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What’s new in Robot Structural Analysis Professional 2023

Key themes and features

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Key themes

Robot Structural Analysis Professional 2023

Structural analysis

Design optimization

Interoperability

Productivity & learning enhancements

New features and enhancements

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Structural analysis

- Gravity analysis with Load Takedown Method
- Improved load distribution from cladding
- Enhanced seismic analysis
- Eurocode wind load for frames

Design optimization

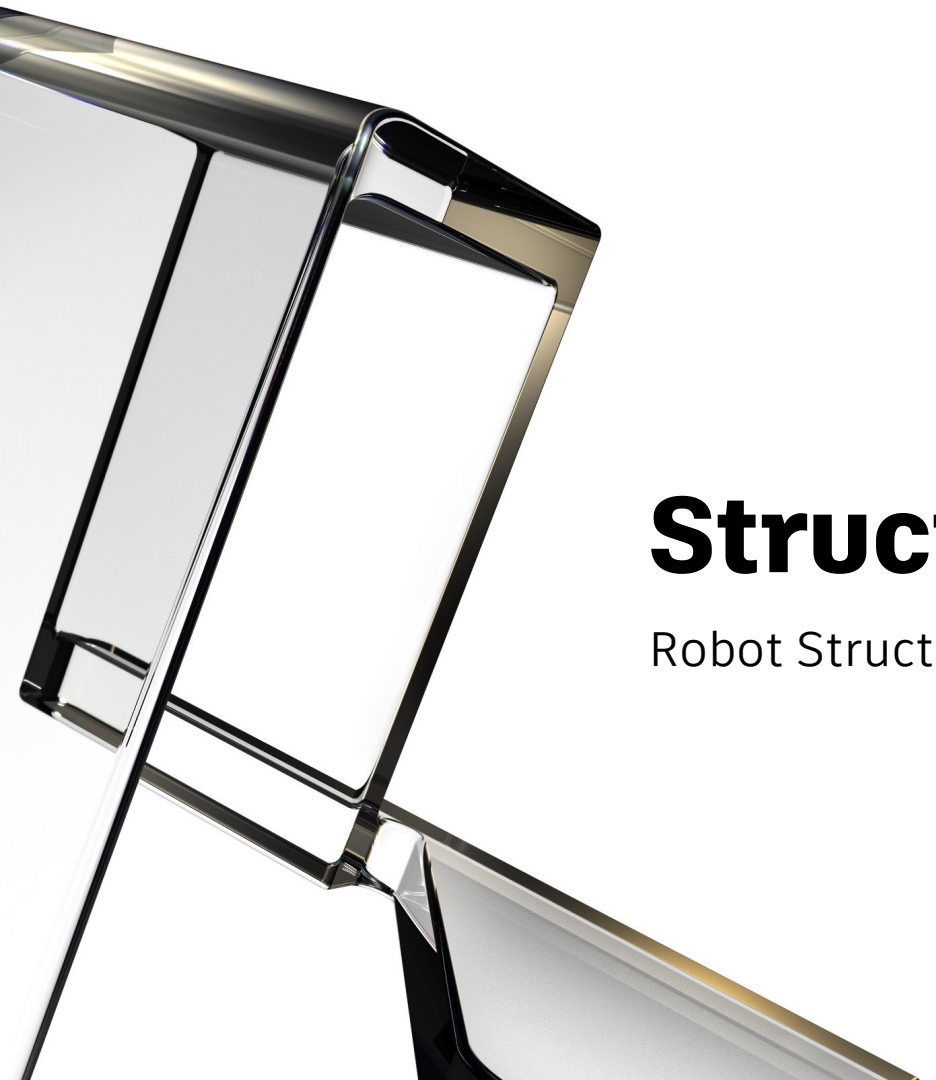
- Design codes updates
  - for North America
  - for South America
  - for Europe

Interoperability

- Revit contextual analytical model integration

Productivity & learning enhancements

- Modeling & results exploration enhancements
- New learning content



Structural analysis

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Gravity analysis with Load Takedown Method

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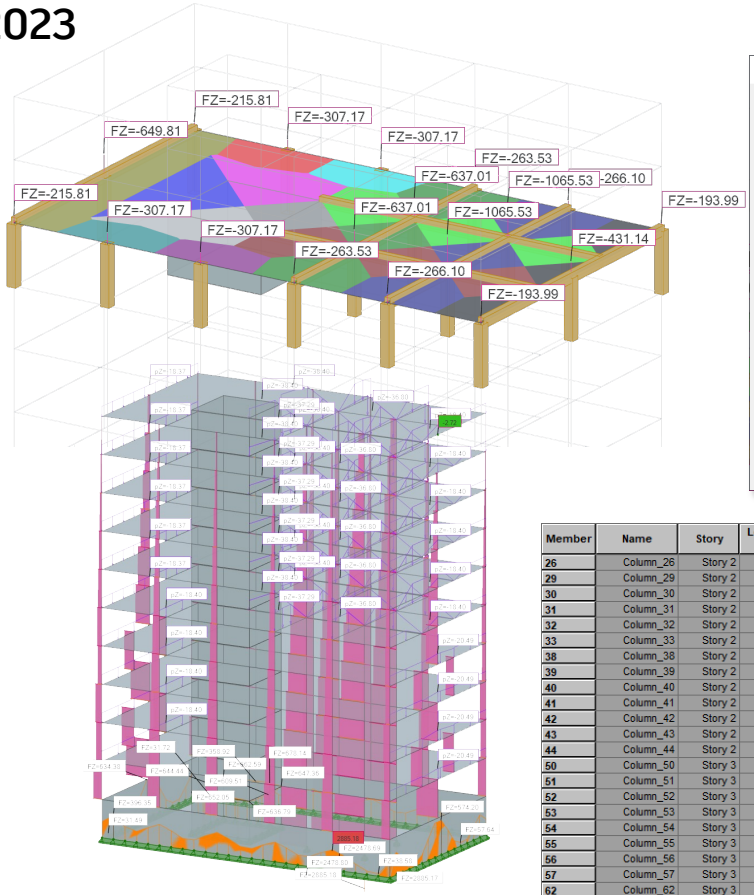
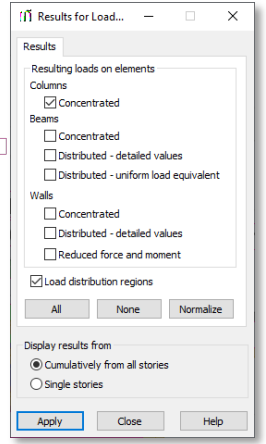
- Early design assessments for building foundations and column layouts
- Easy to use analysis for easy to create analytical model to assess building's behavior
- Transferred loads as results for objects-based code checking

Make design decisions earlier and faster





Member	Name	Story	Length (m)	Case	Load type	Total load (kN)
26	Column_26	Story 2	3.00	1	concentrated load	-789.93
29	Column_29	Story 2	3.00	1	concentrated load	-789.92
30	Column_30	Story 2	3.00	1	concentrated load	-1058.67
31	Column_31	Story 2	3.00	1	concentrated load	-1056.68
32	Column_32	Story 2	3.00	1	concentrated load	-967.47
33	Column_33	Story 2	3.00	1	concentrated load	-974.59
38	Column_38	Story 2	3.00	1	concentrated load	-974.59
39	Column_39	Story 2	3.00	1	concentrated load	-967.46
40	Column_40	Story 2	3.00	1	concentrated load	-1056.67
41	Column_41	Story 2	3.00	1	concentrated load	-2264.57
42	Column_42	Story 2	3.00	1	concentrated load	-2264.57
43	Column_43	Story 2	3.00	1	concentrated load	-2670.94
44	Column_44	Story 2	3.00	1	concentrated load	-2670.94
50	Column_50	Story 3	3.00	1	concentrated load	-543.30
51	Column_51	Story 3	3.00	1	concentrated load	-1131.01
52	Column_52	Story 3	3.00	1	concentrated load	-1131.01
53	Column_53	Story 3	3.00	1	concentrated load	-543.29
54	Column_54	Story 3	3.00	1	concentrated load	-951.31
55	Column_55	Story 3	3.00	1	concentrated load	-949.82
56	Column_56	Story 3	3.00	1	concentrated load	-861.09
57	Column_57	Story 3	3.00	1	concentrated load	-867.72
62	Column_62	Story 3	3.00	1	concentrated load	-867.72
63	Column_63	Story 3	3.00	1	concentrated load	-861.09

Improved load distribution from cladding

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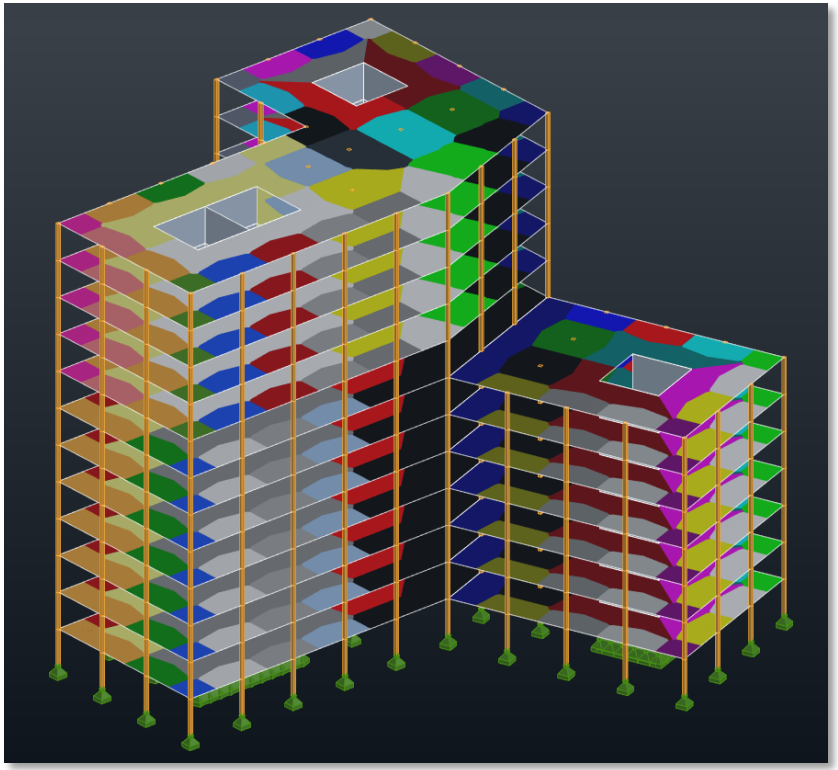
- Corrected load distribution on claddings with objects or elements carrying the load overlap
- Improved the performance of load distribution on claddings
- Improved distribution of linear loads on edges applied to multiple panel and cladding types defined as a single load record
- Corrected load direction on bars coming from cladding load distribution

Greater accuracy in structural analysis



Enhanced seismic analysis

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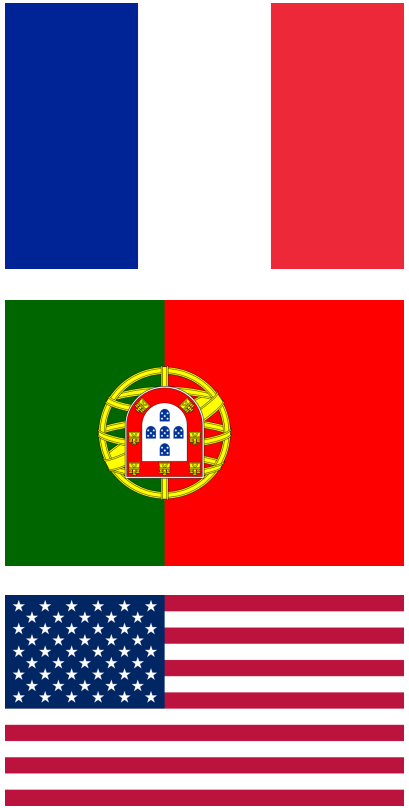
- France
  - French National Annex NF EN 1998-1/NA:2013 Décembre 2013.
  - Local provisions for Nice: NF EN 1998-1/Nice PPR/NA:2007 19Juil. 2011.
- Portugal
  - Portuguese National Annex NP EN 1998-1:2010/A1 2013
- USA
  - Enhanced ASCE 7-16 and IBC 2018
  - Updated calculation of spectrum parameters for IBC seismic codes



Greater accuracy in structural analysis

Eurocode wind load for frames

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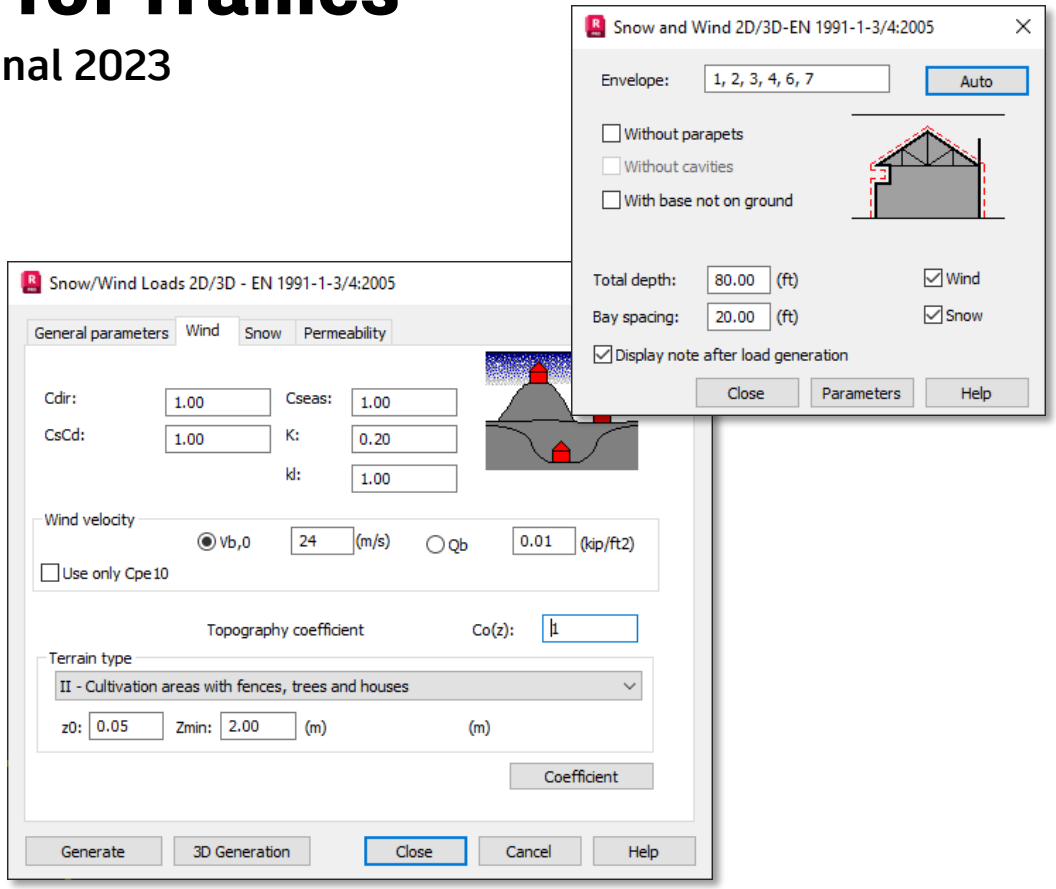
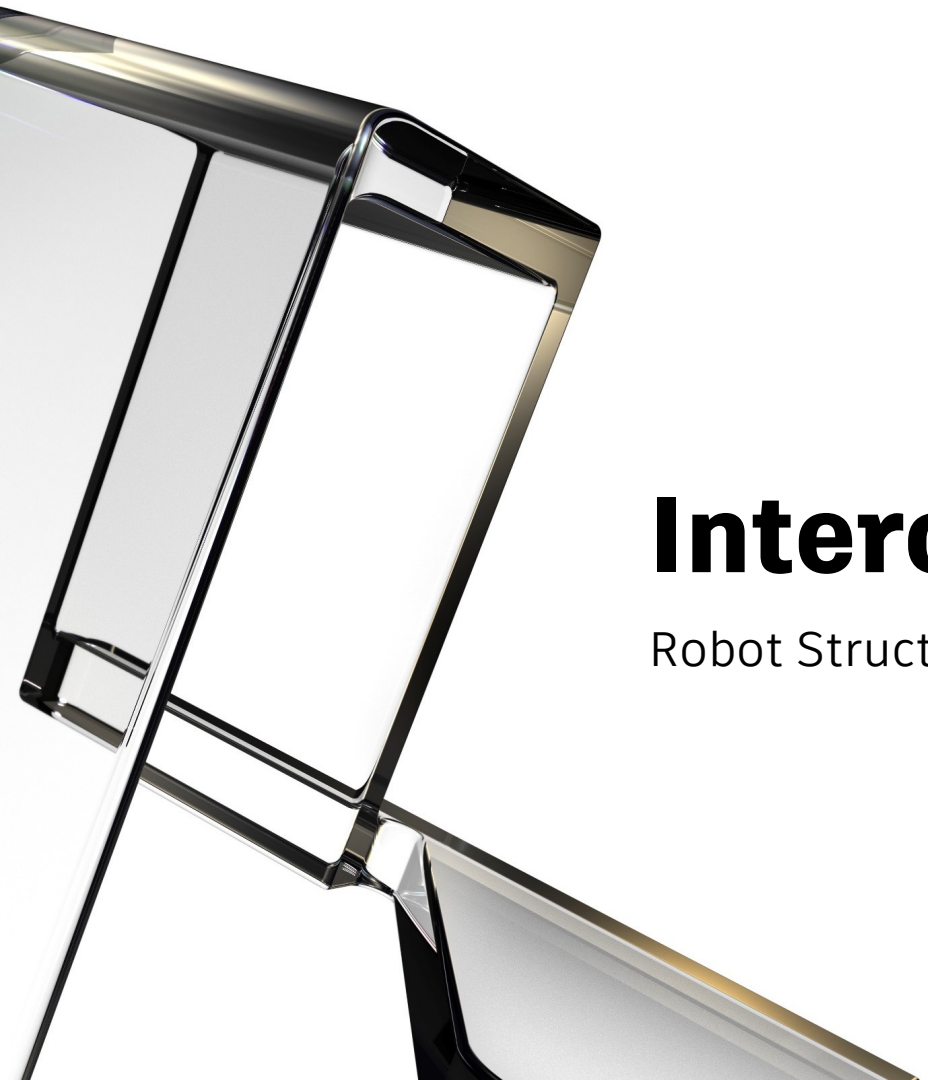
- Updated wind load automation for 2D and 3D frames according to EN1991-1-4:2005
- Updated pressure coefficients for wind load generation on frames



More accurate generation of code-based wind loads



Interoperability

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Revit contextual analytical model integration

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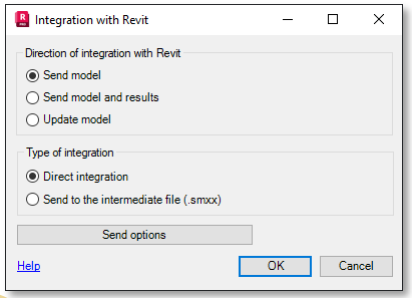
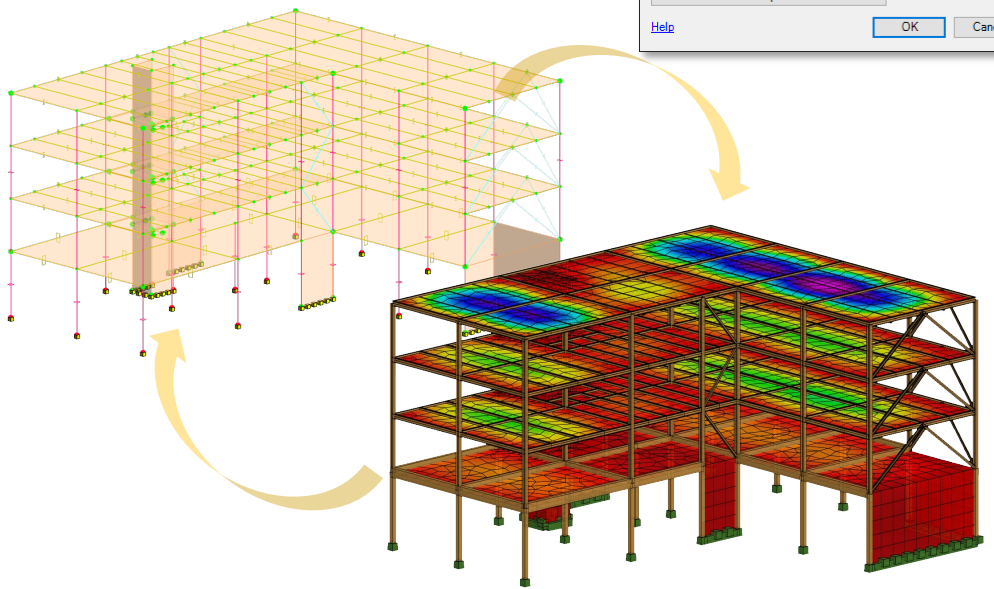
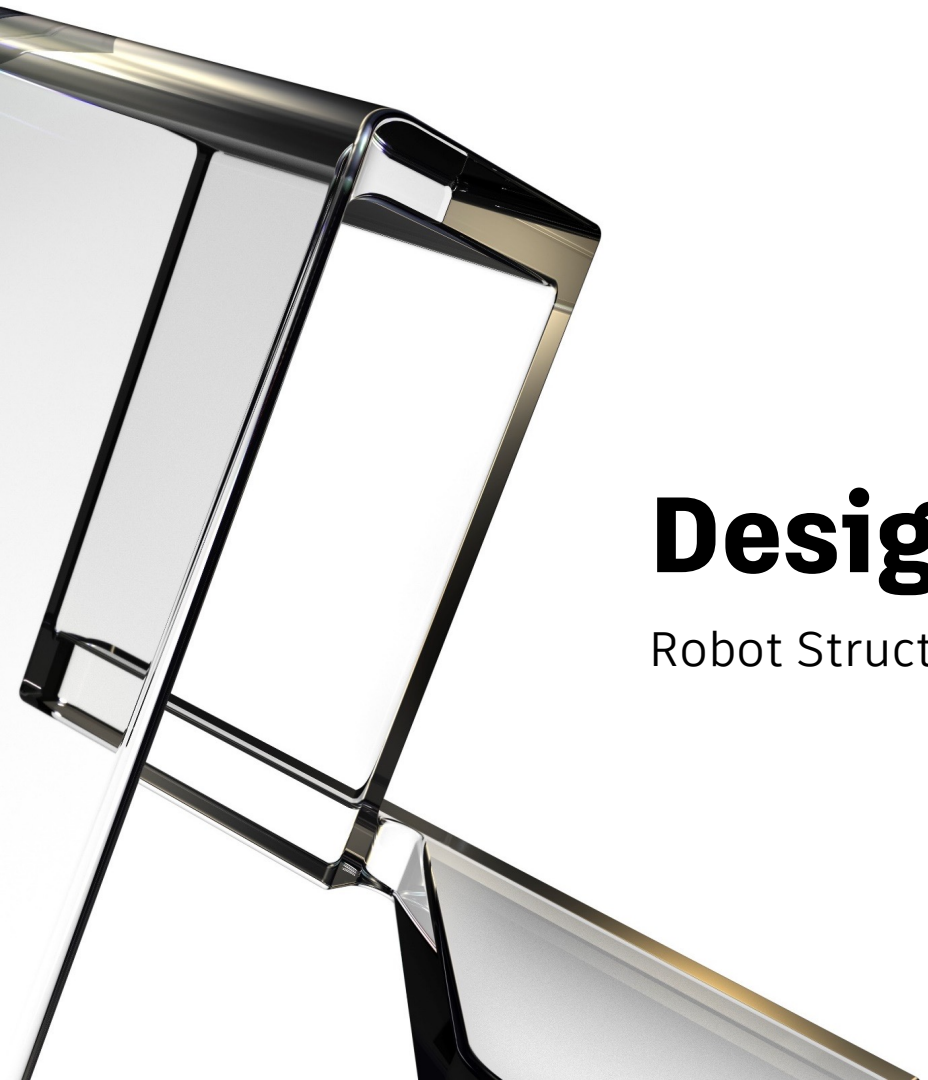
- BIM connectivity updates to Revit contextual analytical model
- Bidirectional analytical model exchange
- Two types of integration





Better support of BIM-centric structural analysis workflows



Design optimization

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Design codes updates for North America

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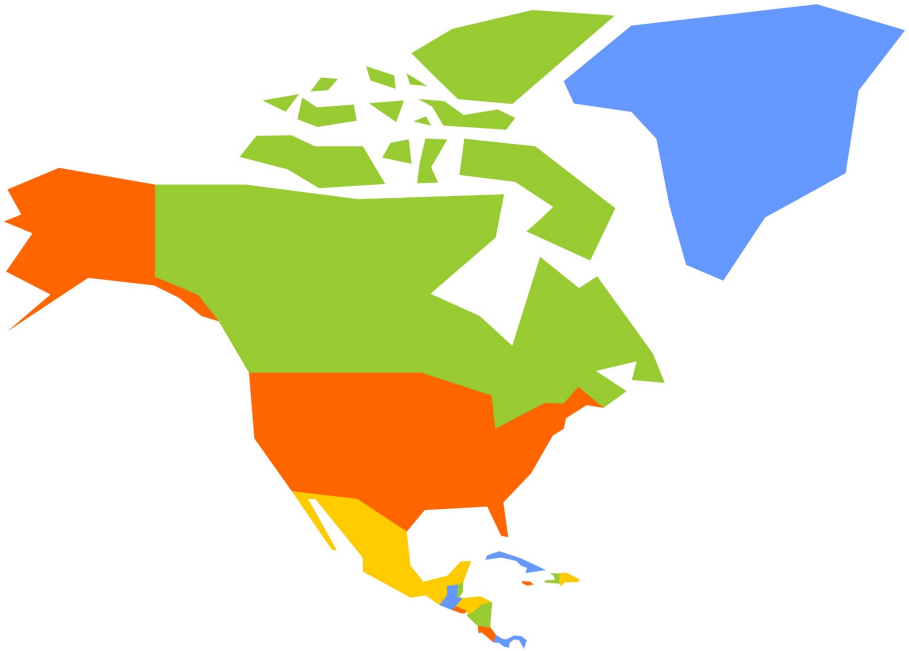
- Canada
  - Steel design code: CAN/CSA-S16-19
- USA
  - Required Reinforcement design code: ACI 318-19



More accurate design of structures following local standards

Design codes updates for South America

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- Brazil
  - Material properties library according to NBR codes of standards
  - Steel sections library
  - Reinforcing rebar library containing bar sizes and steel properties according to NBR 6118:2014
  - Vehicles database for moving load cases NBR 7188
  - Load combinations NBR 8681:2003
  - Steel design code NBR 8800:2008

More accurate design of structures following local standards

Design codes updates for Europe

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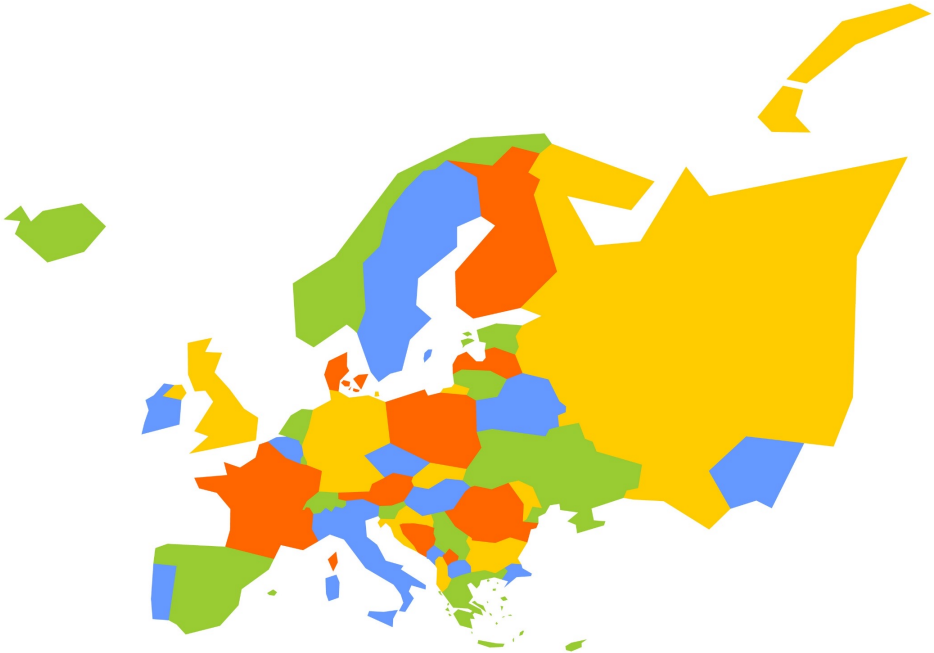
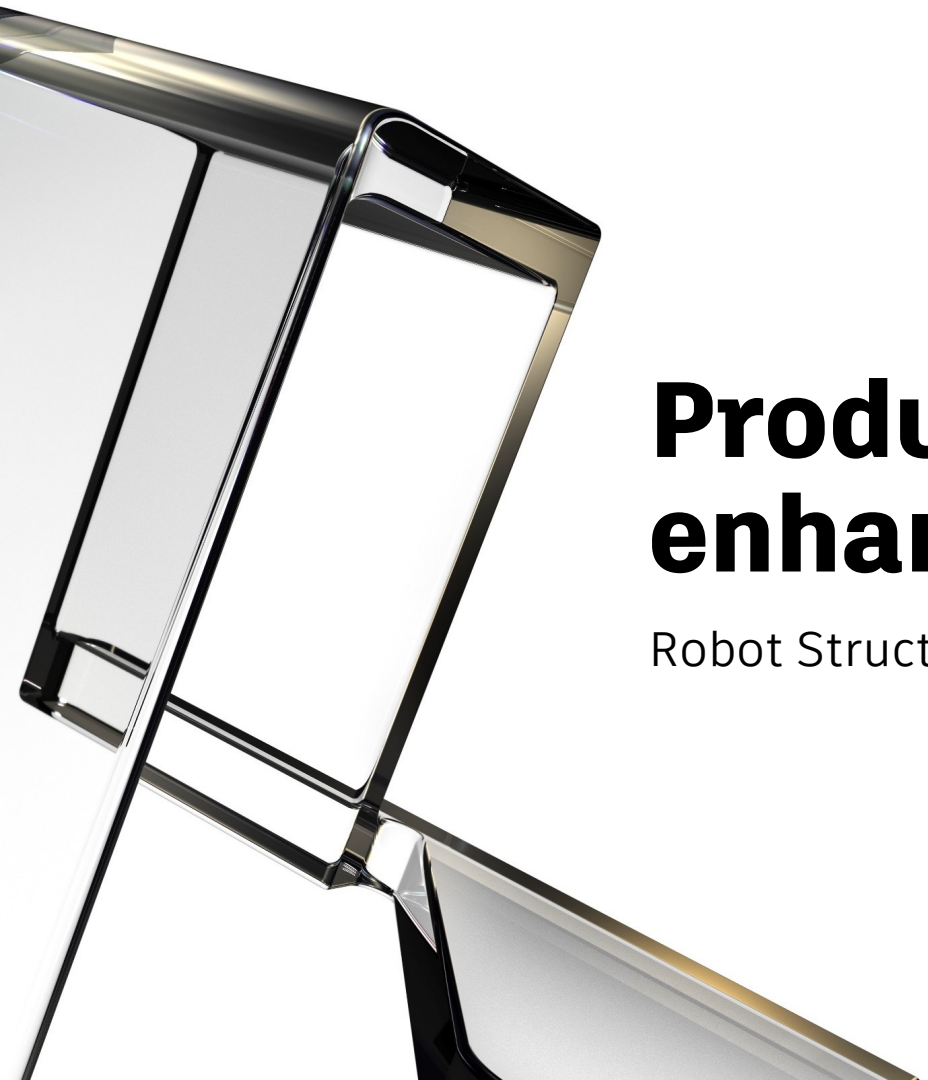
- Denmark
  - Load combinations: National Annex DS-EN 1990 NA:2021
  - Steel design code: Danish National Annex DS/EN 1993-1:2005/DK NA:2019/A1:20141
- Finland
  - Load combinations: National Annex SFS-EN 1990/2016



More accurate design of structures following local standards



Productivity enhancements

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Modeling & results exploration enhancements

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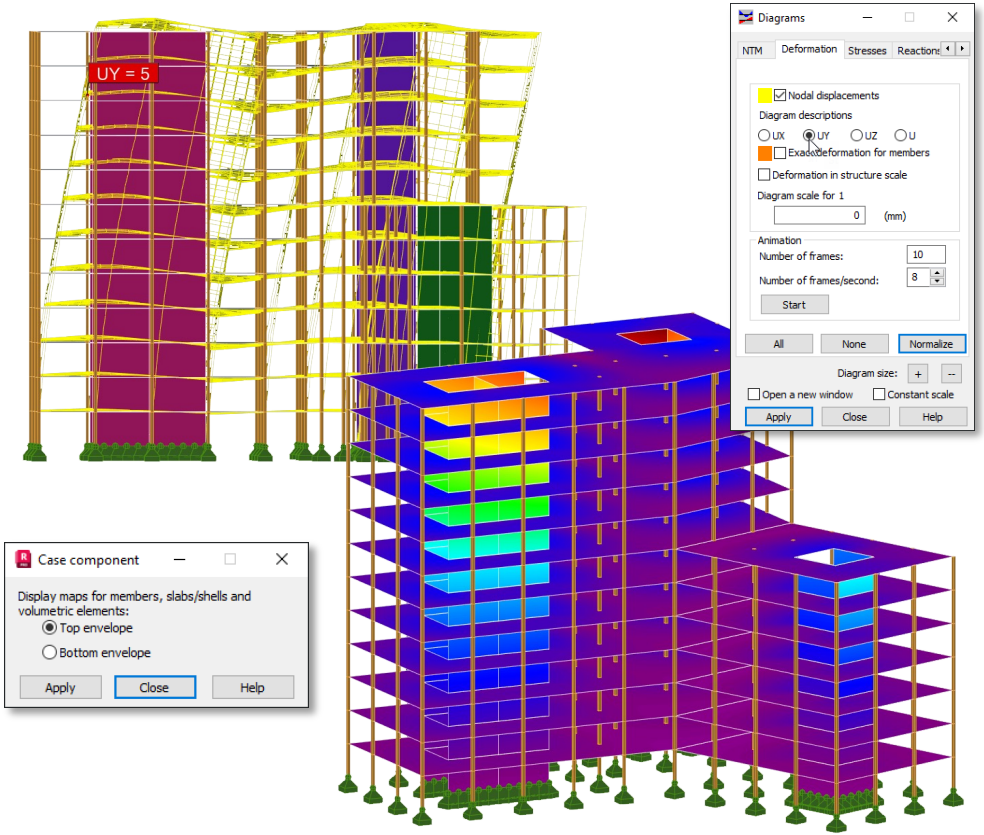
- Groups created on DWG/DXF file import
- Nodal displacement in separate XYZ directions
- Improved results presentation for multiple load cases
- Easy color selection for results presented as crosses



Improved usability and productivity

New learning content

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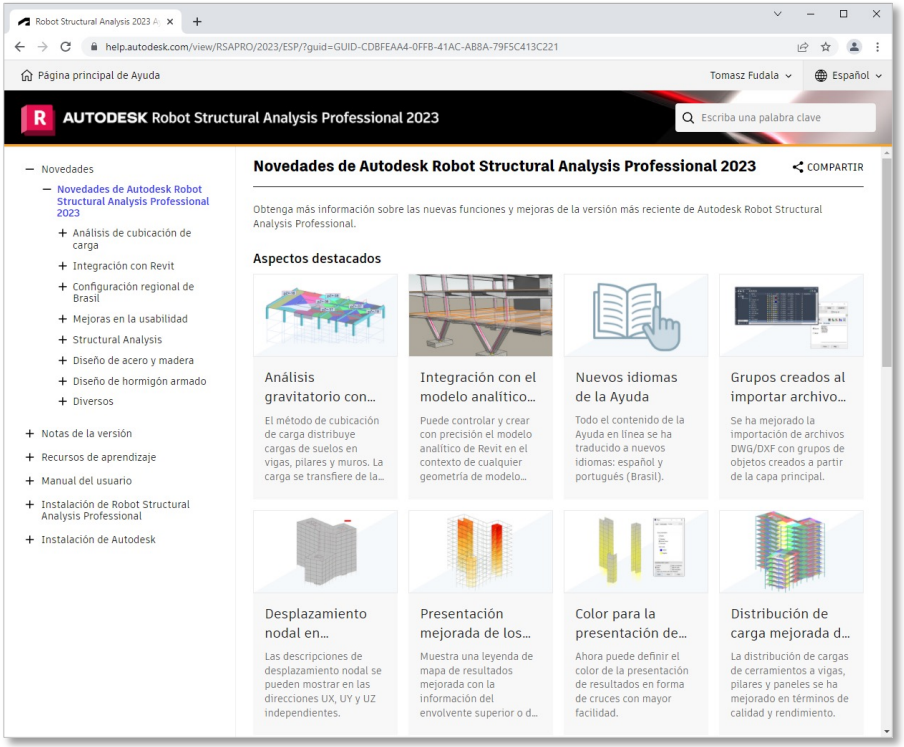
- The entire online help content has been translated to new languages
  - Spanish
  - Portuguese (Brazilian)



Shorter learning curve for new adopters

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