What's New in Revit® Structure 2008

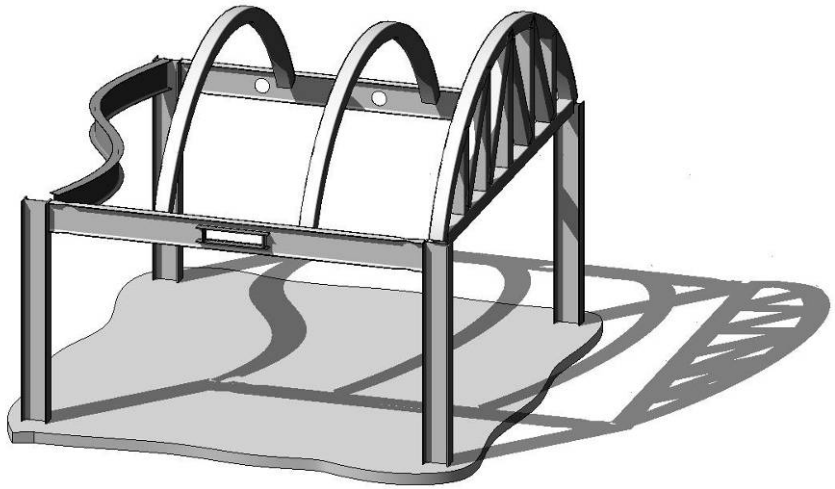
First and Last Name
Presenters Title

Autodesk®

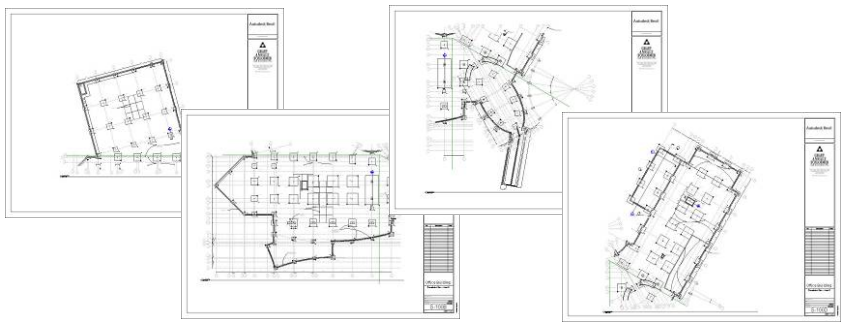
Release Themes

Revit Structure 2008

Advanced Modeling



Improved Construction Documentation



Usability

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Top New Features

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Modeling

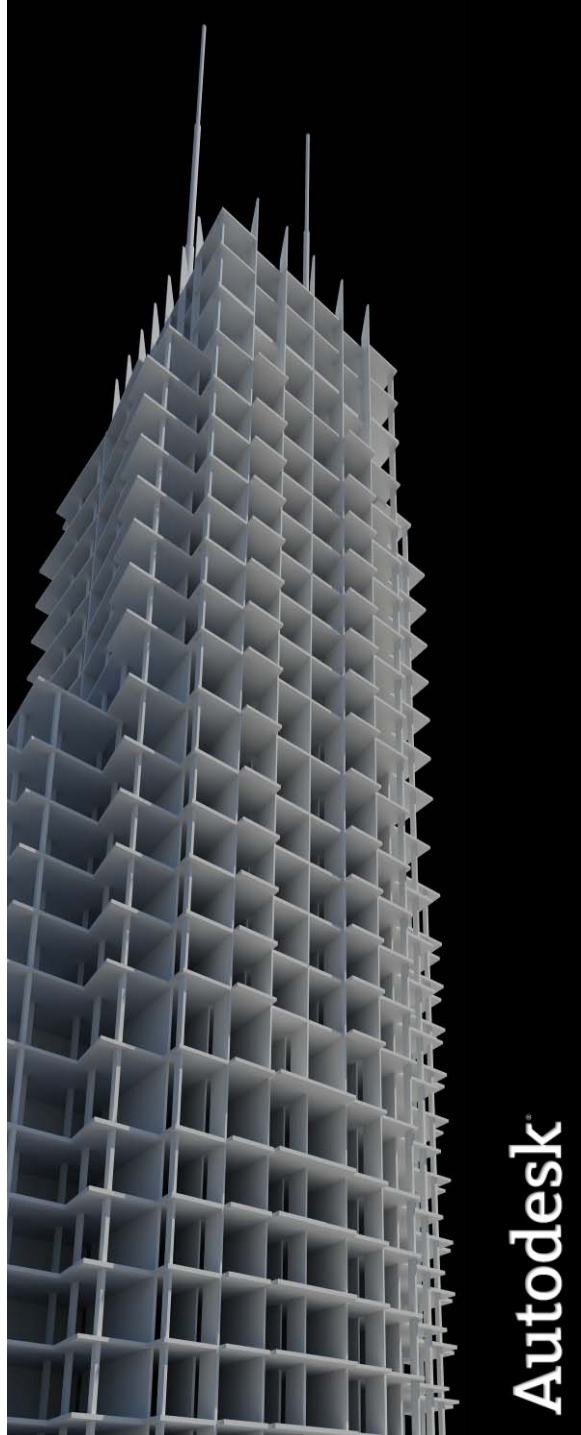
- Curved Structural Beams
- Openings in Structural Beams and Columns
- Parametric Structural Trusses
- Warped Structural Concrete Slabs

Construction Documentation

- Dependent Views for Split Drawings
- Dimension Improvements
- Element Visibility

Usability

- Element Hide/Isolate Overhaul
- Group Improvements



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Structural Modeling Improvements

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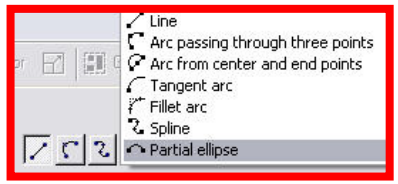
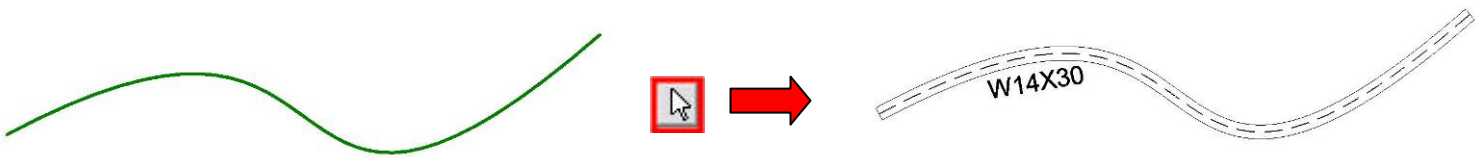
Curved Beams

- Create horizontally and vertically curved beams using the beam tool

- Beams based on arcs, ellipses, and splines



- "Pick" tool for beam creation



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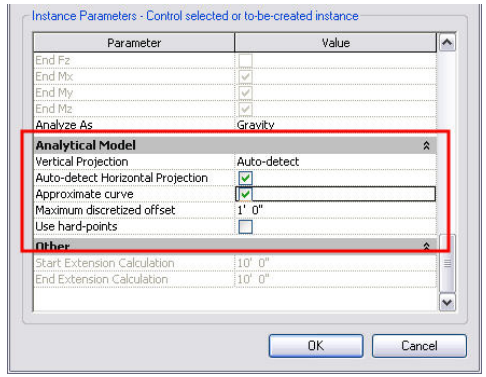
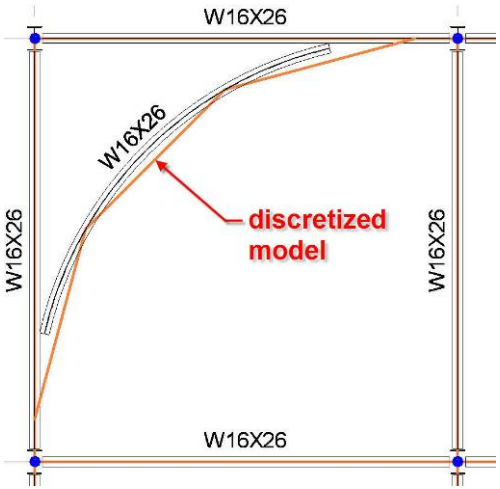
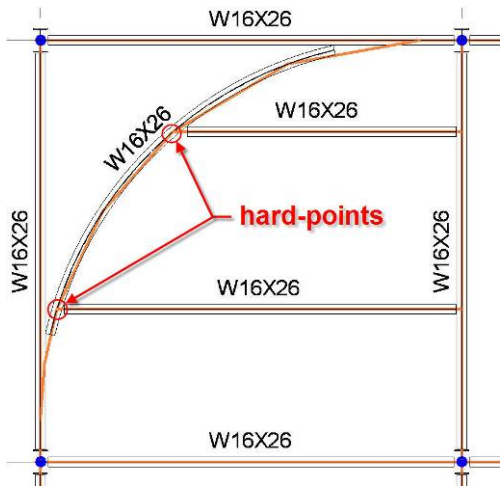
Curved Beams

- Discretization of Analytical Curve
  - Approximate Curve
  - Maximum Discretized offset
  - Analytical hard-points for supported members







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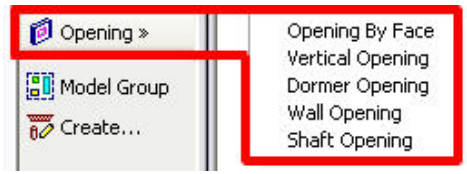
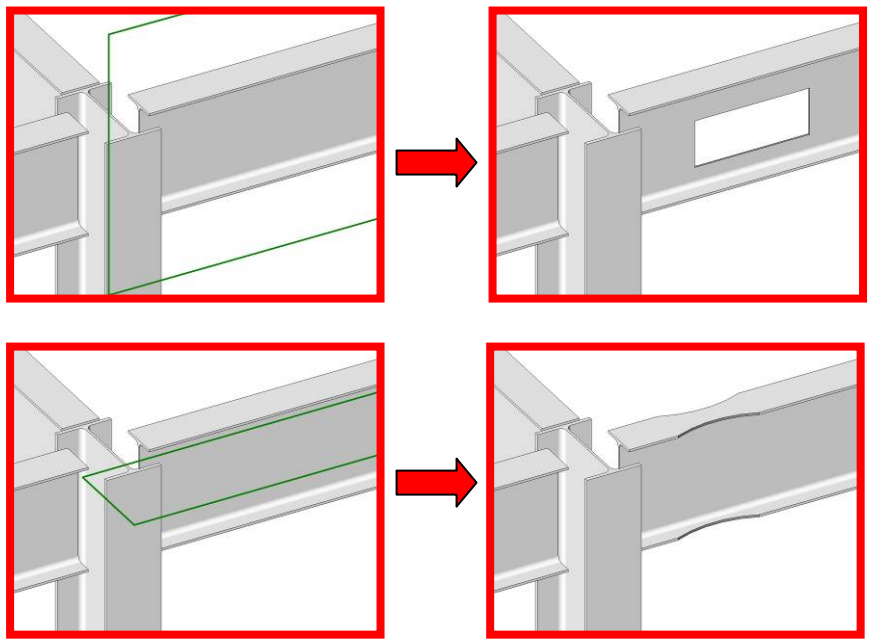
Beam and Column Openings

- Opening toolbar on the Modeling Tab
  - Opening by Face - *NEW*
  - Vertical Opening
  - Dormer Opening
  - Wall Opening
  - Shaft Opening



- Opening By Element Face
  - Vertical Face
  - Horizontal Face



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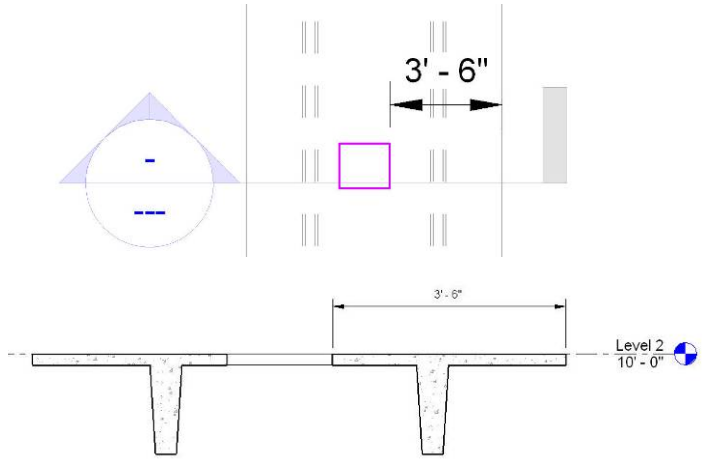
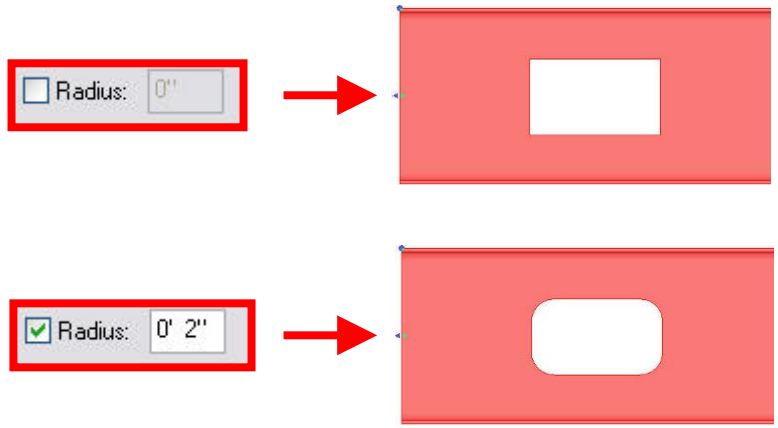
Beam and Column Openings

- Constrain openings in Sketch Mode



- "Radius" option for openings



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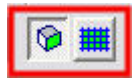
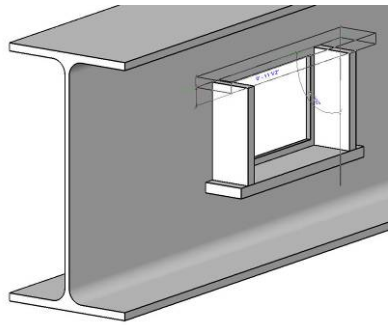
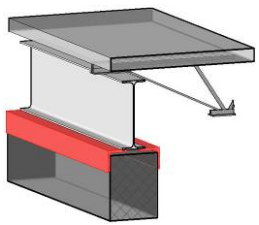
Line based Components on faces - Stiffeners

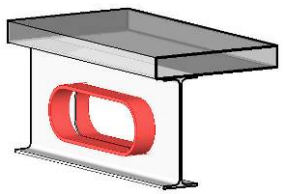
- "Place on Face" component creation
  - Two-pick creation
  - Pre-highlights planar face

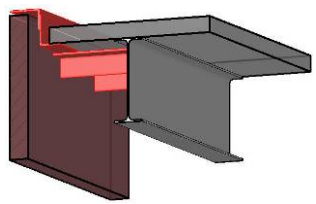


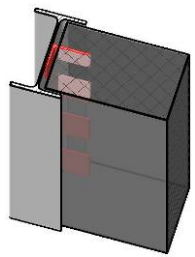


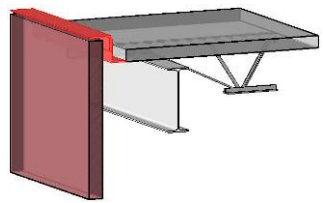
- Line based component content
  - Closed loop stiffener – circular
  - Closed loop stiffener – semicircular end
  - Linear stiffener – angle
  - Linear stiffener – plate
  - Linear stiffener – channel











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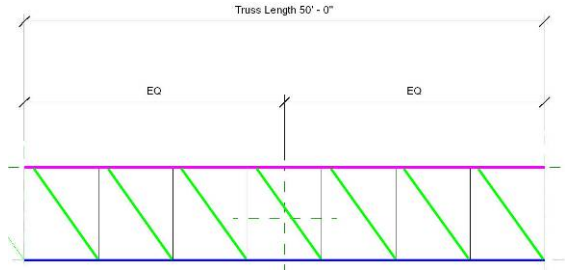
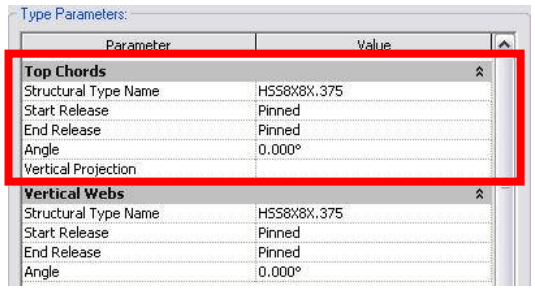
Structural Parametric Trusses

- A collection of beams and braces constrained by a Truss Family
  - Truss tool on Modeling Bar
  - No External Tools Required

- Truss Family dedicated layout tools
  - Truss Top Chord
  - Truss Bottom Chord
  - Truss Web



- Truss Type properties define beams and braced created in truss



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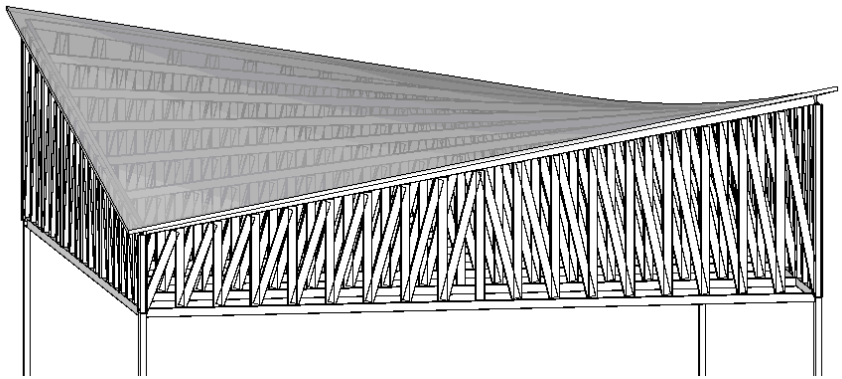
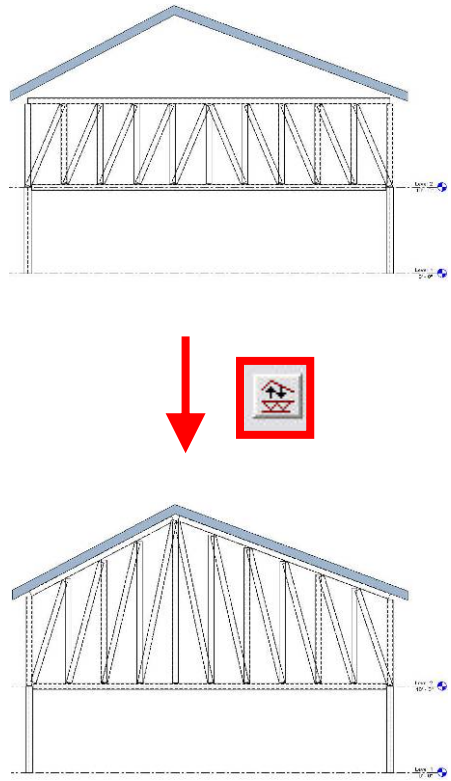
Structural Parametric Trusses

- Truss Edit Tools
  - Attach/Detach Top Chord
  - Edit Profile
  - Reset Truss





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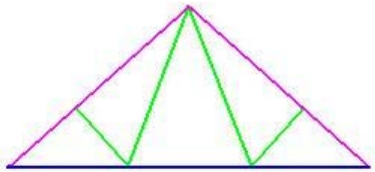
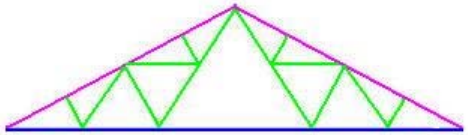
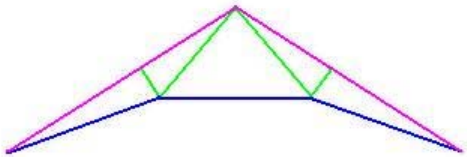
Structural Parametric Trusses



Simple Fink or W Truss

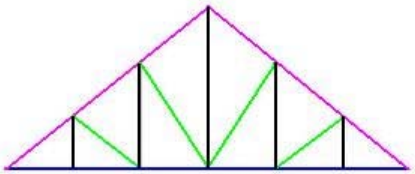


Fink Truss

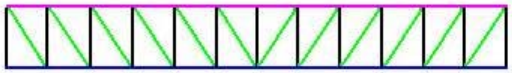


Fink Truss with Cambered Bottom Chord

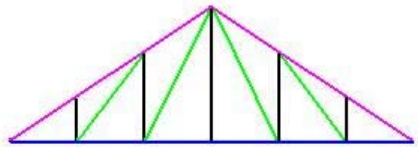
Howe Flat Truss



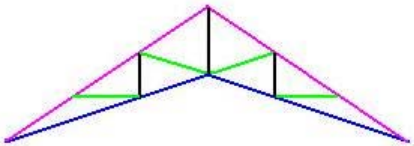
Howe Gabled Truss



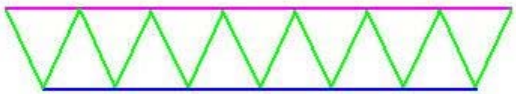
Pratt Flat Truss



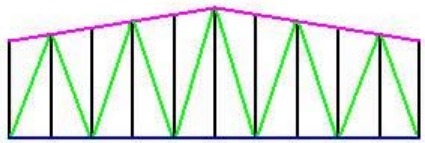
Pratt Gabled Truss



Scissor Truss



Warren Truss



Warren Truss with Cambered Top Chord

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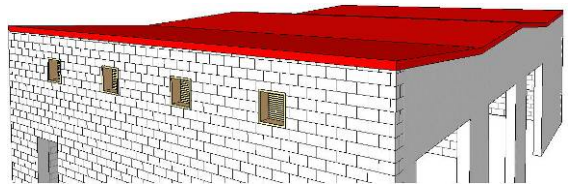
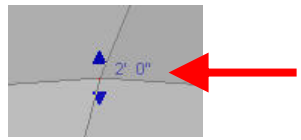
Warped Structural Concrete Slabs

- Modify concrete slabs with straight edges to include multiple slopes for draining



- Slab Modification Tools
  - Sub-Elements Tool
  - Draw Points Tool
  - Draw Split Line Tool
  - Pick Supports Tool



- Variable and constant thickness parameter for slab materials

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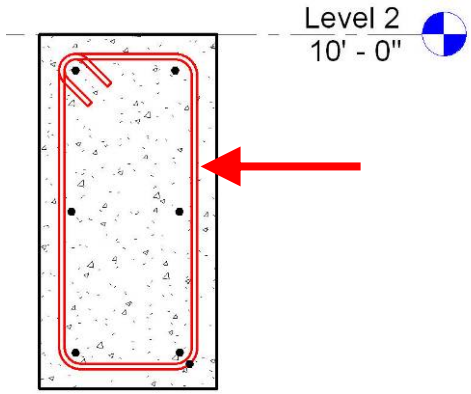
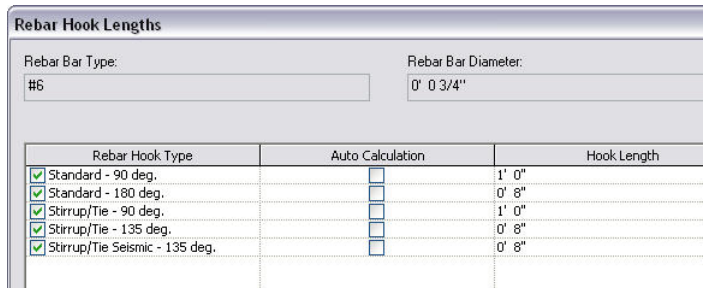
Rebar Improvements

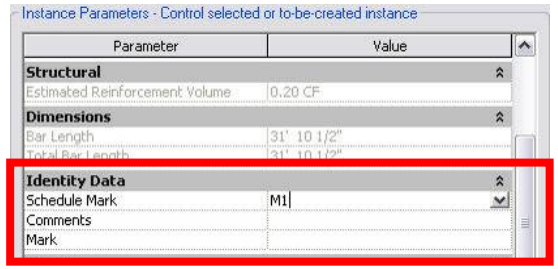
- Physical representation of rebar
  - “Fine” detail level in 2D views
  - Side references for snapping



- Rebar and Rebar Hook have “Style” parameter
  - Standard
  - Stirrup/Tie



- Schedule Mark parameter
  - Local collections of related bars
  - “Select Rebar by Schedule Mark”



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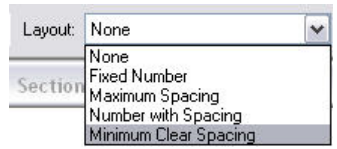
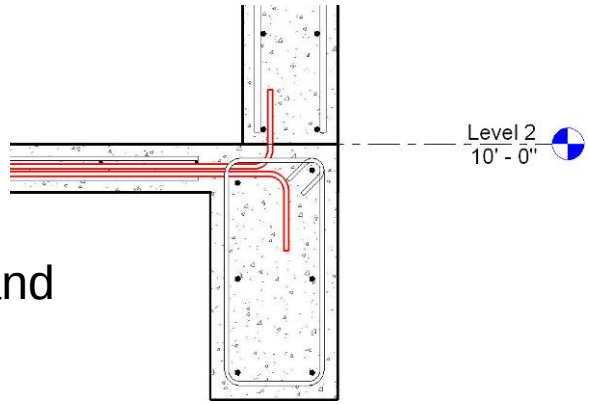
Rebar Improvements

- “Minimum Clear Spacing” layout rule for Rebar sets



- “Estimated Rebar Volume” parameter for concrete host

- “Rehost” tool for Rebar
  - Rebar extended through multiple hosts
  - Identify rebar with host
- Path Reinforcement settings
  - “Alternating Bars Offset”
  - Start and End hooks for Primary and Alternating bars



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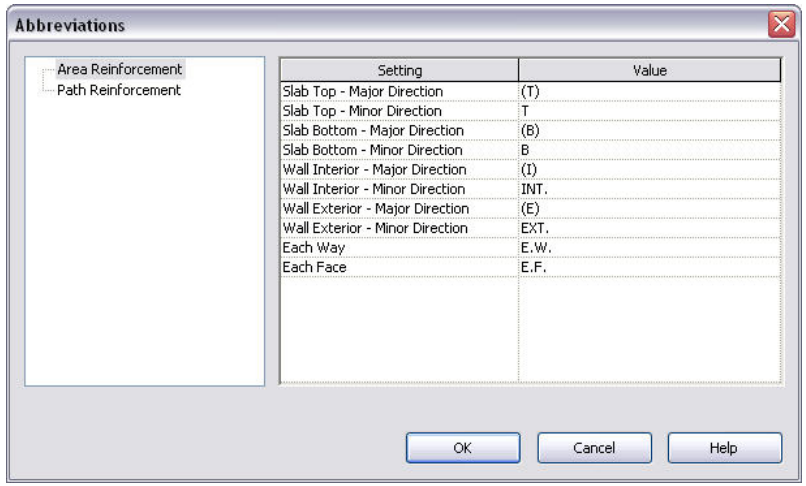
Rebar Improvements

- Customizable abbreviations for Area Reinforcement
  - Slab Top – Major and Minor Direction
  - Slab Bottom – Major and Minor Direction
  - Wall Interior – Major and Minor Direction
  - Wall Exterior – Major and Minor Direction
  - Each Way
  - Each Face



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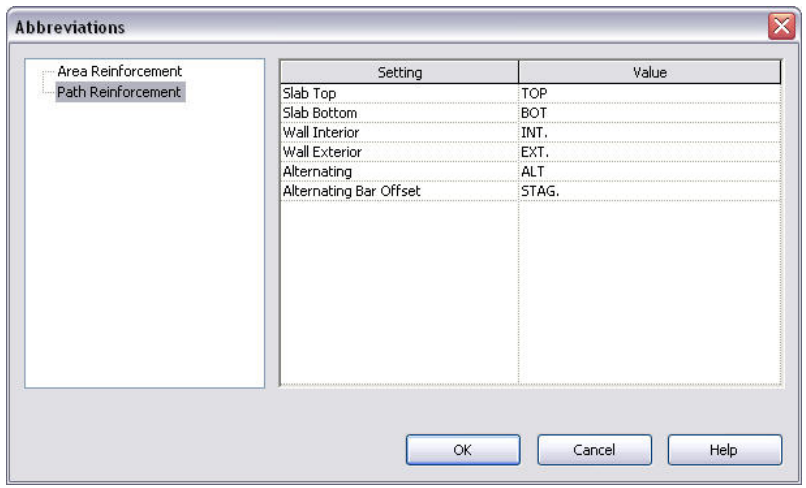
Rebar Improvements

- Customizable abbreviations for Path Reinforcement
  - Slab Top and Bottom
  - Wall Interior and Exterior
  - Alternating
  - Alternating Bar Offset



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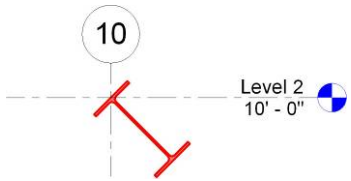
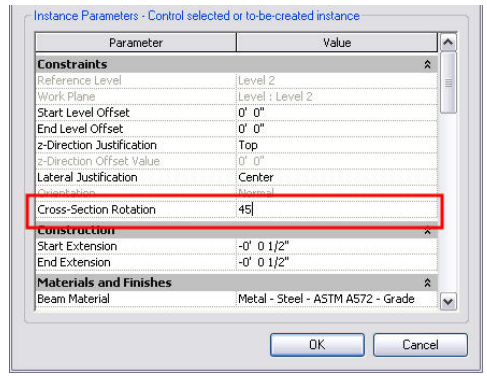
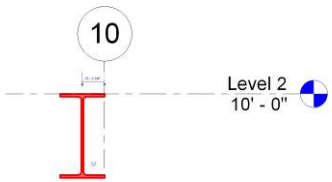
Beam Parameters

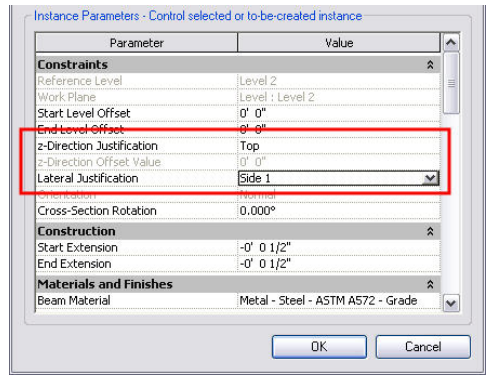
- “Cross-Section Rotation” parameter (formerly “Angle”)



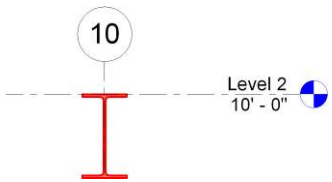


- “Lateral Justification” parameter (formerly “Horizontal Justification”)





- “z-direction Justification” parameter (formerly “Vertical Justification”)



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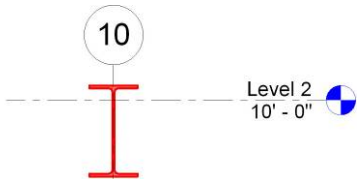
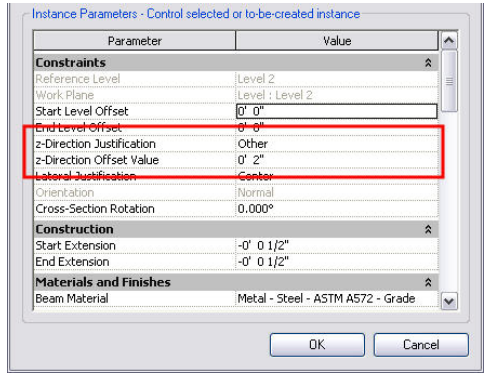
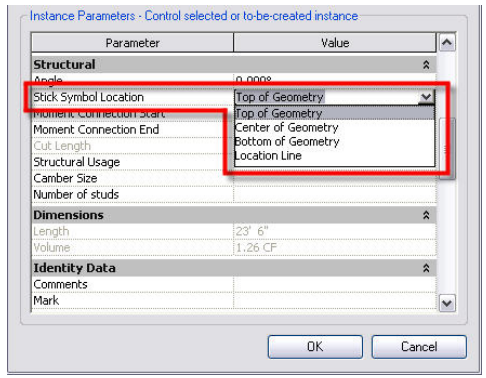
Beam Parameters

- "z-Direction Justification" parameter controls Geometry Offset





- "Stick Symbol Location" parameter (formerly "Stick Symbol on Top")
  - Top of Geometry
  - Center of Geometry
  - Bottom of Geometry
  - Location Line



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Advanced Modeling

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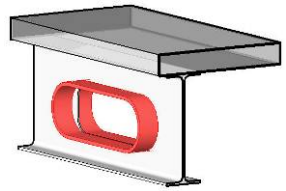
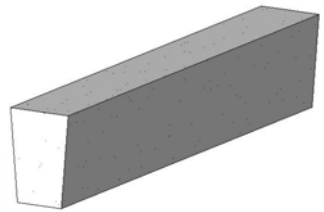
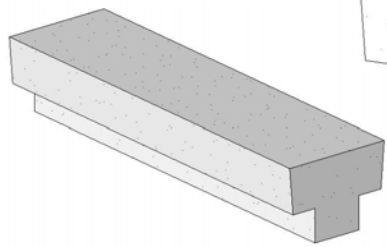
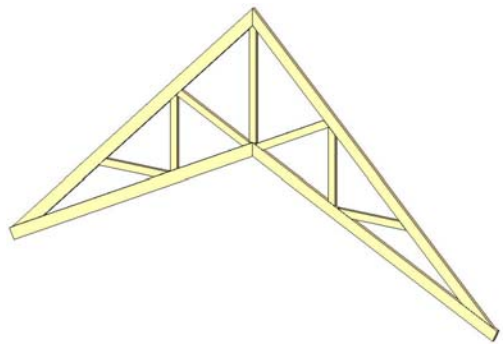
Structural Content

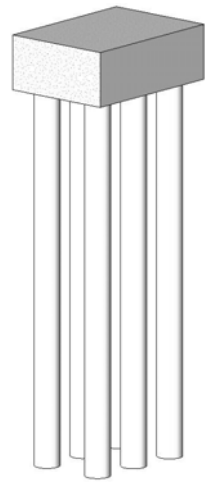
- Structural Stiffeners
  - Closed loop stiffener – circular
  - Closed loop stiffener – semicircular end
  - Linear stiffener – angle
  - Linear stiffener – plate
  - Linear stiffener – channel
- Pan joist
- Pan joist with ledges
- Pile Caps
- Structural Trusses











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Construction Documentation

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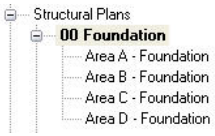
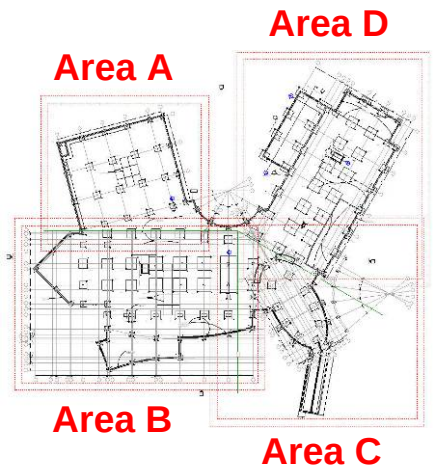
Dependent Views

- Ability to create Primary and Dependent Views
  - One view split up onto multiple sheets
  - One set of annotations
  - Varying Crop Boundaries

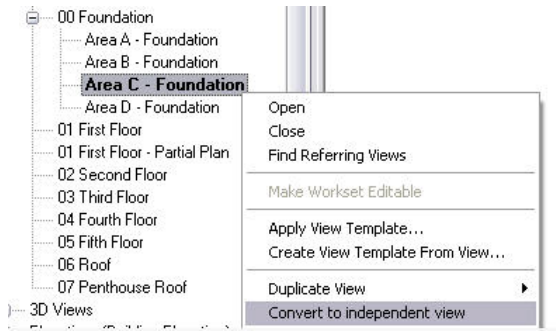




- Matchlines and View References
  - Matchlines can have Top and Bottom constraints
  - Reference adjacent partial plans

- Additional crop region for annotations

- Convert Dependent View to standalone view



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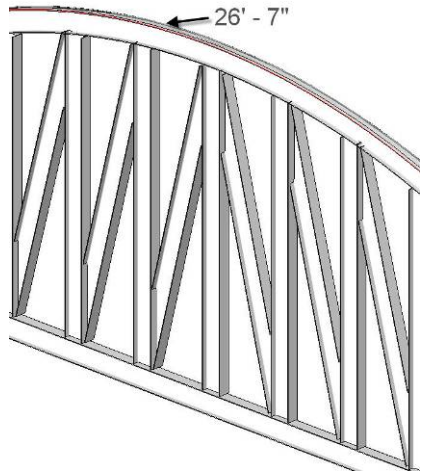
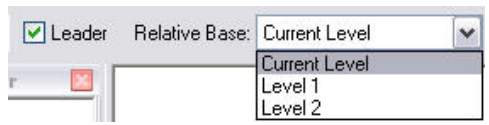
Spot Reference Improvements

- Fly-out menu for Spot Elevations and Coordinates

- Place spot elevations/coordinates on non-horizontal surfaces and non-planar edges



- Options Bar additions
  - "Leader" parameter
  - "Relative Base" parameter



- Value is visible prior to placing

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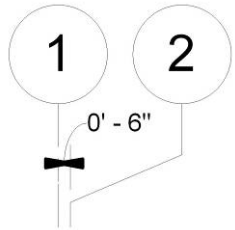
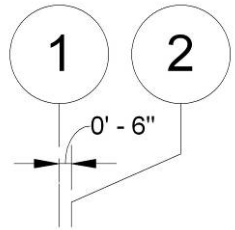
Dimension Improvements

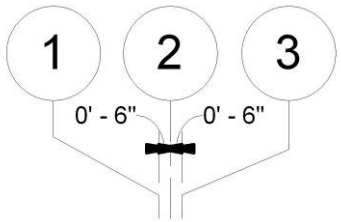
- Auto-adjust dimension arrows
  - Linear
  - Angular
  - Radial

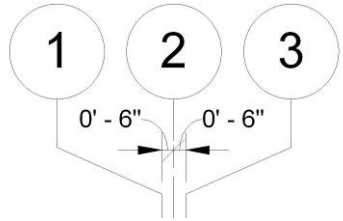
Old Dimensions **New Dimensions**



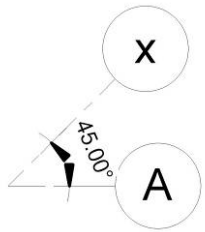


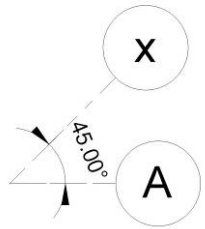
- "Interior Tick Mark" parameter





- "Flipped Dimension Line Extension" parameter





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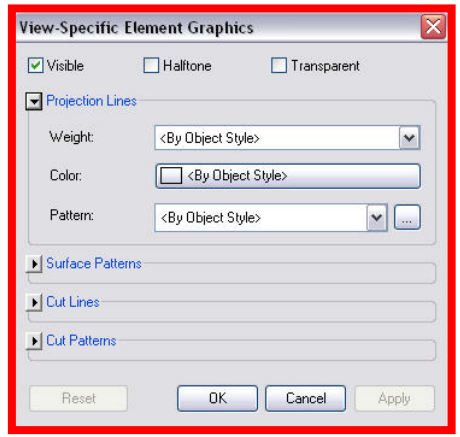
Element Display

- “Right-click” ability to override element’s visibility and display
  - Fill patterns and colors
  - Halftone
  - Transparency
- Easily hide elements for plotting
- “Reveal Hidden Elements” button
- Reconfigured Visibility Graphics dialogue box



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Usability

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Usability

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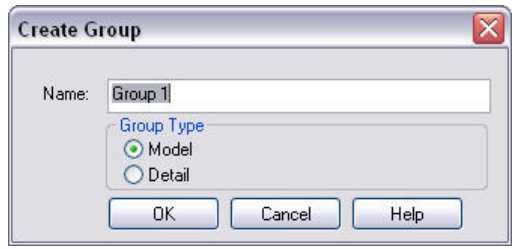
Group Improvements

- New Group creation dialogue box
  - Activated with Group command
  - Name Model and Annotation Group



- Enhancements to Group edit mode
  - Design Bar is active while editing groups
  - New Group edit dialogue box
  - Nested Group shortcut

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Group Improvements

- Exclude individual Elements in a Group
  - Tab to element and right-click to exclude
  - Pre-highlight excluded member and right-click to restore
  - “Restore all” command for excluded elements

- Save and Load Groups as Links
  - Revit no longer produces .rvg
  - Existing .rvg files are supported

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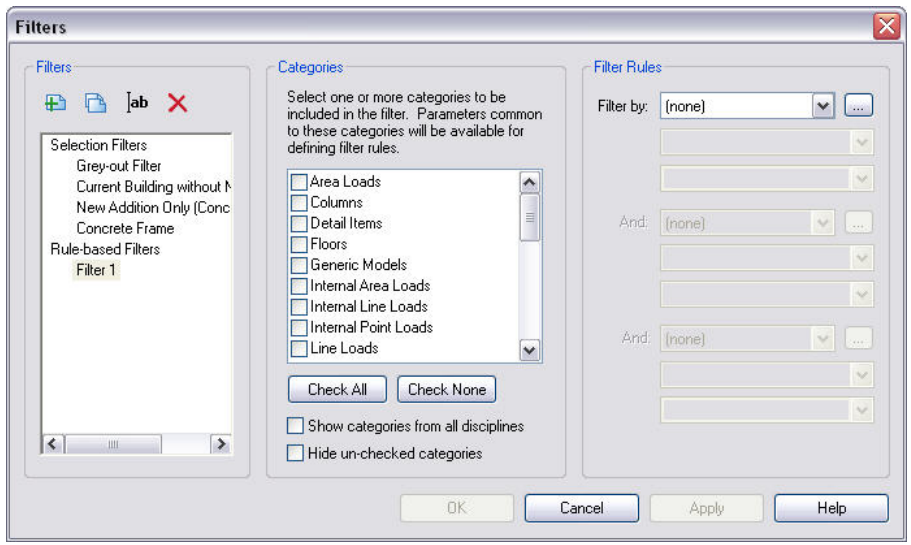
Filter Definition

- New Filter dialog box
- Easily manage all filters in one dialog box
  - Create New
  - Edit, rename or delete existing



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Revit Links

- Schedule elements by Link Instance
  - “Select available fields from” RVT links
  - Two new schedulable fields: Name and Files name
- Display Nested Links in linked files
- Represented in Project Browser
- “Bind” link instances to Groups
- Cross project copy of .rvt links using “copy to clipboard”
- Copy elements from linked .rvt file into project using “copy to clipboard”

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Revit API

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General Improvements

- Element Unique ID
- Change Selected Elements
- Math Library
- New Commands
  - Array, Mirror, etc.
- Improvements to existing capabilities
- Add-in Manager
- Access to elements that make up a family

*“Be able to extract the geometry shapes sections(FamilySymbol) and the ability to query what type of section it is, e.g., I section, channels, box, etc. * Ability to create new FamilySymbols using the API. * Explanation for each parameter in the BuiltInParamaters Enum list” ramaseshan@*

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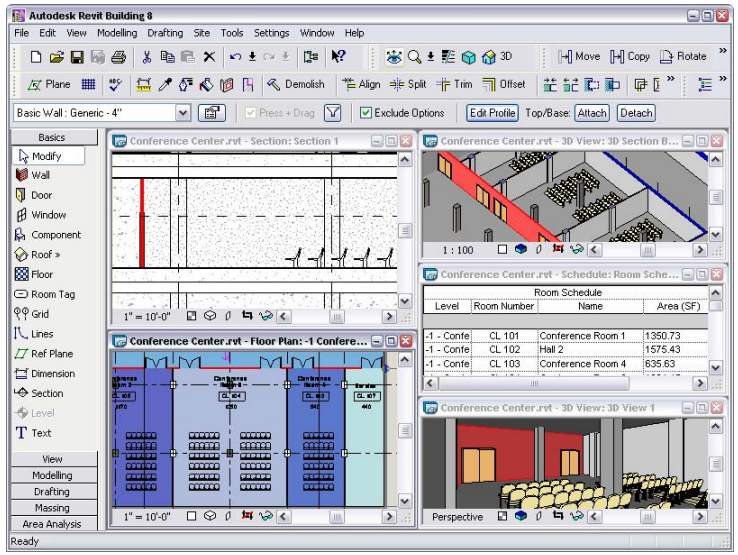
Application Integration

Application Launch when Revit Starts

- Events - OnOpen, OnNew, OnSave, OnSaveAs, OnClose
- Top Level Menus
- Custom Toolbars
- Transaction Control
- Element Pick options



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Application Automation Features

- Pointer to all active external applications
- File Menu Commands:
  - New, Open, Save, Save As, Close
  - Print
  - Import, Export DWG™ / DXF™
- Room Creation With/Without Location

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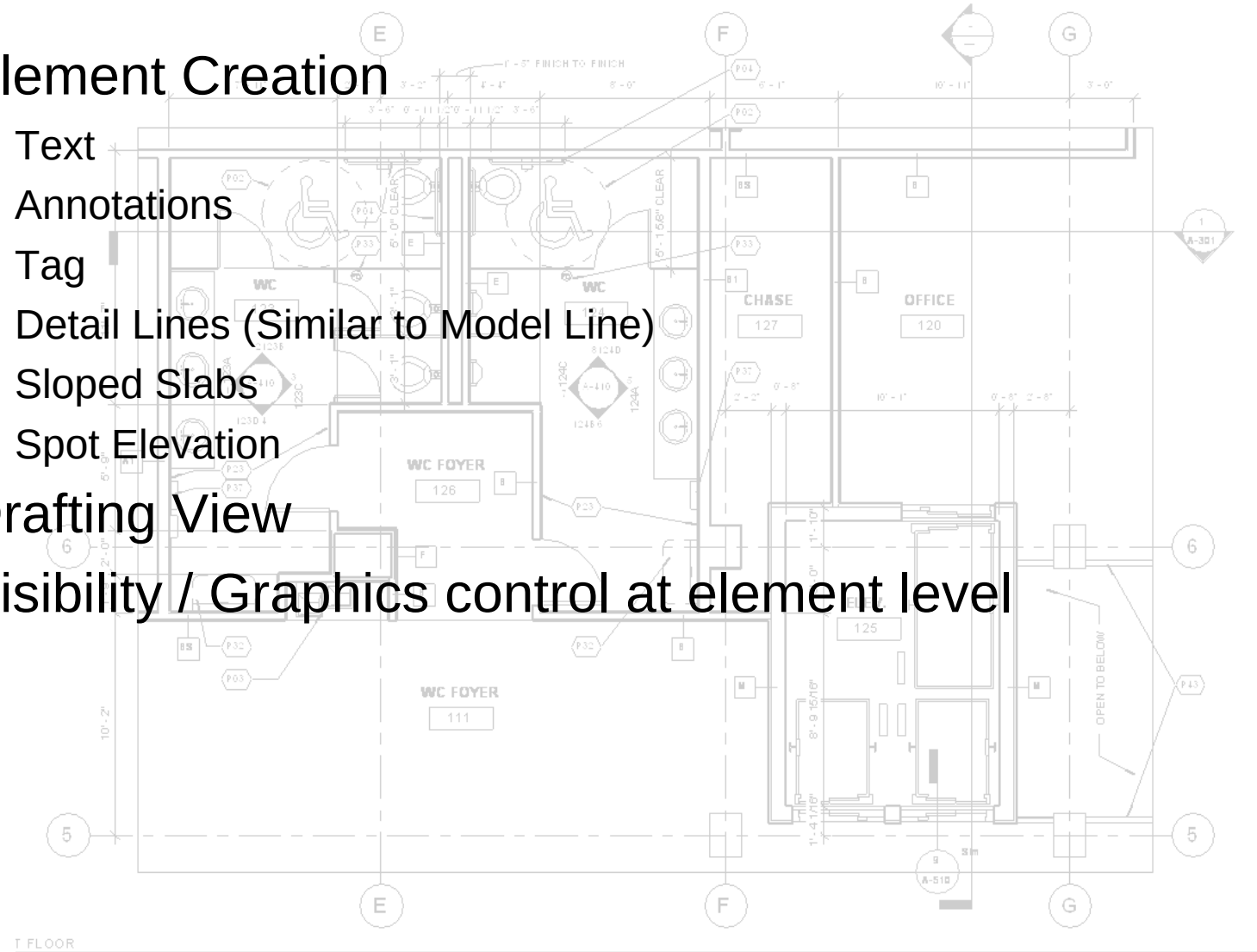
Documentation Automation

Element Creation

- Text
- Annotations
- Tag
- Detail Lines (Similar to Model Line)
- Sloped Slabs
- Spot Elevation

Drafting View

Visibility / Graphics control at element level



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