



# Autodesk® Revit® Structure 2011

What's New

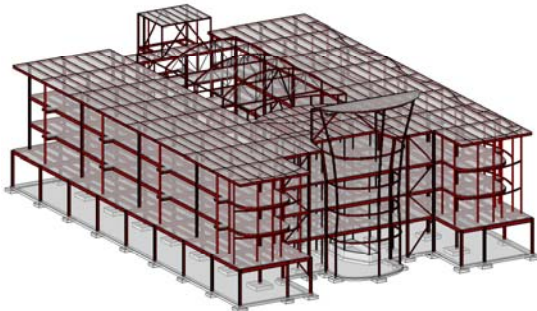
# Top Features

Autodesk® Revit® Structure® 2011 Software

## Enhanced Design Features

### Fit and Finish

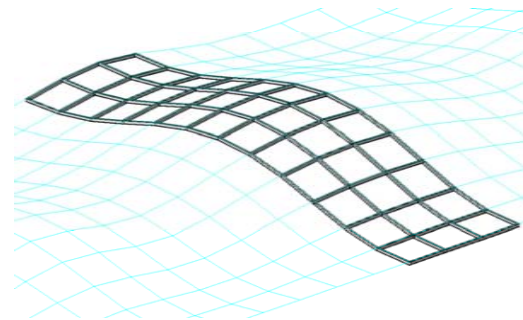
- Slanted columns
- Beam systems and trusses
- Concrete clean-up
- Concrete reinforcement
- Analytical model
- Connection symbols



## Improved Productivity

### Ease of Use

- User interface
- Large team workflow
- Performance improvements
- Modeling enhancements
- Documentation improvements
- Autodesk® Revit® API improvements



## Extended Capabilities

### Design Extensibility

- **S** Model review
- **S** Steel frame generator
- **S** Wall framing improvements
- **S** Bridge modeling
- **S** Reinforcement improvements
- **S** Integration improvements



**S** Features are available to Autodesk® Subscription members only.



# Enhanced Design Features

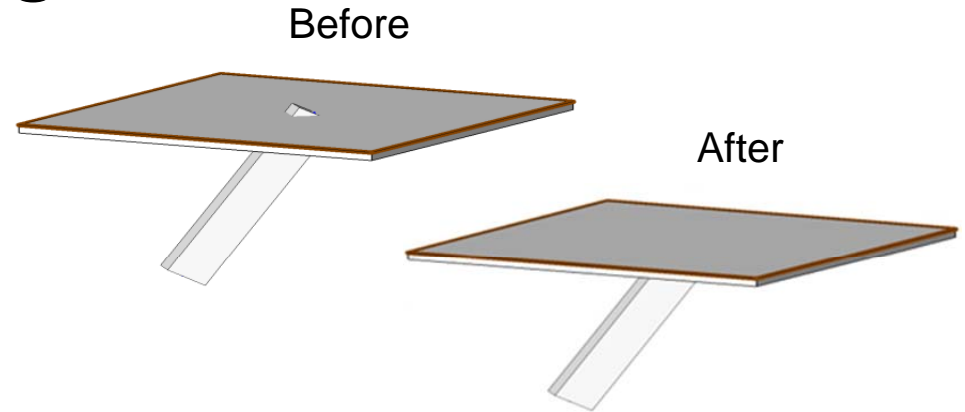


# Enhanced Design Features

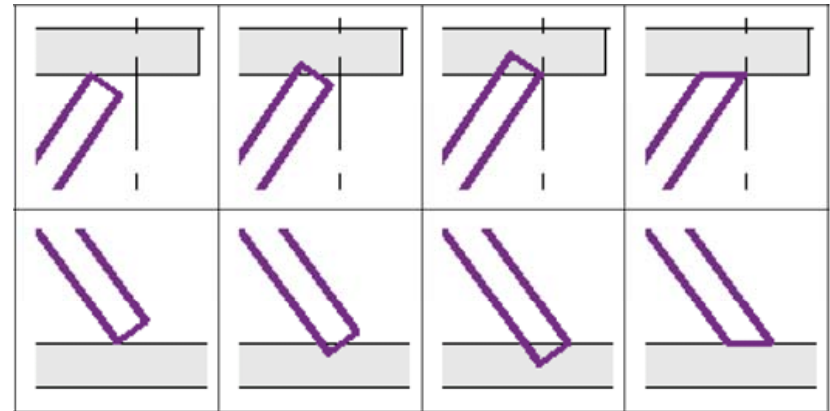
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## Slanted Column Enhancements

- Plan view placement
- Column end geometry position control when attached to a beam
- Cut column tangent to an attached structural floor
- Unattached column end-cut appearance
- Beam join elevation on resized columns



Justification Adjustments



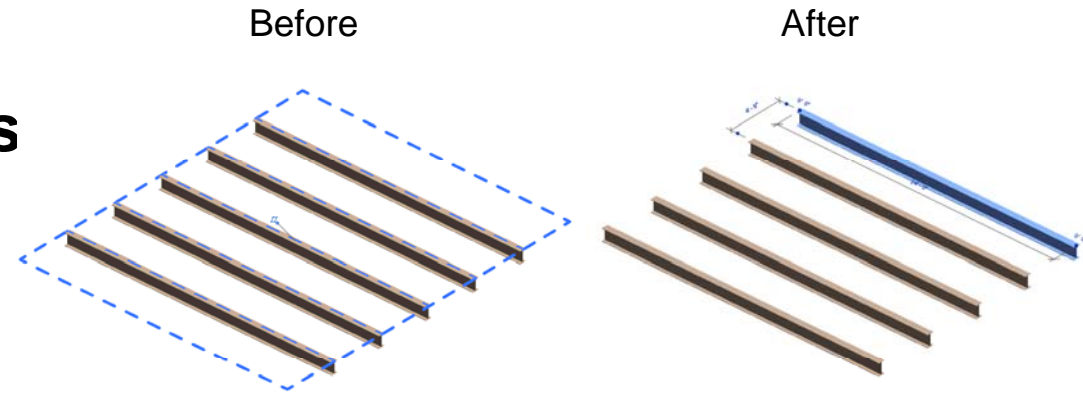
*More control and easier placement of slanted columns*

# Enhanced Design Features

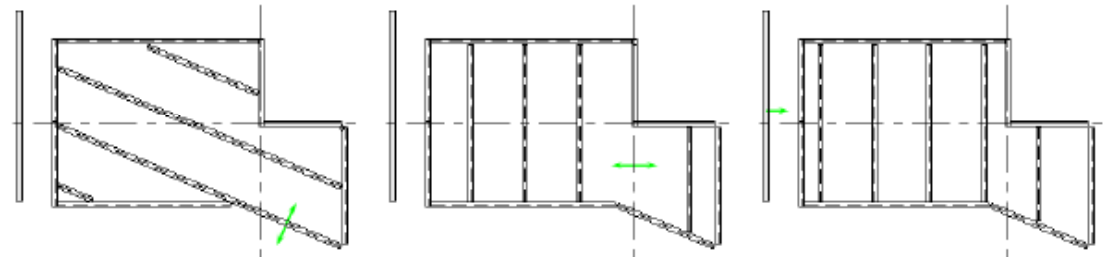
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## Beam System Enhancements

- Remove beam system while retaining beam elements
- Specify beam direction for an independent sketch line
- Specify beam direction with walls and beams



Beam Direction Justifications



*More flexibility to create and modify beam systems*

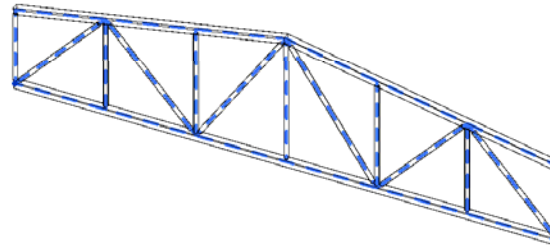
# Enhanced Design Features

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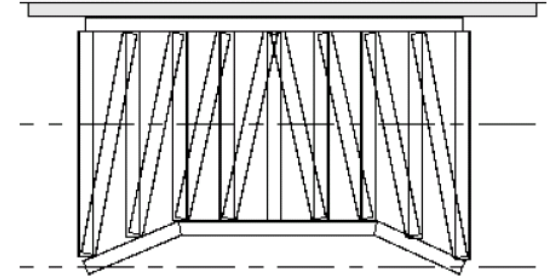
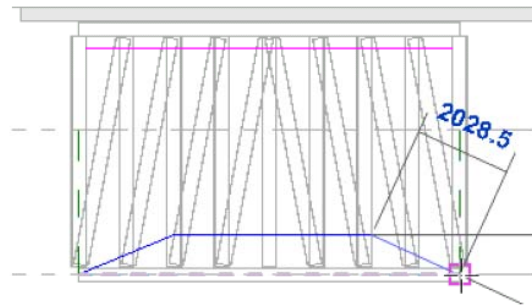
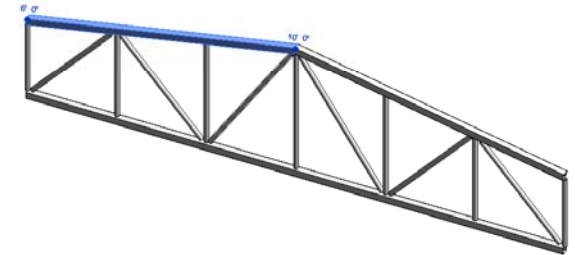
## Truss Enhancements

- Remove the truss family while retaining beam elements
- Sketch chords on attached trusses
- Bottom chord attaching to floors and slabs

Before



After



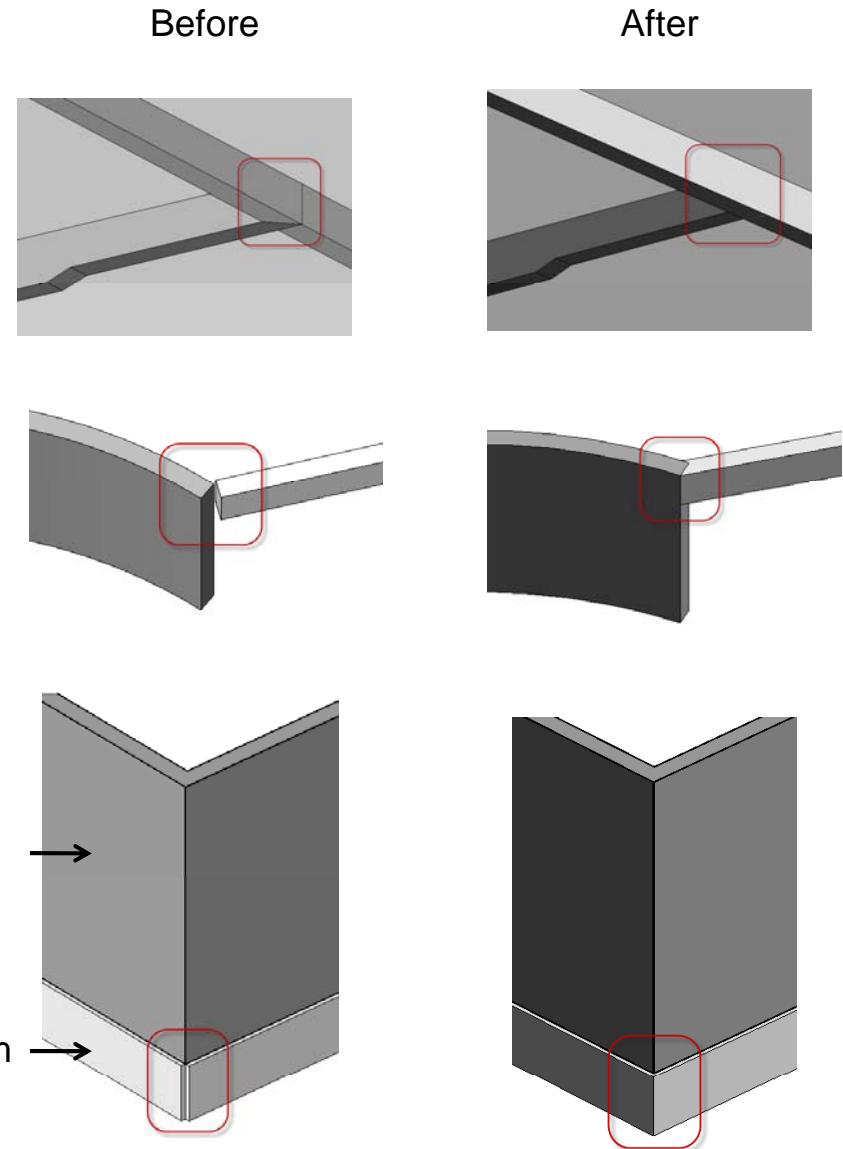
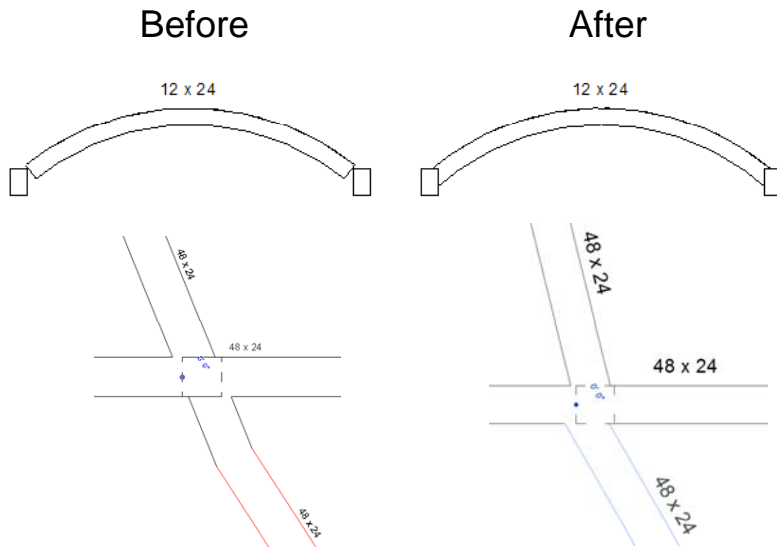
*More flexibility when placing and modifying trusses*

# Enhanced Design Features

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## Concrete Join/Cleanup Enhancements

- Complex beam profiles
- Column joints
- Wall joins
- Curved beams



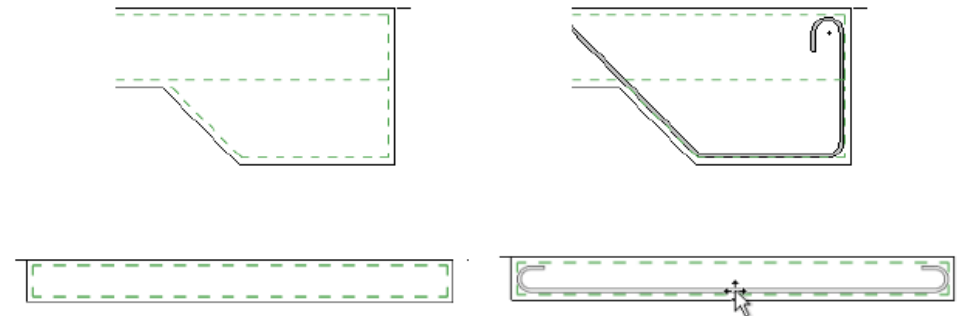
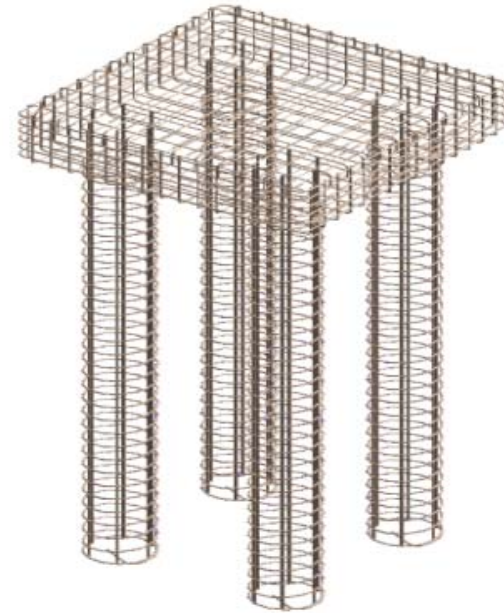
*Display more accurate representation at concrete joins*

# Enhanced Design Features

*Autodesk Revit Structure 2011*

## Reinforcement Enhancements

- 3D shape spiral
- Slab edge reinforcement
- Configuring rebar sets
- Additional hook bend radius for rebar
- Concrete host cover reference visibility
- Major spacing of area reinforcement in tags



*More rebar options when modeling and documenting concrete reinforcement*

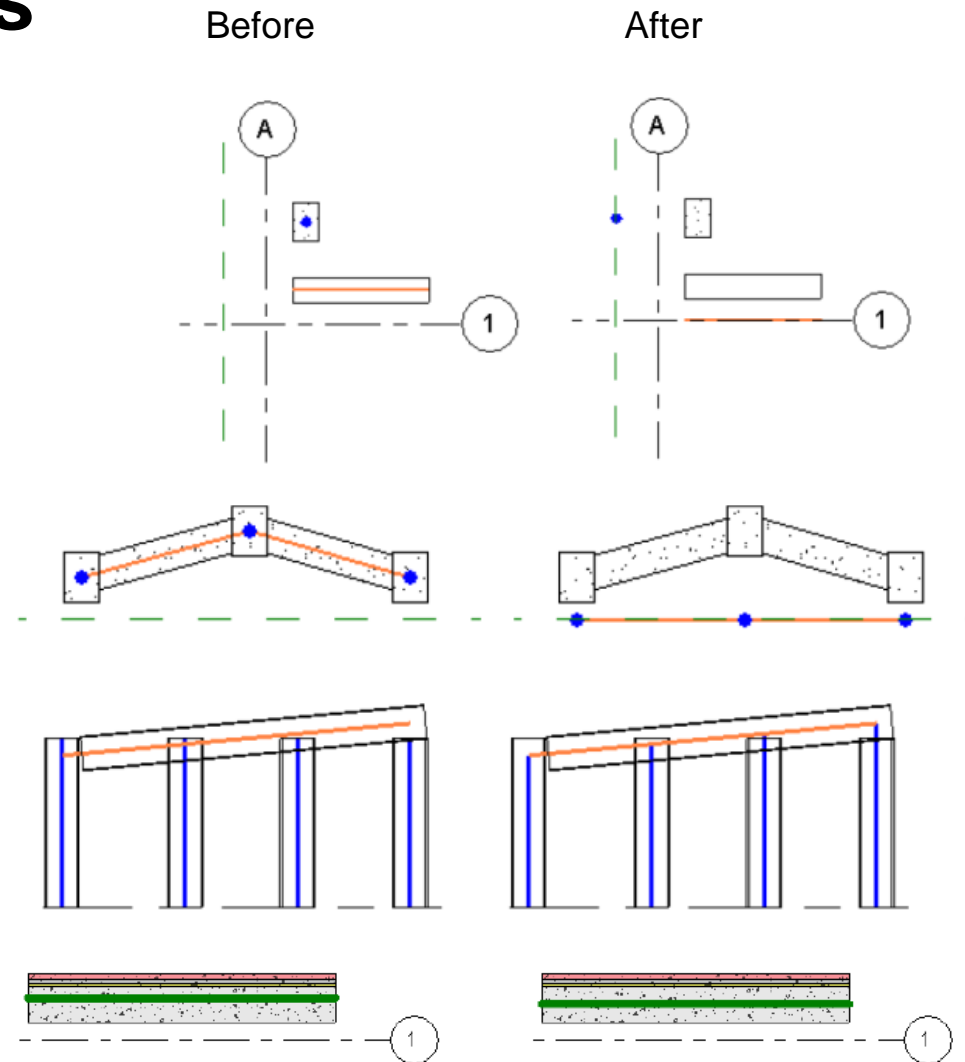


# Enhanced Design Features

*Autodesk Revit Structure 2011*

## Analytical Model Enhancements

- Horizontal projections:
  - From the center of a wall core
  - From columns and beams
- Vertical projections:
  - Auto-detect behavior of columns
  - From beams
- Manual analytical adjustment of columns
- Rigid links in beams



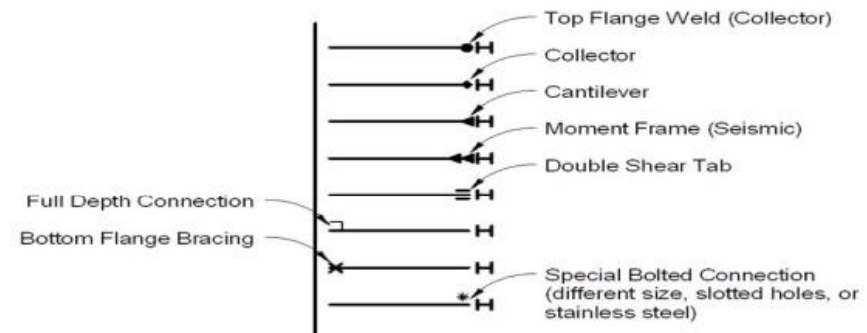
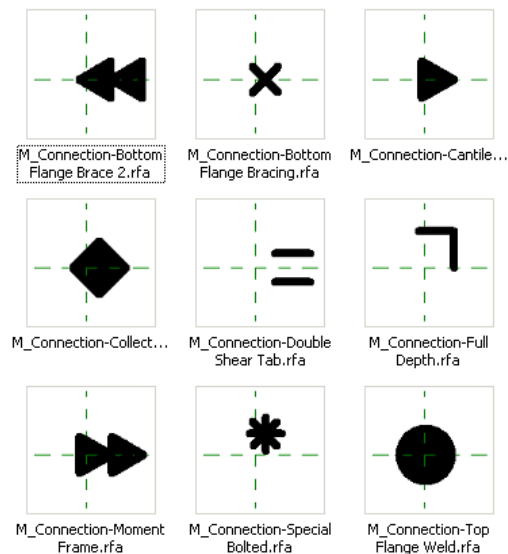
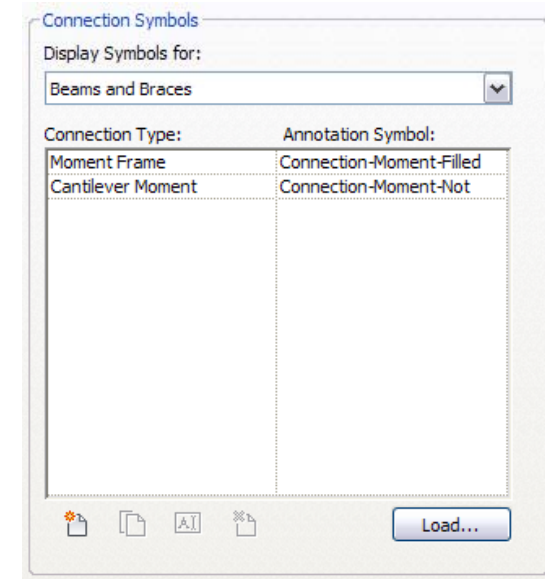
*More flexibility for automated and manual analytical model adjustments*

# Enhanced Design Features

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## Connection Symbol Enhancements

- Additional connection symbol families
- Load and manage connection symbol families within the structural settings dialog box



*Ability to display several new symbolic connection types for documentation*

# Improved Productivity

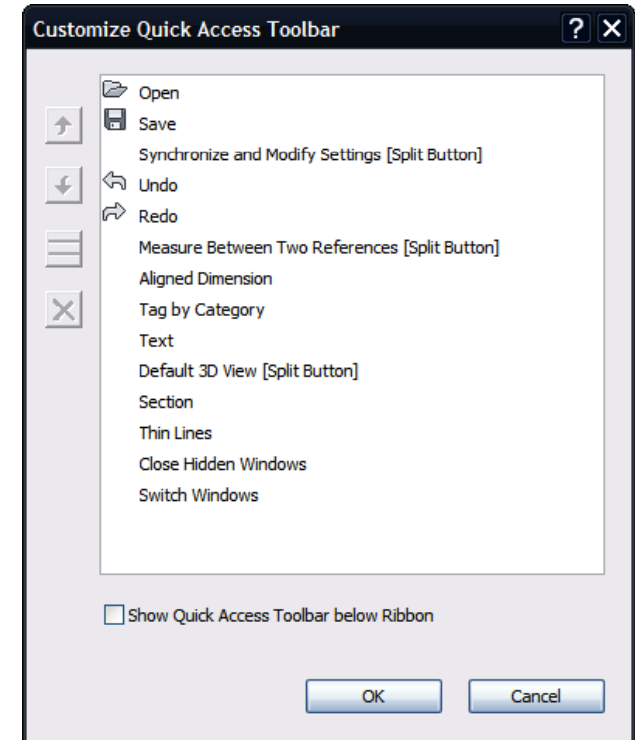
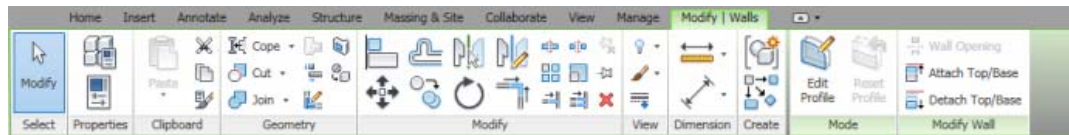


# Improved Productivity

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## User Interface Improvements

- Properties palette
- Quick Access Toolbar customization
- Status bar tools
- Modify tab/contextual switching
- Repeat last command
- Resizable dialog boxes



*Easier access to tools  
and commands*

# Improved Productivity

*Autodesk Revit Structure 2011*

## Large-Team Workflow Linked Models

- Worksets control
- View filters
- Tag elements



## Performance Enhancements

- Application startup
- Model open
- Sync with central file
- Linked files
- User interface reaction time



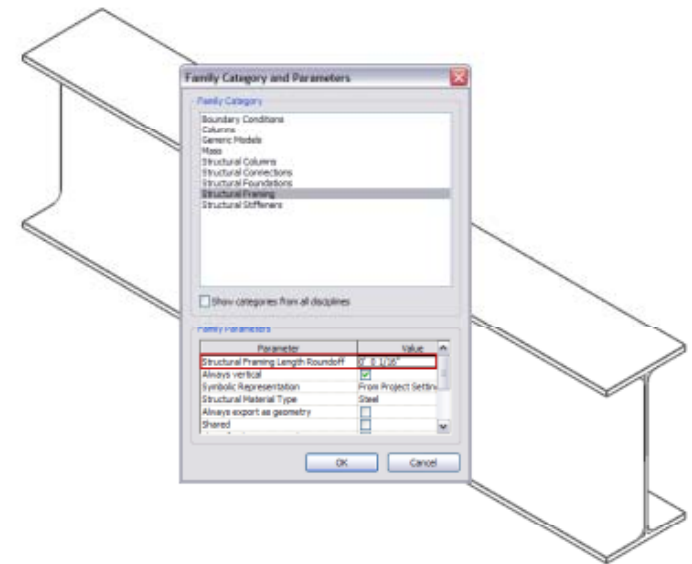
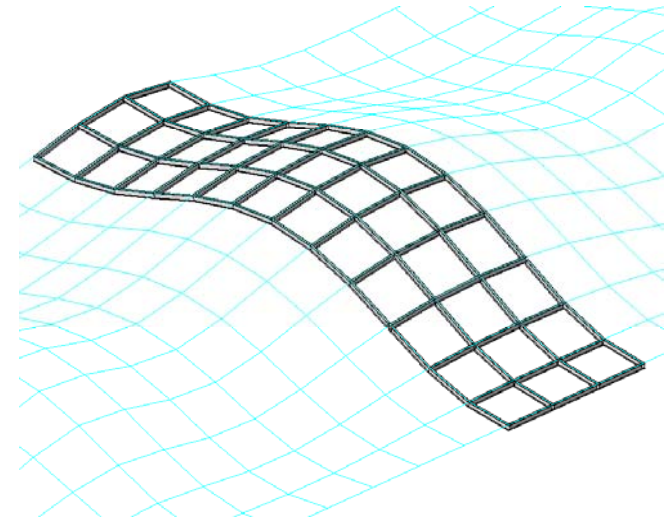
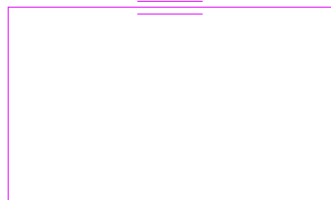
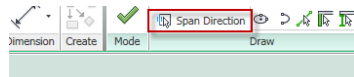
*Improved large-team workflows  
and software performance*

# Improved Productivity

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## Modeling Enhancements

- Object selection
- Temporary dimensions
- 3D alignment
- Beam placement using 3D CAD geometry
- Control beam length tolerance
- Split walls with gap
- Span direction for metal deck floors



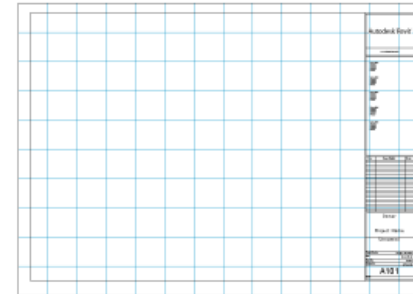
*Improvements to help make everyday task easier*

# Improved Productivity

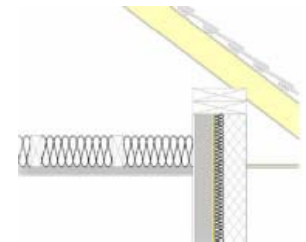
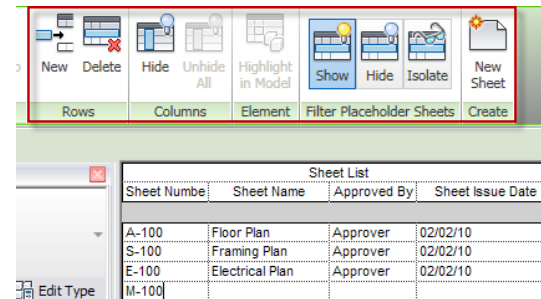
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## Documentation Enhancements

- Custom elevation tag
- Drawing list improvement
- Sheet layout grid
- “A” and “W” user-defined parameters available in schedule field
- Convert between line types: model, detail, symbolic
- Insulation tool
- Conditional formatting to schedules



Structural Framing Schedule				
Type	A	W	Length	Weight (Tons)
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
WBX10	0.02 SF	10	31' - 5"	0.15708
W12X26	0.05 SF	26	10' - 11 7/8"	0.142906
W12X26	0.05 SF	26	10' - 5"	0.135362
W12X26	0.05 SF	26	10' - 11 7/8"	0.142871
W12X26	0.05 SF	26	10' - 4 7/8"	0.135307
W12X26	0.05 SF	26	10' - 11 7/8"	0.142859



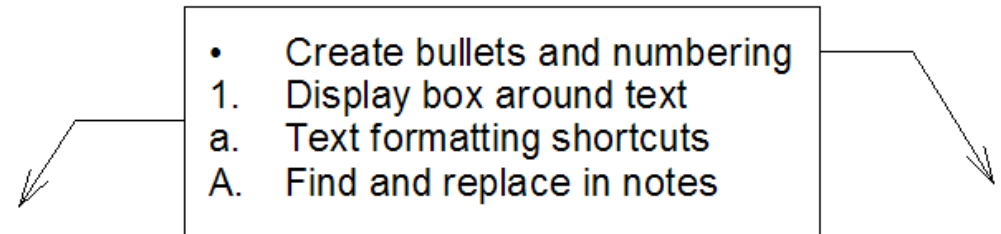
*More productivity tools for construction documentation*

# Improved Productivity

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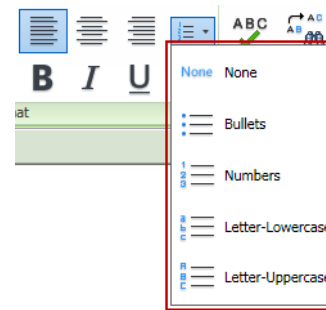
## Text Improvements

- Create bullets and numbering
- Display box around text
- Text formatting shortcuts
- Find and replace in notes



## Leader Improvements

- Enhanced leader attachment
- Ability to adjust leader end distance



Formatting Shortcuts	
<b>Bold</b>	(Ctrl+B)
<i>Italic</i>	(Ctrl+I)
<u>Underline</u>	(Ctrl+U)

*More choices available when placing your text and leaders*

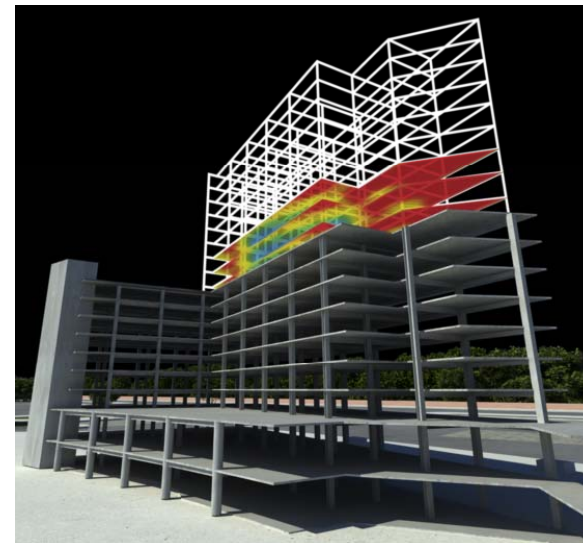
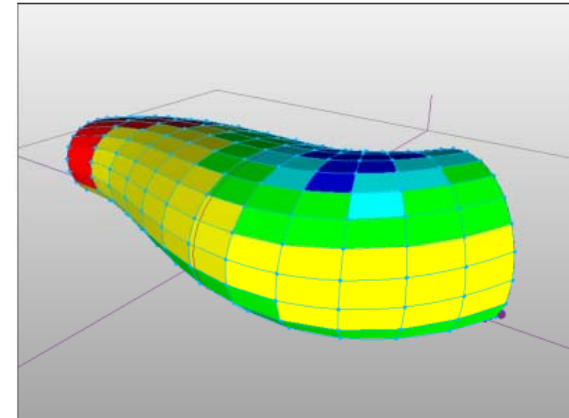


# Improved Productivity

*Autodesk Revit Structure 2011*

## Autodesk Revit API

- Dynamic Model Update:
  - Element Add/Change/Delete notifications
  - Programmatic editing in response to Revit model changes
- Analysis visualization framework
- Advanced selection and element filtering
- New user-interface tools
- Custom error handling



*Additions in the Autodesk Revit API bring higher integration*

# Extended Capabilities

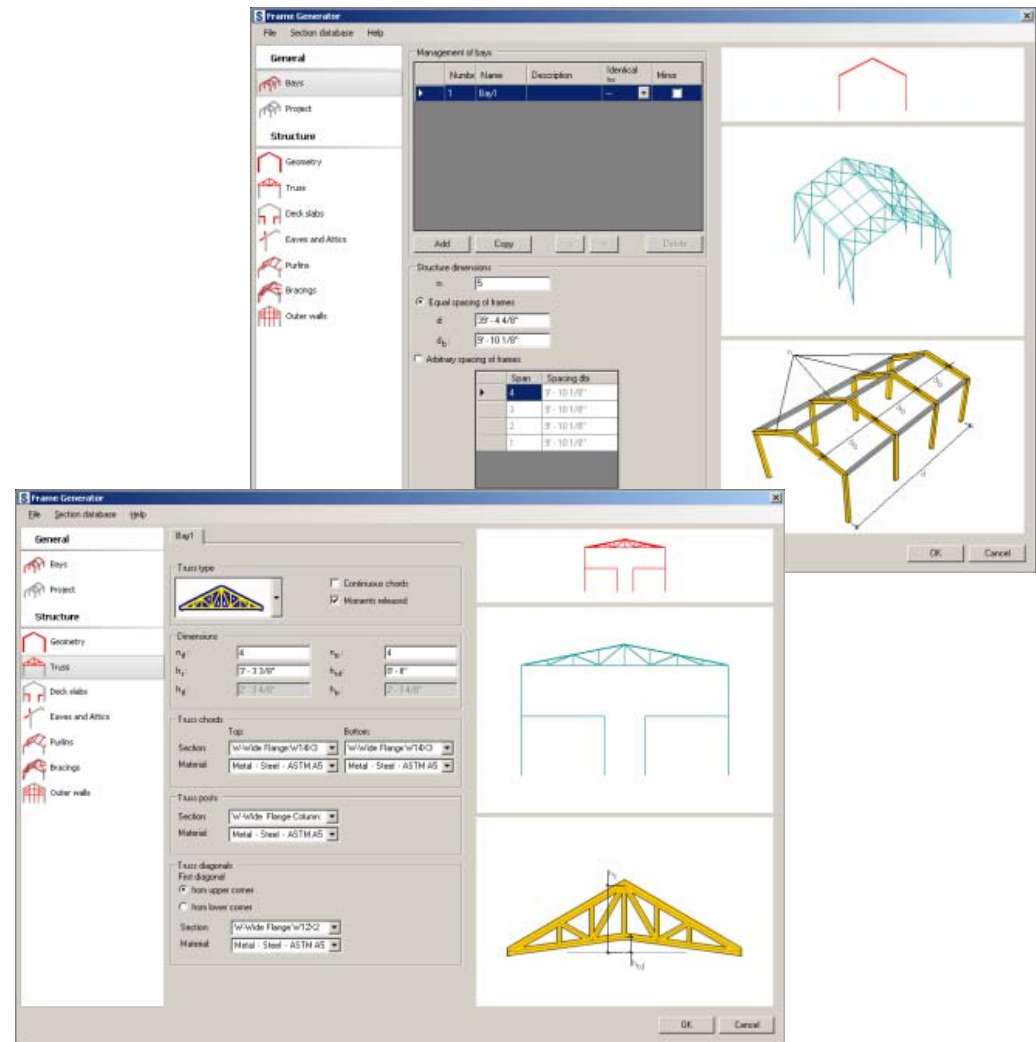
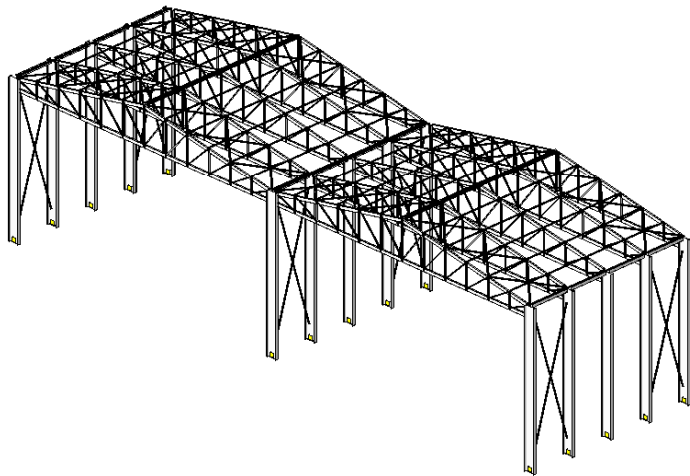


# Extended Capabilities

Autodesk Revit Structure 2011

## Frame Generator Extension

- Generate structural elements
- Geometric frame parameters
- Various graphical modes



Quicker and easier creation of simple 3D framing models

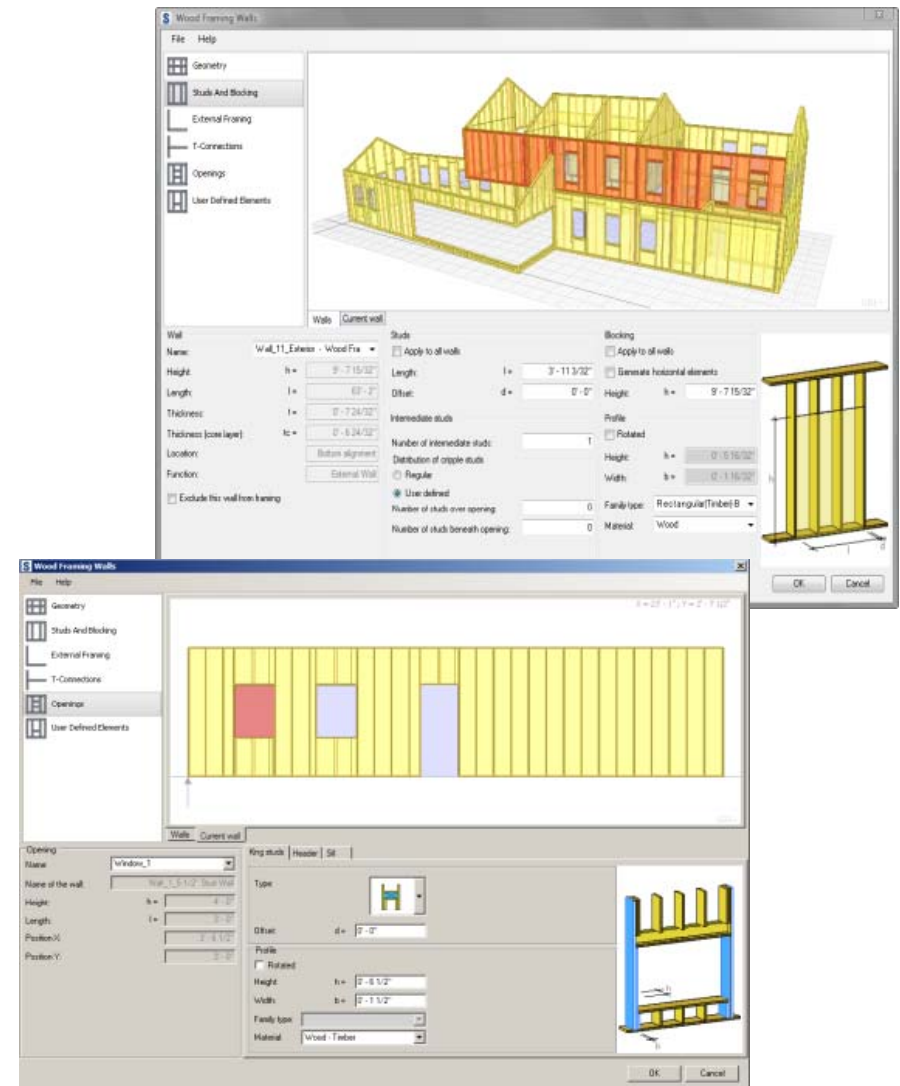


# Extended Capabilities

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## Wood Wall Framing Extension

- T and L connections
- Stud spacing and blocking
- Window sill and header configurations
- Multiselection option
- More flexibility when placing stud locations



*Quicker and more accurate modeling  
of wall framing structures*



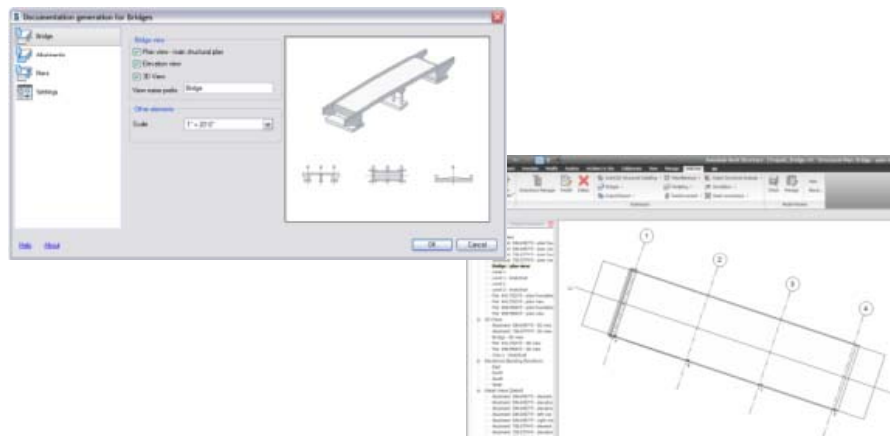
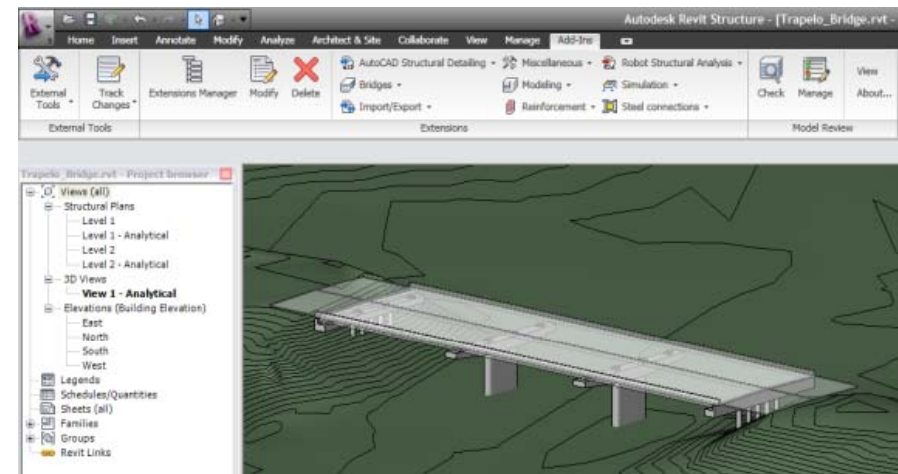
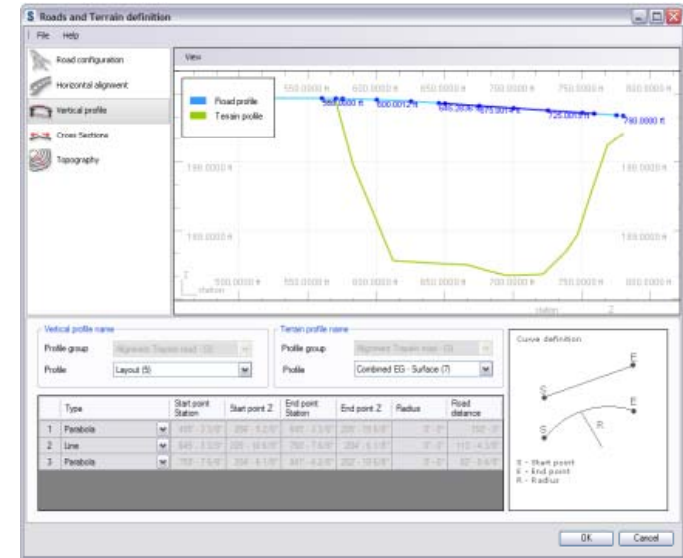
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# Extended Capabilities

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## Bridge Extensions

- Roads and terrain definition
- Integration with AutoCAD® Civil 3D® software
- Bridge definition creation
- Document generation
- Customization of bridge families



Create more accurate and efficient 3D bridge models



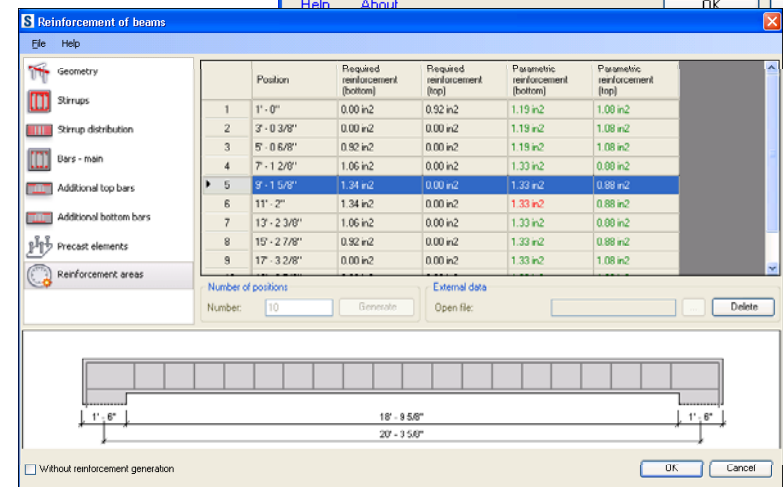
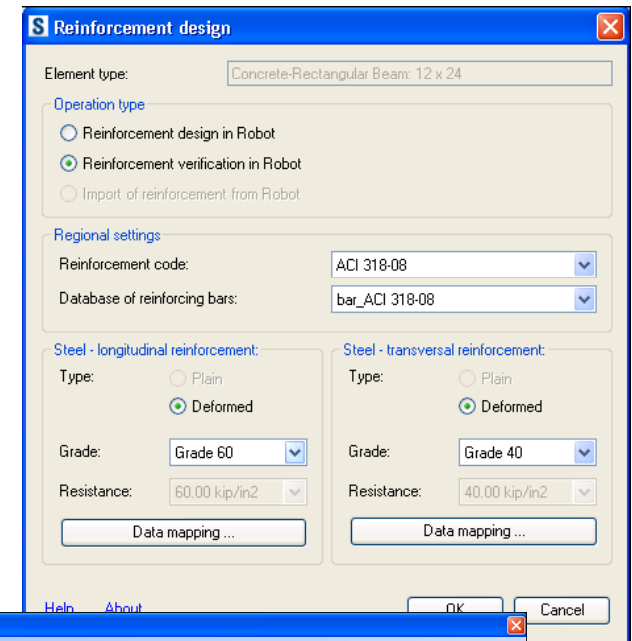
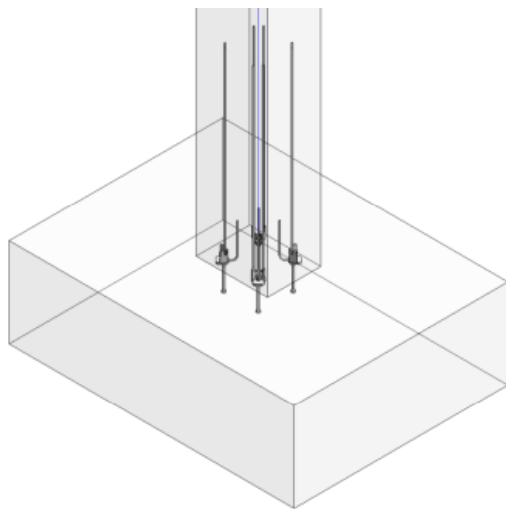
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# Extended Capabilities

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## Reinforcement Extension Improvements

- Define and generate prefabricated elements
- Compare required reinforcement and user-defined reinforcement
- Generate rebars based on shape codes



*Better efficiency when designing reinforcement using Revit® Extensions*



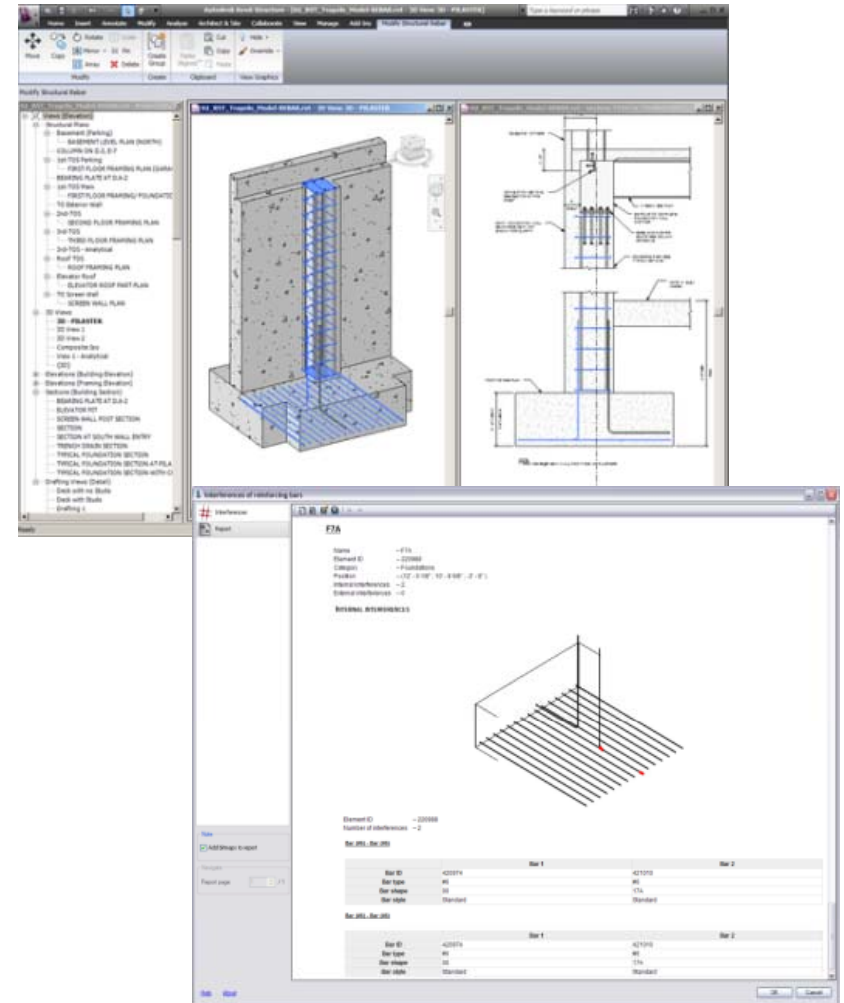
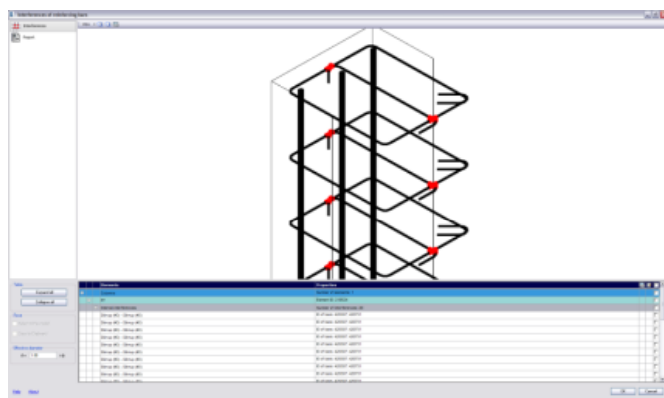
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# Extended Capabilities

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## Interferences of Reinforcing Bars

- Display collisions in tabular and graphical form
- Highlight rebar collisions found within the model
- View and print results in HTML format
- Export to Microsoft® Excel® or Microsoft® Word



*Help reduce costly on-site redesign and rework issues due to improper placement of rebar locations*



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# Extended Capabilities

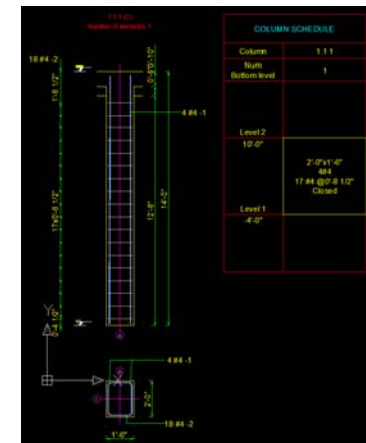
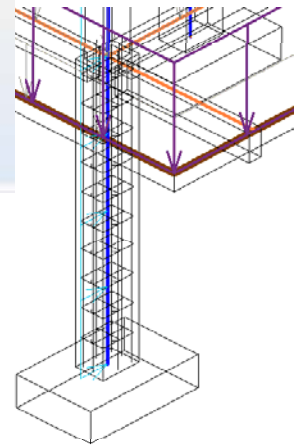
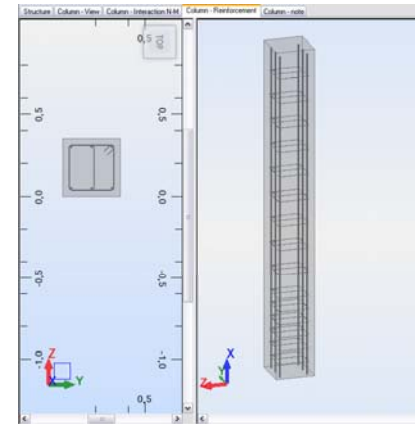
*Autodesk Revit Structure 2011*

## Reinforcement Drawings Extension Update

- Autodesk® Robot™ Structural Analysis software elements imported from a Autodesk Revit Structure file now appear in AutoCAD® Structural Detailing software
- Rebar defined by user exposed in AutoCAD Structural Detailing

## Reinforcement Design Extension Update

- Rebar mapping functionality
- User-defined rebar now recognized in Robot Structural Analysis



*Interoperability improvements for creating 2D drawings and analysis design*



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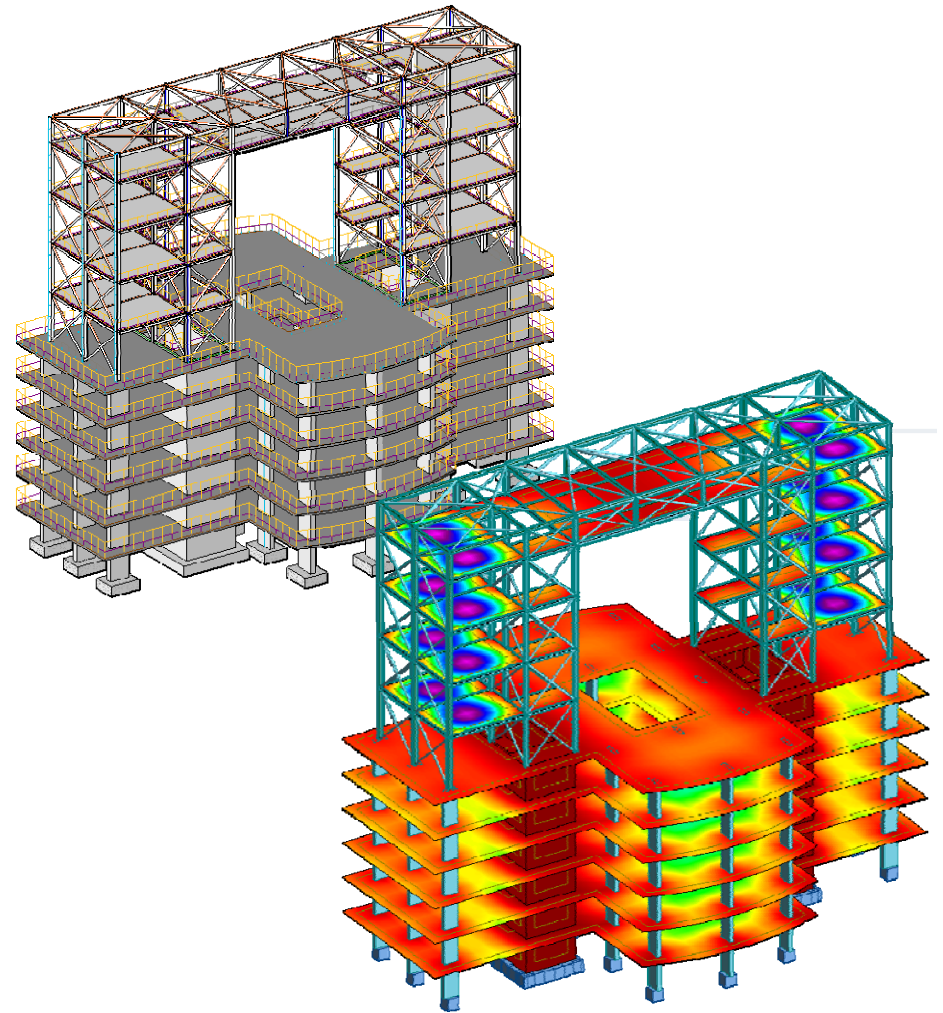


# Extended Capabilities

*Autodesk Revit Structure 2011*

## Improved link with Robot Structural Analysis

- Steel connection transfer
- Transfer of required reinforcement
- Improved content mapping
- Transfer of plan views as background images



*Enhanced BIM workflow with  
Autodesk Revit Structure*



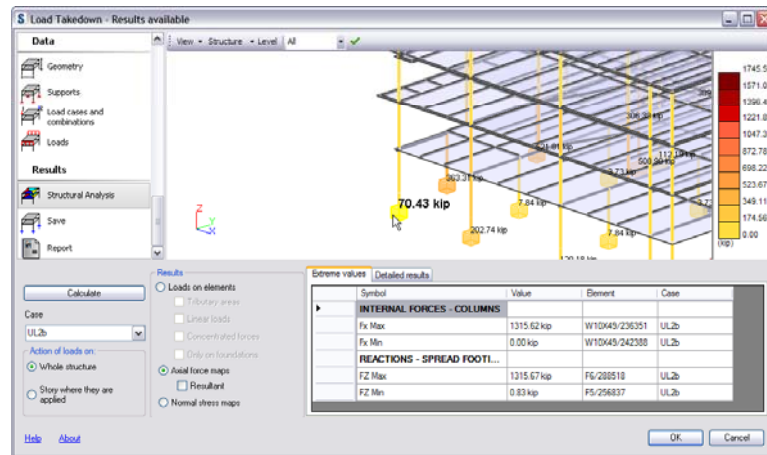
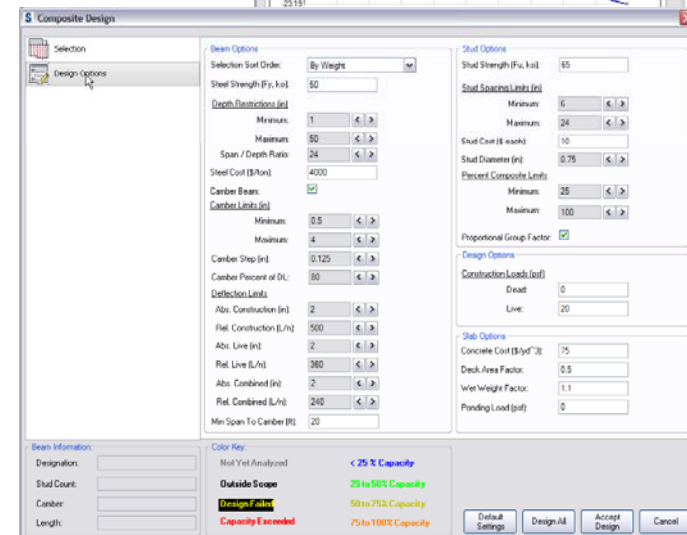
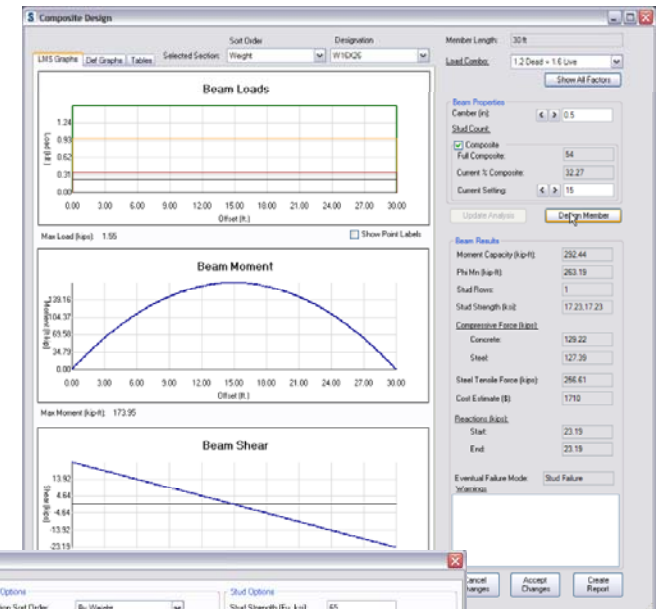
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# Extended Capabilities

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## Load Takedown and Steel Composite Design Extensions

- Included in the Revit Extension package
- No longer need a valid Robot Structural Analysis license



Tools to better drive engineers from BIM to analysis



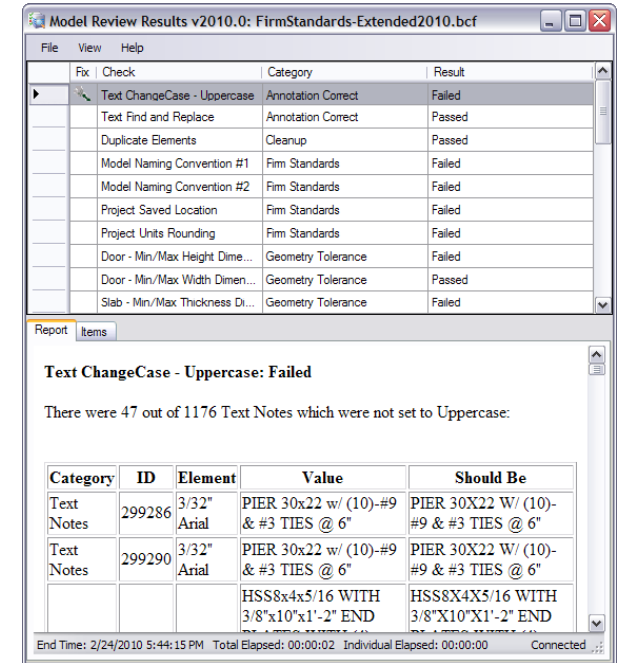
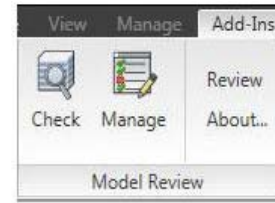
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# Extended Capabilities

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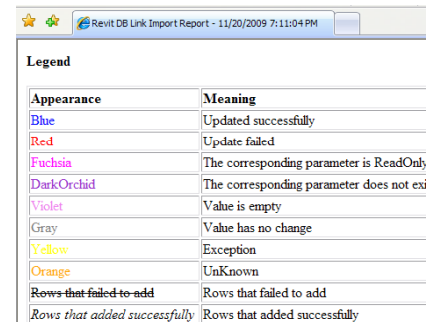
## Model Review

- Audit building information
- Evaluate adherence to standards
- Help maintain model consistency



## Autodesk® Revit® DB Link

- Import/export model information
- Maintain relationships
- Update graphic/nongraphic information



BaseOffset	TopLevel	BaseLevel	AnalyzeAs	Length
-3.66666666666667	242072	329	1	13.97916666666678
-3.66666666666667	242072	329	1	13.97916666666678
-3.16666666666667	242072	329	1	13.47916666666678
-3.16666666666667	242072	329	1	13.47916666666678
-3.66666666666667	242072	329	1	13.97916666666678
-2.66666666666667	32567	329	1	12.99999999999999
-3.83333333333333	242072	329	1	14.14583333333345
-3.33333333333333	242072	329	1	13.64583333333345
-3.33333333333333	242072	329	1	13.64583333333345
-3.83333333333333	242072	329	1	14.14583333333345
-2.66666666666667	32567	329	1	12.99999999999999

Save more time auditing building information models, and better link models to external databases



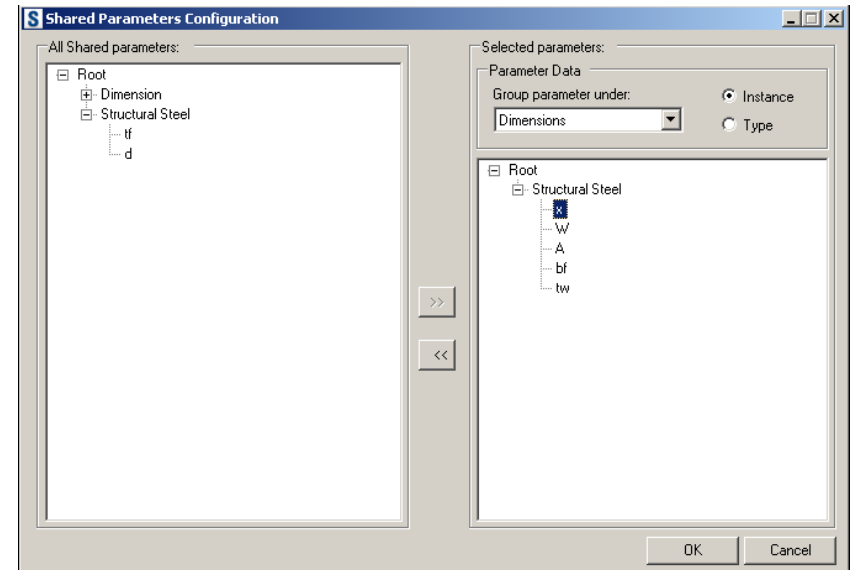
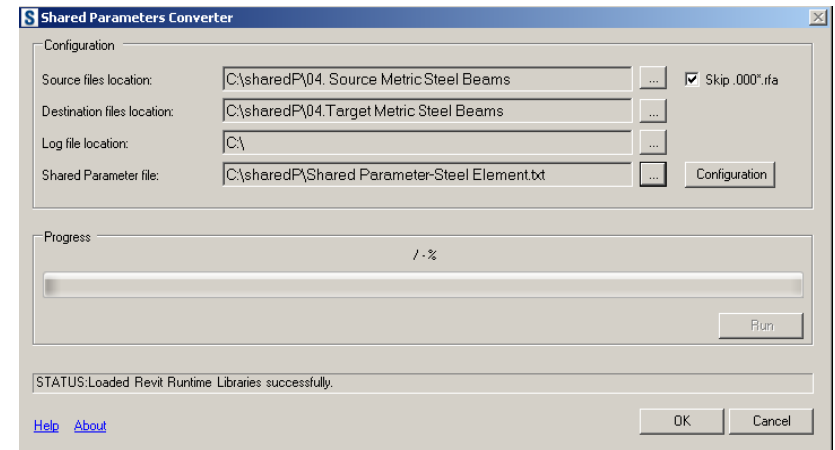
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# Extended Capabilities

*Autodesk Revit Structure 2011*

## Shared Parameters Converter Extension

- Change family parameters to Revit shared parameters
- Add or replace shared parameters to Revit families file

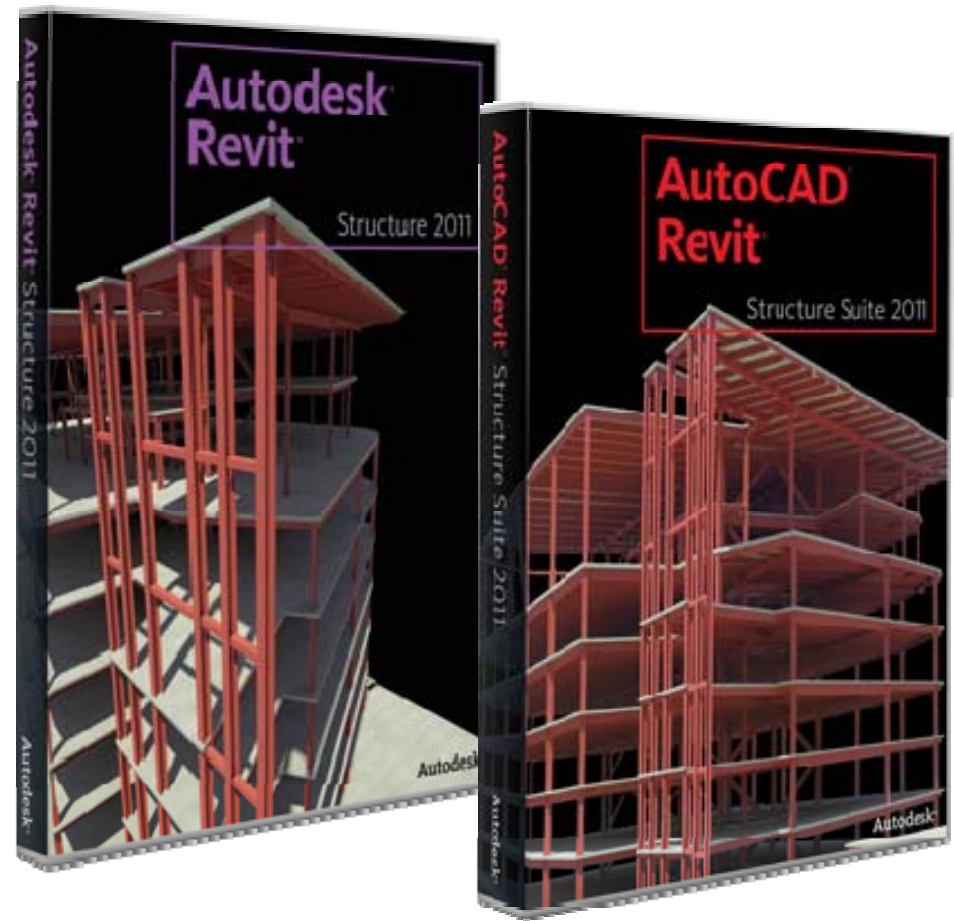


*Ability to change family parameters  
to shared parameters*



# Autodesk Revit Structure 2011

- Enhanced design features
- Improved productivity
- Extended capabilities



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