Dlubal

Structural Analysis & Design Software

www.dlubal.com

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Webinar

Revit, IFC, and DXF Integration in RFEM 6

Questions During the Presentation

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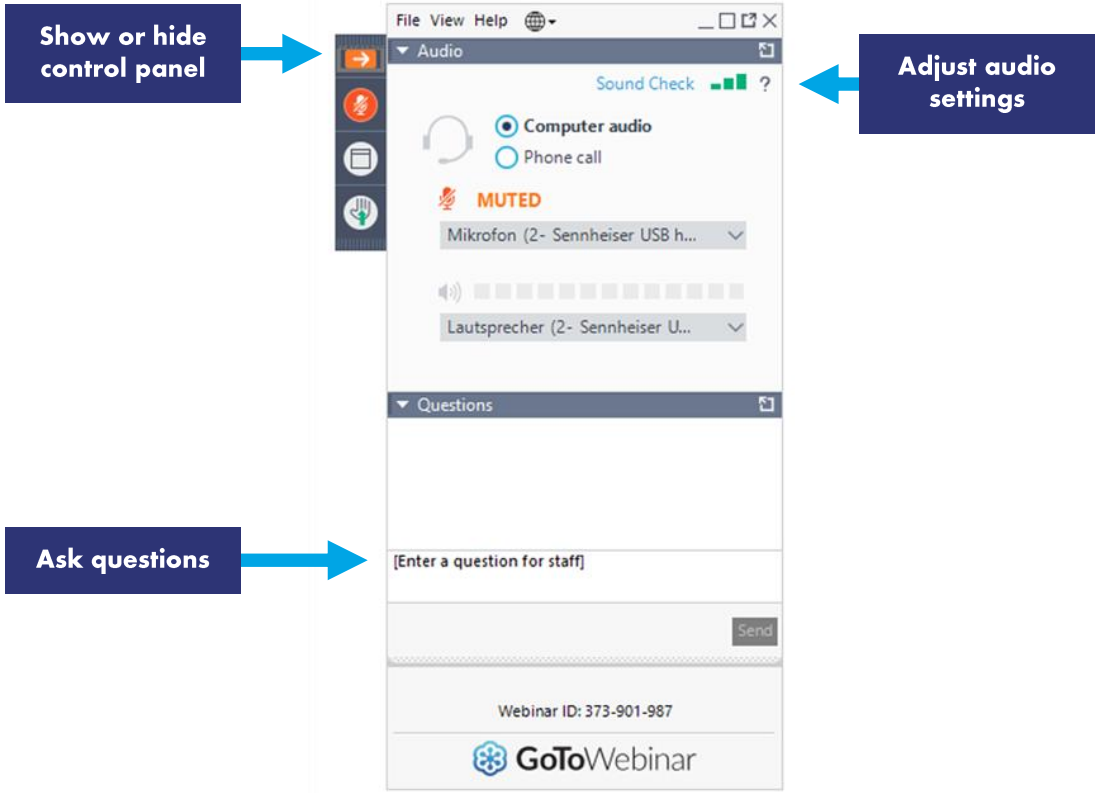
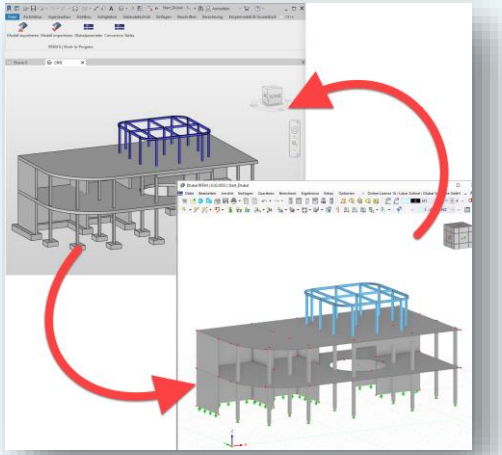


CONTENT

01 Data exchange with Autodesk Revit

02 IFC import/export options

03 DXF import/export options



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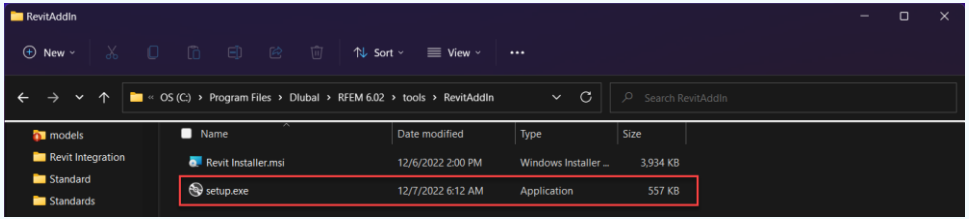
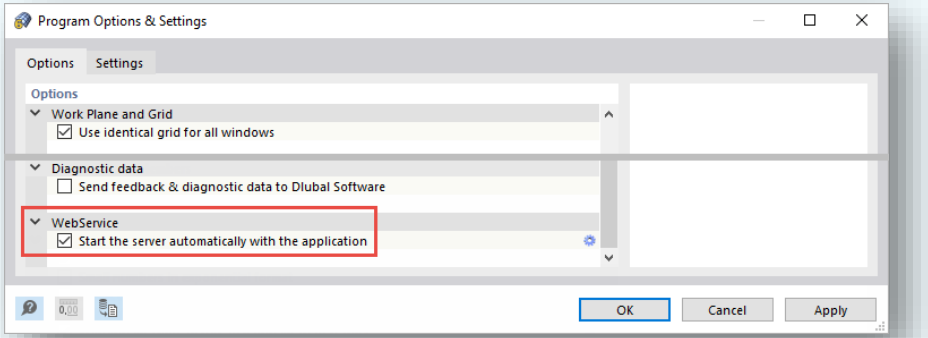
General Information

- Current interface to Revit 2022 (Work-In-Progress Version)
- Direct interface (web services) → Revit and RFEM on one PC
- Manual subsequent installation
- Currently requires a web service license, but will be freely available in the future
- Necessary setting in RFEM





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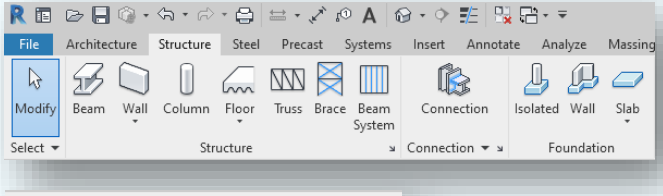
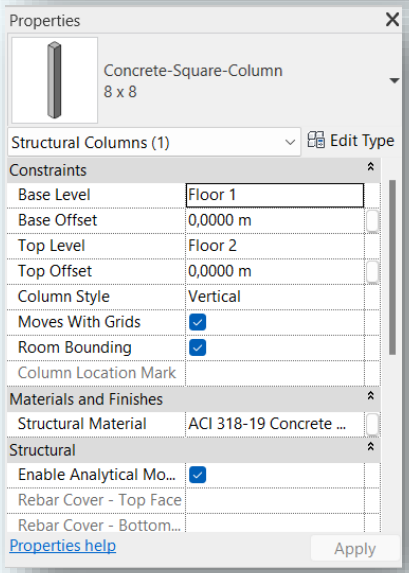
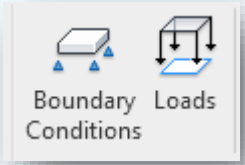
Dlubal Relevant Structural Objects in Revit

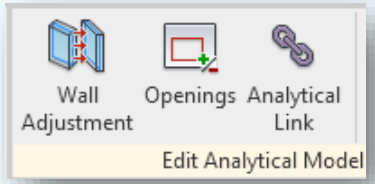
Implemented Objects

- Load-bearing walls, load-bearing floor slabs, foundation slabs
- Girders, columns, struts
- Beam systems
- Openings
- Materials and cross-sections (conversion table)
- Hinges
- Support conditions (point, line, area)
- Foundations (as nodal or line support)
- Offsets (eccentricities)
- Couplings









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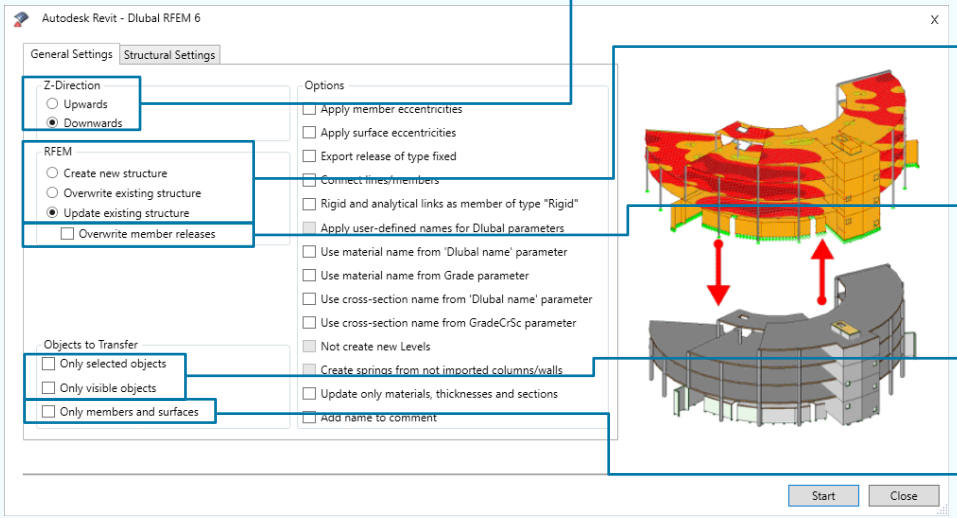
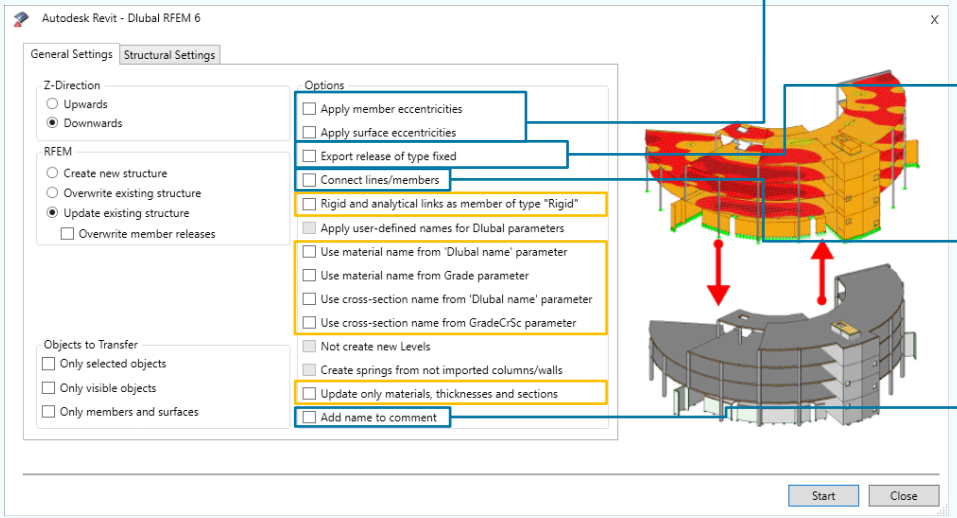
Export Settings



- Direction of the global Z-Axis in RFEM.
- Basic export type. Update allows changes in Revit to be adopted in RFEM while maintaining RFEM-specific inputs (e.g., loads).
- Member hinges are not overwritten with Revit definitions in Dlubal. Release definitions in RFEM are of higher priority (e.g., non-linearities).
- Allows export of subsystems. Control over selected or visible objects in Revit.
- Exports only the main objects beams, columns, slabs without hinges and support definitions. Any incomplete or incorrect definition in Revit is ignored.

Export settings



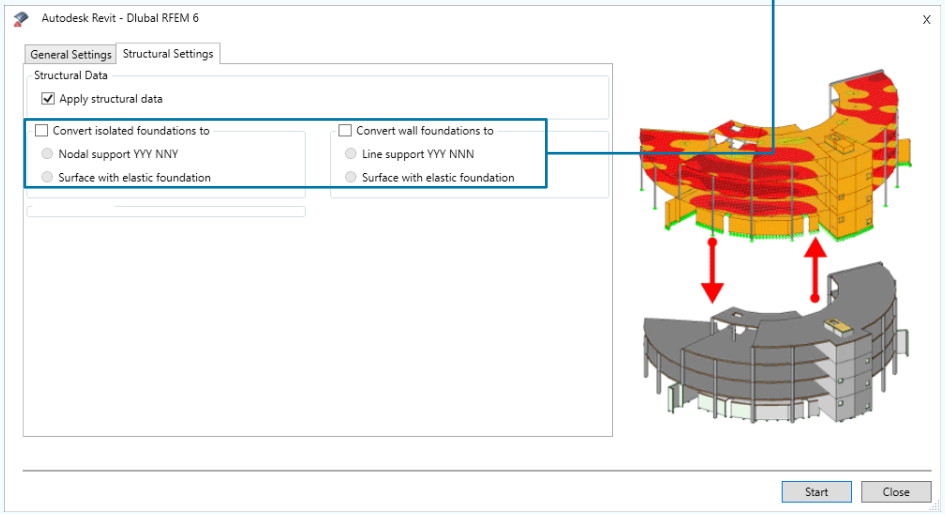
Writes offsets in Revit as member or surface eccentricity in RFEM.

Generates "empty" releases on all RFEM members that do not receive any specific release information from Revit. Members are rigidly connected.

Connects lines/members that intersect. A mechanically connected system can be created and calculated. However, this may be associated with model changes that make later model comparison with Revit more difficult.

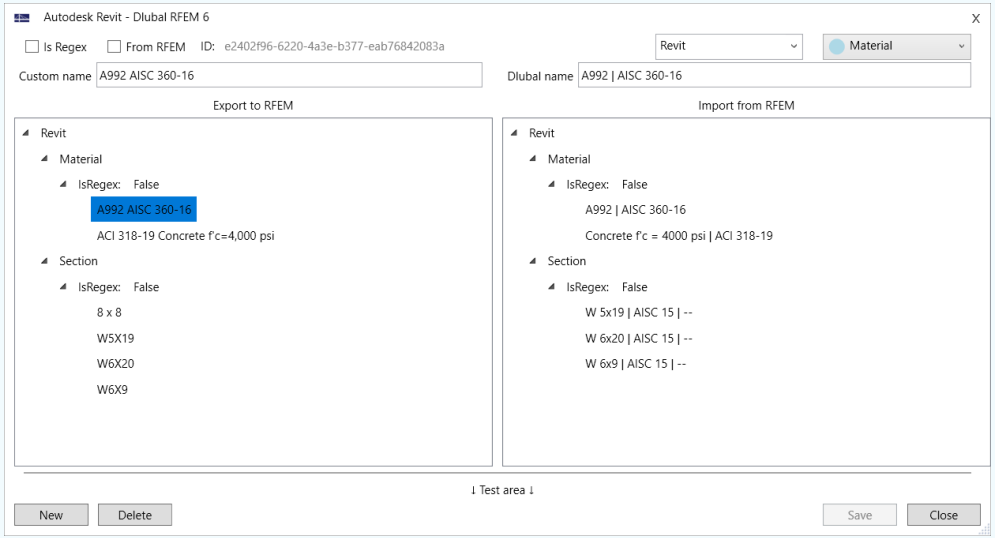
Documents the Revit material and cross-section names in the associated RFEM comments.

Export settings



Objects of the type isolated foundation or wall foundation can be created in RFEM either as a pinned nodal support, a pinned line support, or as an elastically bedded surface. In Dlubal, there are no foundation objects, only simple supports. The assigned spring stiffnesses are preset and must be adjusted in RFEM. The dimensions of the surfaces are also preset and may need to be modified.

Conversion table

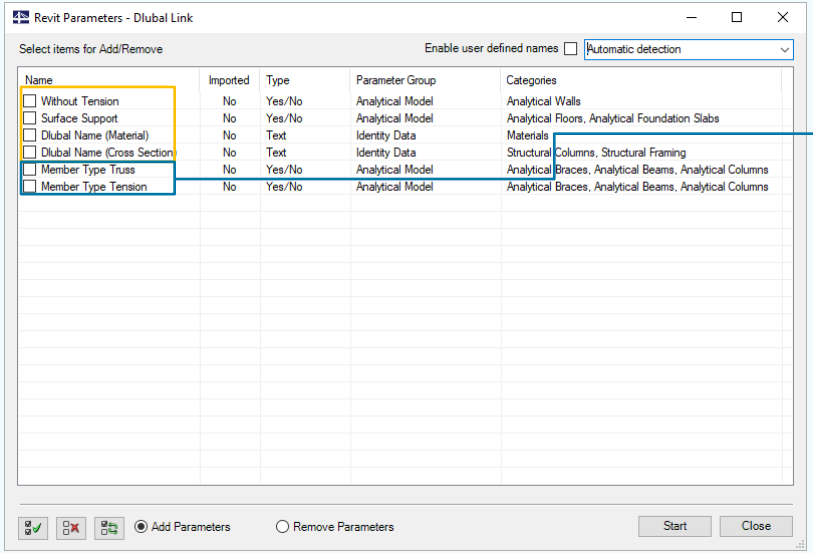


Left column controls conversion for export from Revit to RFEM.
Right column controls conversion for import from RFEM to Revit.

Subdivision for materials and cross-sections.

Creation of regular expressions possible. Allows conversion of multiple objects via one entry (https://regex101.com/).

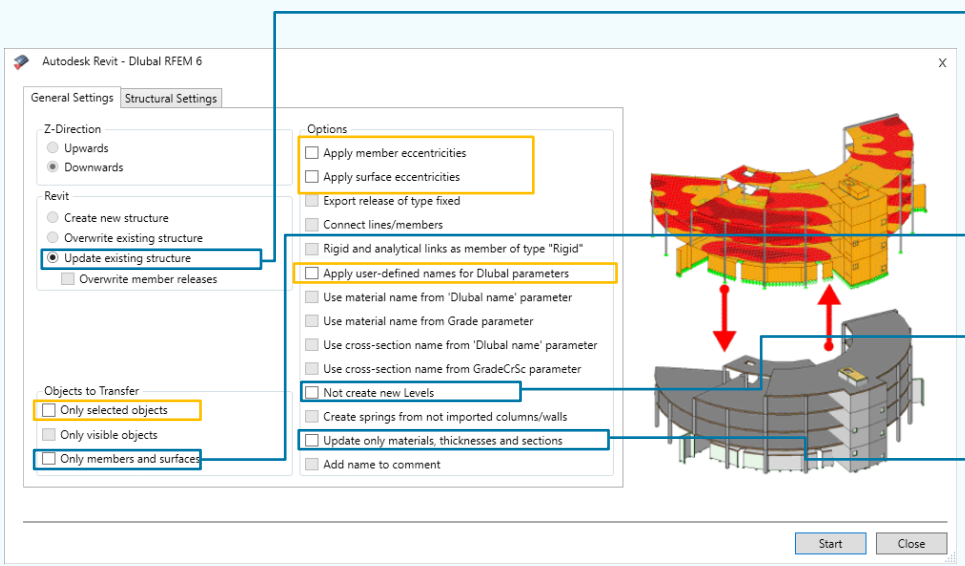
Revit parameter



Allows definition of additional information within the Revit objects that can be interpreted in RFEM.

Member types "truss" and "tension" can be defined or saved in the analytical object properties.

Import settings



Only possibility is updating an open Revit project. Revit families that are already loaded into the project are automatically used if the conversion is correct. Families cannot be loaded into the project from RFEM 6. Likewise, families cannot be created.

Imports only the main objects beams, columns, slabs without hinges and support definitions.

During the import, RFEM can create new planes for the position definition of objects. This option can be used to prevent it.

Reduces updating to changing materials, section names, and surface thicknesses. Coordinates not updated. No adding or deleting objects.

General information

Import

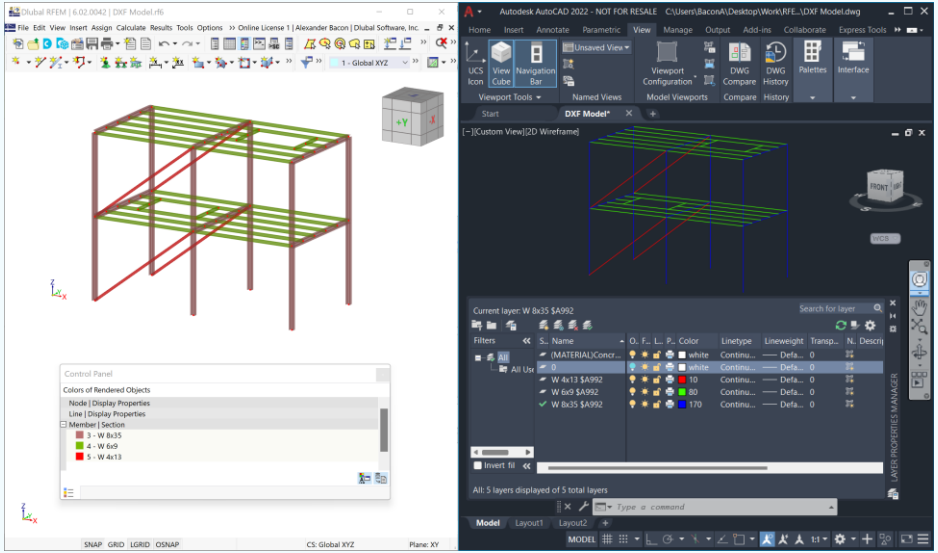
- IFC 2x3 / IFC 4
- Structural Analysis View / Coordination or Reference View
- Integrated IFC Viewer
- Conversion into Dlubal objects

Export

- IFC 4
- Structural Analysis View / Reference View
- Allows opening of IFC-files in CAD software

General information

- Direct import from AutoCAD or Import of DXF-files
- Import from specific layers
- Conversion of lines into members (requires specific layer description)
- Import as background layer
- Export includes lines only



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