



Introduction to Structural Precast for Revit

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MEP & Structural Fabricators (MSF) Forum at AU Las Vegas 2017



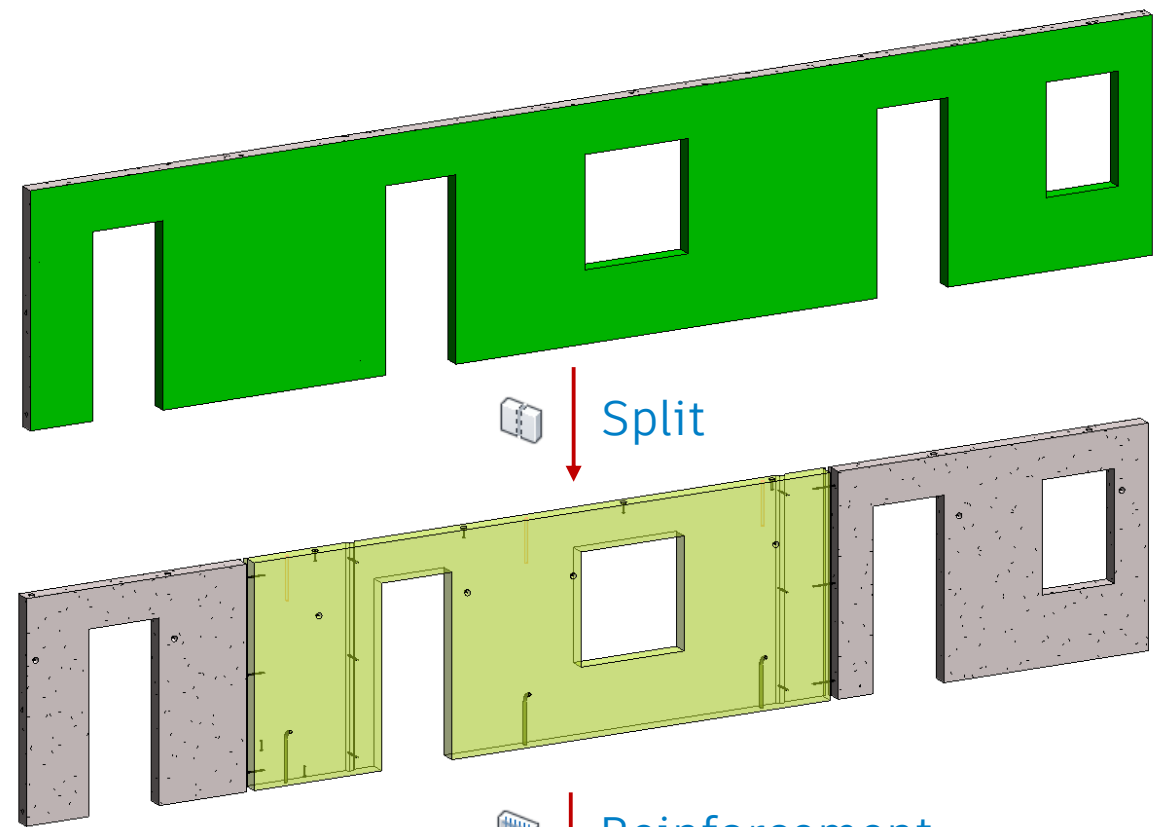
Agenda

- Overview of the Autodesk Structural Precast Extension for Revit
- Available Precast Elements
- Configuration Settings
- Segmentation (Automatic, Manual)
- Reinforcement (Area, Edge, Custom Fabric Sheet)
- Shop Drawings
- CAM Export
- MEP Coordination

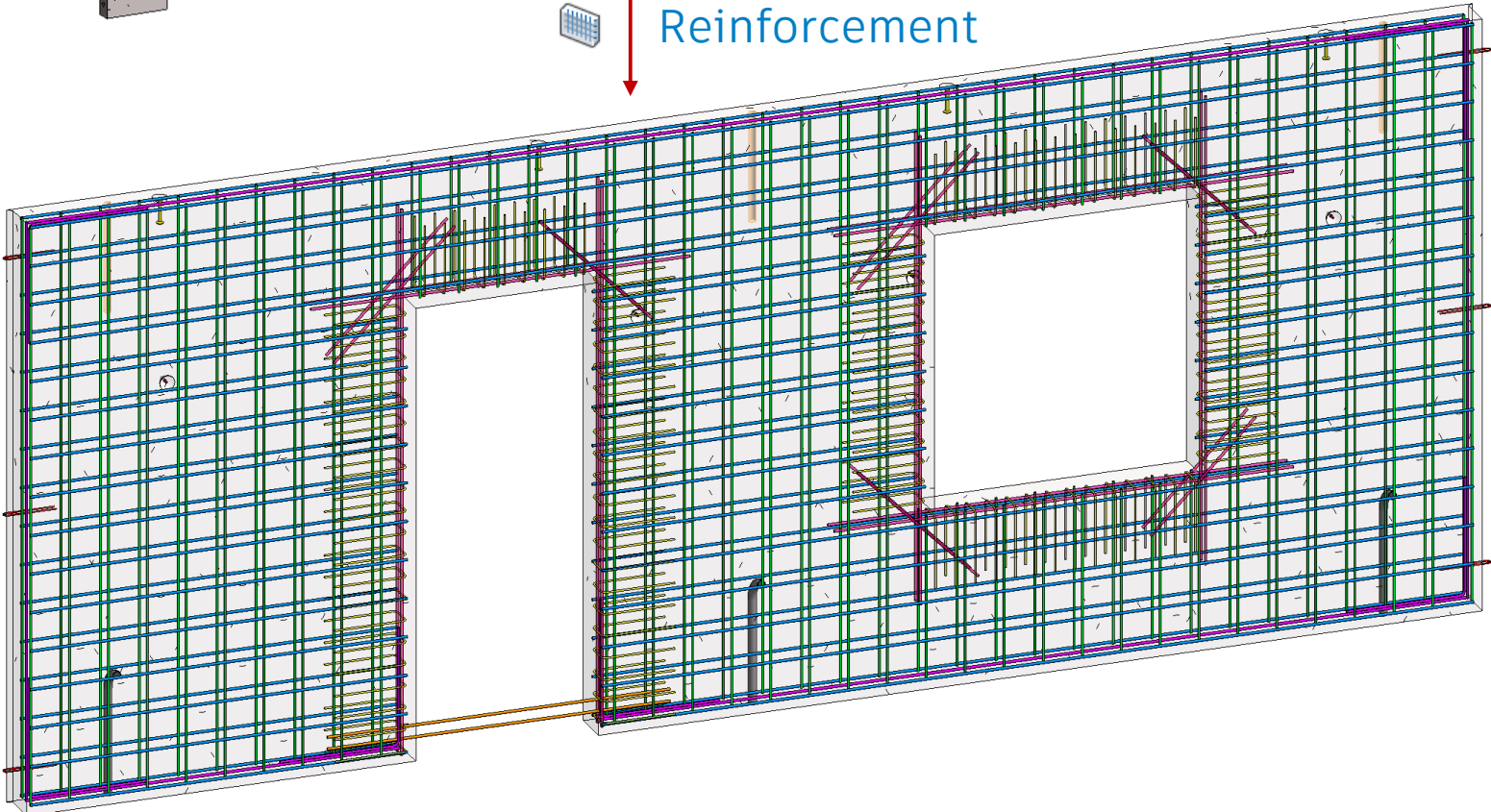
The background features a complex 3D composition of translucent blue and white geometric forms. On the left, a series of white, thin, rectangular plates are stacked vertically, creating a spiral-like structure. To the right, a large, flowing blue ribbon-like shape curves and loops, partially overlapping a white, angular, crystalline structure. The entire scene is set against a light blue gradient background. A solid blue horizontal band spans the bottom of the image, serving as a base for the title text.

Overview

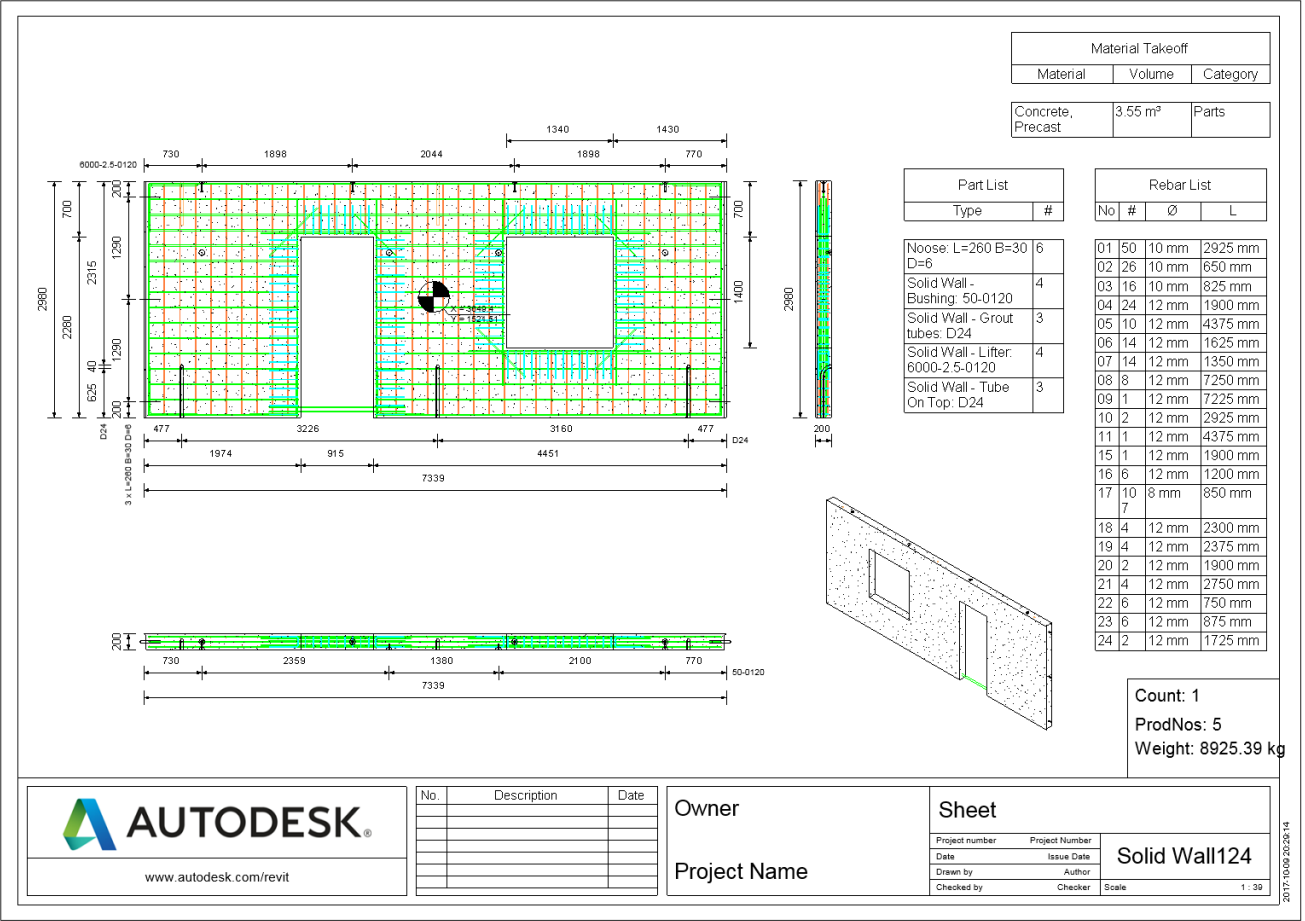
Overview | Workflow



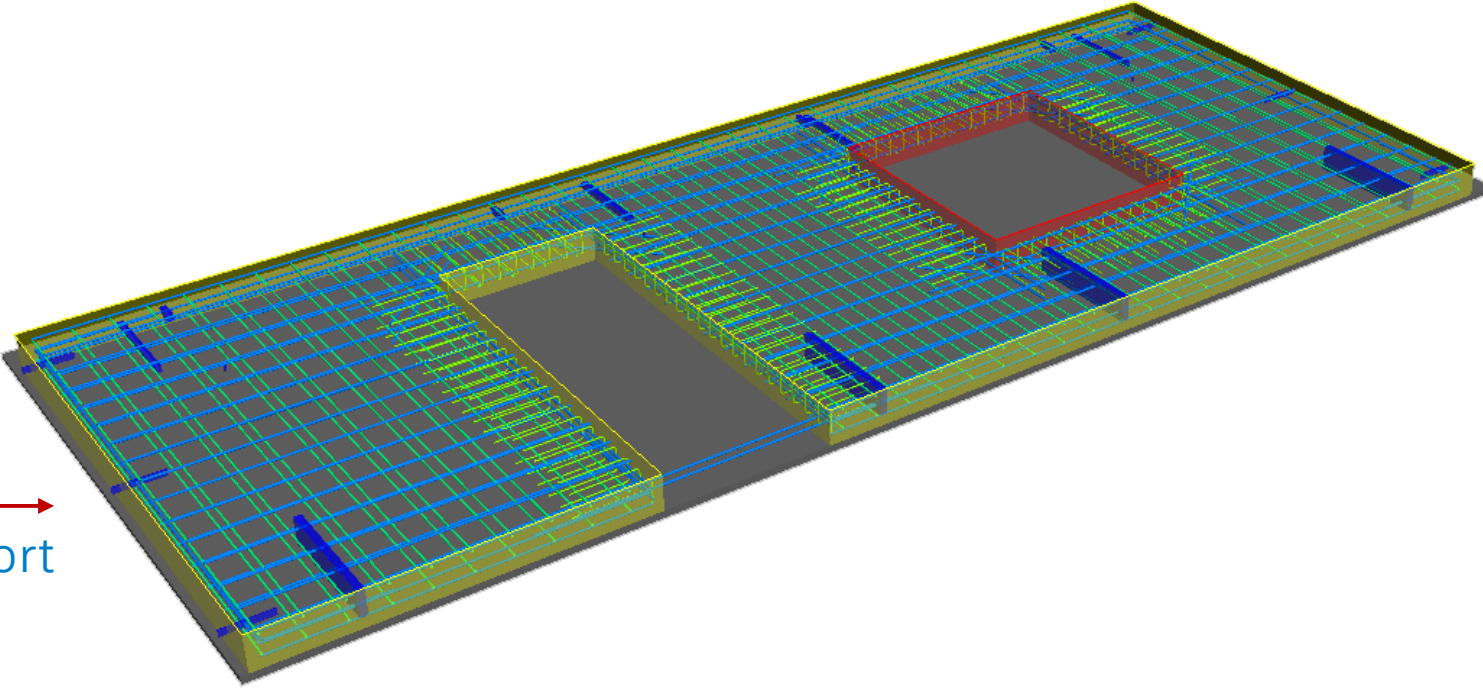
Reinforcement



Shop Drawings

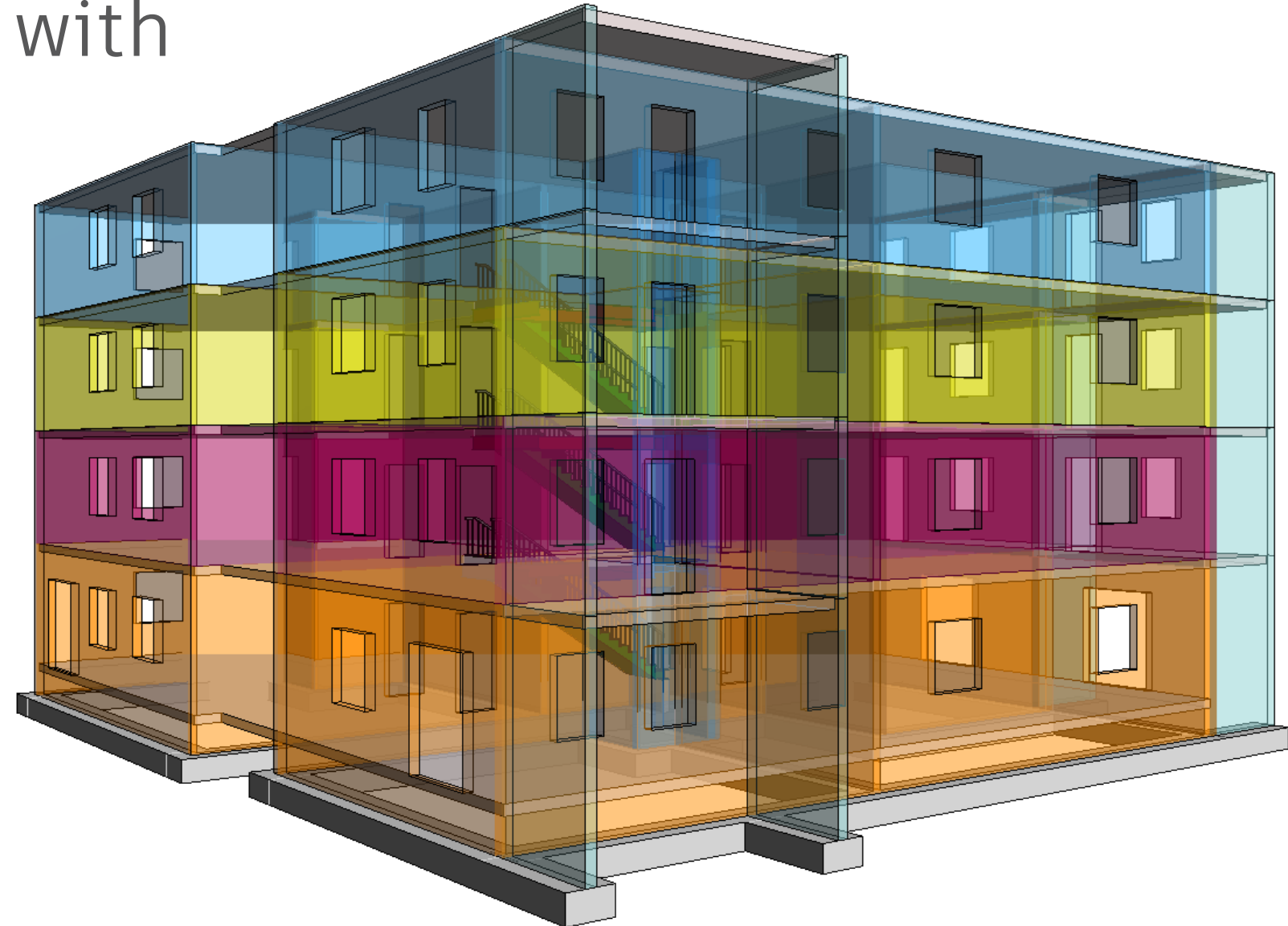


CAM Export



Overview | Key benefits and business values

- Better connect structural design to precast fabrication
- Streamline detailing to fabrication with model-based deliverables
- Extend fabrication to the field to minimize waste

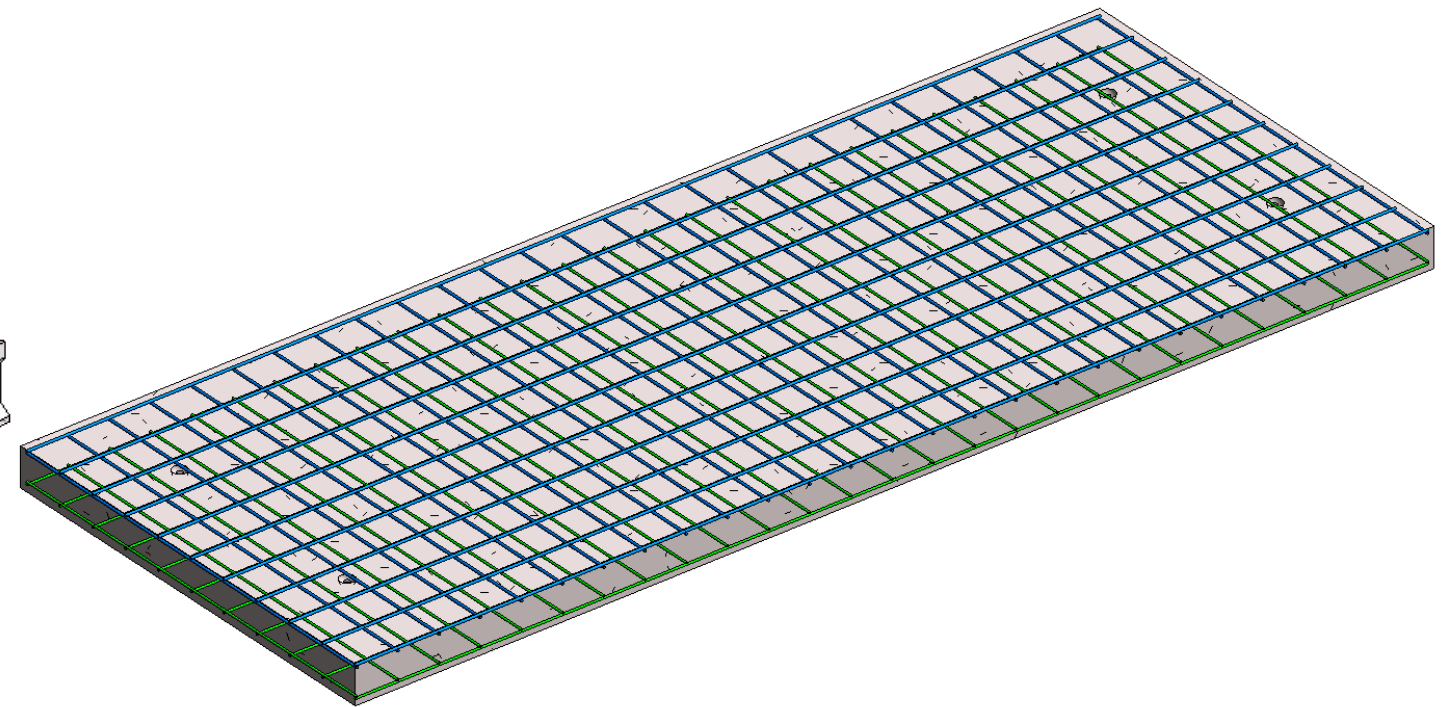
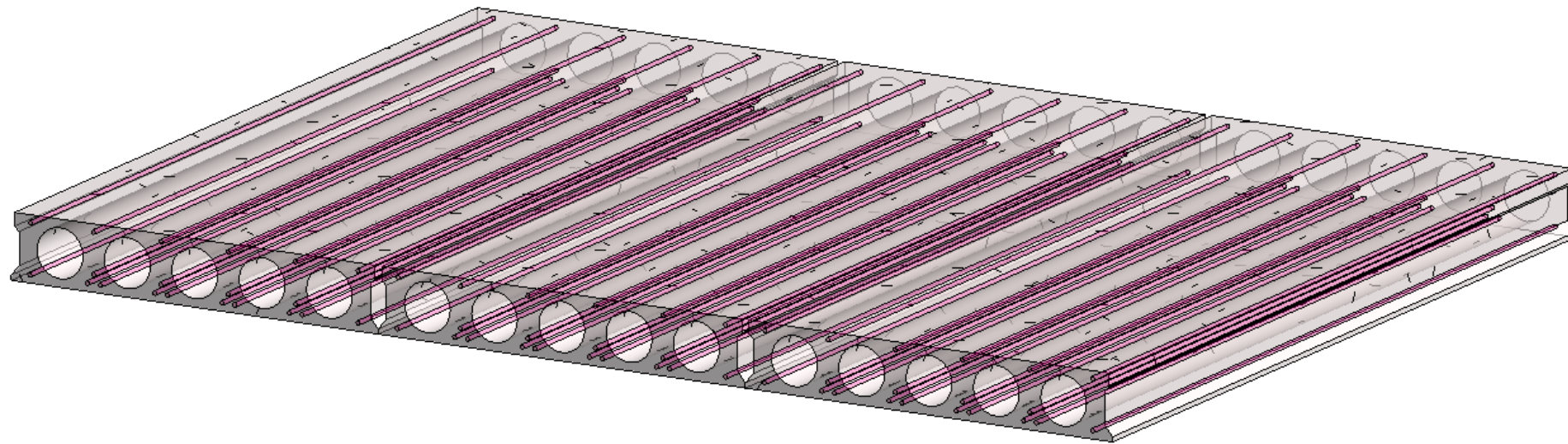
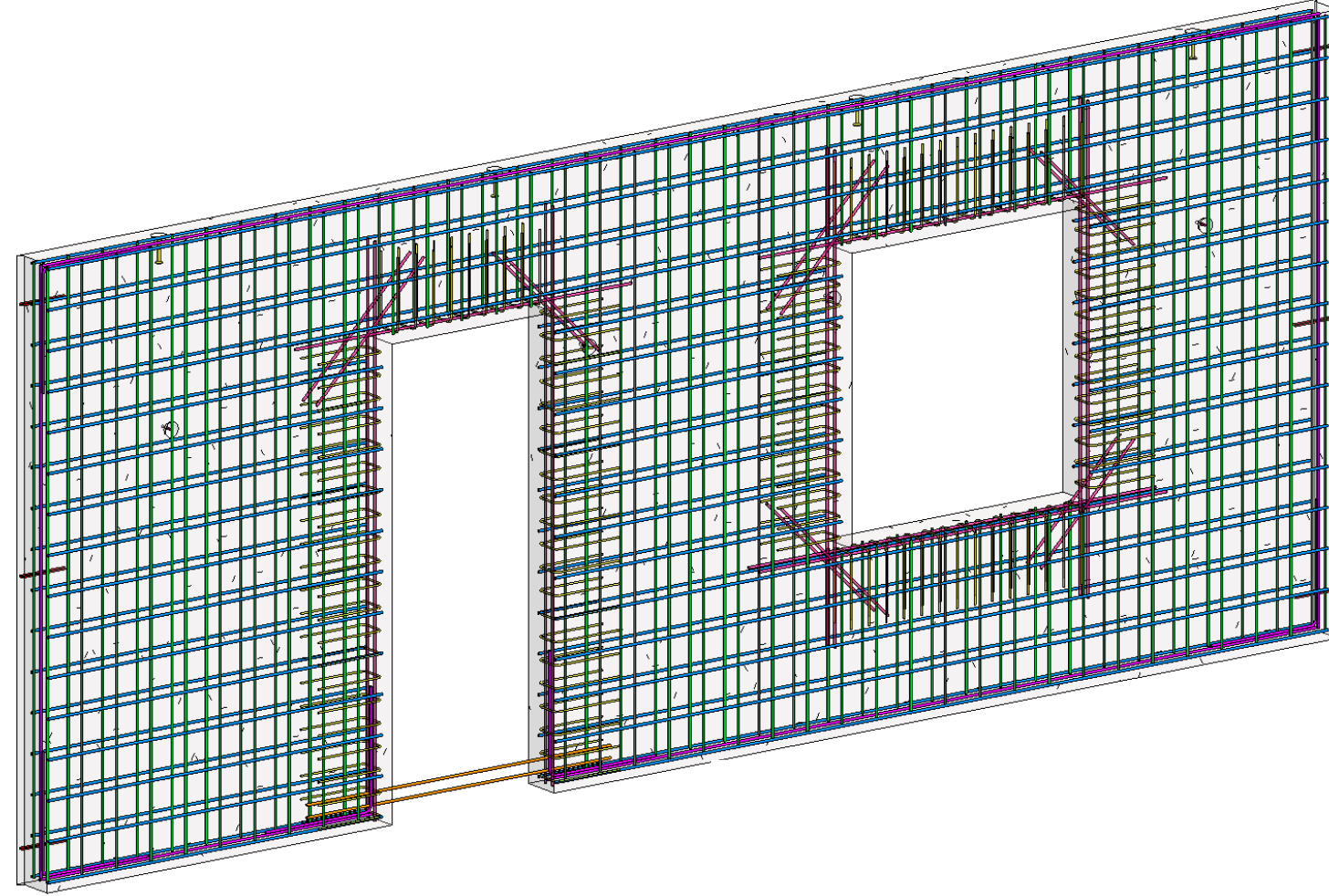


An abstract architectural rendering featuring a series of white, rectangular precast elements stacked vertically on the left. To their right, a large, flowing, blue translucent structure curves and loops, resembling a ribbon or a fluid architectural form. The entire scene is set against a light blue background. A solid blue horizontal band spans the bottom of the image, containing the text 'Precast Elements' in white.

Precast Elements

Precast Elements | Available Types

- Solid walls
- Solid slabs
- Hollow core slabs

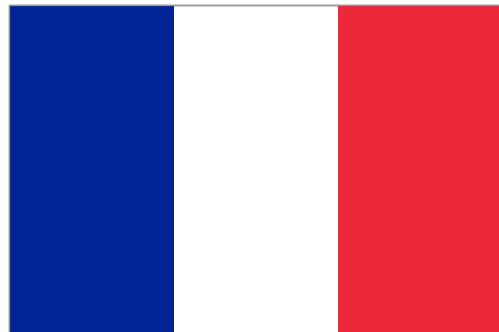


The background features a complex, abstract composition of overlapping geometric and organic shapes. On the left, a series of white, rectangular, blade-like structures are stacked vertically, creating a sense of depth and rhythm. To the right, a large, flowing, blue ribbon-like shape curves across the frame, its surface reflecting light and showing a grid-like texture. Below this, a series of white, rectangular blocks are arranged in a row, partially obscured by the blue shape. The bottom of the image is dominated by a solid blue horizontal bar that serves as a base for the text.

Configuration Settings

Configuration | Installation

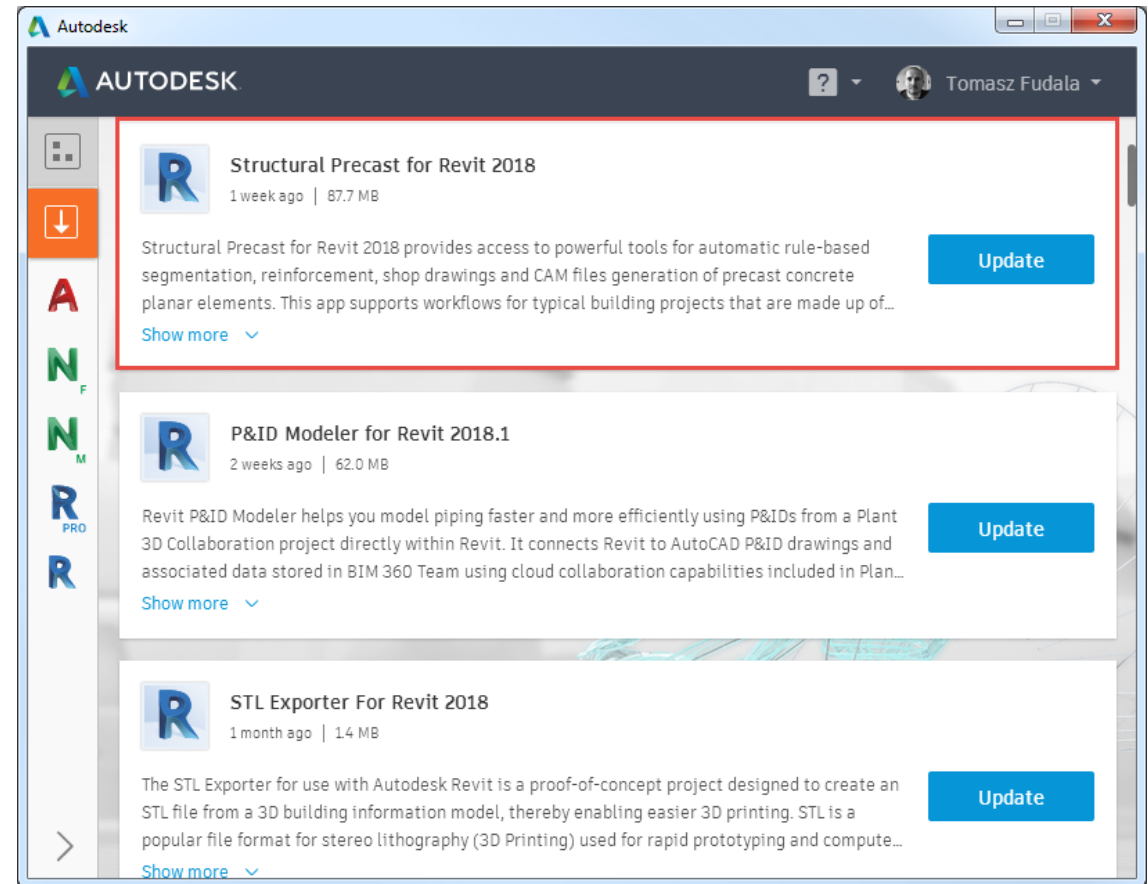
- Download from the [Autodesk App Store](#)
- Access the installer from within the Autodesk Desktop App
- The extension is available in English, French and German languages



AUTODESK APP STORE



Structural Precast Extension for Revit 2018
OS: Win64
Autodesk® Structural Precast Extension for Revit® 2018 is a BIM-centric offering for modeling and detailing precast planar elements that promotes productivity for engineers, detailers and fabricators.
[Subscription App](#)

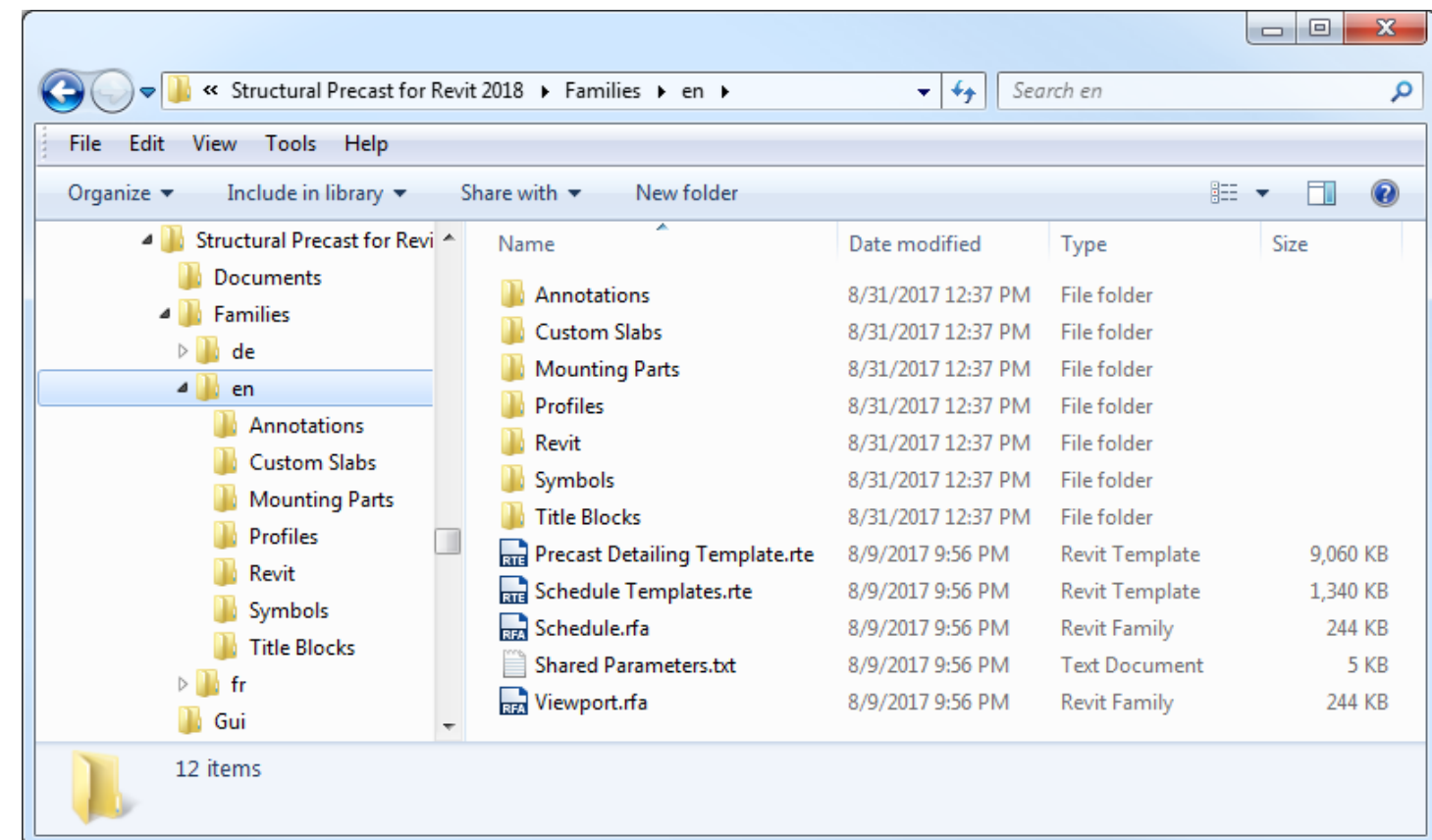


Configuration | Settings

- Family based approach
- Several Revit families and templates can be found in a dedicated location...

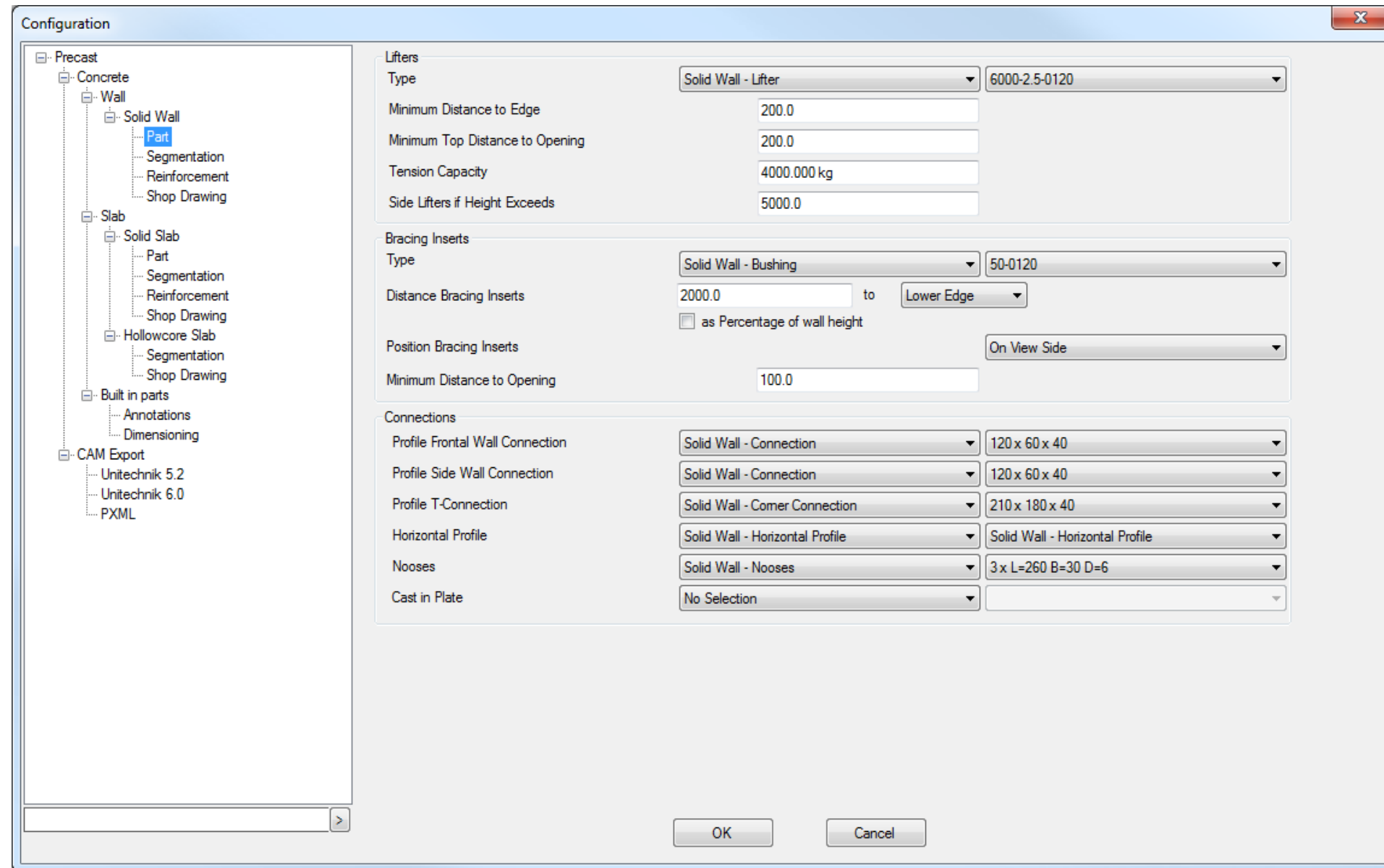
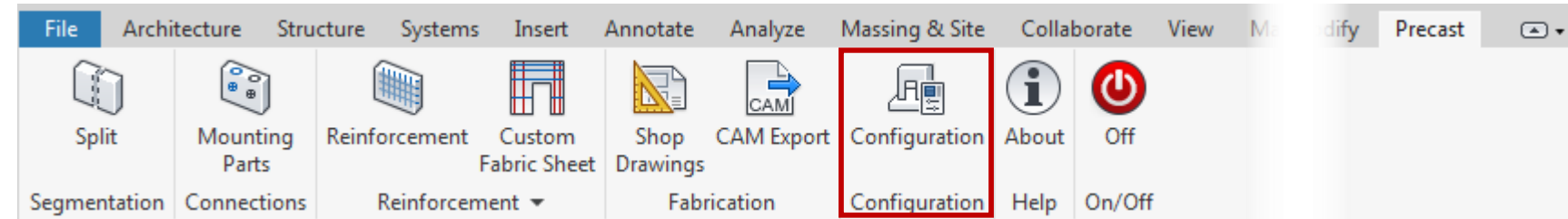
C:\ProgramData\Autodesk\Structural Precast for Revit 2018\Families

- *Users can add their own families, industry standards*



Configuration | Settings

- Mounting parts information
- Segmentation rules
- Reinforcement definition
- Project drawings
- Settings for annotation and dimensioning in parts
- CAM Export parameters



The background features a complex, abstract composition. On the left, a series of white, rectangular, three-dimensional blocks are stacked vertically, creating a sense of depth and rhythm. To the right, a large, flowing, blue ribbon-like shape curves across the frame, its surface reflecting light and showing a grid-like texture. Below this, a blue bar with a subtle grid pattern spans the width of the image. The overall color palette is dominated by light blue, white, and a darker blue at the bottom.

Segmentation

Segmentation | Walls



Configuration

Precast

Concrete

Wall

Solid Wall

Part

Segmentation

Reinforcement

Shop Drawing

Slab

Solid Slab

Part

Segmentation

Reinforcement

Shop Drawing

Hollowcore Slab

Segmentation

Shop Drawing

Built in parts

Annotations

Min. Wall Length

1200.0

1

Max. Wall Length

8000.0

2

Min. Wall Height

500.0

3

Max. Wall Height

3000.0

4

Max. Weight

12000.000 kg

Horizontal Gap

20.0

5

Vertical Gap

20.0

6

Min. Distance to Openings

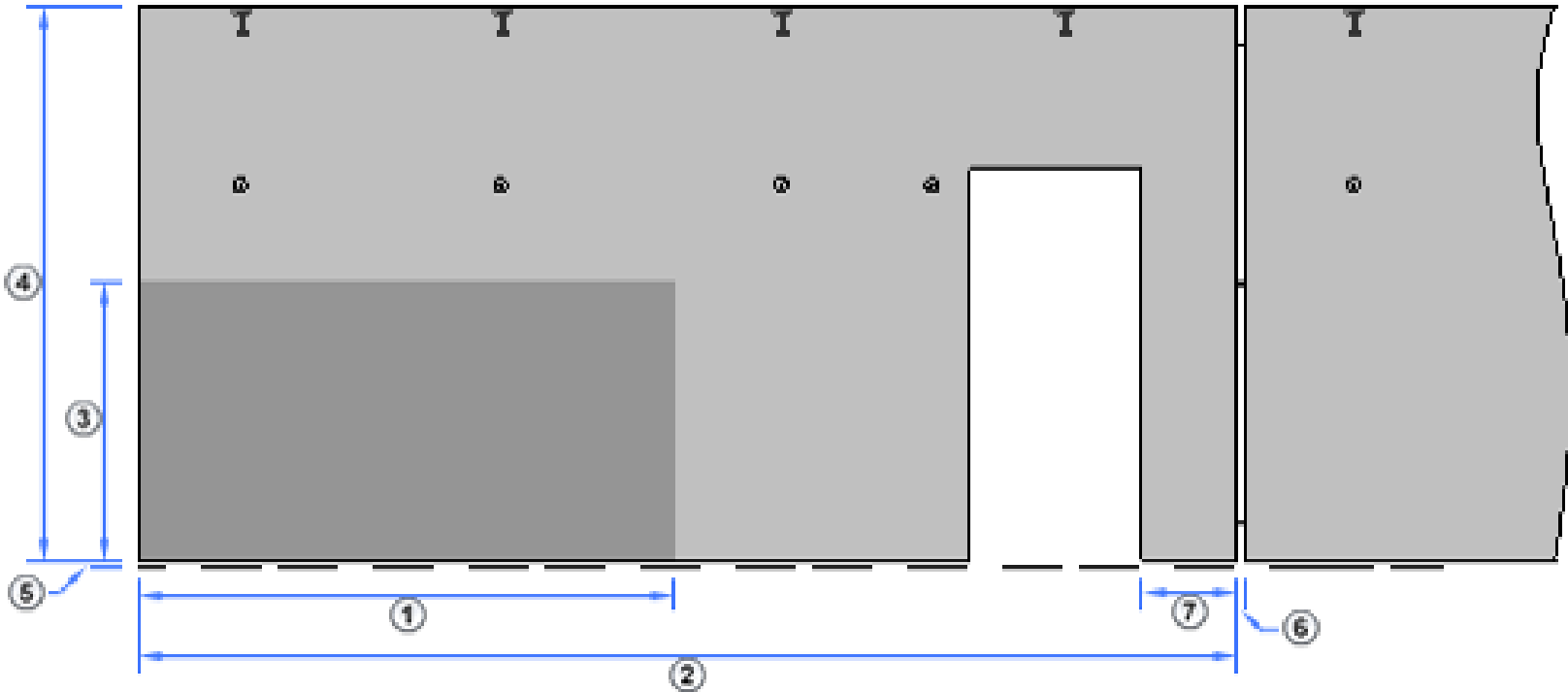
500.0

7

Profile Overlap Height

100.0

8

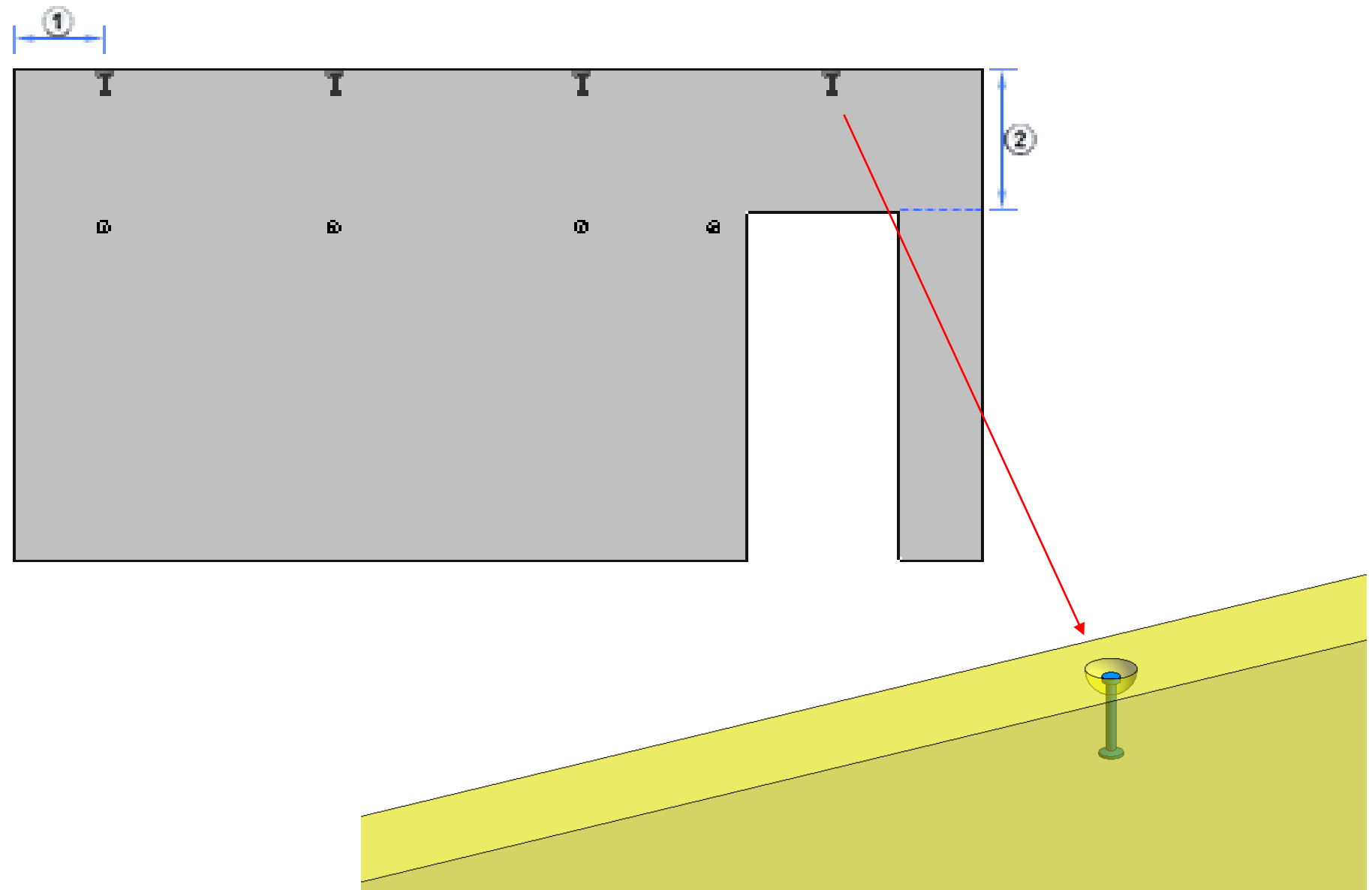


Segmentation | Walls | Lifters

- Parts -> Lifters Section



Lifters	
Type	Solid Wall - Lifter
Minimum Distance to Edge	200.0
Minimum Top Distance to Opening	200.0
Tension Capacity	4000.000 kg
Side Lifters if Height Exceeds	5000.0



Segmentation | Walls | Bracings Inserts

- Parts -> Bracings Inserts

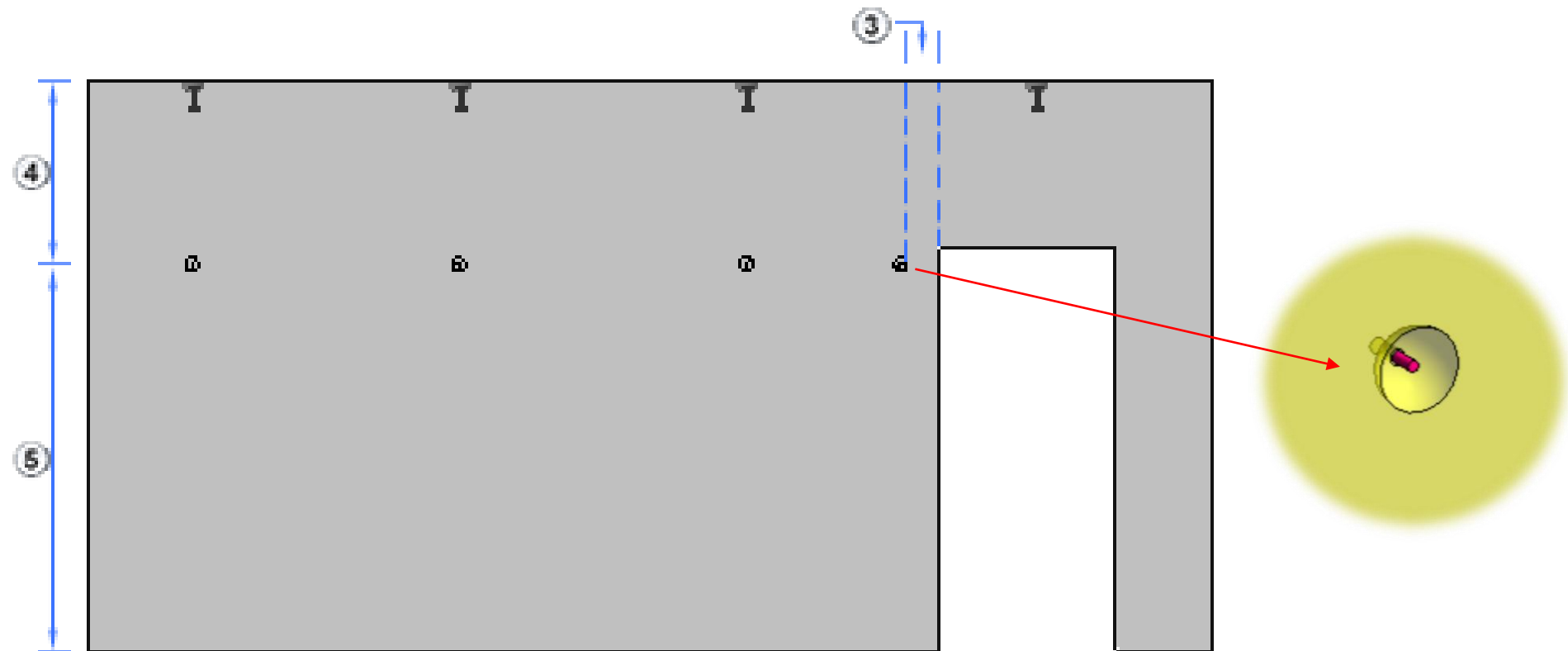
Bracing Inserts

Type Solid Wall - Bushing 50-0120

Distance Bracing Inserts 4 & 5 2000.0 to Lower Edge
☐ as Percentage of wall height

Position Bracing Inserts On View Side

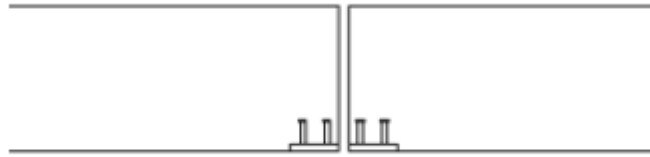
Minimum Distance to Opening 3 100.0



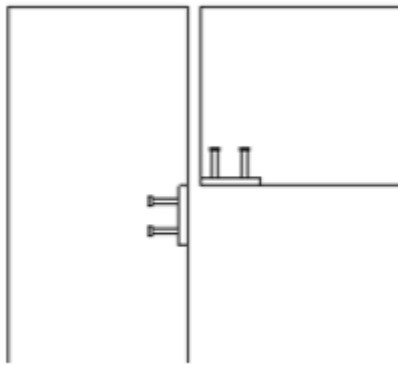
Segmentation | Walls | Connections

■ Parts -> Connections

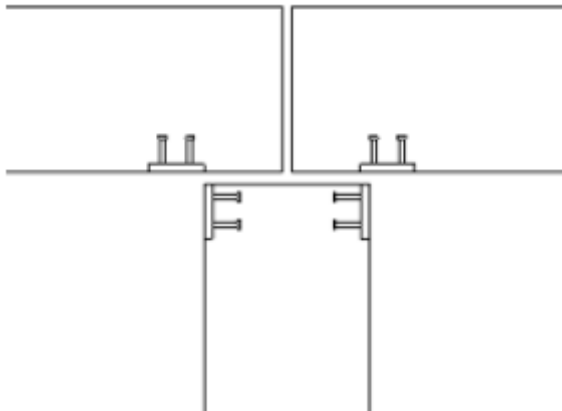
Straight connection



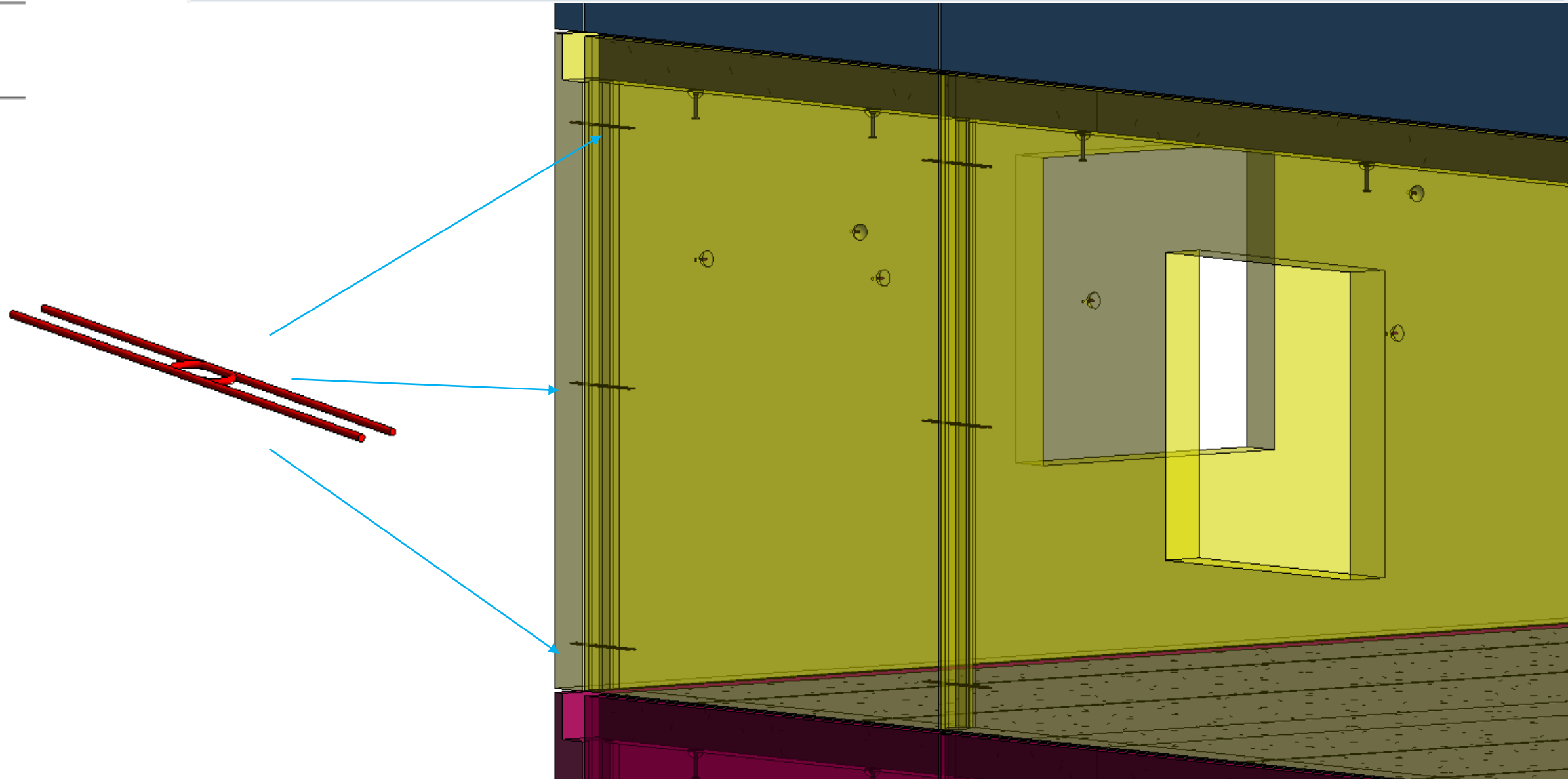
Connection at 90°

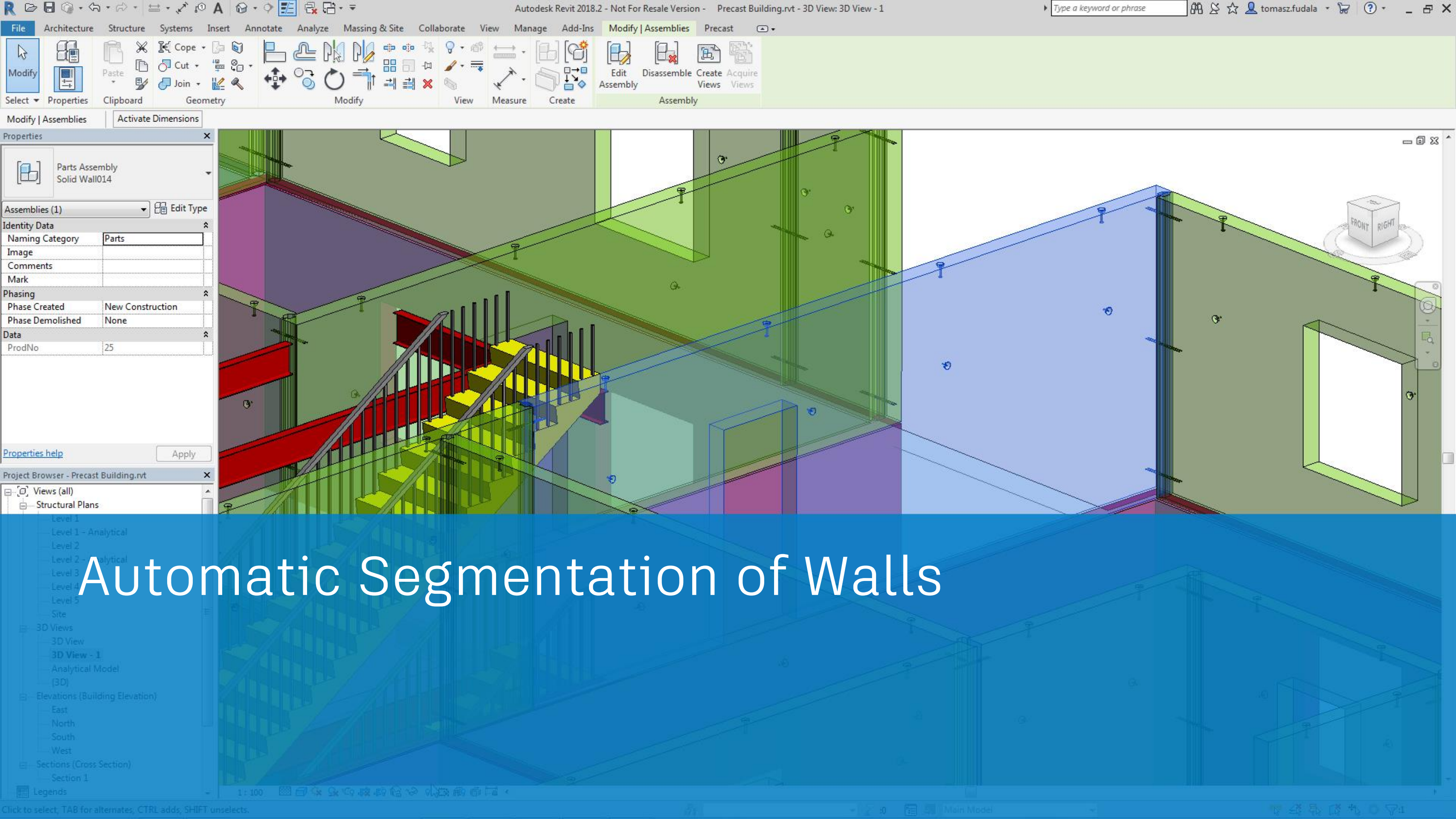


T-connection



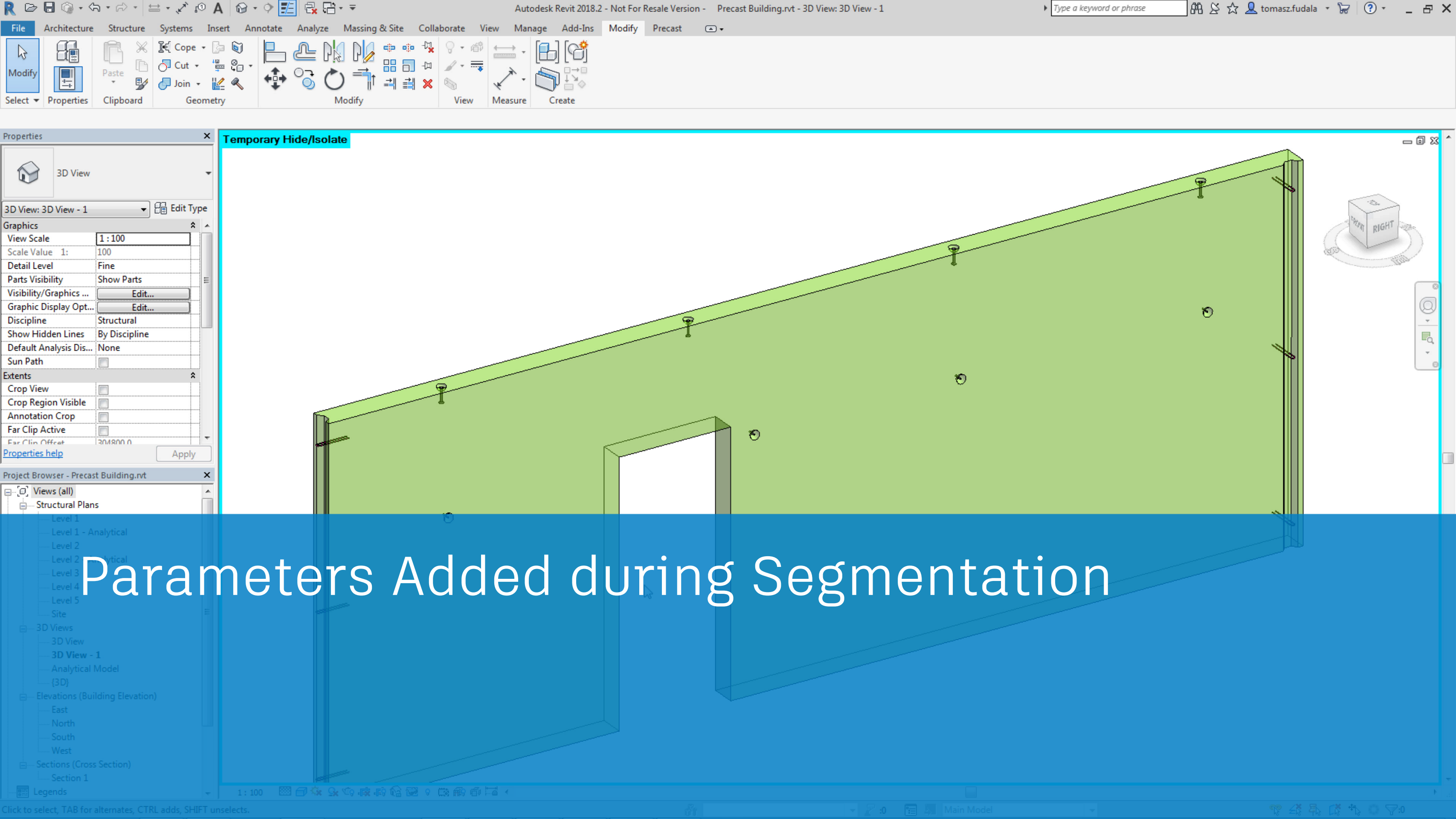
Connections		
Profile Frontal Wall Connection	Solid Wall - Connection	120 x 60 x 40
Profile Side Wall Connection	Solid Wall - Connection	120 x 60 x 40
Profile T-Connection	Solid Wall - Corner Connection	210 x 180 x 40
Horizontal Profile	Solid Wall - Horizontal Profile	Solid Wall - Horizontal Profile
Nooses	Solid Wall - Nooses	3 x L=260 B=30 D=6
Cast in Plate	No Selection	





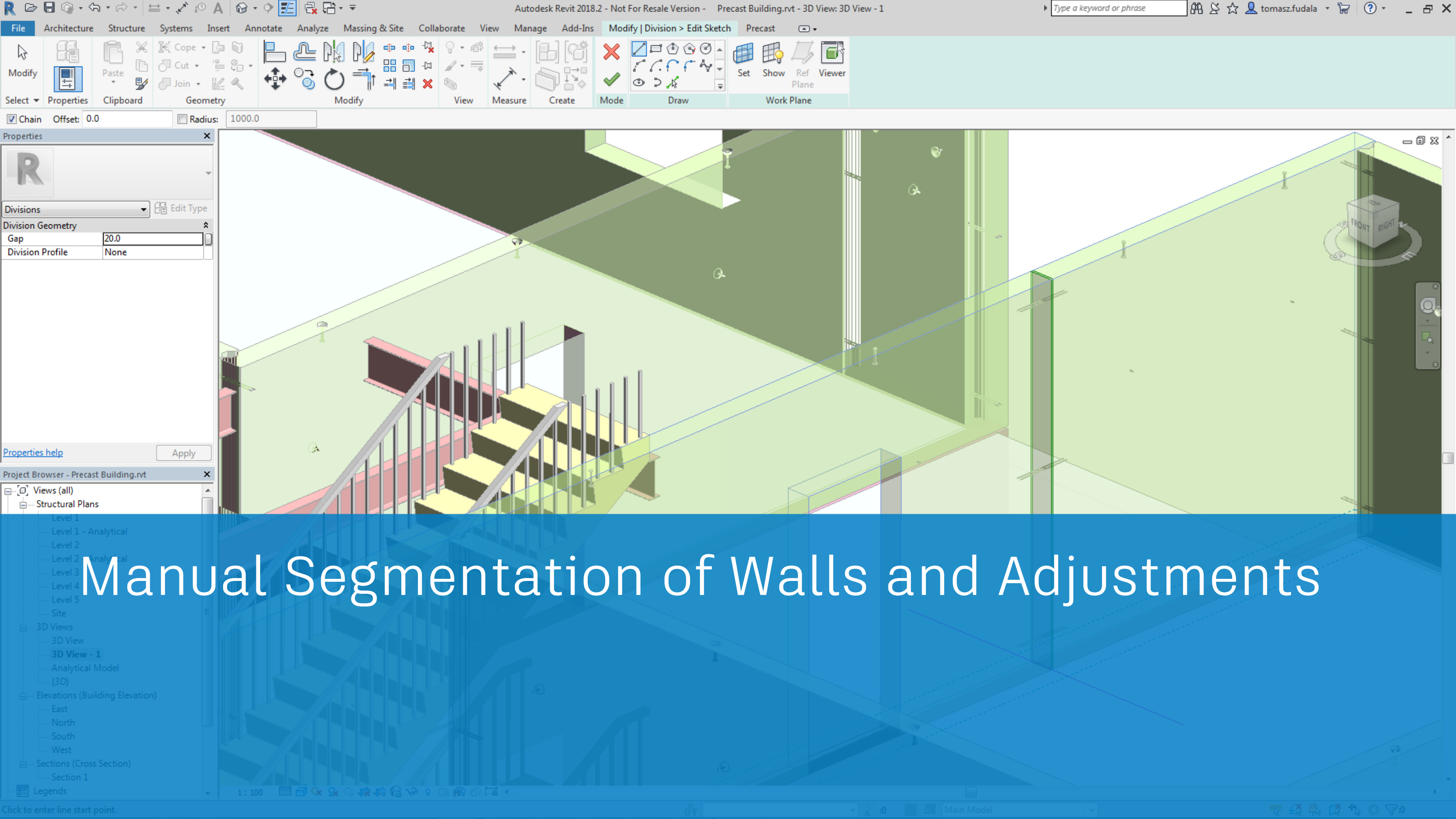
Automatic Segmentation of Walls

DEMO



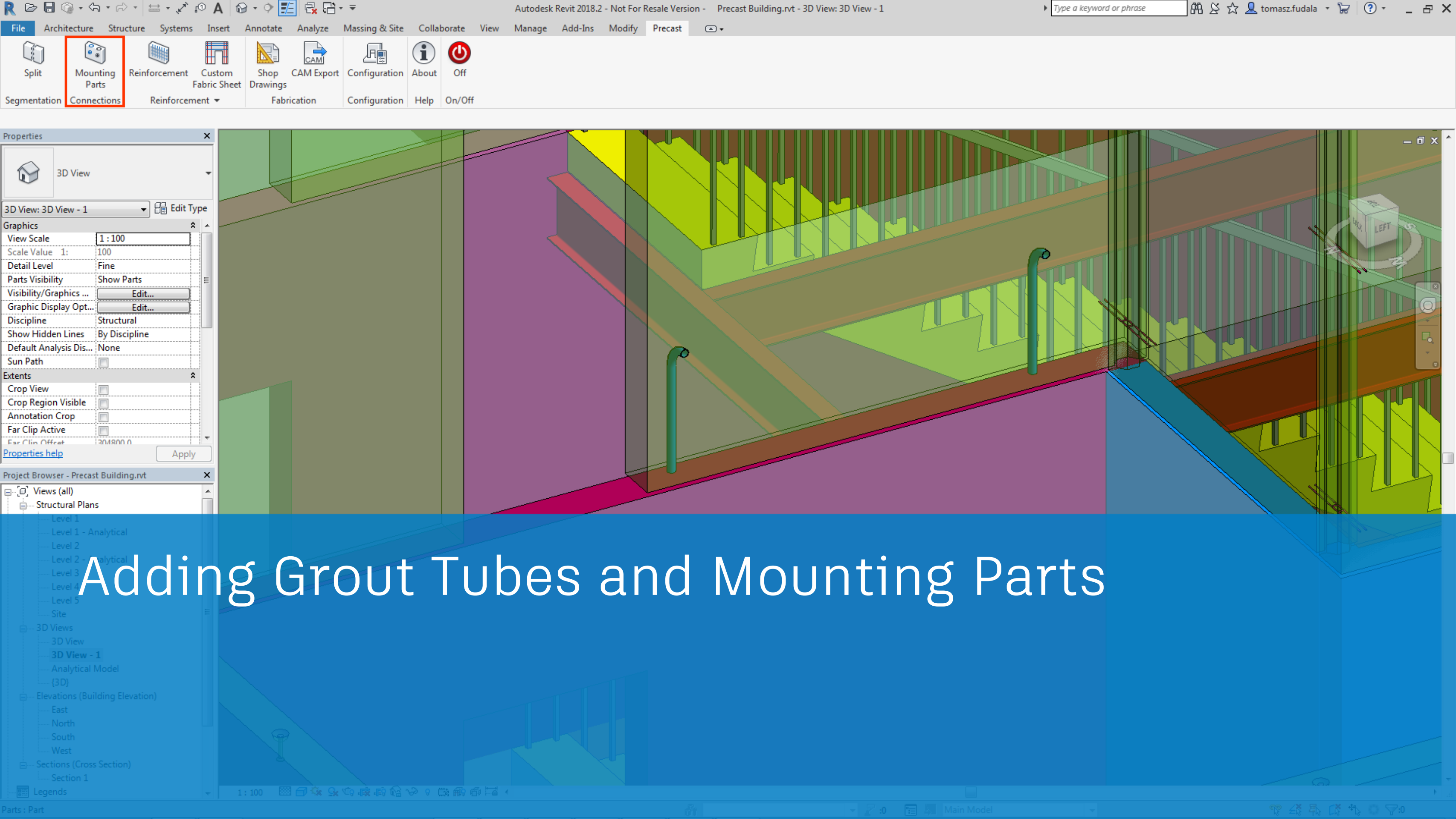
Parameters Added during Segmentation

DEMO



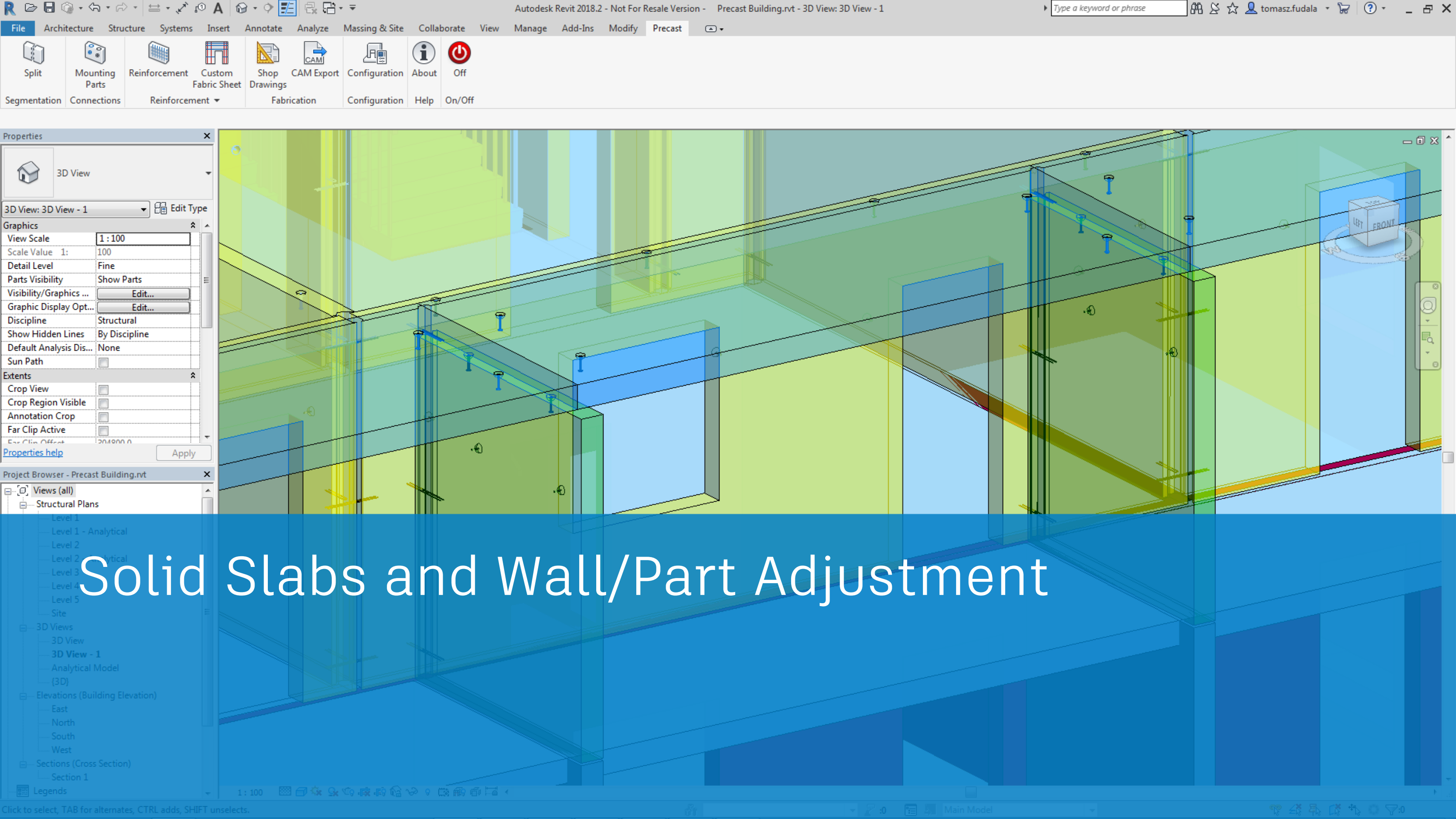
Manual Segmentation of Walls and Adjustments

DEMO



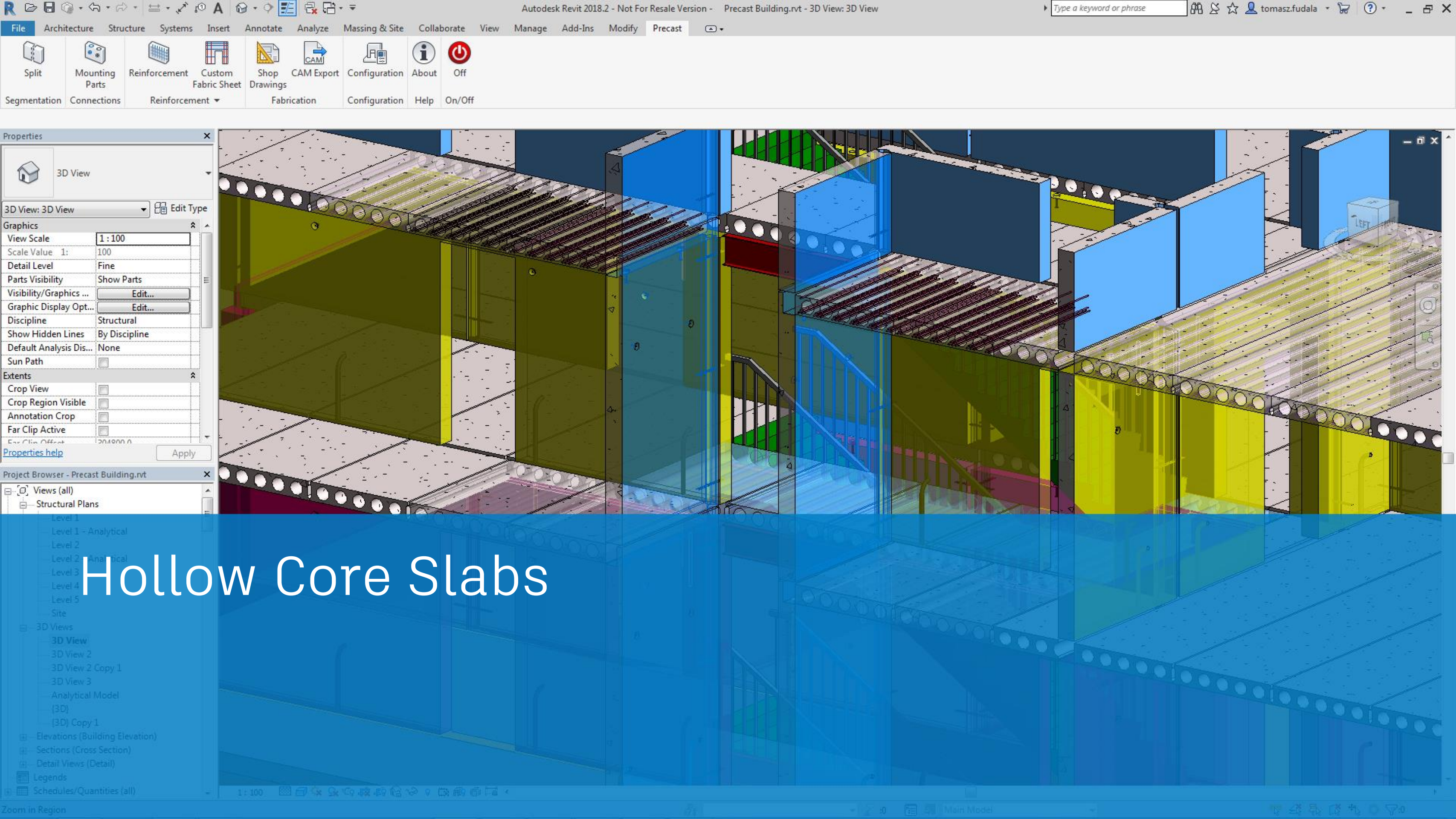
Adding Grout Tubes and Mounting Parts

DEMO



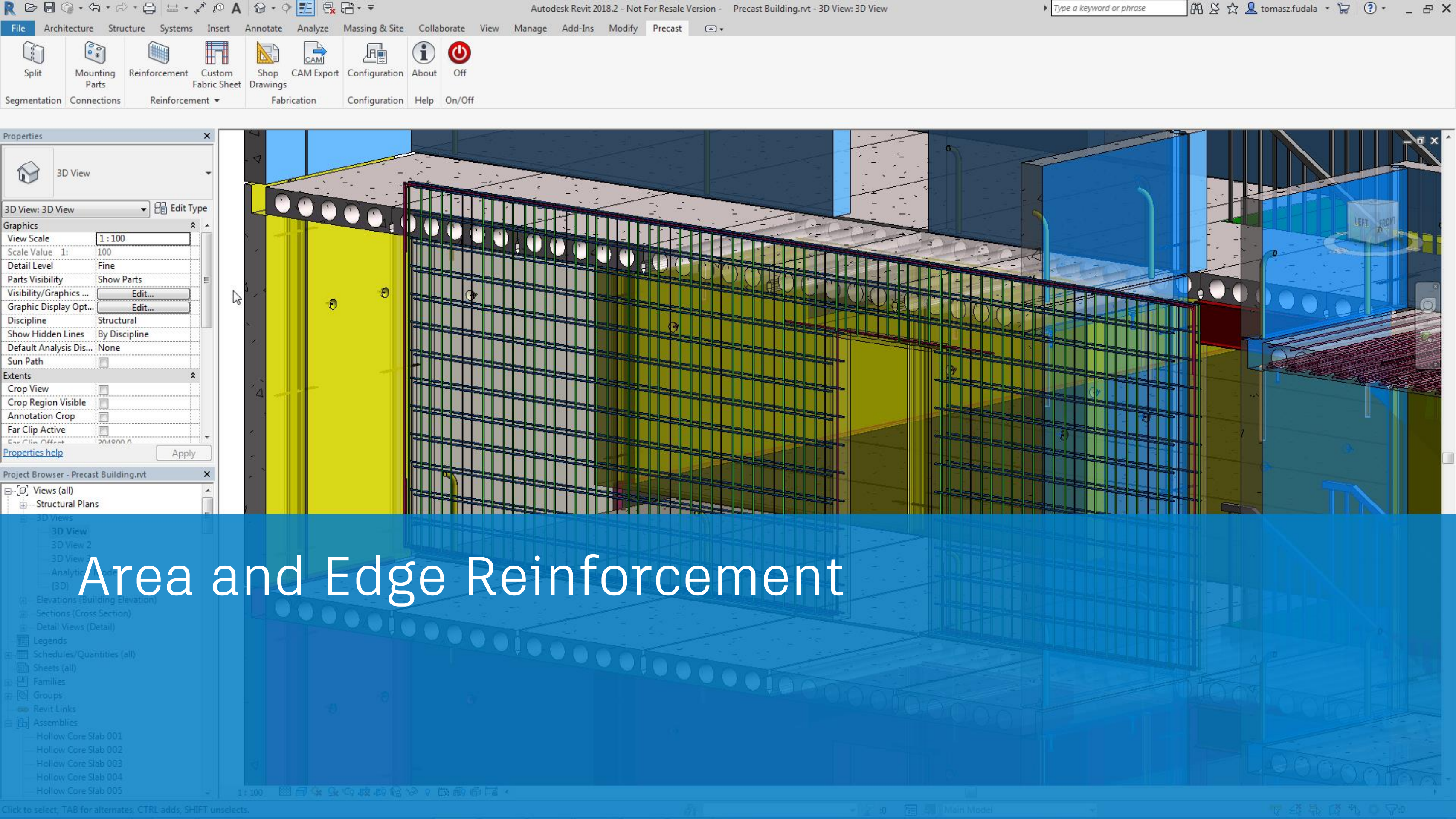
Solid Slabs and Wall/Part Adjustment

DEMO



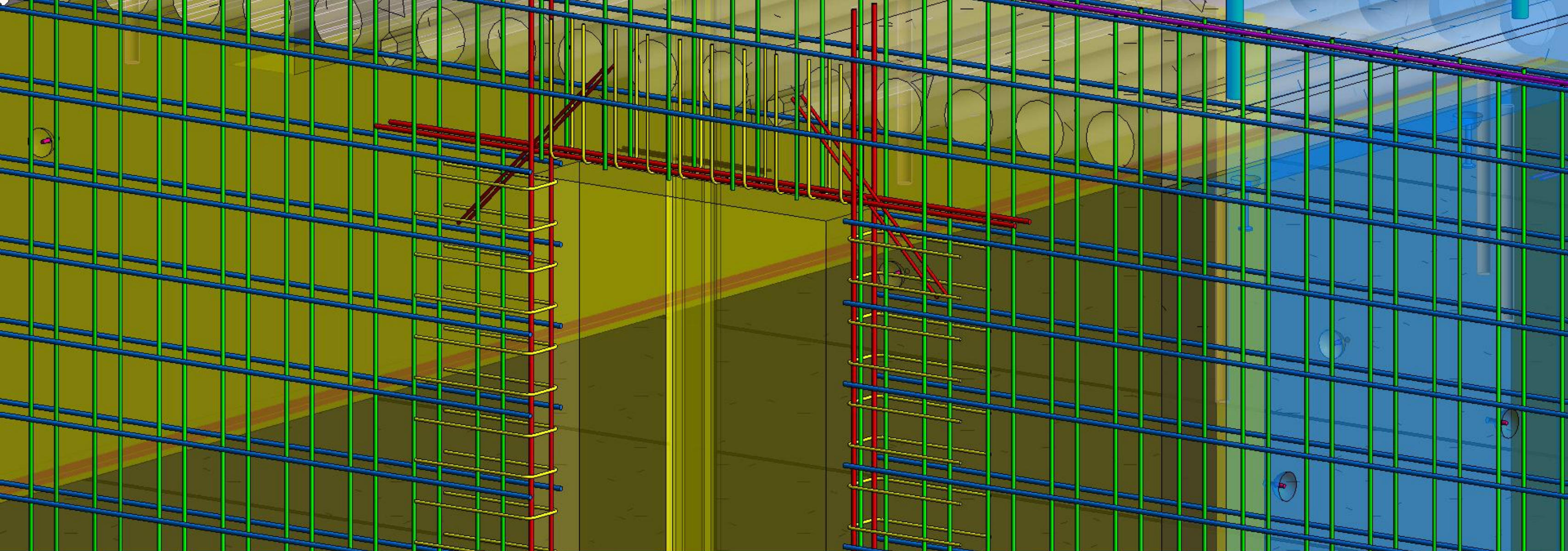
Hollow Core Slabs

DEMO



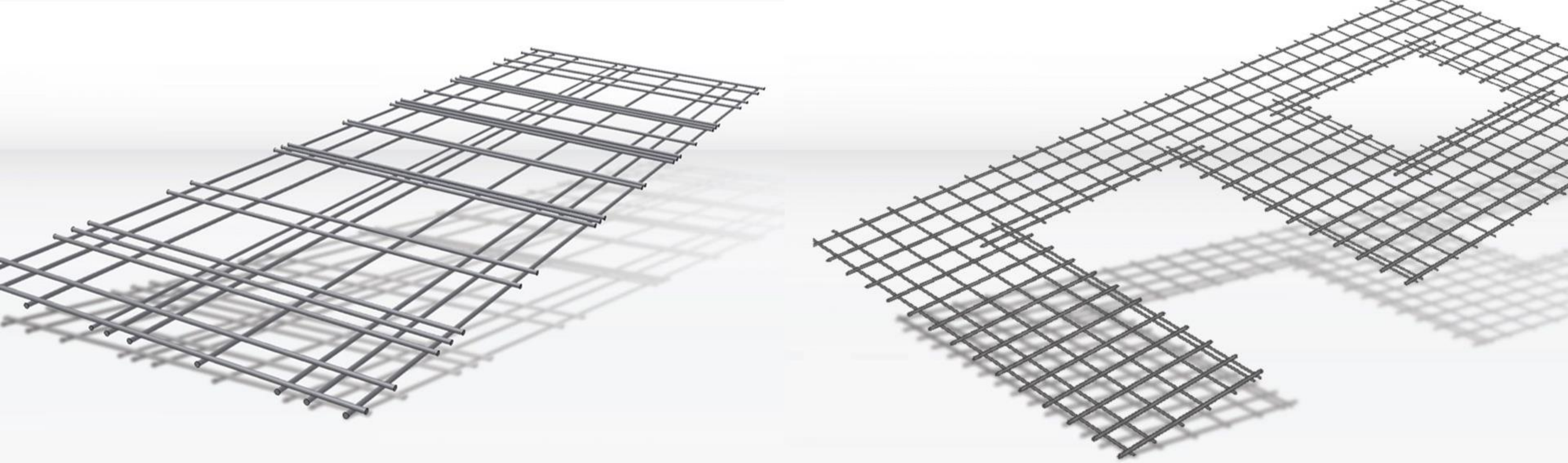
Area and Edge Reinforcement

DEMO



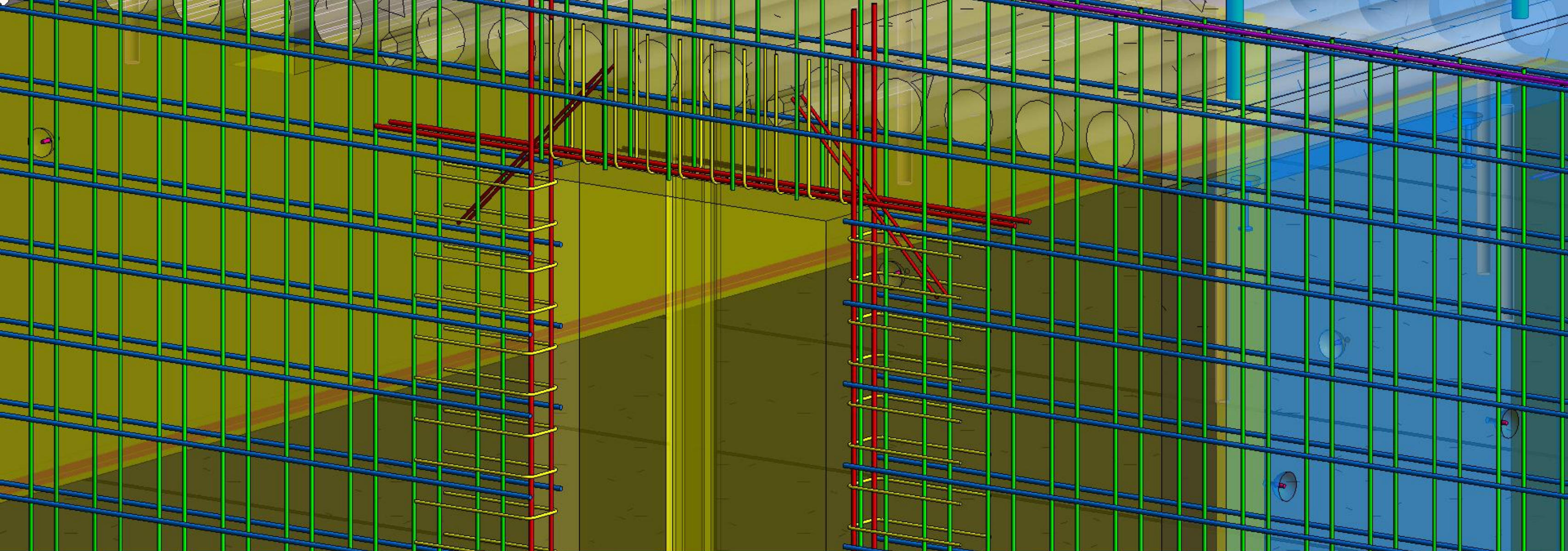
Manual Addition of Rebars

DEMO



Custom Fabric Sheets

DEMO



Level of Development (LOD)

DEMO

Properties

Sheet

Sheet: Sheet Edit Type

Graphics

Visibility/Graphics Overri... Edit...

Scale 1 : 38

Text

Job No

Drg No

Rev'n

Status

Identity Data

Dependency Independent

Referencing Sheet

Referencing Detail

Assembly: Keynote

Assembly: Assembly Des...

Assembly: Cost

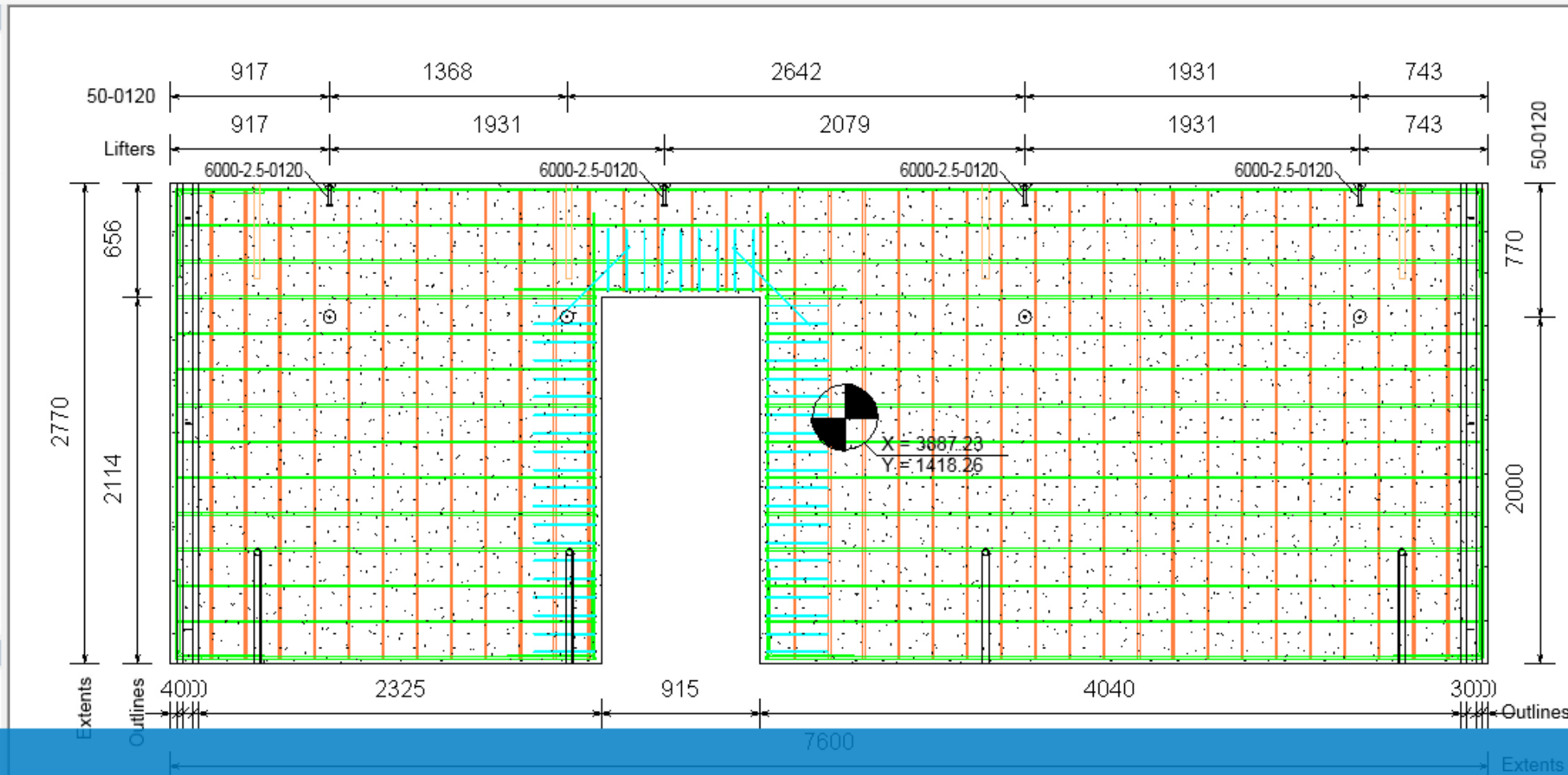
Assembly: Type Mark

Assembly: Assembly Code

Properties help Apply

Project Browser - Precast Building.rvt

- Schedule: Material Takeoff
- Schedule: Material Takeoff_
- Schedule: Part List
- Schedule: Part List_
- Schedule: Rebar List
- Schedule: Rebar List_
- Sheet: Solid Wall325_ - Sheet
 - Solid Wall325: 3D View: 3D Ortho 1
 - Solid Wall325: Detail View: Elevation Frc
 - Solid Wall325: Detail View: Elevation Lef
 - Solid Wall325: Detail View: Elevation Top
 - Solid Wall325: Schedule: Material Takeoff
 - Solid Wall325: Schedule: Part List
 - Solid Wall325: Schedule: Rebar List



Part List_

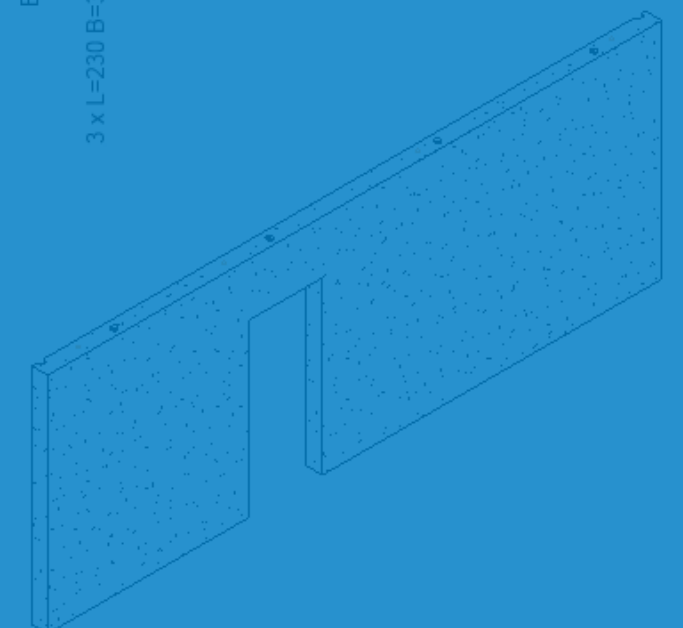
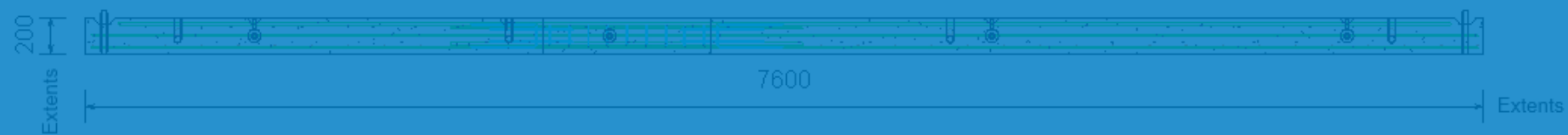
Type	#
Noose: L=230 B=30 D=6	6
Solid Wall - Bushing: 50-0120	4
Solid Wall - Grout tubes: D24	4
Solid Wall - Lifter: 6000-2.5-0120	4
Solid Wall - Tube On Top: D24	4

2770 200 1185 1185 200

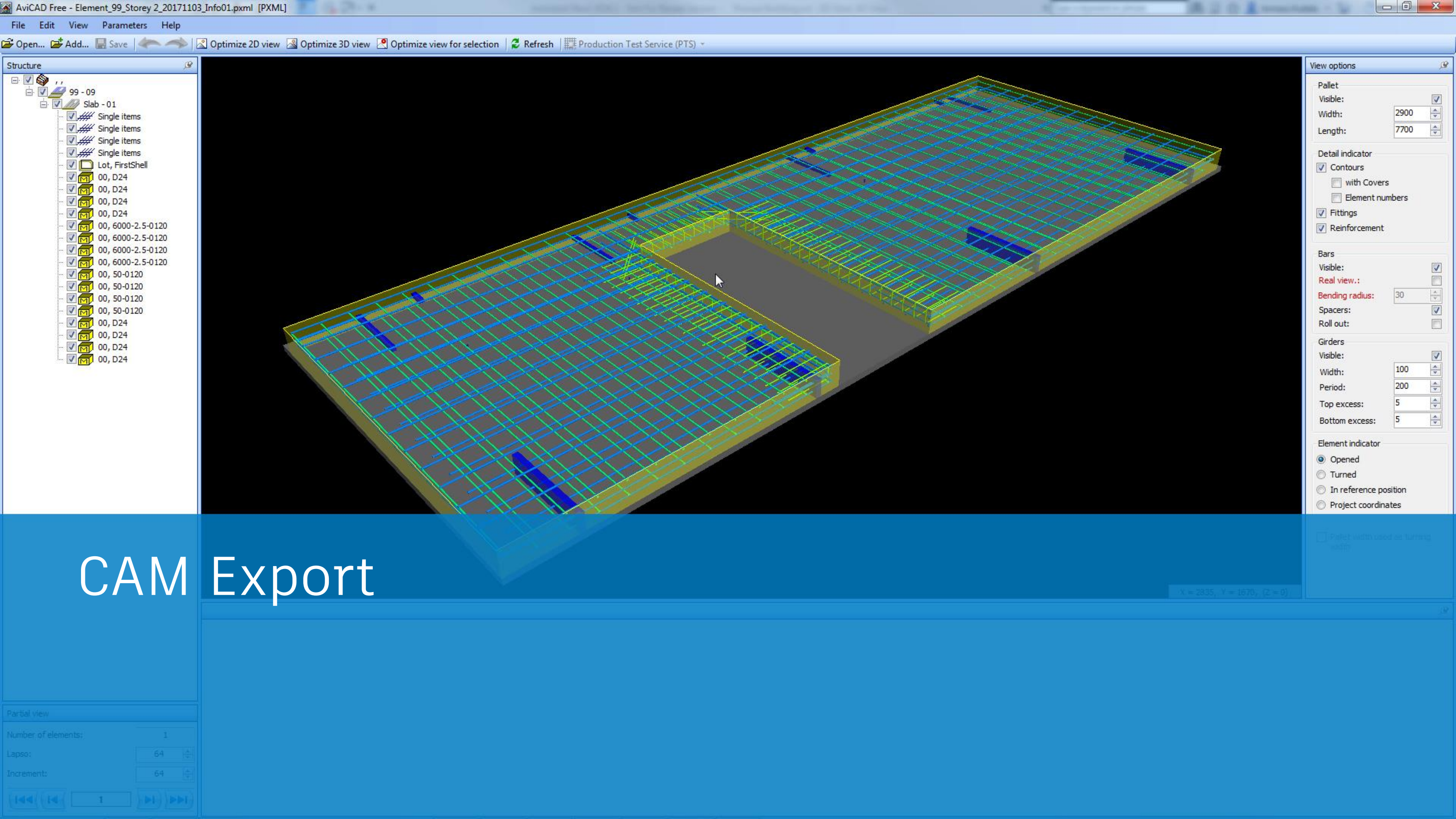
3 x L=230 B=30 D=6

Extents

Shop Drawings



DEMO



CAM Export

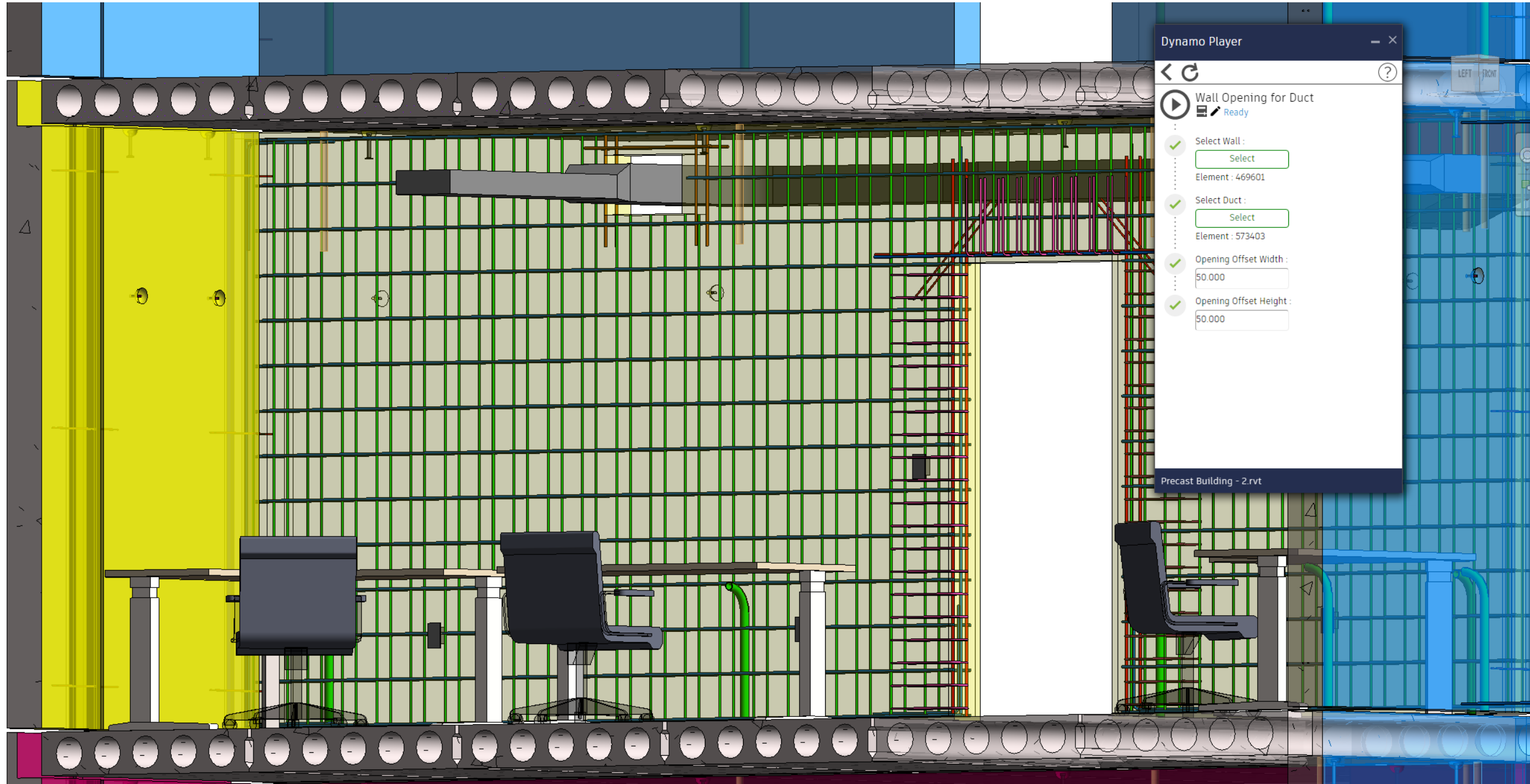
DEMO

The background features a series of white, rectangular blocks stacked vertically on the left side, creating a sense of depth and rhythm. To the right, there are flowing, translucent blue shapes that resemble liquid or smoke, curving and overlapping each other. A solid blue banner spans the bottom of the image, providing a clear area for text.

MEP Coordination

Precast | MEP Coordination

- Wall Opening for Duct using Dynamo Player



DEMO

Q&A

