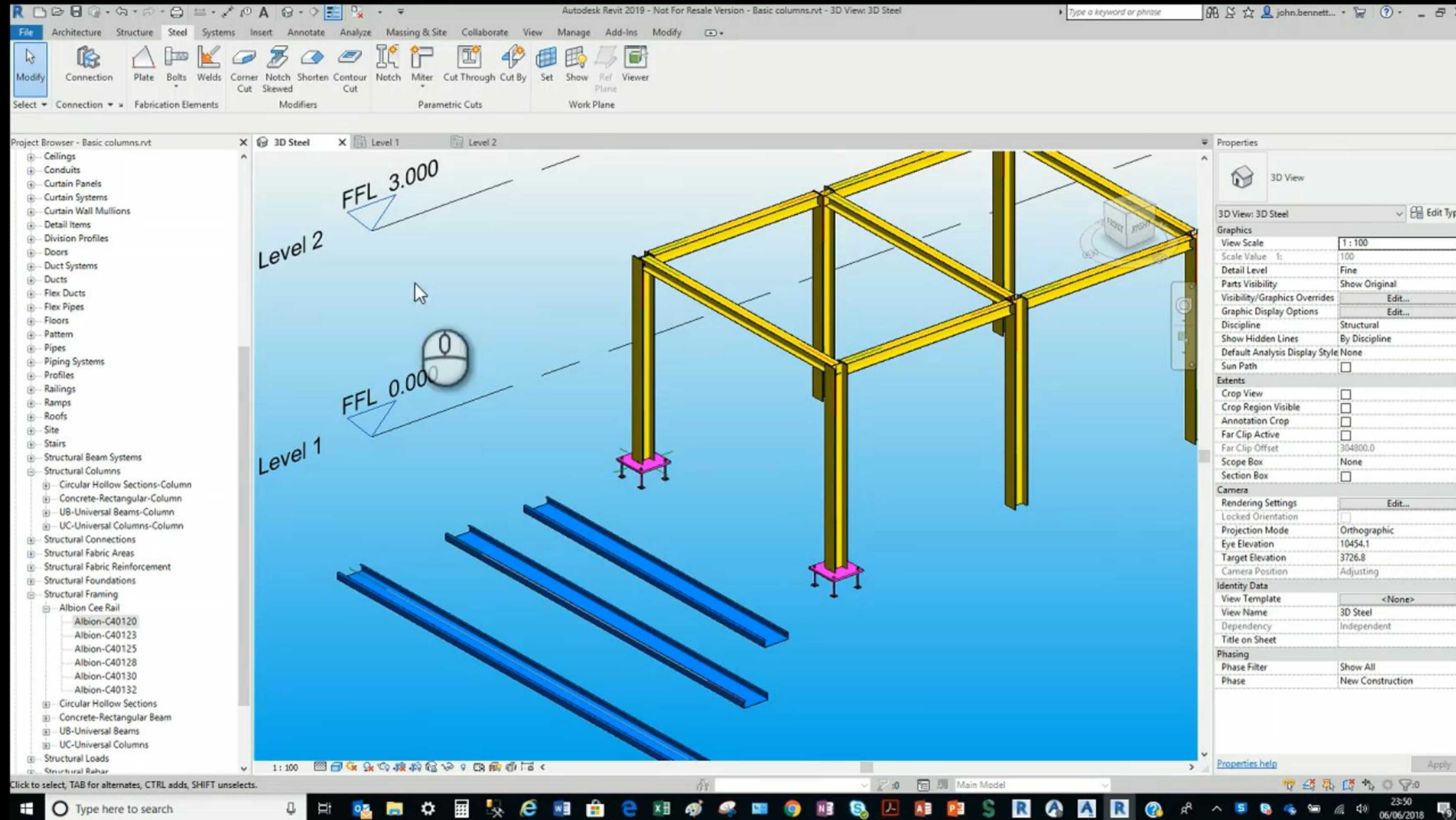


Tip : Blog post, Gumby's Article on LinkedIn.

[Graitec Blog - New tools in Revit 2019](#) , [Stephan's LinkedIn Article](#)



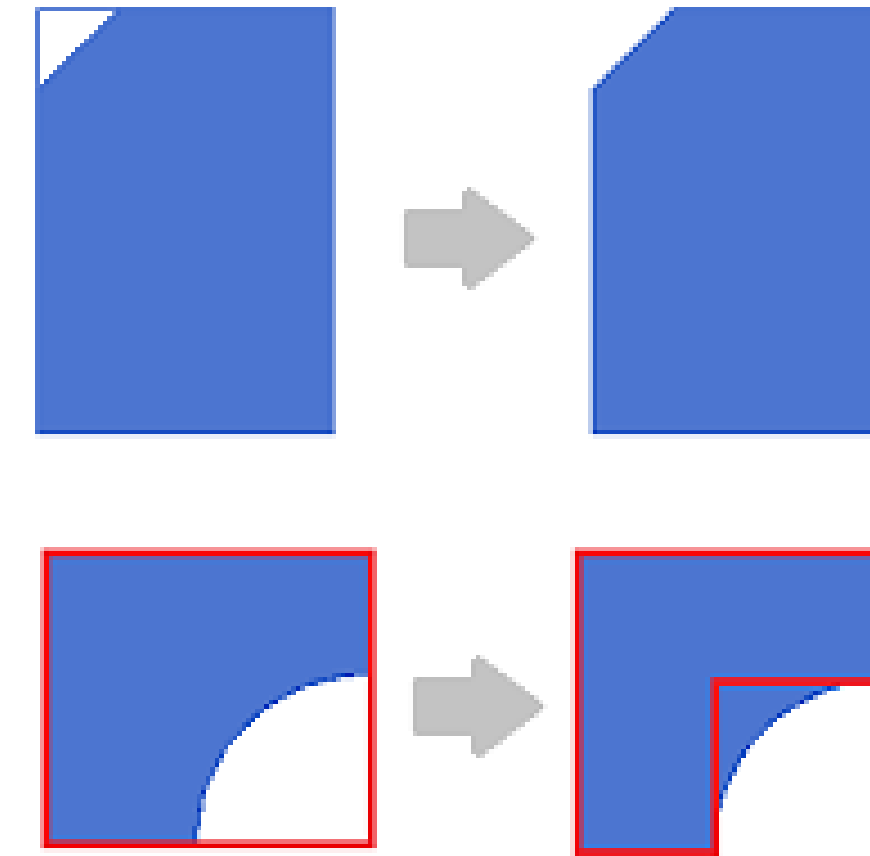
Revit to AS – Steel Fabrication Format 2019



Revit to AS - Steel Fabrication Element Transfer.

- **Steel fabrication Transfer method 2019**

- With 2019, The Copes/Cuts/Shortens are now transfer via the Steel fabrication elements. This is taken into the SMLX via this format.
- This works with the Steel Fabrication Format, transferring the Structural Beams as the Steel fabrication Shape into Advance Steel With the Connections.



Note: Any structural framing or column, exported from Revit or Advance Steel that has an associated cut in the SMLX file, will be imported in Revit as a structural framing or column with a [Steel fabrication shape](#).

[Revit 2019 Supported Structural Steel Shapes and Families for Steel Fabrication](#)

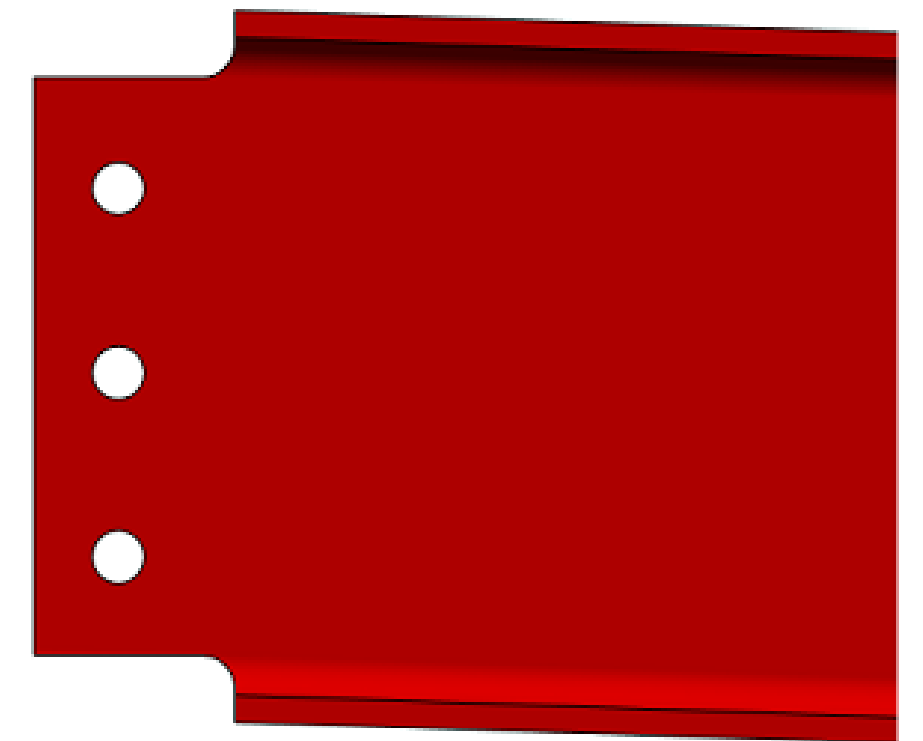
[Revit 2018 Supported Structural Steel Shapes and Families for Steel Fabrication](#)

Note: the 2018 method is Different, the supported list is different, this is a new approach in 2019/20.

Tip : Note that this is New format for 2019, SMLX is different structure in 2019 to accommodate the change in Shape format and connections. Note fabrication shape displays the exact shape of the element and the process of creating it is irreversible

[2019 Steel Fabrication Element Transfer](#)

[2020 Steel Fabrication Element Transfer](#)



Steel Elements Transfer Revit to Advance Steel:

Template Ideas for Modelling



Revit – Template Ideas. Slide 1.1

- **Template : Creation elements**

- **Origin** - In AS, try to model about the 0,0,0. modelling in Revit at this reference makes the transfer easier.

- **Levels**

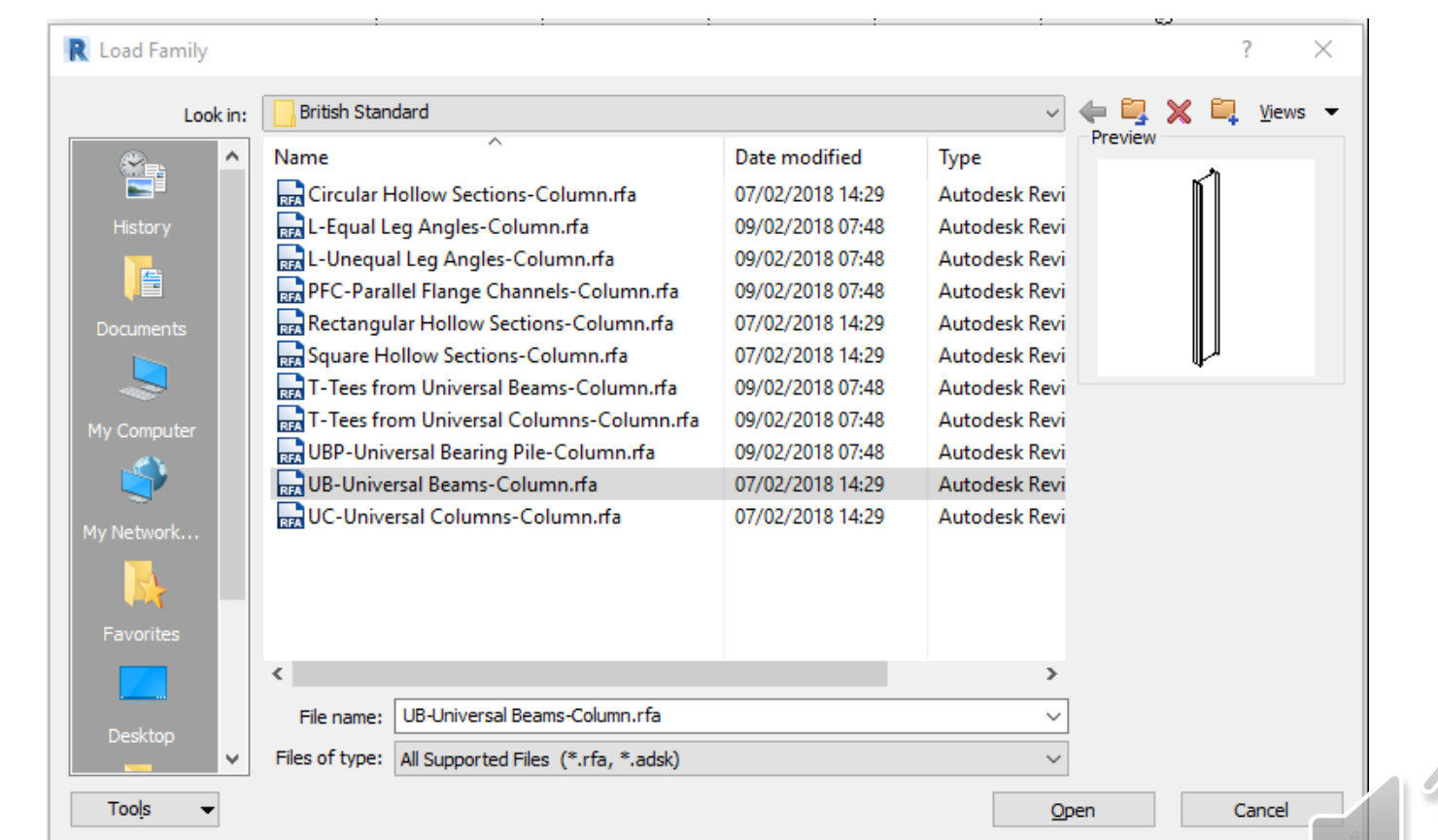
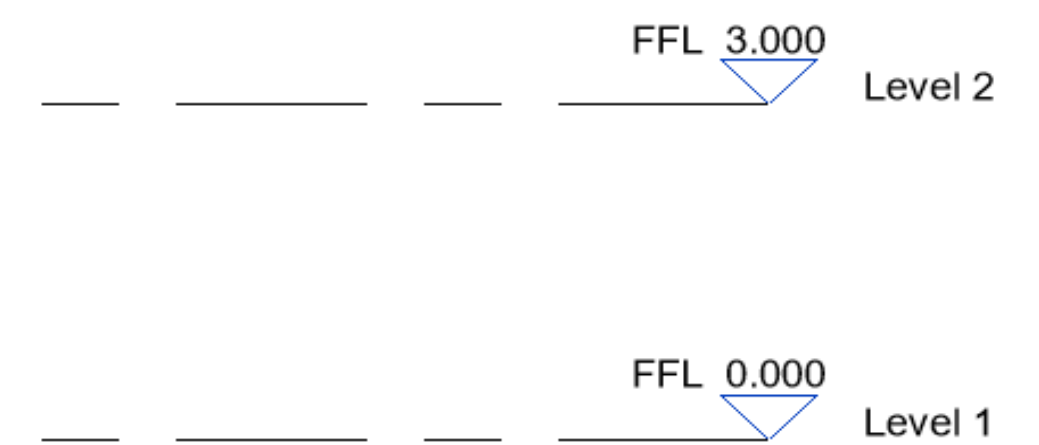
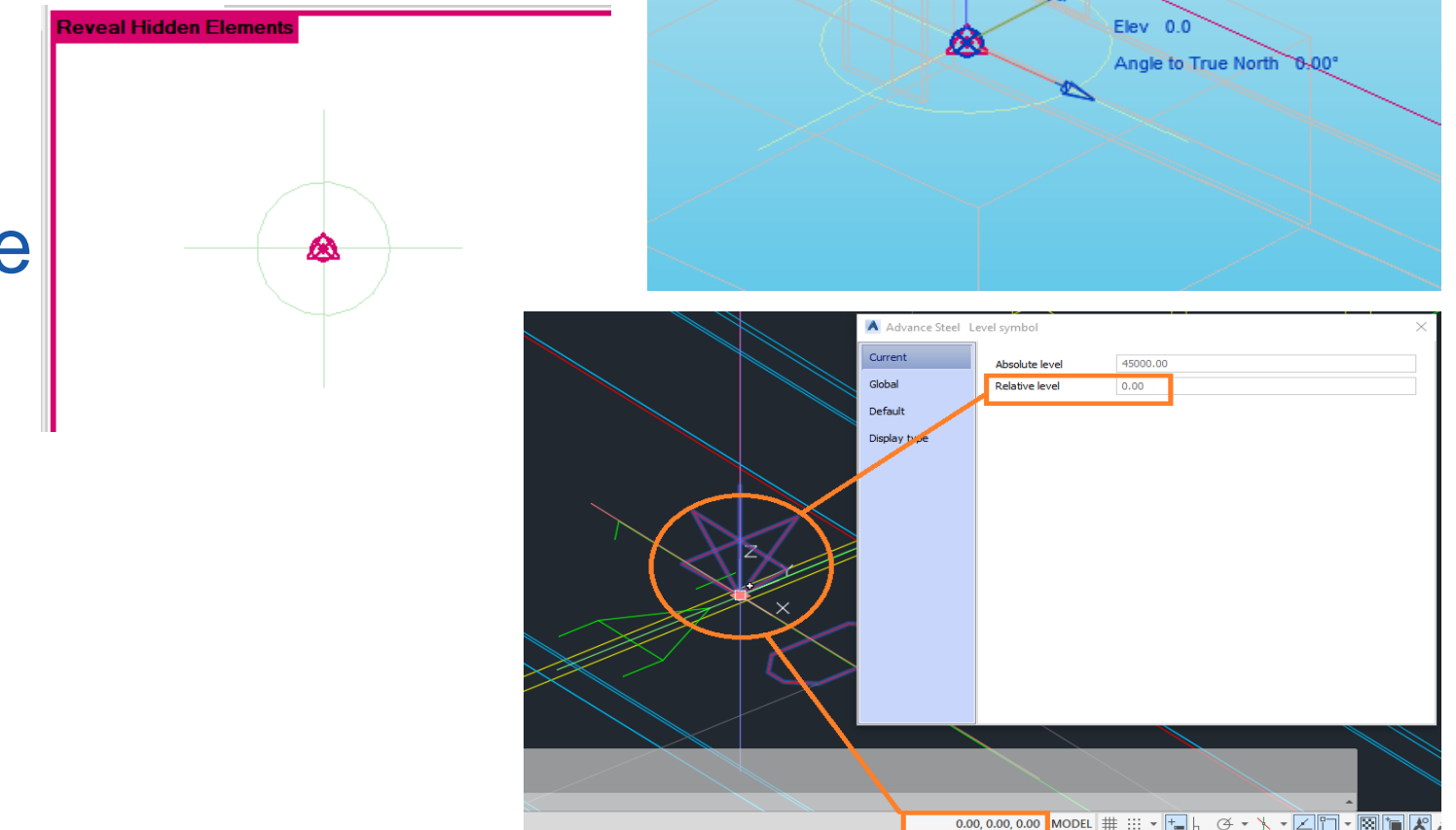
- Use them, place beam on them, they are transferred providing they have Beams elements on them
- Try not to use large offsets for beams, affects in the transfer.

- **Grids**

- **Transferable**, but watch if coming from AS, as you only need the level 1, multi levels used in AS, can lead to confusion.

- **Steel Sections/Families**

- C:\ProgramData\Autodesk\RVT 2019\Libraries\UK\Structural Framing\Steel\British Standard
 - Personal View –load the correct country libraries, all of them, just makes it easier to model steel in Revit.



Revit – Template Ideas. – Slide 1.2

- **Template : Creation elements**
 - **Steel Connections** - just load them all, is easier, then use search feature.
 - Create new instances and store them in the template (2020 option)
 - **Steel Materials** – there are some in the system, by default Revit is mapped to AS via the AEC materials, but you can add you own, If you have access to steel guide then look, if New materials, Create the same in AS.
 - **Level of Detail** - Set this to Fine to see the connections and Steel shape correctly.
 - **Colours** - Revit is different to AS, New users need to get to grip with materials and also Visual graphics and the overrides.
 - Personal view, try to make the steel and connection elements different base colours, just helps to see them in model.
 - When creating materials, use this as the basis to change the colour for steel, if working with AS, try to match what you would expect to see.

Tip: when you create your template, then add it to you list of preferred templates, so selection and use is easier.

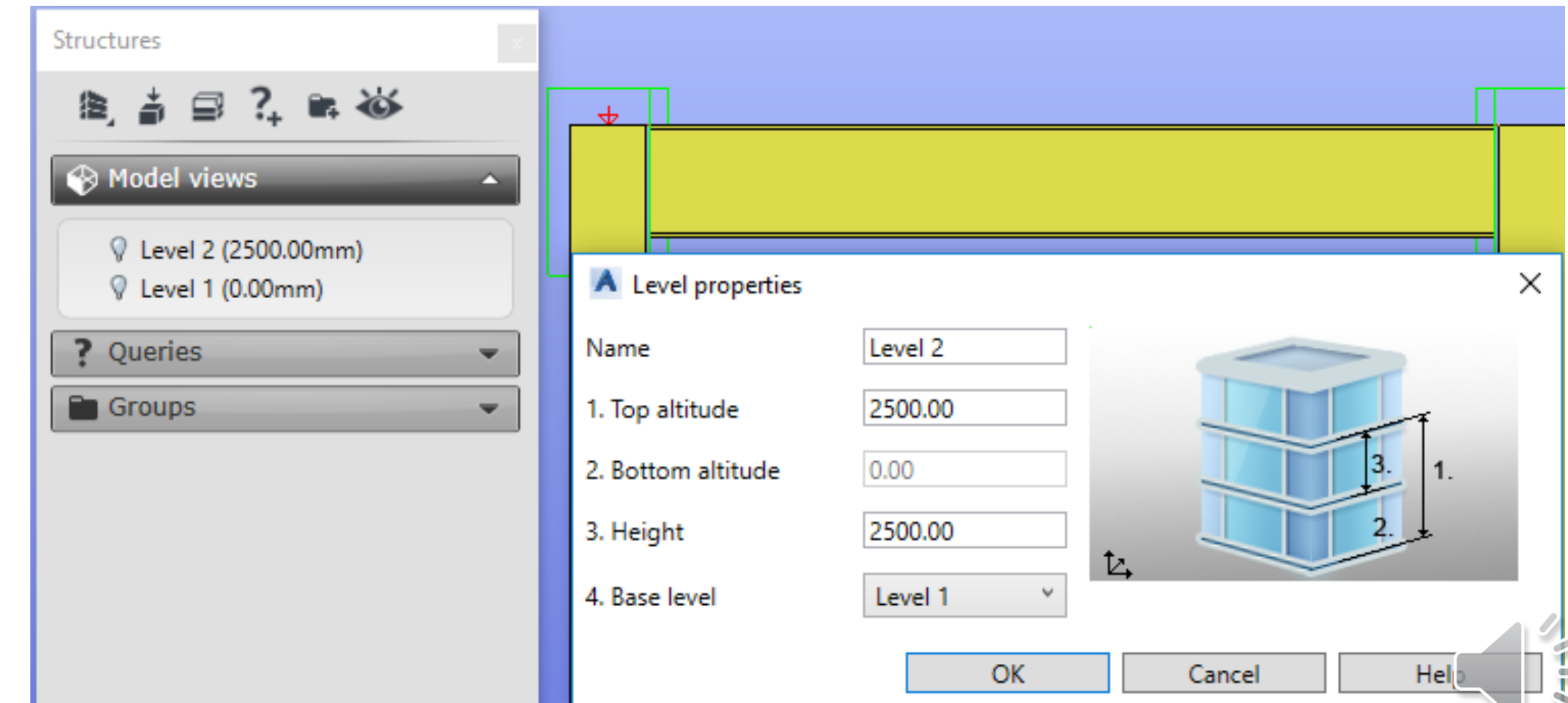
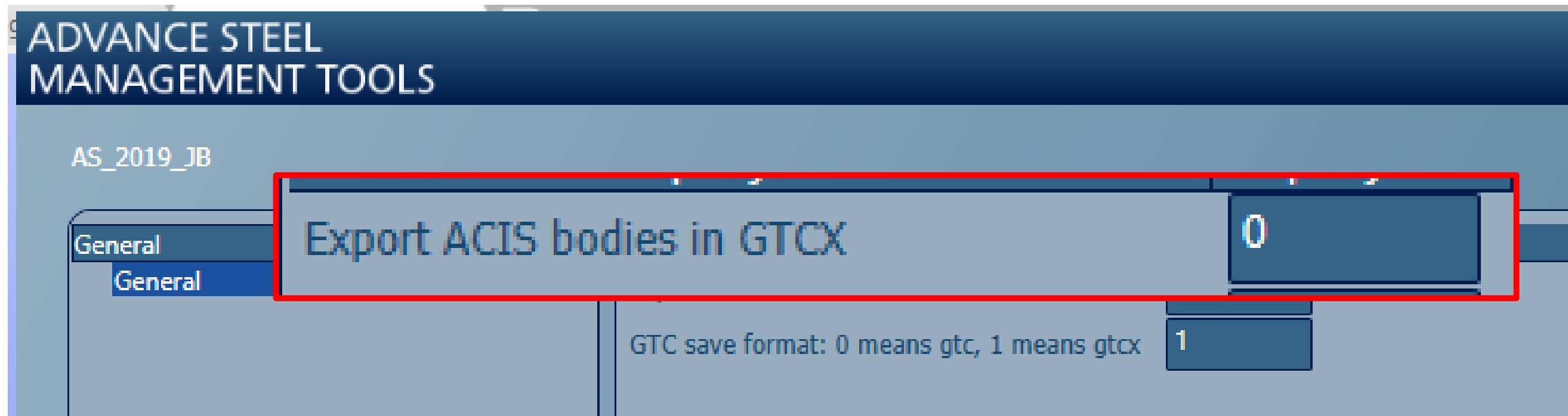
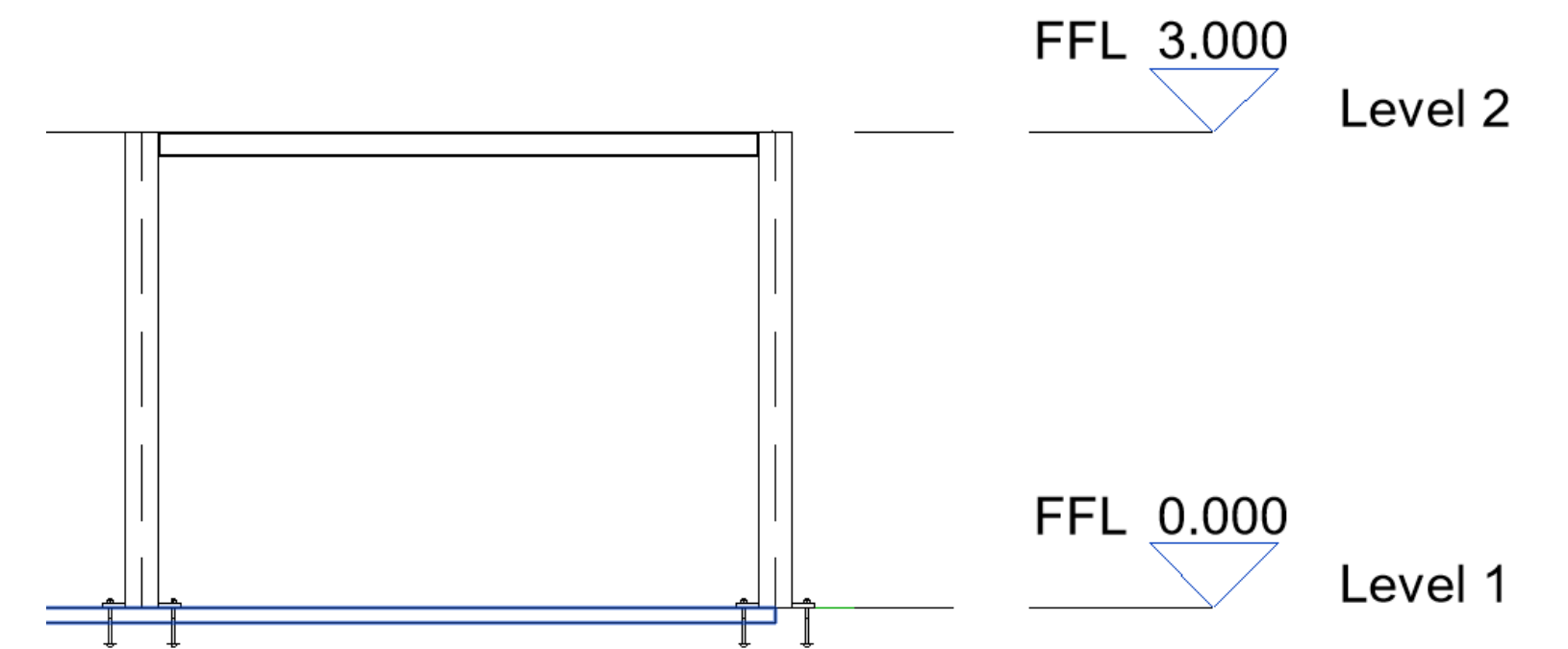
[Revit Help - Setting you default template adding to list](#)



Advance Steel – Model Settings.

- **Management Tool Settings**

- **GTC AS Defaults Settings-** Change this (UK) so you do not need to number the model before the export.
- **AS Levels**– Use levels in the project explorer, if working with Revit, attach beams to levels, the levels are transferred into Revit.
- **Origin** - In AS try to start your model at the WCS , 0,0,0 position, this helps when transferring to Revit. As the levels are based around that reference point.



Steel Elements Transfer Revit to Advance Steel:

New Features in RVT 2020



New Features and Enhancements

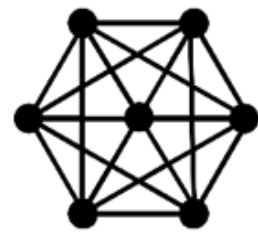


Optimize

- ✓ Path of Travel
- ✓ Improved OR in View Filters
- ✓ Material Appearance Improvement
- ✓ Material User Interface Improvements
- ✓ Image and PDF improvements
- ✓ Tag, Schedule and View Filter for Elevation
- ✓ Track and Edit Scope Box Parameter in View List
- ✓ Copy and Paste Legends Across Sheets
- ✓ Create Parts from Imported Geometry
- ✓ InfoCenter Reduction
- ✓ Dynamo 2.1 Ships with 2020
- ✓ Steel Connections for Dynamo
- ✓ Enhanced Performance for Detailed Steel Models
- ✓ Additional Parameters for Steel Components
- ✓ Electrical panel feed through lugs connection
- ✓ Change Service Improvements

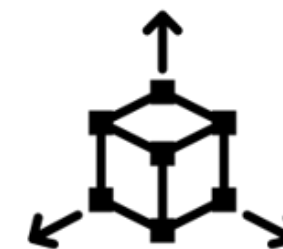
Autodesk Revit 2020

Connect



- ✓ PDF Into Revit
- ✓ Publish Cloud Model on Revit Home
- ✓ Cloud Models for Revit Update
- ✓ Support for Sketchup 2018 Import and Link
- ✓ Revit Extension for Fabrication Exports

Create

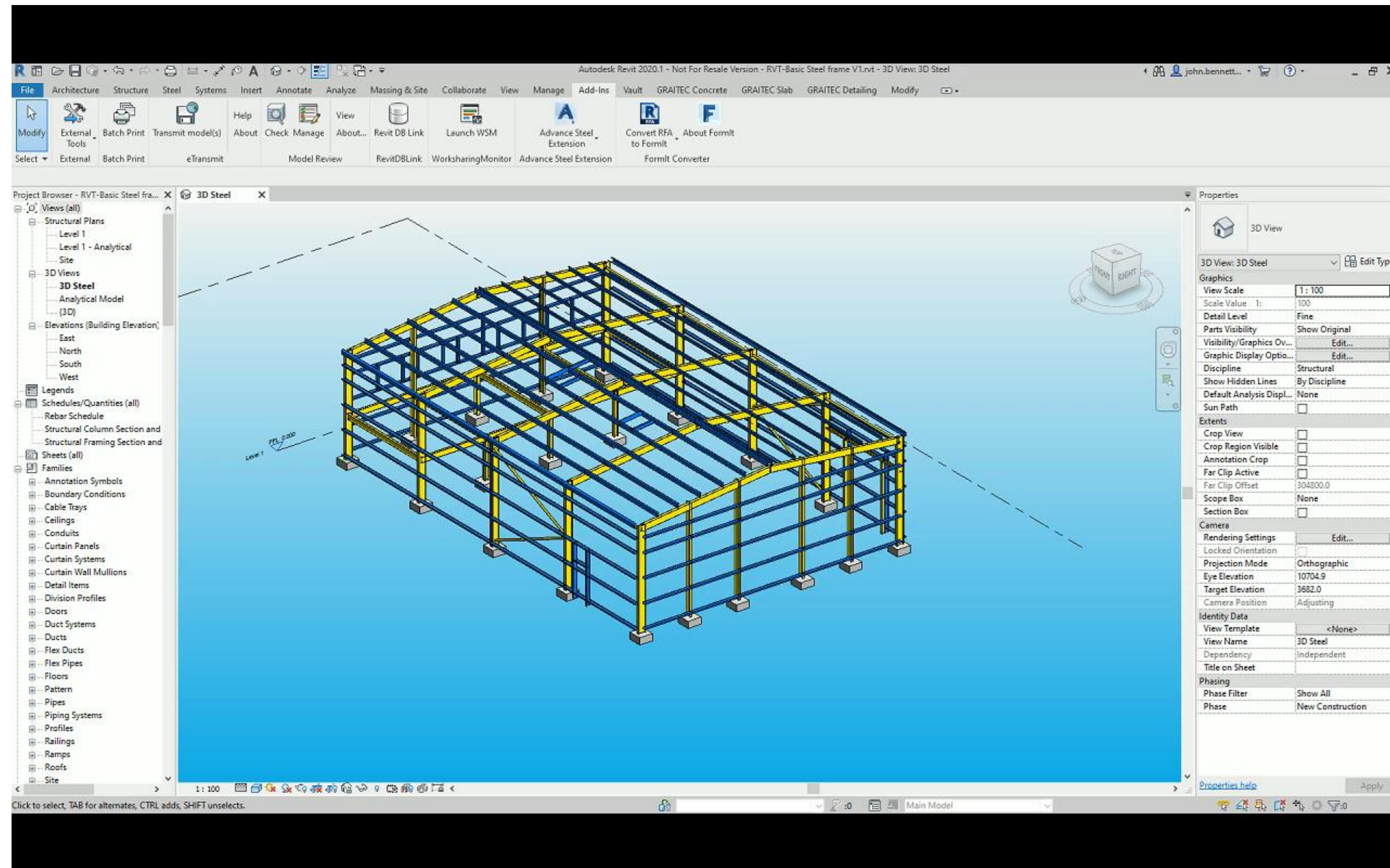


- ✓ Elliptical Walls
- ✓ Improved Rebar Copy & Move Logic
- ✓ Multi Rebar Annotation to Concrete Faces
- ✓ Multi Rebar Annotation for Free Form Rebar
- ✓ Rebar in Model-in-place Stairs
- ✓ Steel Connections Propagation
- ✓ Steel Connections Grouping
- ✓ Tags & Dimensions of Steel Elements
- ✓ Electrical Homerun Wiring Improvements



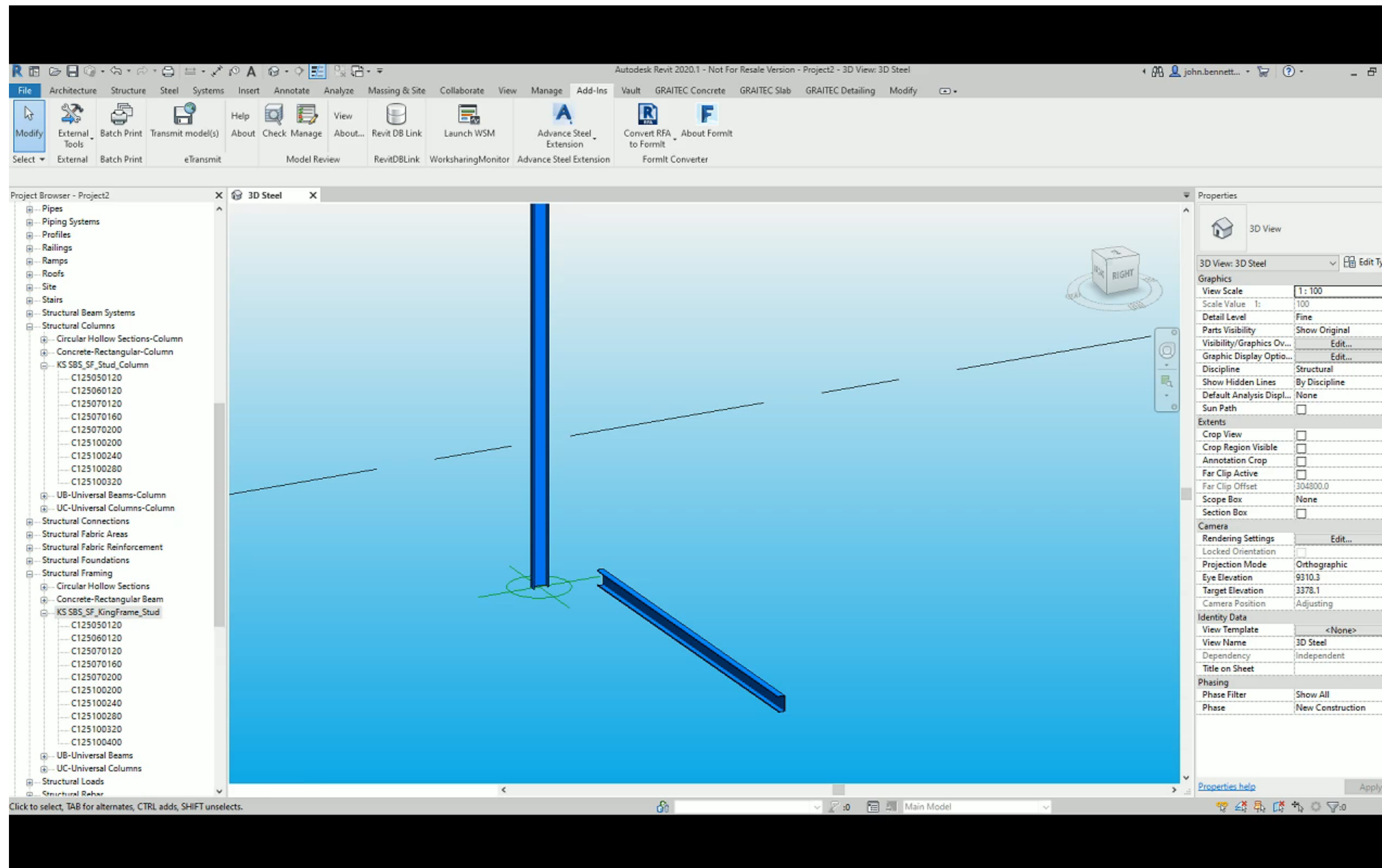
Revit 2020 to AS2020 – Basic Transfer

The extension exports models using only the Rule Based Mapping Transfer. The **Revit Family Based Mapping Transfer** and the **Dynamic Profile Transfer** types were removed from the export functionality.



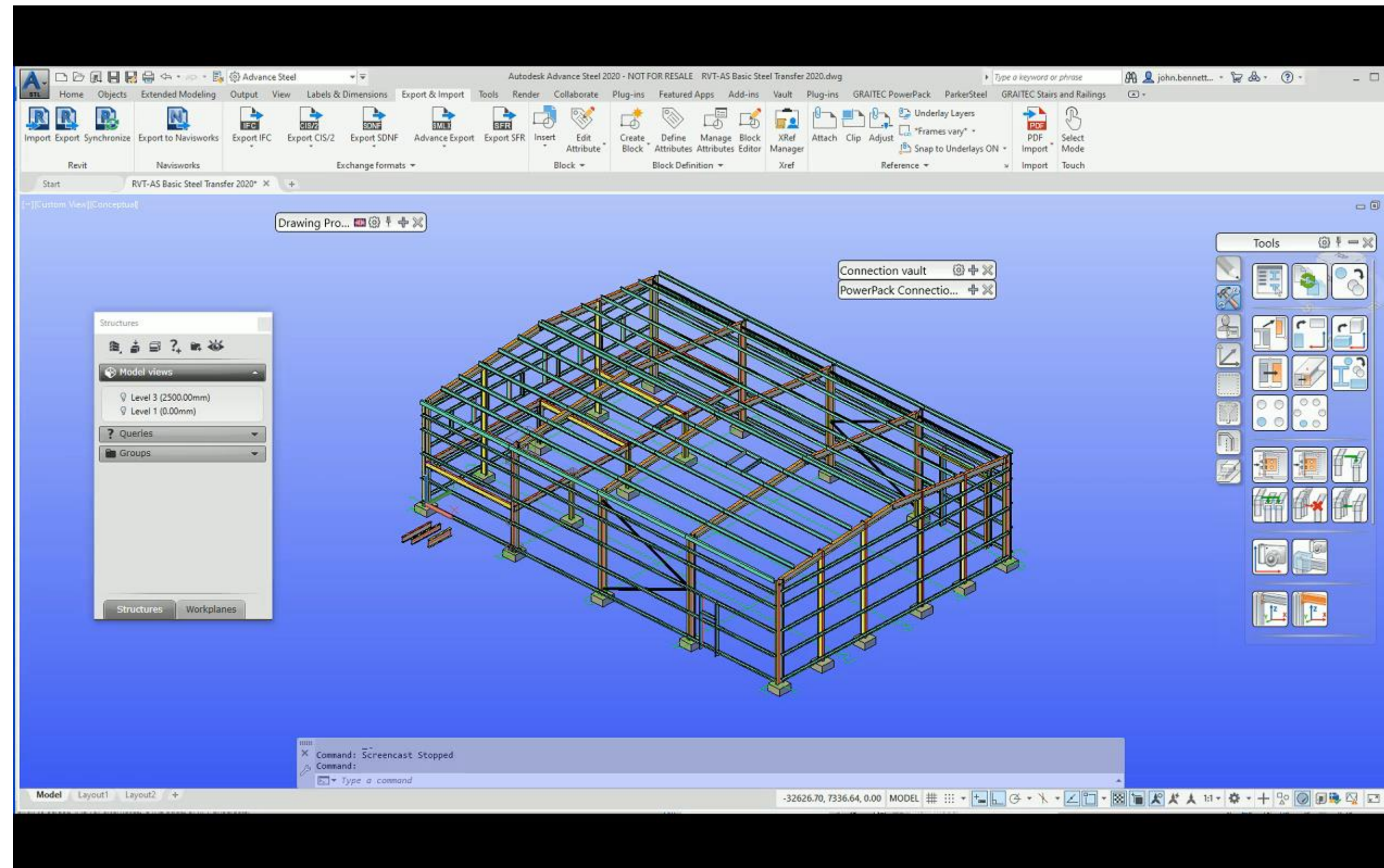
Revit 2020 to AS2020 – 1 to 1 Mapping

The **extension exports models using only the 1 to 1 Mapping Transfer**. This is used most frequently to map sections from Revit to AS, creating various table entries.



Revit 2020 to AS2020 – Sync Options

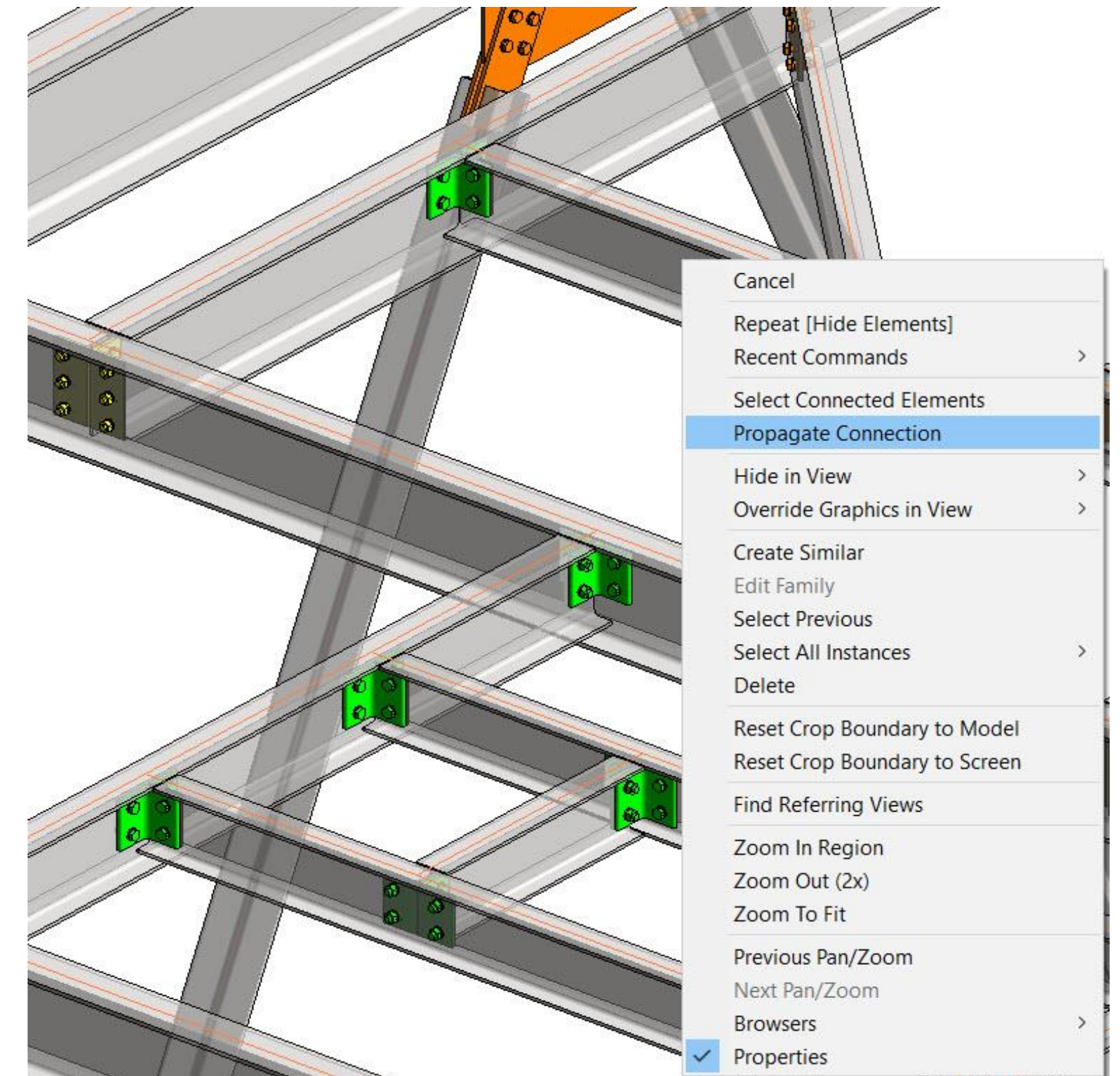
The **extension** has a **Synchronising feature via the Transfer**. This can be used to transfer and bring back into the Revit or Advance Steel changes between the models.



Revit 2020 – Connection Propagation- Slide 1

Steel Connections Propagation

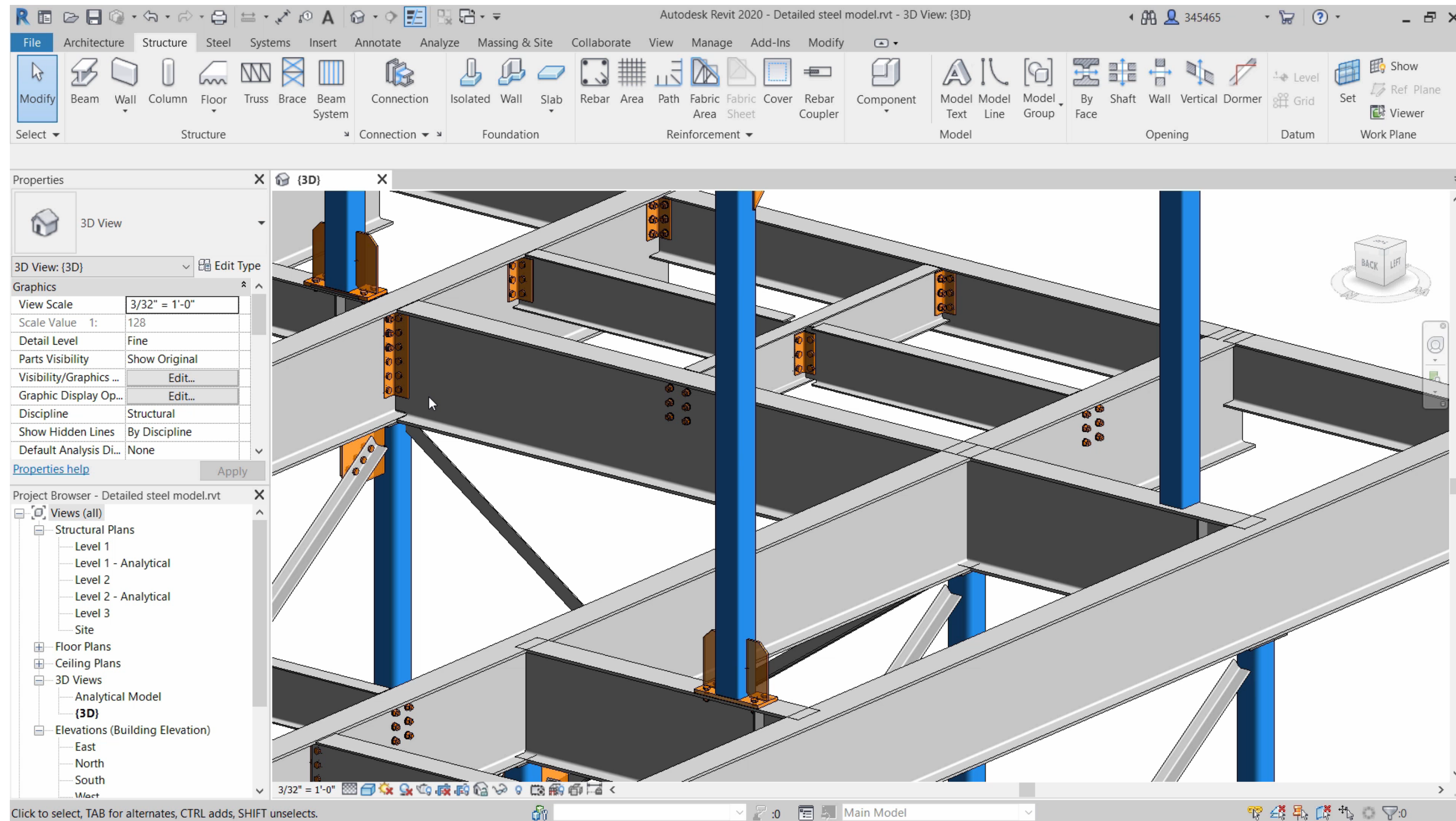
- New option in the contextual menu
- Available for any steel connections available out-of-the-box
- Same framing conditions required
- Relevant to visible steel members



Quickly place the same steel connections in your project



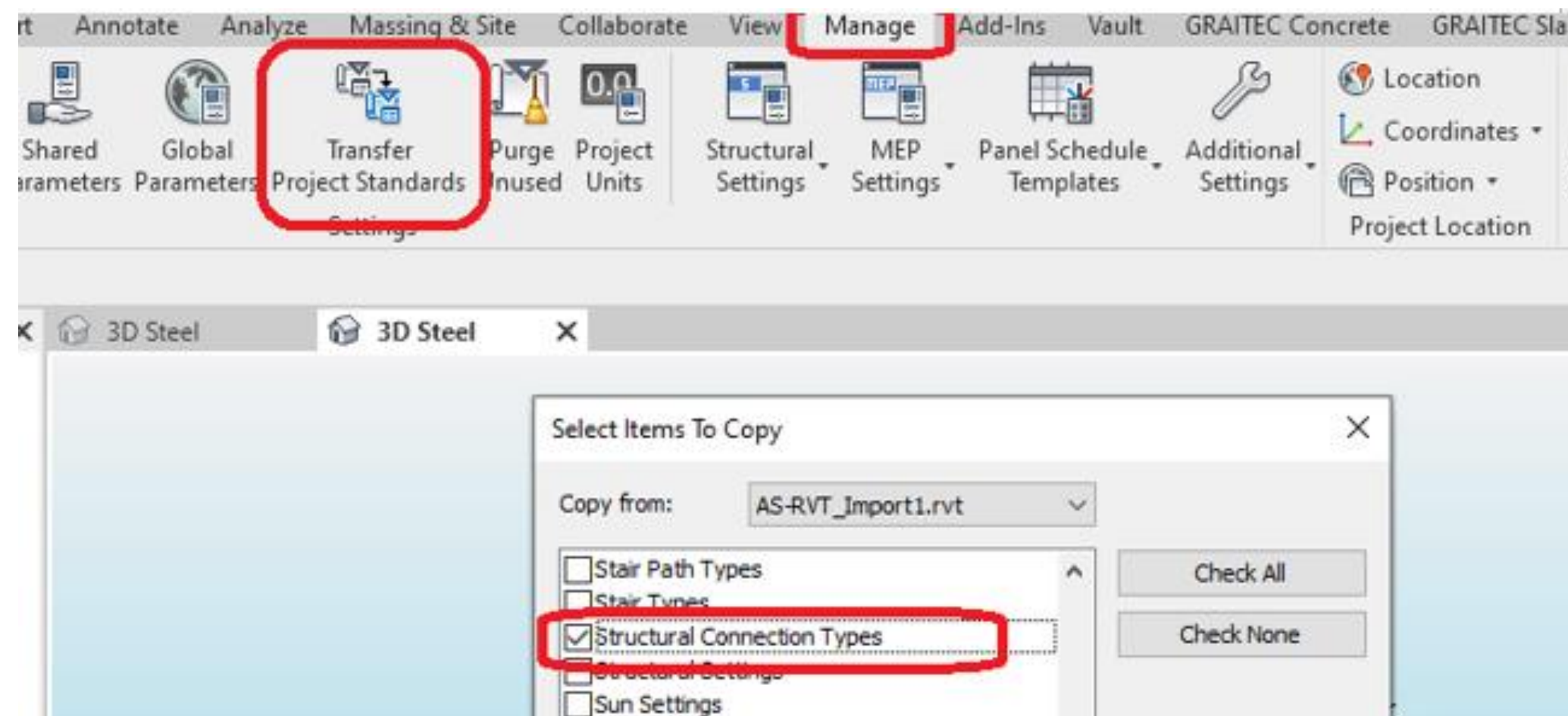
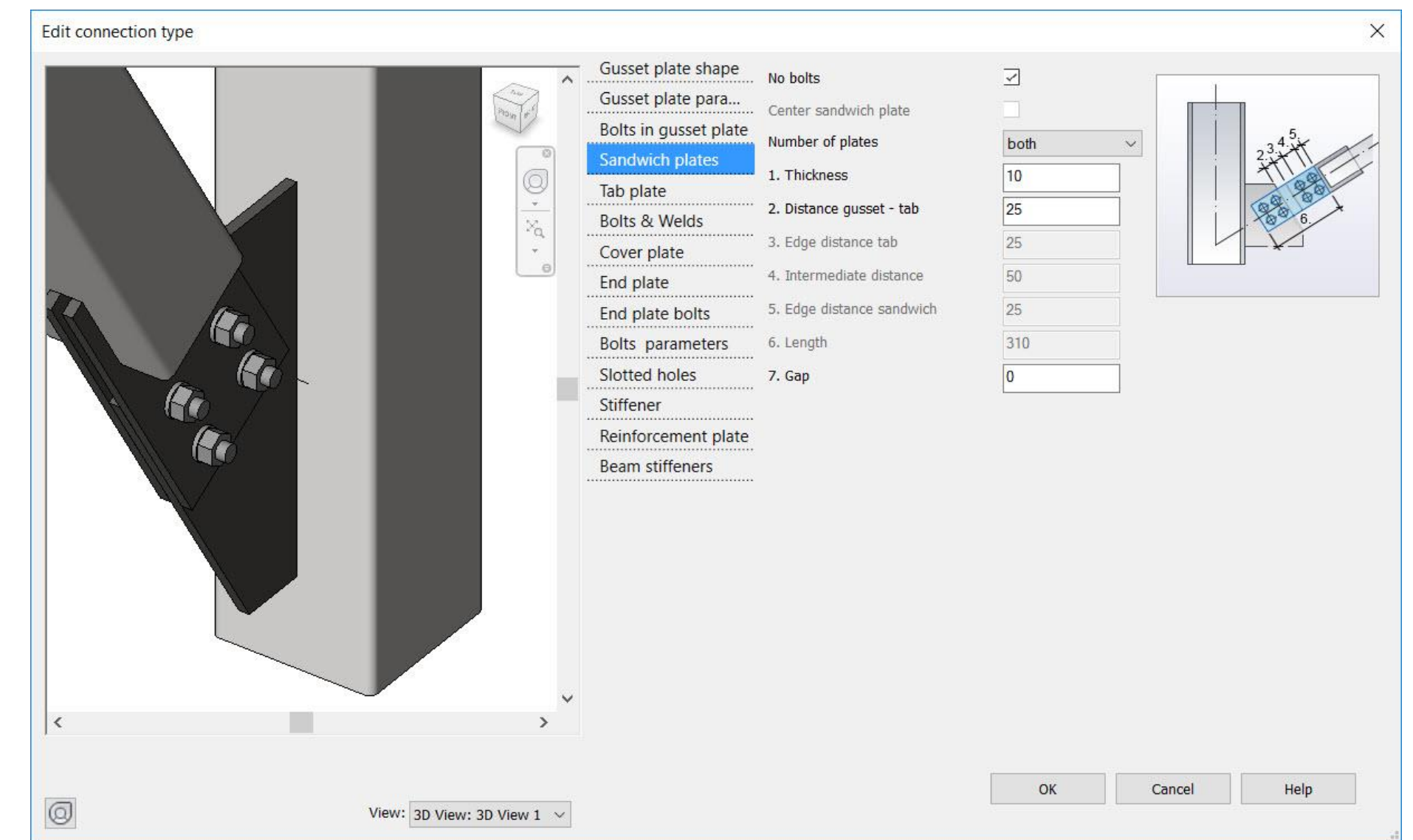
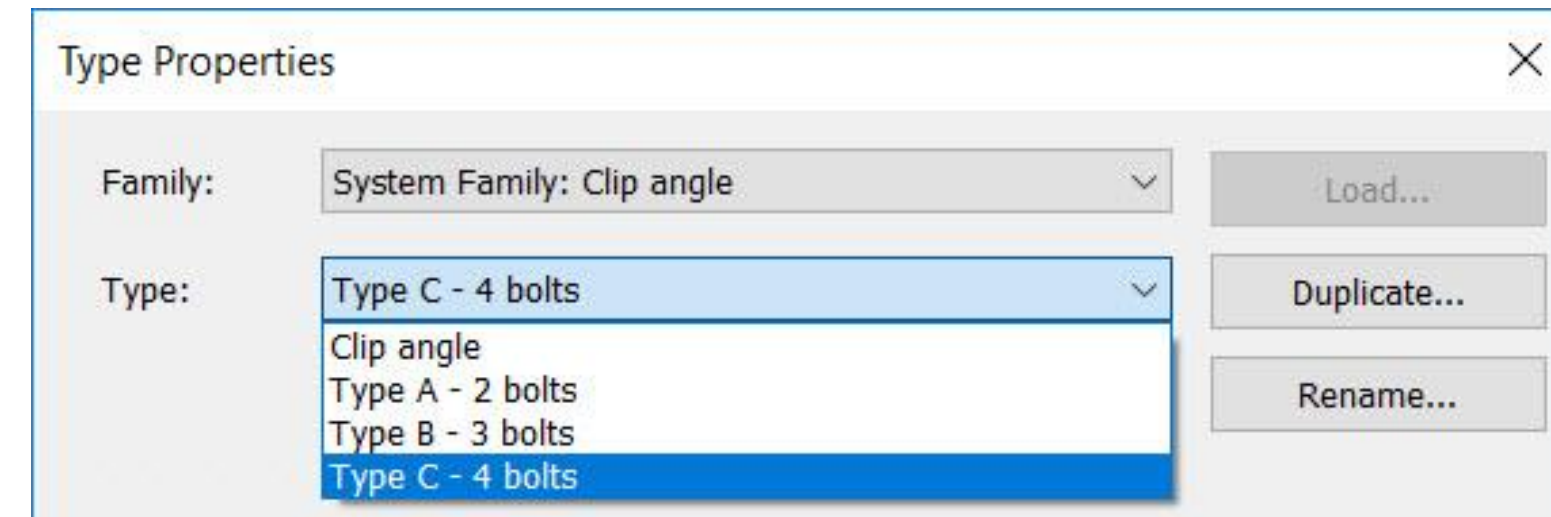
Revit 2020 - Connection Propagation



Revit 2020 Connections Grouping – Slide 1

Steel Connections Grouping

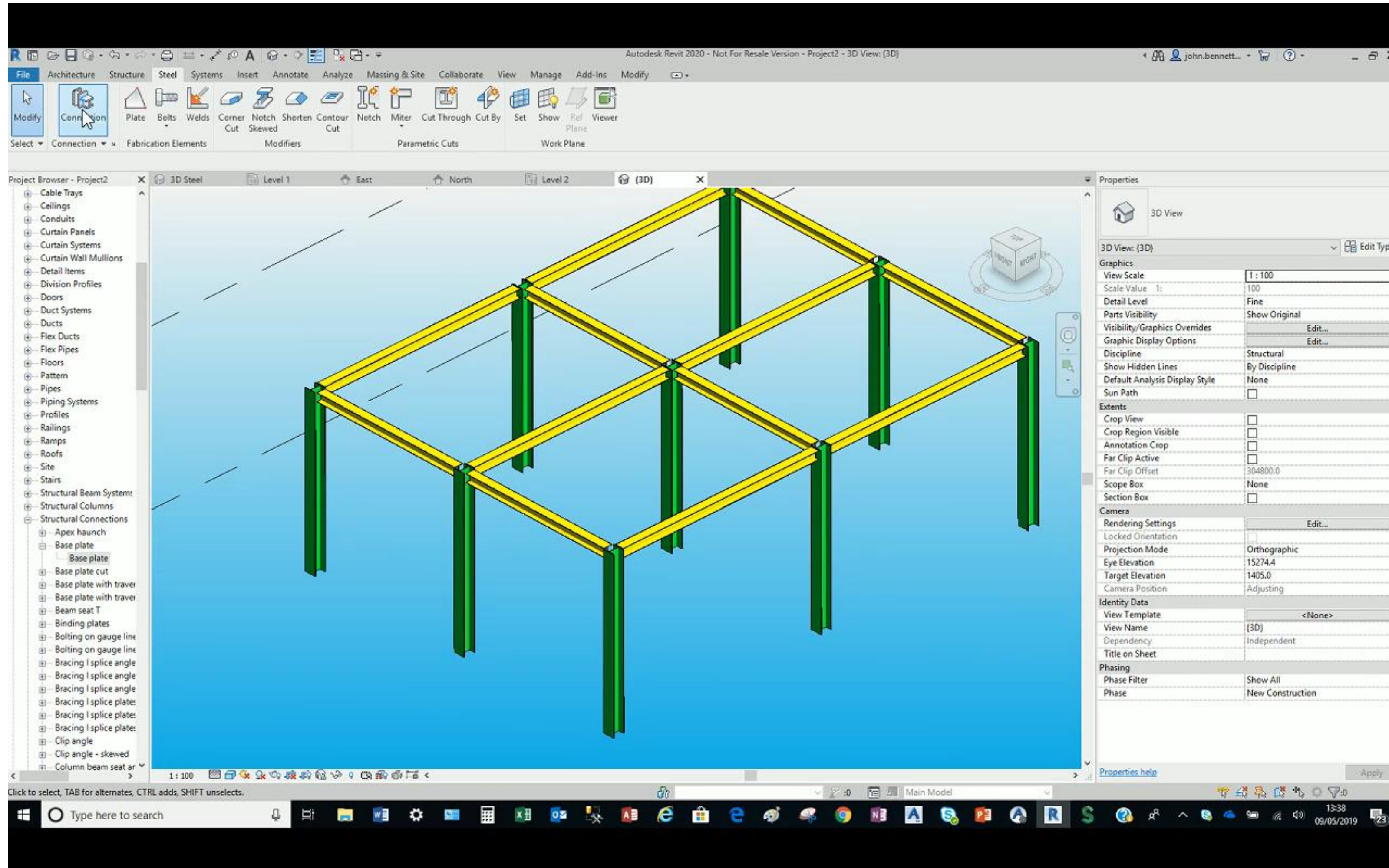
- New type editor with preview
- Easily configure different types of connections
- Update all instances of the same type from one place
- Reuse them in same or other project -Transfer properties



Manage repeat connection design more easily and efficiently



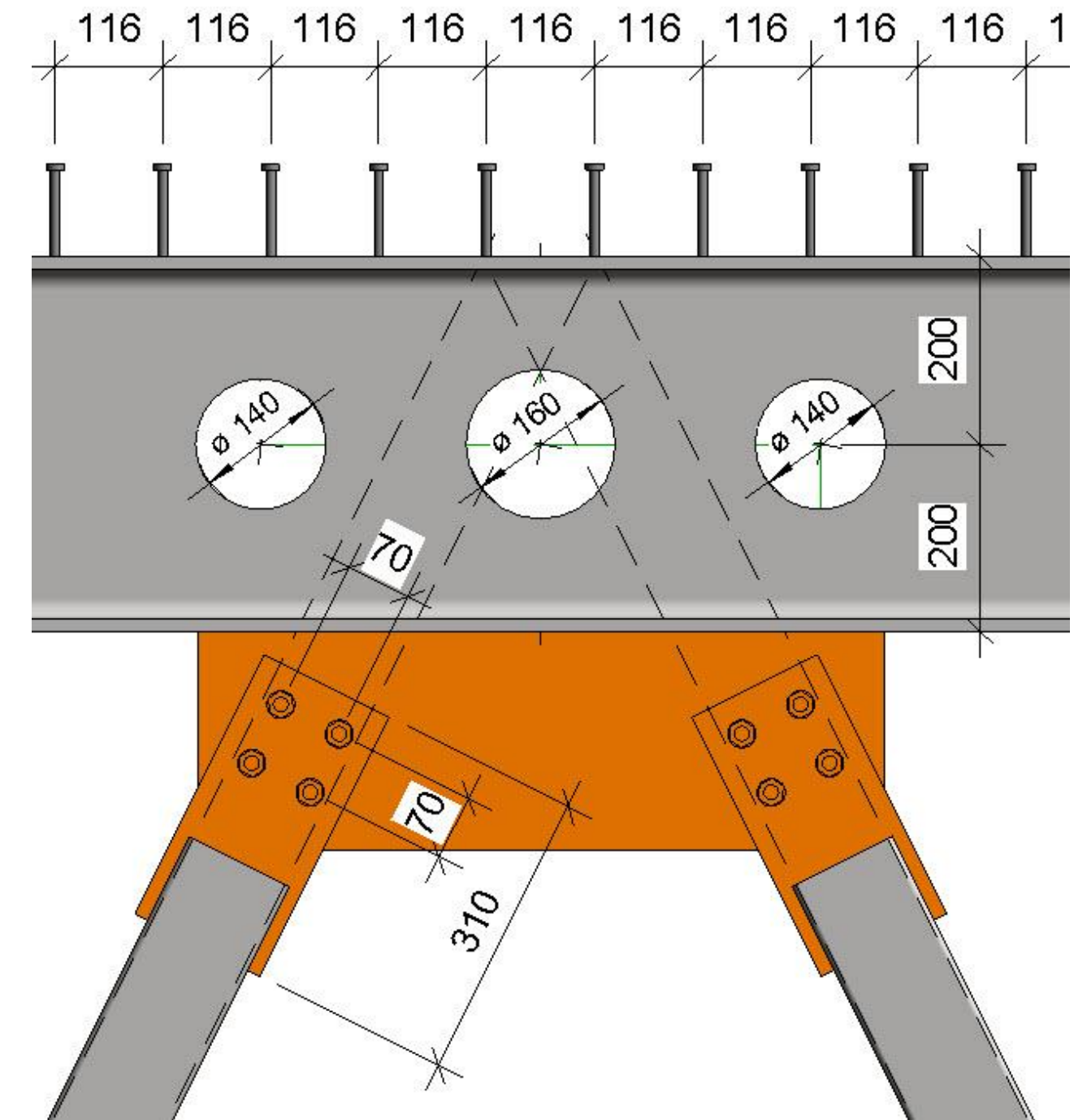
Revit 2020 –working with new Connection options



Revit 2020 – Tags and Dimensions - 1

New Features for Tags and Dimensions of Steel Elements

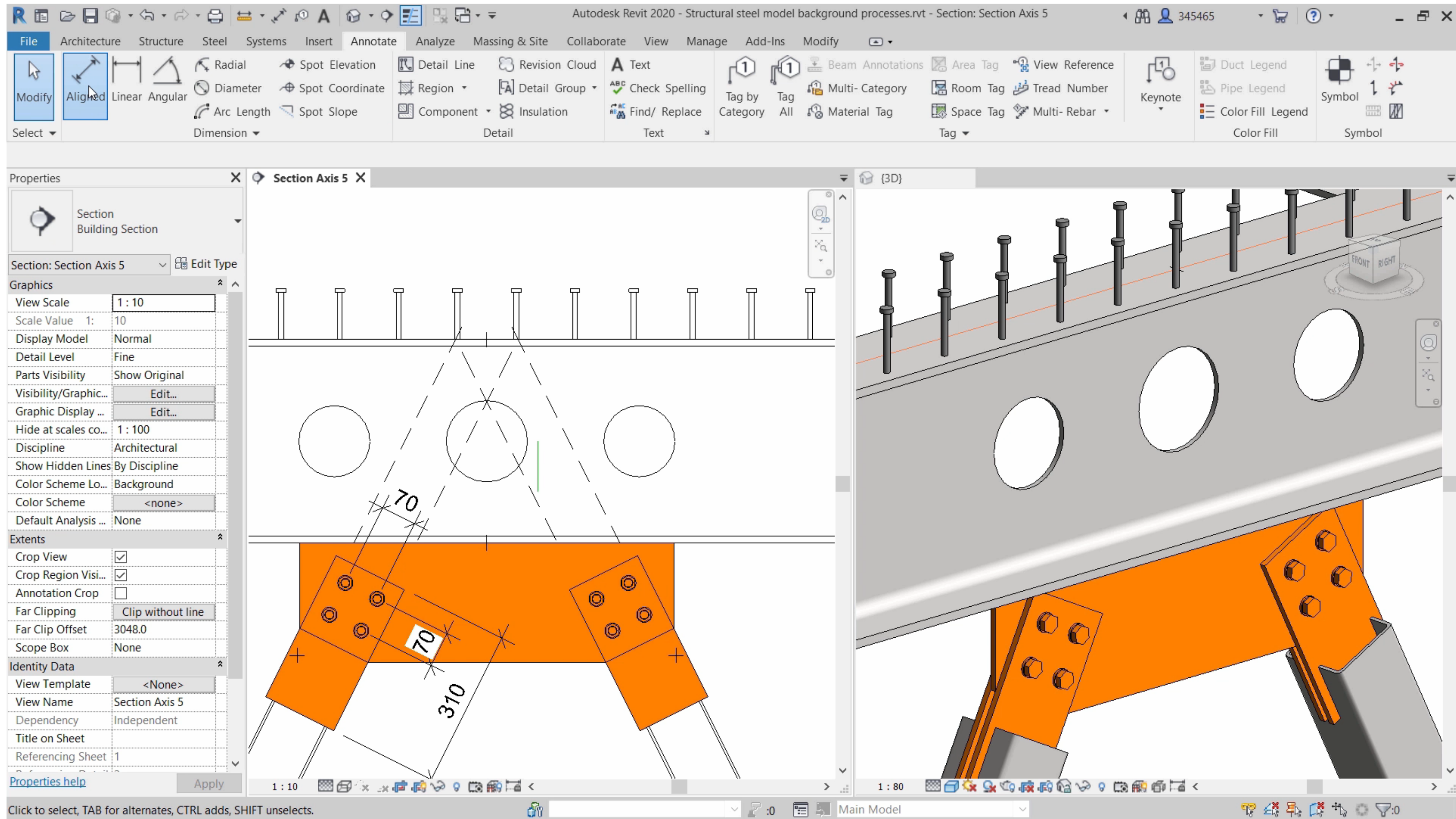
- Radial & diameter dimensions of circular openings
- Dimension for holes and shear studs
- Now allow weld tags in any view



Create more accurate documentation for detailed steel elements



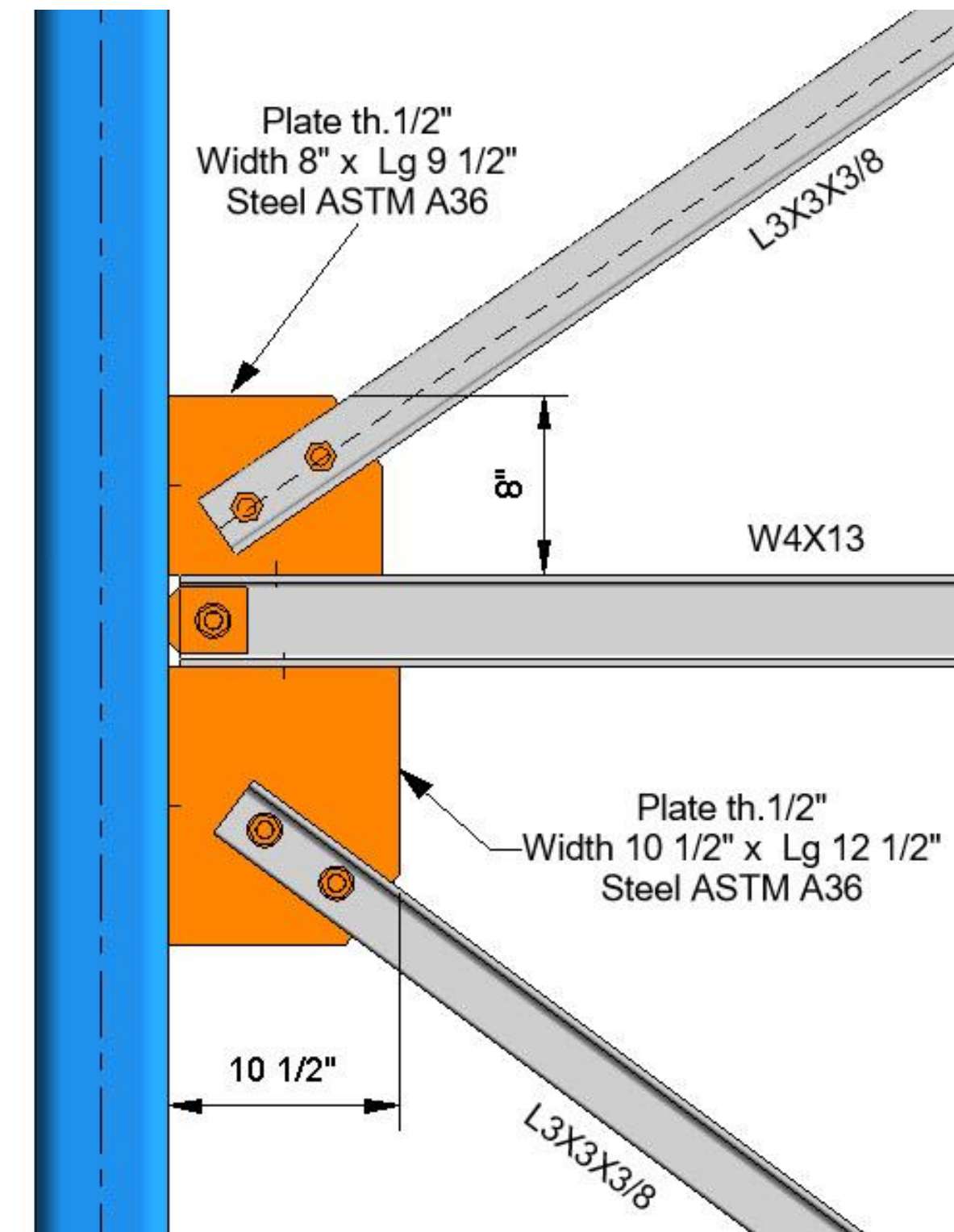
Revit 2020 – Tags and Dimensions - 2



Revit 2020 – Detailing options for labeling/tags

Additional Parameters for Steel Components

- More parameters at hand
 - e.g. plate width & length
- Capture more information from the BIM model
- Enhanced collaboration with fabricators
 - More detailed tags
 - Schedules with more information



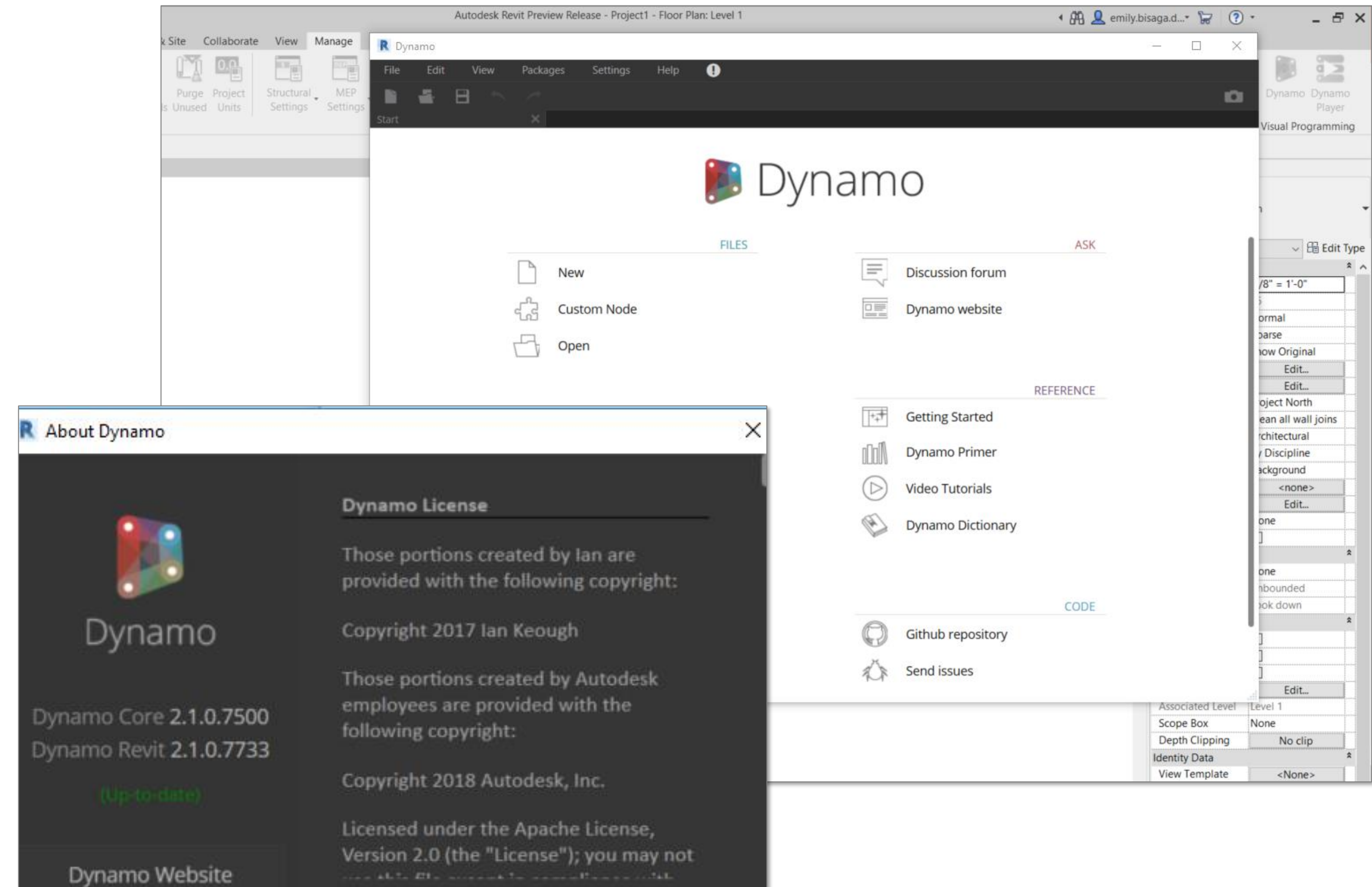
Create more accurate documentation for components of steel connections



Revit 2020 – Dynamo engine.

Dynamo 2.1 Ships with 2020

- Every time you update Revit
Dynamo will update as well
- Does not impact other
Dynamo installations



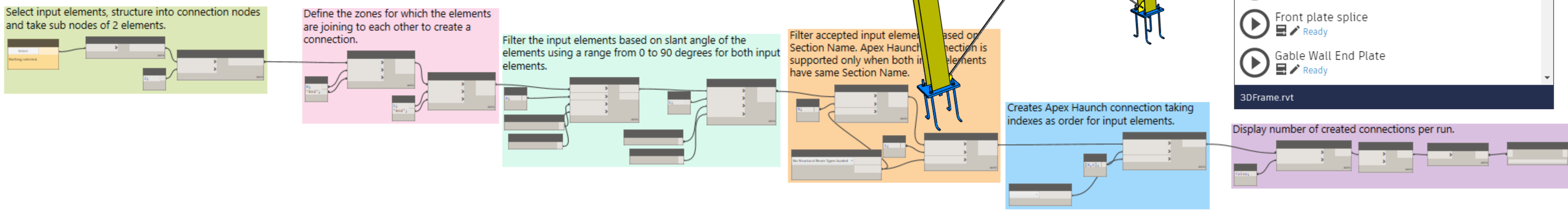
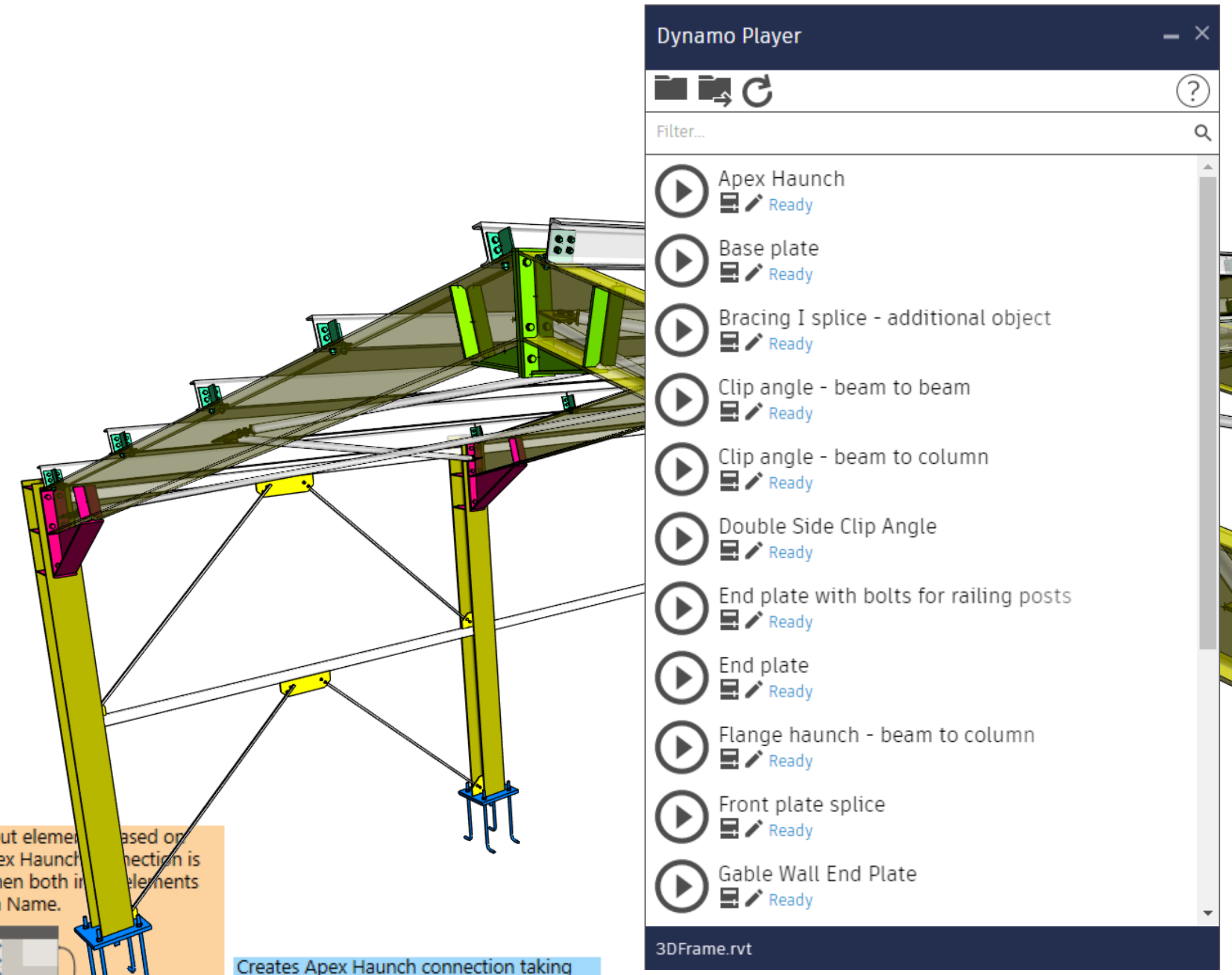
Streamline Dynamo installation coordination for your team



Revit 2020- Use of Dynamo Steel Connections

Steel Connections for Dynamo

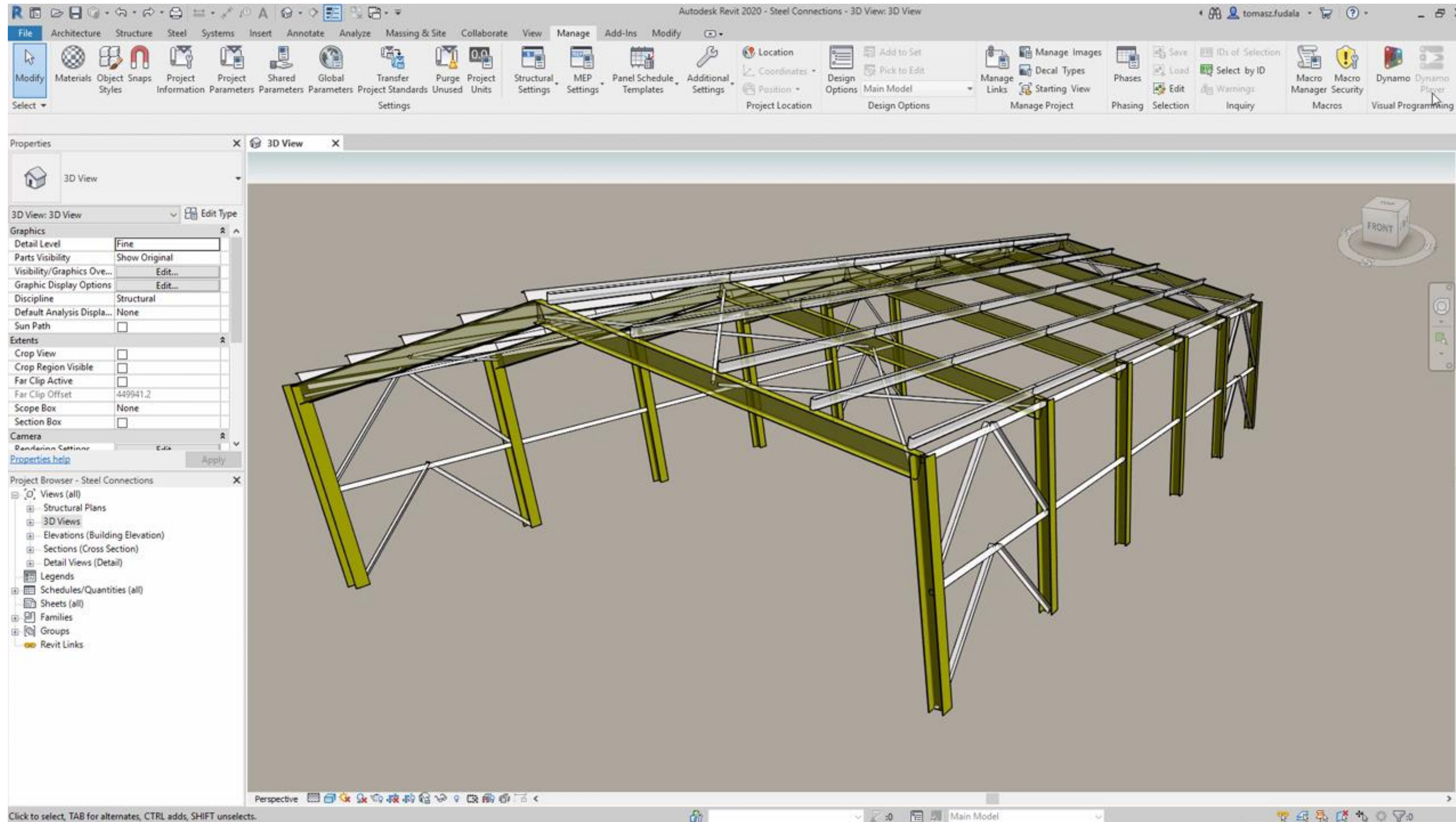
- New Dynamo nodes to model steel connections
- Out-of-the box scripts ready to be run in Dynamo Player



Enhanced productivity by automating modeling of steel connections



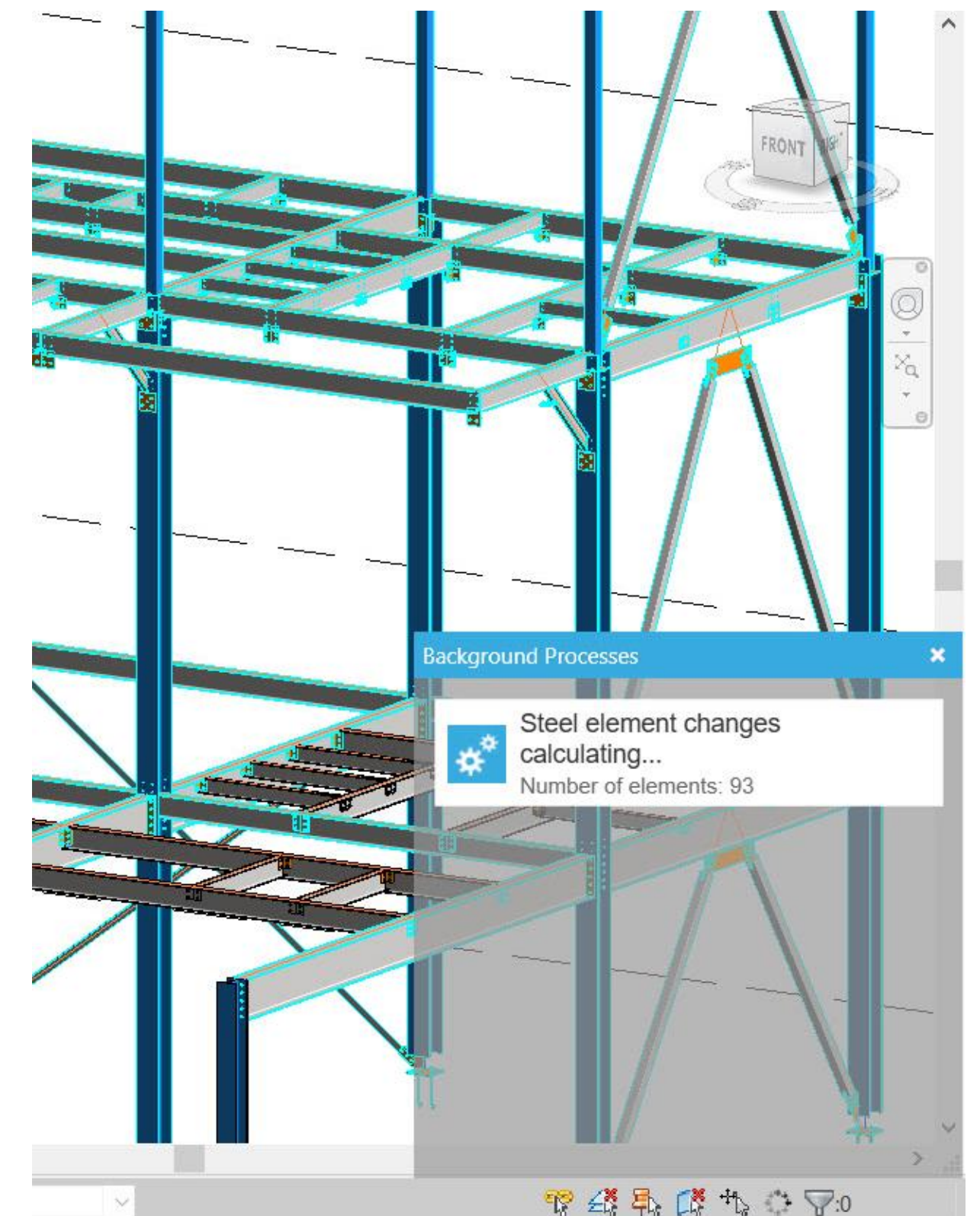
Revit 2020 Steel Connections from Dynamo Scripts



Revit 2020 – Performance upgrades

Enhanced Performance for Detailed Steel Models

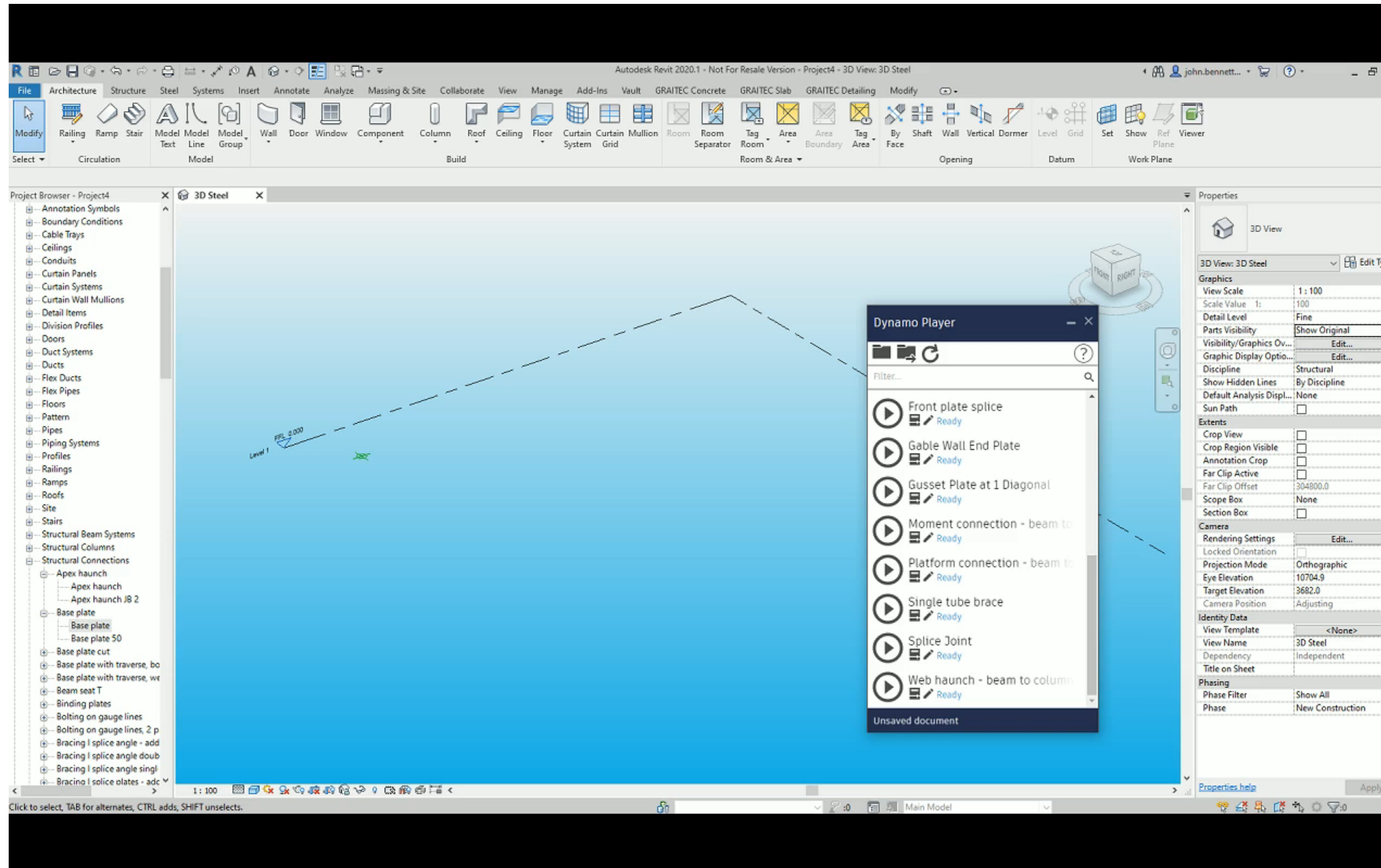
- Background process for steel connections
- Faster response time
- Allow to perform other actions at the same time
- Involved elements highlighted in color
- Status visible in background processes window



Get a faster response time for performance intensive steel engineering tasks



Combining it all together



Useful links

Blog pages:

[Graitec Blog](#)

[Revit What's New blog](#)

[Revit Structures blog](#)

[Dynamo Scripts for Portal Frame](#)

Video pages:

[Advance Steel 2020 what's New playlist](#)

[Revit 2020 what's New playlist](#)

Help Pages:

[Advance Steel Extension in Revit 2020](#)

[Detail Steel modelling in Revit](#)

[Steel Fabrication elements in Revit](#)

[Steel Elements Cut Tools in Revit](#)

[Structural Steel connections in Revit](#)

[Steel connections in Dynamo for Revit](#)

[Detail Steel Modelling Background processing.](#)

[About Steel Element Asynchronous Update](#)

[Considerations When Using Steel Fabrication Elements](#)

■ Webinars:

- [Structural Steel for Revit Users](#)

- [Revit Collaboration Part 1](#)

- [Revit Collaboration Part 2](#)

- [Fab it for Revit](#)

- [Revit for modular buildings](#)

■ Structures Roadmap

- [Autodesk product roadmaps -structural](#)

Questions



- Any Questions ?
- Contact :
 - John.bennett@graitec.com



Feedback.

- Please partake the class survey in the app



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