Release Notes for RISA-3D

Version 18.0.3 Enhancements/Corrections

- General:
  - Added the ability to import a DXF drawing grid.
  - Added the ability to quickly switch your model into 2D Mode.
  - Enhanced the Copy Global tool with 'Connect Bays' to use W8x10 for connecting members.
  - Updated the Model Merge tool to detect zero length members and eliminate them.
  - Updated the behavior when moving wall panels to retain their original openings and boundary conditions.
  - Corrected an issue where the 'Click to Locate' function for drawing grids was not working as expected.
  - Resolved an issue where changing the skew angle in the drawing grid caused additional decimal points to appear in the node coordinates.
  - Resolved an exception message caused by invalid data in the Saved Drawing Grids.
  - Resolved an issue where the active tool (ie. Draw Members) would drop after the first click.
  - Fixed an issue where the Extend tool was incorrectly deleting members.
  - Resolved an issue where splitting or adding nodes to locked elements was also modifying the unlocked portion of the model.
  - Resolved an issue where canceling a modification still produced the Clear Results warning.
  - Resolved an issue where an incorrect number of duplicate members was being reported in the model merge.
- Hot-Rolled Steel:
  - Resolved an issue where the torsional strength for a tube shape was reported with the wrong units in the Detail Report.
  - Fixed an issue where the lateral torsional buckling calculation was missing in the hot-rolled angle detail report.
- Concrete:
  - Added the moment interaction diagrams in the Detail Report for concrete rectangular columns.
  - Enhanced the metric bar size notation for reinforcement when ASTM A615M rebar is selected.
  - Resolved an issue with concrete columns where perimeter bar sizes were reported as CUSTOM despite having assigned Design Rules.
  - Resolved an issue where Custom Rebar Layouts were not saving.
  - Resolved an exception message when opening the detail report for a round concrete beam.
  - Resolved a graphical display error where concrete column detail reports showed incorrect moment of inertia values.
  - Updated the Concrete Reinforcement spreadsheets to properly display concrete reinforcement detail.
- Wood:
  - Updated the Design tab of the Load Combinations spreadsheet to display KD when a CSA 086 wood design code is selected.
  - Updated the wood material default values in the Materials spreadsheet to include SCL materials.
  - Resolved an issue that prevented custom wood materials from being created through the Materials spreadsheet.
  - Corrected the displayed solid sawn design values in the Shape Selection database.
  - Resolved an issue opening SCL wood databases when switching design codes.
  - Corrected the shear design value for glulam members using NDS 18 LRFD.
  - Corrected an issue where the wood hold down record counter would become corrupted in some cases.
- Masonry:
  - Corrected graphical errors in the masonry wall panel Detail Report.
- Cold-Formed Steel:
  - Fixed an issue for custom ZS shapes where gamma was saved in radians instead of degrees.

    - Resolved an issue where cold formed steel properties weren't displaying correctly within the Code Check spreadsheet.
- Stainless Steel:
    - Corrected the phi and omega factors when switching between LRFD and ASD design codes.
- Graphics:
    - General:
        - Added the ability to search for inactive members and walls.
        - Added the graphical option to customize the scale of nodes.
        - Added the ability to graphically display the additional boundary conditions created when using the All command.
        - Enhanced the graphic display of the Response Spectra input table.
        - Resolved an issue where the 3D View was not showing the model.
        - Resolved an issue where splitting a member was not retaining the distributed load.
        - Resolved an issue where full length distributed loads retained partial length information.
    - Wall Panels:
        - Enhanced the visibility of wall panels and plates to show in front of the drawing grid.
        - Corrected a graphical issue that did not launch the Wall Panel editor after double-clicking the wall panel.
        - Resolved a graphical issue that allowed point loads to be applied beyond the geometry of a wall panel.
    - Results:
        - Added the deflection ratio check to the Design Properties section of the Member Detail Report.
        - Added buttons in the Results Explorer panel to view either the Envelope or Batch spreadsheet results.
        - Enhanced the Internal Force Summation tool to report the forces in the information box in the Properties Panel and consider the selected Results View option in the 3D View.
        - Updated the Member Detail Reports to report the current member label and load combination.
        - Resolved an issue where the size adjustment setting was not applied to the Node Reactions.
        - Resolved an issue where wall panel deflection would not animate if stress contours were displayed.
        - Fixed an issue where the time steps were not changing when viewing an animated time history load combination.
- Spreadsheets:
    - Added functionality to utilize online shapes in the Section Sets spreadsheet.
    - Enhanced the spreadsheet behavior to allow the arrow keys to move the cursor within the text.
    - Refined the behavior of spreadsheets when pressing Enter to accept the entry and go to the next row.
    - Corrected an issue where pasting into the Nodal Loads spreadsheet would always assign the load type as displacement (D).
    - Corrected an exception message caused by the 'Insert Row Above Selected' option in the load spreadsheets.
    - Fixed an issue where specifying rectangular (RE) shape sizes in the Section Sets spreadsheet caused error code 1043.
    - Resolved an issue where the member size could not be changed after selecting a General section set in the Members spreadsheet.
    - Fixed an issue where the 'Ignore After' and 'Show All' options were not filtering the Code Check results.
- Plates:
    - Improved the speed of the plate submesh routine.
    - Resolved an issue where incorrect label prefixes were used in the Quad and Tri plate submesh option.
    - Resolved an issue where existing plates weren't able to be submeshed using the Auto Submesh option.
    - Corrected the Degenerate Plate Check to find non-planar plates.
- Shortcuts:
    - Enabled Ctrl+Alt+M to open the Materials spreadsheet.
    - Resolved exception messages when using shortcut key combinations.

    - Resolved an issue where Ctrl+Alt+I inverted the selection instead of opening the Diaphragms spreadsheet.
    - Fixed an issue where Ctrl+Alt+L locked the unselected part of the model instead of opening the Load Combinations spreadsheet.
- Solving:
    - Resolved an issue where the program was unable to solve an Envelope solution after solving a single Load Combination.
    - Resolved an issue where the warning log was not reporting the location of a meshing error.
- Printing:
    - Added the ability to print an individual spreadsheet.
    - Added the ability to print directly from the Internal Force Summation Results dialog.
    - Added the ability to print the Rebar Detailing section of the Concrete Detail Report.
    - Corrected an error where printing reports would cause the program to unexpectedly close.
    - Resolved an issue where items added to the report weren't saved after the Report Printing dialog was closed.
    - Resolved an issue where the program wasn't loading previously created Report Templates.
- Interaction:
    - Added the ability to Append one model into another model.
    - Resolved an issue where certain RISASection files were not allowing the program to open.
- Operations:
    - Updated the program to prevent users from accessing a RISA-3D model that is already open by another user.
    - Modified the preview file (.prv) to be a hidden file.
    - Corrected an issue to properly save files with the .r3d file extension after importing DXF.
    - Resolved an issue that occasionally caused the program to freeze while Clearing Results after modifications are made with results present.
    - Resolved issues with the backup file where they sometimes could not be opened or re-saved.
    - Fixed an issue where the program would automatically minimize after clearing results.
- Licensing:
    - Updated the program to enable subscription license users to borrow a license from the cloud service for offline use.
    - Added the ability to run the program in demonstration mode when no license is available.
    - Added functionality in new Licensing Dashboard.

Version 18.0.2 Enhancements/Corrections

- General:
    - Updated the program to make it easier to change the region as defined in Application Settings.
    - Improved functionality of the Fluid Load Generator in the Rectangular Tank Template.
    - Resolved a units issue where the Linear Force units were not properly retained in the interface.
    - Updated the application of point loads to only apply along the length of the member chosen.
    - Resolved an issue where pressing 'Apply to Selected' when elements were locked was also applying loads to the unlocked portion of the model.
    - Enhanced the selection states to differentiate between capital letters for labels that were flagging a duplicate label warning.
    - Resolved an issue where the solution was cleared after adding project grid lines.
- Analysis:
    - Improved the speed of solution for plate elements.
    - Resolved an issue preventing some models from solving a dynamic analysis with an odd number of modes.
    - Corrected an overly conservative design when using P-Delta with mt/m for Linear Force units.
- Design:

    - Resolved an issue with suggested design when the member design list differed from the assigned member shape type.
    - Fixed an issue where solving the model with the suggested design caused an erroneous P-Delta error.
- Hot-Rolled Steel:
    - Updated the hot rolled steel compression capacity for wide flange members to consider the flexural-torsional buckling limit state if Ltorque is greater than either Lby-y or Lbz-z per Section E4 for AISC 15th and 14th Editions.
    - Updated the code checks for steel members with slender elements to properly include limit state of FTB per AISC 14th Section E7.
    - Resolved an issue where columns with pinned end releases were reporting panel zone checks.
    - Resolved an issue where the web slenderness check for members with minimal frame ductility was using moderate frame ductility requirements.
- Concrete:
    - Updated the warning reported in the Code Check spreadsheet for concrete members which qualify as deep beams.
    - Fixed an issue where certain multi-span concrete beam models were reporting inconsistent required moments when solved with a single threaded versus multi-threaded solution.
    - Resolved an issue that produced erroneous concrete reinforcement warning messages in the warning log.
- Wood:
    - Enhanced the Design List for wood members by setting defaults based on the selected material.
    - Resolved an issue that prevented users from entering a size of less than 2” (thick) and/or 3” (depth) for Full Sawn wood members.
    - Corrected an issue where wood shear panel design was incorrectly processing the shear schedule database.
    - Resolved an issue where certain wood wall panel models with applied point loads would cause the program to close unexpectedly.
    - Enabled the multi-ply and ply connection options for members using SCL or Custom wood materials.
- Masonry:
    - Resolved an issue where certain models containing masonry wall panels were not opening properly.
    - Fixed an issue where certain models were producing inconsistent out of plane masonry capacities when solved with single threaded versus multi-threaded solution.
- Aluminum:
    - Resolved an issue preventing custom solid rectangular aluminum shapes from being recognized.
- Cold-Formed Steel:
    - Resolved an issue where tubes using codes older than 2007 were erroneously reporting a code check. Cold formed tube shapes only apply to the 2016/2012/2010/2007 codes.
- Graphics:
    - Graphical View:
        - Added the Dim Lock tool which allows the user to Lock a model, but still display the Unlocked elements as greyed-out elements.
        - Resolved a display issue where selected elements were erroneously hidden when using the Lock tool.
        - Corrected a display issue where all node reactions were displayed when using the Lock tool.
        - Added the ability to use Undo while deleting members of the model.
        - Fixed an issue where models containing only solids were not properly displaying stress contours.
    - Ribbon Toolbar:
        - Corrected an issue to activate the Detail Report button from the Results tab when in Results spreadsheets.
    - 3D View:
        - Improved the graphical scaling of reactions.
        - Resolved a display issue that limited the visibility of the reaction magnitudes.
    - Properties Panel:

        - Enhanced the column widths to automatically size based on contents.
        - Resolved an issue where creating a new basic load case would use gravity factors from the previous basic load case.
        - Resolved an issue where re-assigning member end nodes was not capturing the modified member length.
        - Corrected an issue where deflection ratio options were not saved.
        - Resolved an issue where assigning an explicit wood shape was not applying the selected material.
    - Selection:
        - Improved the selection of loads when using the Select Elements by Properties tool.
        - Enhanced the loads tab in the Select Elements by Property dialog by adding a checkbox to take the absolute value of the loads in the model.
        - Resolved an issue that prevented all section sets from appearing in the Select Elements by Property dialog.
    - Dialogs:
        - Updated the keyboard Escape behavior to close dialogs, and not windows, when pressed.
    - Spreadsheets:
        - Added the ability to filter Input spreadsheets based on the graphical selection.
        - Improved spreadsheet behavior to prompt a warning if a property is attempted to be deleted while being assigned to one or more elements.
        - Enhanced the sorting hotkey (F9) with more options while in spreadsheets.
        - Improved the speed of opening spreadsheets.
        - Decreased the time it takes to sort the Code Check spreadsheet.
        - Improved the Story Drift Results spreadsheet to switch between the By Combination and By Item presentation.
        - Added the ability to use the Fill Block command in the Boundary Conditions spreadsheet.
        - Resolved an issue to allow data to be entered in the Advanced tab of the Boundary Conditions spreadsheet.
        - Corrected issues with copy and paste in some spreadsheets.
        - Resolved an issue to show all required decimal places in the Member Torsions spreadsheet.
        - Resolved a graphical issue in the Seismic Detailing spreadsheet where certain beams erroneously reported a failing Miscellaneous Check.
        - Resolved a graphical issue where braces with the KL/r requirement unchecked in the seismic design rule were failing slenderness in the Seismic Detailing spreadsheet.
        - Fixed a graphical issue in the Material Takeoff spreadsheet where the incorrect units were displayed.
        - Fixed a display issue that was not reporting the specific governing time step in the results spreadsheets for a time history solution.
    - Detail Report:
        - Enhanced the wall panel detail report to include units for the reported Required and Available values in the Detail Report Design Summary.
        - Corrected a graphical display issue where the reported moments for the Cb calculation were erroneously displayed as zero for CSA S16-14.
        - Resolved incorrect dimensions shown on the rebar detailing cross section in the Detail Report.
        - Fixed a display issue preventing wall panel design results from displaying in the detail report.
        - Resolved a display error that did not show the lintel design in masonry wall panel detail reports.
        - Resolved an issue caused by clicking to the next member from an expanded detail report diagram.
- Printing:
    - Updated the default name of printed PDF files.
    - Added the ability to Print directly from the Wind, Seismic, and Notional load generators.
    - Added a custom or summary detail type to the wall panel detail report.

    - Fixed the 'Add to Full Report' option to add member and wall detail reports when the Report Printing window is open.
    - Resolved an issue preventing Flat Files from being written for certain models.
    - Resolved an issue where printing the Envelope Detail Report caused the program to close unexpectedly.
- Report Printing Dialog:
    - Updated the arrows in the Available Sections For Report to better clarify the collapse/expand functionality.
    - Improved printing behavior for the Advanced items in the report printing.
    - Enhanced the Snapshot feature to display the images under the Advanced section of the Report Printing dialog.
    - Refined the presentation of the dragging/reordering sections behavior.
    - Fixed issues where using the "Select All" option to print detail reports caused the program to hang.
    - Fixed an issue where the currently selected detail reports were not properly clearing after using the "Unselect All" option.
    - Resolved an issue where images could not be re-ordered in the report.
    - Resolved an issue when specifying different values within the page report numbers.
- Print Preview:
    - Resolved an issue where the print preview page size was shown very small.
    - Resolved an issue where the print preview was not reflecting changes made to the current sections in the report.
- Interaction:
    - Added DXF import and export.
    - Resolved an issue that prevented some RISASection files from being recognized in RISA-3D.
- Operations:
    - Added the ability to access the RISA-3D Help document directly from the File menu.
    - Added a Save prompt when closing to retain newly created selection states.
    - Resolved an issue where a new model could not be opened if the current model was solved.
    - Resolved an issue where terminating the solution from the solution dialog would cause the program to lock up.
    - Fixed the Recall Last Dialog/Tool option from the right-click menu to work for all tools.
    - Resolved an issue where the program was unexpectedly closing during initialization.
    - Resolved an issue during installation where some defaults were not properly used based on the selected region.

Version 18.0.1 Enhancements/Corrections

- Design:
    - Added additional metric bar sizes for the ASTM A615M rebar set.
    - Enhanced member design properties to prevent an entry of zero for Cb.
    - Corrected an issue with the reporting of the lateral torsional buckling factor (Cb) according to AISC.
    - Refined deep beam criteria according to ACI 318-14 Section 9.9.
    - Resolved an issue where concrete shear walls were not reporting qualifying seismic piers.
    - Resolved a display issue for In-Plane Reinforcement of Masonry Shear Walls in Detail Reports.
    - Corrected an issue with optimizing wall panel hold down selection.
    - Corrected the wood wall capacity adjustment factor, (2w/h), to apply to both seismic and wind load combinations per AWC NDS SDPWS 2015 and 2018. Previous codes applied to wind only.
    - Updated the wood wall calculation of 'Sigma L_i' per AWC NDS SDPWS 2015. This will affect the Shear Capacity Adjustment Factor, (Co), and the Sheathing Area Ratio, (r).
    - Resolved an issue where wood design results gave a design check value of infinity (reported as '-nan(ind)' in the output).
    - Resolved a units issue for wood wall axial stud spacing results.
    - Resolved a units issue for metric envelope beam deflections.

    - Resolved an issue with the user input RSA scaling factor.
    - Resolved an issue where the solver was not able to mesh certain area loads.
- Integration:
    - Restored the ability to import a RISA-2D model.
- Graphical View:
    - Increased the brightness of the selected items in the graphical view.
    - Improved the scaling of the load display in the 3D View.
    - Added the ability to select 'Model View Settings' and 'Results View Settings' by right clicking in the 3D model view.
    - Revised the appearance of distance tool in dark mode.
    - Corrected a display issue of the results graphically where it did not toggle between Load Combination/Category/Basic Load Case.
    - Corrected a display issue for rendered or color coded members with results present.
    - Corrected an issue that caused the 3D View not to display for some operating systems.
    - Corrected an issue with the display of animated models.
    - Resolved an issue where locking the model in certain views would cause it to close unexpectedly.
- Ribbon Toolbar:
    - Added the ability to use the Undo while drawing or modifying the model.
    - Enhanced the Results quick view button to display the unity check member label.
    - Moved the Delete All Wall Regions button next to other Delete features in the Modify tab.
    - Resolved an exception message that appeared when the Point Moving button was clicked when no moving load patterns were defined.
    - Increased the significant digits in the Wall Panel Editor drawing grid to hundredths.
- Properties Panel:
    - Updated the Point Moving Load feature to the Properties Panel, similar to other drawing tools.
    - Corrected the Properties Panel to remove rebar parameters for non-concrete members.
    - Corrected the selection of the rebar set for concrete members.
    - Refined Property Panel behavior when a nominal wood shape is selected.
- Dialogs:
    - Added functionality to the Quick Tips button in some dialog windows.
    - Enhanced the Design List by setting defaults based on selected shape.
    - Fixed an issue in the Shape Database with shape properties not appearing in the View dialog.
    - Improved the Shape Database preview to show the actual sizes of nominal wood members.
    - Corrected an issue with deleting a Custom Rebar Layout.
    - Corrected the display of the base elevation in the Wind Load Generation to show zero instead of a very small number.
    - Updated the animation settings dialog with a checkbox to stay open.
- Spreadsheets:
    - Spreadsheets can be resized and their size is stored throughout the program use and the next session.
    - Improved the display of code check results >1.0 to be shown as red and bold.
    - Fixed an issue with saving defaults in the Wall Design Rules spreadsheet.
    - Resolved an issue preventing data from being pasted in the active Basic Load Case spreadsheet.
    - Corrected an issue that caused input loads to be displayed with a multiple of a million due to international settings using commas instead of periods.
    - Added the ability to copy and paste duplicate load combinations.
    - Resolved an issue where pasted load combinations would re-sort after closing the spreadsheet.
    - Corrected a display issue with the concrete column code check spreadsheet.
    - Corrected the reported values in Member End Forces to not be the maximum force for the entire length of the member.
    - Filter Out Unselected Results was corrected to show results for only the selected items.
    - Resolved sorting issues for all input and output spreadsheets.
    - Corrected an issue so that spreadsheets are minimized when the Report Printing dialog is selected.
- Detail Report:

    - Coordinated the shape property geometric variables to match the shape database.
    - Resolved an issue where opening a concrete beam detail report would, in some cases, cause the program to unexpectedly close.
    - Revised the detail report for wood members to clarify the direction of the governing shear load.
    - Corrected an issue with the display of metric units in detail reports.
    - Corrected the display of the location in the expanded diagrams within the Detail Report.
    - Resolved spelling errors in the Detail Report of Masonry Walls.
    - Corrected an issue where more decimal places were being presented in the wall reinforcement design than were specified in the application settings.
- Detail Report Printing:
    - Fixed an issue with printing enlarged diagrams from a member detail report.
    - Corrected print issues for some models when the Add to Full Report checkbox was selected from the member detail report.
- Report Printing Dialog:
    - Fixed an issue with adding spreadsheet results to the report from the Spreadsheets tab.
    - Resolved an issue with missing selected detail reports in the Detail Reports tab.
    - Fixed an issue with printing wall panel results when choosing 'Select All' from the Detail Reports tab.
    - Corrected an issue with batch printing of wall panel detail reports for a model without wall panels.
    - Restored the ability to print load generation reports (Wind, Seismic, Notional).
    - Fixed an issue with the filter selection.
    - Corrected an issue where the created report template wasn't automatically being selected after canceling the creation of a new report template.
    - Enhanced the printing of the Detail Report to correct pagination issues.
    - Corrected issue with inability to print while Print Report Dialog was not docked.
    - Resolved a print issue with a printer on the network.
- Print Preview:
    - Corrected an error from Print Preview scroll pages.
    - Corrected the Print Preview display for margins larger than 2 inches.
- Printing:
    - Enabled the Print button directly from the dialogs where feature was previously unavailable:
        - Member Detail Reports, Wall Detail Reports, Enlarged Diagrams, Time History, Moving Loads, Response Spectra, Shape Database, Warning Logs
    - Added the ability to include Response Spectra plots in reports.
    - Aligned the flat file to match the order of the older version and corrected missing sections.
    - Enhanced the warning log print with a header.
    - Fixed an issue with printing from Edit Moving Load Pattern Definition dialog.
    - Corrected the printing of the Detail Report for masonry walls in order to print the expanded sections.
    - Resolved an issue that was causing abnormal scaling of printed graphics for Windows 7 machines.
- Operations:
    - Added the ability to open a RISA file by dragging the model over the open program.
    - Improved the program behavior to copy any missing files automatically for the user upon opening the program.
    - Fixed the Backup file opening mechanism.
    - Resolved an issue that caused a corruption of Wood Shear Wall Design Rules upon saving the model.
    - Fixed an issue with the program closing unexpectedly after undoing the creation of a wall panel.
    - Corrected an issue where applied loads were considered inactive.
    - Resolved an issue preventing newly created moving loads from being applied in the model.
    - Corrected an error caused by duplicated custom rebar layouts.
    - Corrected an issue with losing RISAFoundation information when editing and saving a RISA-3D model in V18. RISAFoundation integration is not currently supported.
- Installation/Program Opening:
    - Resolved an issue that prevented certain models from opening: Index out of Range.
    - Corrected an initialization error due to

        - Duplicate labels of members, materials, etc.
        - Missing Wood Schedule files
        - Custom Rebar Layout files
        - Inability to write to the Current User registry key
    - Corrected the Detail Report display of equations due to missing files in installation.
    - Corrected the selection of Load Combinations due to missing files in installation.
    - Corrected the installation of Regions (non-US) to a new folder.

Version 18.0 Enhancements/Corrections

- Analysis:
    - Added solution multi-threading to utilize multiple CPU cores which drastically reduces envelope and batch solution times for models with many load combinations.
    - Corrected an issue where wind loads were not generated after switching the vertical axis from Y to Z.
    - Corrected an issue where Envelope Only solution results were not being retained after closing the program.
    - Corrected an error where area loads applied during dynamic analysis were causing error code 2018.
    - Resolved a bug that affected the story height of wall panels when diaphragm elevations were changed.
    - Fixed a problem when using metric units where the Member Beam Deflection spreadsheet values were incorrectly increased by a factor of 25.4.
- Hot-Rolled Steel:
    - Revised the leg slenderness classification for double angle detail reports to only consider the longer leg per CSA S16-14.
- Concrete:
    - Added concrete member deflection diagrams to the detail report.
    - Added a warning message for concrete seismic design to better explain the aspect ratio limits.
- Masonry:
    - Fixed the cross section detailing image for out-of-plane reinforcement of a masonry wall.
- Cold-Formed Steel:
    - Updated the capacities reported in the member detail report to reflect the safety factors for members analyzed using AISI 1999:ASD.
    - Corrected the safety factors used to calculate the allowable capacities reported in the detail report for members analyzed using cold-formed steel codes 2010 or older.
    - Revised the flexural-torsional buckling stress, (Fe), per Section C4.1.2 for doubly symmetric shapes using AISI S100-07 which was incorrectly using Fe (Eq. C4.1.2-1) which is for singly symmetric sections.
    - Resolved a missing input parameter, connector spacing (a), for cold formed steel when a specific procedure was followed.
- Stainless:
    - Resolved a false value of '9.999+' shown for the shear unity check of stainless steel members.
- Wood:
    - Added LRFD wood design for NDS 2018 and NDS 2015 codes.
    - Added the ability to view custom wood material properties through the material selection dialog.
    - Updated the wood shape database to reflect the overall thickness based on the number of plies selected.
    - Updated the cross-section detailing image for FTAO and Perforated wood walls to be more accurately represented in detail reports.
    - Updated the wood wall calculation of "Sigma L_i" per AWC NDS SDPWS 2015. This will affect the Shear Capacity Adjustment Factor, (Co), and the Sheathing Area Ratio, (r).
    - Corrected the wood wall capacity adjustment factor, (2w/h), to apply to both seismic and wind load combinations per AWC NDS SDPWS 2015 and 2018. Previous codes applied to wind only.
    - Corrected an error in calculating the moment capacity of glulam beams using CSA O86-14.
    - Corrected an issue with preserving default custom wood species in the Materials spreadsheet.

- Graphics:
  - Detail Report:
    - Improved Detail Reports to show expanded calculations for code check.
    - Improved output to show all the code references in expanded Detail Reports for all materials.
    - Enhanced the member detail report output to report the section modulus and plastic modulus.
    - Resolved an issue with missing masonry wall panel labels from the detail report.
  - Printing:
    - Added batch printing of detail reports.
    - Added an interactive Print Preview for the graphical view and reports.
    - Added a preview of the custom logo in the print reports.
    - Added functionality to edit saved custom report templates.
    - Saved page setup properties specified in Printing dialogs as default settings.
  - Viewing:
    - New graphical user interface with ribbon toolbar.
    - Added preview thumbnails for recent projects accessible from the File menu.
    - Added custom Snap View options to allow snapping to a view other than the default XY, XZ, YZ, or ISO.
    - Added synchronous display of results based on the load combination selected in the 3D View drop-down.
    - Improved graphic display options in the Quick View toolbar.
    - Resolved a graphical issue for members that were copied while displaying color coding.
    - Fixed an issue where, in some cases, selected members were not rendered correctly.
    - Resolved an issue where lengthy node labels were not properly displayed in the Properties.
    - Fixed an issue preventing the display of reactions with an Envelope Only solution.
  - Selection:
    - Added the ability to select and edit loads graphically.
    - Added a Connection Rule selection filter for members in the Selection Criteria dialog.
    - Added all options for tension/compression only members into the Selection Criteria dialog.
    - Added the option to Relabel Selected elements in addition to All elements.
    - Improved the Select Elements by Property tool to group section sets and shapes together.
    - Resolved an issue where Show Selected Lines in Current view was not working properly after sorting the spreadsheet.
  - Spreadsheets:
    - Enhanced spreadsheets allow for improved sorting and auto-sizing columns.
    - Added all input spreadsheets into the Data Entry drop-down list.
    - Improved functionality of selecting/resizing cells in spreadsheets.
    - Fixed sorting for all input and output spreadsheets.
    - Resolved an issue that prevented the Wall Panel Design spreadsheet from sorting.
    - Revised an issue where Select Marked Lines in Current View was not working properly in the Wall Panel Forces spreadsheet.
    - Corrected the text color of failing seismic drift ratios to show red in the Story Drift spreadsheet.
    - Resolved a rare occurrence that caused the program to crash when sorting Node Coordinates spreadsheet.
  - Dialogs:
    - Added the ability to resize the Wall Panel Editor window.
    - Updated the Shape Selection dialog to be more intuitive.
    - Resolved a graphics issue to properly show the entire High Level Generation tool dialog.
- General:
  - Created a progress bar for calculating seismic loads using the seismic load generation tool.
  - Enhanced the High Level Generation tools to draw continuous members.
  - Enhanced the creation of solids to extrude from the local axis.
  - Enhanced the Extend tool to extend a member to a wall panel or plate.
  - Improved the file format of the Help file.

- Modify tools improved to allow rotation and scaling based on a click point.
- Simplified the terms "joint" and "node" to now use node exclusively in all input and output.
- Fixed an issue in the truss generator where truss widths set to out-to-out were incorrectly using centerline dimensions.
- Corrected an issue where using the extend tool would inadvertently move a boundary condition in some cases.
- Corrected an issue where scaling a wall panel could lock distributed loads on the panel from being edited.
- Resolved an issue where adjacent unselected member area loads were deleted during Delete Selected Area Loads function.
- Corrected an issue where imported time history files would not retain file name upon import.
- Resolved an issue where member function would revert to Lateral after updating member size.
- Corrected an issue where nodes were internally being duplicated after integration for some models.
- Corrected an issue where reactions would graphically disappear after subsequent runs in some cases.
- Resolved a copy and paste issue to only copy RISA-3D column headers when pasting outside of the program.
- Corrected an issue where material properties were erroneously reporting as N/A in some cases.

Version 17.0.4 Enhancements/Corrections

- Enhanced message to include required version number during use of the Director to transfer between programs of incompatibility.
- Corrected an issue that didn't allow program integration for models saved on a shared network location.
- Resolved an issue that was not allowing the program to fully close on exit due to a licensing error.
- Removed false error message of not being able to release subscription license on select machines.
- Corrected an error that prevented the import of Revit and STAAD files.
- Resolved an issue that prevented the import of select file types from other programs.
- Resolved an issue that caused solution files to be deleted when transferring between programs.
- Corrected the wood diaphragm detail report display to show the building layout for models integrated with RISAFloor.
- Resolved an issue where load categories would not transfer from RISAFloor to RISA-3D with gravity only elements in RISAFloor.
- Resolved an issue that caused RISAConnection to be unable to read previously saved solution files from RISA-3D.

Version 17.0.3 Enhancements/Corrections

- Analysis:
  - Improved solution efficiency and behavior with compression and tension only members.
  - Corrected an issue where thermal loads applied to inactive tension/compression only members were erroneously included in the calculation.
  - Corrected an issue with the deflected shape for members with partial fixity end releases and intermediate nodes along the length of the member.
  - Fixed an issue where the self weight of wall panels could be erroneously affected by adjacent wall panels due to internal plate numbering of the wall panel submesh.
  - Resolved a units issue where analysis offsets using metric units were not properly converted.
- Hot-Rolled Steel:
  - Added A913 Gr.65 material to default U.S. hot rolled steel materials.
  - Updated Ry and Rt for A1085 material in default U.S. hot rolled steel materials.
  - Updated cross sectional properties of Canadian wide flange W690x802 in the shape database.
  - Updated the seismic detailing check for AISC 358-10 to limit the column depth of a W36 shape per section 6.5.

    - Updated the compression calculations of for slender prismatic tapered wide flange members using AISC 360-16.
    - Corrected an issue where Cb was still being calculated despite a custom user input for unbraced length.
    - Updated Cb limit to be 1.5 for single angle hot rolled members for the AISC 13th, 14th, and 15th Editions.
    - Revised the leg slenderness classification for single angles per Canadian code to only consider the longer leg.
    - Revised the flange slenderness ratio for wide flanges analyzed using AISC 15th Edition to use half the flange width instead of the full flange width.
    - Resolved an issue where the slenderness limitation was applied to brace seismic design rules when the KL/r requirement was not required.
    - Corrected an issue where bending was being considered erroneously in the unity check for single angles per Canadian code in some cases.
    - Corrected the flexural-torsional buckling strength for singly symmetric tapered wide flange members to appropriately consider torsional buckling based on the AISC Design Guide 25.
    - Revised the weak axis shear width-to-thickness ratio for WT shapes analyzed using AISC 14th Edition to use half the flange width instead of the full flange width.
    - Corrected the calculation of the stiffened element depth, h, for wide flange, tapered wide flange, and channel shapes per the AISC 13th, 14th, and 15th Editions.
    - Resolved a conservative error in Qs calculation for tapered wide flange members when equation E7-9 was used.
- Concrete:
    - Corrected an issue where minimum vertical reinforcement in concrete walls was being calculated too conservatively for some models.
- Masonry:
    - Corrected an issue where masonry walls in some cases were being designed over the user defined UC limit.
- Wood:
    - Updated the Simpson Holddown, Simpson Chord Straps, and Canadian Simpson Holddown schedules based on the 2017-2018 Simpson Strong-Tie Wood Construction Connectors catalog.
    - For multi-ply members, updated the Cp calculation to use the smaller Cp value from both directions instead of a conservative Le/d value.
    - Corrected capacity calculations for wood built-up columns with 2-5 plies per NDS section 15.3.
    - Resolved an issue where the compression capacity of wood members was reported incorrectly when both effective length factors Kyy and Kzz were set to zero.
    - Resolved an issue where the beam stability factor, CL, was erroneously being applied to the tension capacity for SCL members analyzed using the NDS 2018.
    - Improved optimization of wood wall panels designed using the FTAO method.
    - Fixed an issue preventing results from being calculated for models imported from TNXTower with wood members having K=0.
- Cold-Formed Steel:
    - Added distortional buckling consideration per the commentary in Appendix 2 when calculating the compression capacity for ZS, CS single, and CS back-to-back shapes per the AISI S100-16.
    - Fixed an issue that prevented distortional buckling from properly being taken into account for the compression capacity of CS single and ZS shapes analyzed using AISI S100-12.
    - Corrected an issue where the distortional properties for HU shapes were being calculated incorrectly.
    - Fixed an issue where the flexural-torsional buckling stress used in calculating the compression capacity of CS F2F shapes was erroneously taken as sigma_t when the connector spacing was set to zero.
    - Revised the flexural-torsional buckling stress, Fcre, per Section E2.2 for doubly symmetric shapes using AISI S100-16 to be calculated as sigma_t (Eq. 2.2-5) for doubly symmetric sections instead of Fcre (Eq. 2.2-1) which is for singly symmetric sections.
    - Corrected an issue where the incorrect unbraced length was being reported in some cases when the beam would experience negative bending.

- Corrected the safety factor for shear using the CANACERO 2016 code.
- Fixed an issue for custom ZS and CS shapes where the moment capacity based on lateral torsional buckling was not considered in the combined axial and bending interaction equation when a user input R factor was used.
- Corrected an issue where an interaction equation from AISI 2012 code was being used in the AISI 2016 code in some cases.

- Aluminum:
  - Updated the shear capacity calculation to consider shear rupture per ADM 2015.
  - Updated the lateral torsional buckling moment capacity (Mn,LTB) calculation for solid rectangular shapes to use Mnu instead of Mnp per ADM 2015 section F4.
  - Updated the shear calculation for Z shapes to include two flanges for shear area.
  - Updated the shear capacity calculation for flat webs supported on one edge per ADM 2015 Section G.3 instead of G.2.
  - Fixed an issue resulting in negative weak axis moment capacity for channels.
  - Corrected an issue where moment capacity per ADM 2015 check could be controlled by Section F8 from ADM 2010.
  - Fixed an issue where the omega for rupture was used in the tensile yielding check when calculating the bending capacity for round tubes analyzed using ADM 2010.
  - Corrected Lv calculation for round tube shear capacity per ADM 2015, Section G4.
- Stainless:
  - Corrected the calculation of the stiffened element depth, h, for wide flange and channel shapes per the AISC 14th Edition.
- Integration:
  - Added AISC 360-16 15th edition code as an option for connection design within RISA-3D.
  - Added vertical brace connection integration from RISA-3D to RISAConnection for CSA S16-14 and CSA S16-09.
  - Added the ability to specify splice connections as the connection rule for beam or column shear and moment splices.
  - Added a new warning message for splice connections with incomplete connection rules.
  - Added an error message for two-sided clip angle connections assigned to the wrong column orientation.
  - Improved calculation of seismic mass for models integrated with RISAFloor with thickened slabs, drop panels or shear caps.
  - Enhanced support for connection integration from the demonstration version of RISA-3D & RISAFloor into the demonstration version of RISAConnection.
  - Improved integration functionality when exporting connection results from RISAConnection to automatically bring RISA-3D into the foreground.
  - Updated the leaning column calculations by correcting the column length and wall centroid values.
  - Updated the tributary height used to calculate wind load to only consider floors with diaphragms for models integrated from RISAFloor.
  - Corrected an issue where the 'Design Connections' feature within RISA-3D would not provide connection design for some cases.
  - Resolved an issue where some vertical brace connections for RISA-3D models (under RISAFloor) were not properly transferring to RISAConnection.
  - Resolved an issue where chevron brace connections were erroneously reported as invalid.
  - Fixed an issue where connections could not be designed using the Design Connections dialog from within RISA-3D.
- General:
  - Added connections and member ends to the available report printing sections.
  - Added an error message to warn users that partial fixity end releases are not currently supported for tapered members.
  - Updated the warning message for models solved without P-Delta when P-Delta is required by code.
  - Revised the reported span for the maximum deflection ratio to say 'NA' instead of '0' when the deflection ratio is larger than L/10000.

- Fixed an issue with non-physical members causing incorrect moment capacity results in some models.
- Corrected a graphical issue where the reported member deflection ratio turning red would not match the corresponding pass or fail design rule limit.
- Resolved a display error that was only allowing one decimal place to be viewed in the weight column of the Material Take Off spreadsheet. Now it is dependent on the output decimal settings.
- Corrected an issue that did not assign all Seismic Design Rules to each section of a member physically split.
- Corrected unexpected opening and saving behavior of RISA-3D results for RISAFloor based models.
- Resolved an issue where reading in saved RISAFloor results in some cases erroneously applied a parapet to wall panels, causing them to overlap with RISA-3D wall panels.
- Resolved rare improper P-Delta Error Message when specific models from RISAFloor to RISA-3D, with non-standard units, are solved.
- Resolved a rare crash when viewing plate contour results and re-solving the model on Windows 7 using a non-Aero Theme desktop.

Version 17.0.2 Enhancements/Corrections

- Resolved an issue where graphically editing member end releases from partially fixed to fully fixed was not updating the Members spreadsheet.
- Resolved an issue for members using partial fixity end releases where the deflection magnitude and forces transferring to connecting members were reversed when non-symmetric loading was applied.
- Fixed an error in the Eurocode Hot Rolled Steel database where the Zy and Zz values were erroneously inverted for rectangular and square tube sections.
- Corrected an issue for certain models where running multiple solutions of the same load combination was not properly storing the same analysis results.
- Corrected an issue where in some cases, if a suggested shape could not be determined for concrete section sets the program would terminate.
- Corrected an issue for the distribution of lateral loads to diaphragms when multiple diaphragms are present at the same level.
- Corrected an issue where plate contours were displayed incorrectly in some cases when also displaying the deflected shape.
- For models imported from RISAFloor, corrected an issue where semi-rigid wind loading would not apply to multiple diaphragms at the same level.

Version 17.0.1 Enhancements/Corrections

- Improved base plate connection export to RISAConnection to now group base plate connections separately per their function (Lateral or Gravity) designation.
- Updated the tabulated radius of gyration values for masonry walls per the 2007 NCMA TEK 14-1B document.
- Resolved an issue where custom saved Drawing Grid settings would prevent program integration.
- Corrected an issue where members with point loads applied at 0% of the member length reported a moment at the opposite end when both member ends were pin-released.
- Resolved an issue where analysis offsets and member point loads would in some cases cause the program to close unexpectedly when running a solution.
- Resolved an issue where the program would close unexpectedly when trying to solve a dynamic solution for a model with analysis offsets.
- Resolved an issue where the program would close unexpectedly when insufficient memory was allocated for calculations requiring multiple iterations.
- Corrected the strong axis moment capacity for hot-rolled HSS members using the AISC 15th Edition Manual when governed by lateral-torsional buckling, Equation (F7-10).
- Corrected an issue with the static solution reporting zero results after running an RSA using the ASCE 2016 Parametric Design Spectra.

- Corrected an issue that prevented the Seismic Load Generator from performing seismic calculations for models using NBC Canadian code design. This also fixed an interface issue that prevented the Overstrength-Related Force Modification Factor (Ro) from updating.
- Corrected erroneous member forces when analysis offset and member end offsets were combined.
- Added an error message to warn users that shear deformations and partial fixity end releases in combination are not currently supported.
- Corrected an issue where round concrete columns with low bending moments and high axial compression caused the allowable axial capacity to be erroneously zeroed out.
- Corrected an issue where saved solution results for wood wall models became corrupted when the model was re-opened.
- Corrected an error where explicitly defined double sided wood wall sheathing panels would not save properly with the model file.
- Corrected an error where the wind load generation would ignore the "No Wind" checkbox selection on semi-rigid or flexible diaphragms from RISAFloor.
- Resolved an issue where using analysis offsets would prevent integration between RISA-3D and RISAFoundation.
- Corrected a display issue with the legend not properly showing the color coded items that relate to the setting chosen in the Model Display Options.
- Fixed an error where gravity-only column base plate connections were reporting RISA-3D lateral loads when exported into RISAConnection.
- Corrected an issue where column splice connections were reported with incorrect column labels once exported to RISAConnection.
- Added support for connection integration from the demonstration version of RISA-3D into the demonstration version of RISAConnection.

Version 17.0 Enhancements/Corrections

- Analysis:
  - Added compatibility with *IBC 2018*.
  - Added *ASCE 7-16*
    - Added Load Combination generation
    - Added wind and seismic load generation
    - Added design response spectra
  - Added *NBC 2015* Canadian building code provisions
    - Added Load Combination generation
    - Added wind and seismic load generation
    - Added design response spectra
  - Added partial fixity member end releases using a rotational spring constant to reduce the stiffness of a connection.
  - Updated the display of wall panel axial results in the Detail Report with improved force summation.
  - Improved the optimization process for Suggested Designs for members and section sets.
  - Refined the "Envelope Only" solution for Story Drift to not be overly conservative.
  - Improved Suggested Member design to exclude warping stress for torsionally released member ends.
  - Corrected an issue with tension only members with applied thermal force.
  - Corrected the Cb coefficient calculation for Hot Rolled members when the user enters Lbyy in the Lcomptop.
  - Corrected an issue when the point loads are applied at the ends of member in the same location as a boundary condition.
  - Corrected an issue where members with local y analysis offsets were resulting in larger lateral deflections in local z axis of member.
- Hot-Rolled Steel:
  - Added member design per the *AISC 15th Edition Manual (360-16): ASD & LRFD*.

- Updated the Chinese hot-rolled steel database per the Standardization Administration of the People's Republic of China (SAC) current DB Standards.
- Updated the automated calculation of the EuroCode Moment Gradient Factor C1 to use the widely accepted Lopez, Yong, and Serna method.
- Corrected a metric units display problem for Fye when using the Canadian hot rolled steel design code.
- Corrected an issue where the unbraced lengths were not saving in the Member Properties dialog for Stainless Steel shapes.
- Resolved an issue where stainless steel WT, double angle, and single angle members were reporting NA or negative code check.

- Concrete:
  - Improved how the program recognizes concrete beam spans when combined with semi-rigid diaphragms and wall panels.
  - Improved weight calculations of concrete T and L beam in Material Takeoff results.
  - Added the warning message, "P-Delta Analysis is required for all ACI 318-14 load combinations" to the concrete detail report.
  - Corrected a display issue with the concrete explicit shear reinforcement diagram in the detail report.
  - Corrected a cover value display error for circular concrete column detail reports in the flexural cross section diagram.
  - Corrected an issue where the value for "d" in the out of plane shear capacity calculation was being erroneously taken as the full thickness of the wall for concrete walls with centered reinforcement.
  - Resolved an issue where modifying the thickness of a concrete wall panel did not clear the design results.
- Masonry:
  - Added the view of the FEA analysis to the shear and moment diagrams for masonry lintel detail reports.
  - Corrected a display error which showed "Fully Grouted" in the detail report for masonry walls which were designed with partial grouting.
  - Corrected a DXF export error for a model with masonry walls that would cause the program to close.
- Wood:
  - Added *AWC-NDS 2018* wood code (ASD).
  - Added strap design for wood shear walls.
  - Corrected an issue for the *NDS-01* code where CF was incorrectly calculated as zero.
  - Corrected an issue which erroneously suppressed wood wall panel errors from showing up in the Warning Log.
  - Corrected the wood wall aspect ratio check to now consider the height of the design region, rather than the full height of the wall panel.
  - Resolved discrepancies with reference design values in the glulam database based on the *NDS 2015*.
- Cold-Formed Steel:
  - Improved R factor implementation for C and Z shapes.
  - Corrected an error due to rounding with the safety factor used for shear capacities for cold-formed steel members designed using the *AISI S10-16* code.
- Aluminum:
  - Corrected an issue where the aluminum pipe shear capacity was conservatively divided by two.
  - Removed the aluminum limit state F8.1.1 from the *ADM1-15* code checks as it is only applicable to the *ADM1-10* code.
- Integration:
  - Added the ability for columns from RISAFloor with pinned top and a shear splice assigned at the base to transfer to RISA-3D with pinned top and bottom end releases.
  - Resolved an issue where columns with pinned tops in RISAFloor had bending moment at the top of the column in RISA-3D.
  - Resolved a display issue where live load reduction options overlapped the stainless steel code selection in the global model settings for models from RISAFloor.
  - Corrected an error during integration from RISA-3D to RISAFoundation for models with wall panel thermal loads.

    - Fixed an error in which HSS Tube columns in diagonal brace connections were oriented incorrectly when exported from RISA-3D to RISAConnection.
    - Corrected an issue which erroneously reported an invalid vertical brace angle for RISA-3D models exporting diagonal brace connections to RISAConnection.
- General:
    - Added sorting to the Beam Deflection spreadsheet.
    - Increased the DXF file limit for the number of polylines the program can import as a drawing grid to 5000.
    - Updated the detail report for members being checked for seismic provisions to include a warning message if a member only meets one of the two flange thickness limits according to Table 6.1 of *AISC 358-10*.
    - Corrected a display problem where the enveloped joint reactions were not shown properly in the model view.
    - Corrected the display of wall panel regions shown flipped in the Wall Panel Editor versus the Detail Report.
    - Resolved an issue where moving wall panels vertically would cause the program to close unexpectedly.
    - Resolved an issue where dummy nodes created from generating lateral loading were reported as unstable.

Version 16.0.5 Enhancements/Corrections

- Corrected an error in the iteration of member design which caused an increase in solution time.

Version 16.0.4 Enhancements/Corrections

- Resolved an issue introduced in the Windows 10 Semi-Annual Update (KB 4103721) which prevented Standalone Licensing functions from operating as expected.
- Resolved an issue in which subscription licenses would become non-responsive during the upgrade process.
- Added capability to designate member end support as cantilever or not cantilever in order to calculate the proper deflection ratio.
- Added an error message when two files are appended with different plate local axes settings.
- Corrected an issue which caused erroneous load transfer on members which were offset with the Analysis Offset tool and also had thermal load applied.
- Corrected an issue where changing the cold formed steel code after running multiple solutions was not automatically clearing the stiffness matrix.
- Corrected display of Results toolbar after the Solve Again with Suggested Shapes is performed.
- Resolved overly conservative Suggested Members due to warping stress being included for torsionally released member ends.

Version 16.0.3 Enhancements/Corrections

- Added 14" and 16" depth CS shapes from SSMA database for cold formed steel design.
- Added Brace to Base Plate Connection integration with RISAConnection.
- Improved status bar in the Design Results spreadsheet.
- Corrected an error which prevented Vertical Brace Connection to export to RISAConnection.
- Corrected an error which prevented HSS T-Connections at nodes with more than 2 members to export out to RISAConnection.

Version 16.0.2 Enhancements/Corrections

- Added a new wood wall Aspect Ratio factor per the *ANSI/AWC SDPWS-2015 section 4.3.4.2* which applies to FTAO and Segmented walls who have an aspect ratio greater than 2:1.
- Added the wind load Gust factor calculation for flexible structures per *ASCE 7-10 section 26.9.5*.
- Improved the Seismic Load Generator to allow the manually input period to exceed the code specified upper limit for drift design.
- Improved Area Load Mesher for area loads with less than a one inch width.
- Improved the mesher for the Automesh plate drawing tool to be more robust.
- Improved the Automesh feature to include co-planar polygons.
- Added the ability to align plate local axes.
- Improved the internal meshing code for semi-rigid diaphragms.
- The member exclude feature now applies to the Member Forces Maximum and End Reactions spreadsheets.
- Deflection ratio updated to be only in terms of local deflection.
- A 1.43 factor is now applied to the cracked moment of inertia for concrete beams and columns for service load combinations per *ACI 318* and *CSA A23.3* commentaries.
- Updated the Service and Strength L/y and L/z ratios to use the legacy deflection method.
- Added the governing load combination for shear in the detail reports and spreadsheet results for concrete column members.
- Corrections to the seismic detailing design feature:
    - Added an error message for seismic moment connections assigned to non-wide flange column-beam intersections because this is not allowed per *AISC 358-10*.
    - Corrected an issue where panel zone shear for OMF columns was only checking shear from one beam rather than those on both sides of the column flange.
    - Corrected an error where OCBF brace results were reporting the incorrect demand force in tension and compression per the *AISC 341-10*.
    - Corrected an error where braces in OCBF frames were checking the wrong slenderness limit in the Seismic Detailing results.
    - Corrected an error where the Column-Beam Ratio seismic results were reporting the wrong section reference from the *AISC 358-10*.
- Resolved a problem with the Wall Panel Forces where the forces were off by a factor of 1000 when running a Gupta Response Spectra load combination.
- Corrected an issue where seismic input variables would not save in RISAFloor when the *NBC 2010* or *NBC 2005* codes were selected.
- Corrected Aluminum code checks to include the limit state *F.8.1.1*.
- Corrected the unbraced length for Aluminum members that were using Lbyy instead of Lcomp.
- Resolved an issue where the stainless steel results were affected by the hot rolled steel code.
- Improved design checks of custom WT members integrated from RISASection whose orientation did not match the default in RISA-3D.
- Fixed a problem with the concrete column solver where, for certain column lengths, the interaction diagram would fail and give a message about a missing rebar layout.
- Fixed a problem where viewing a detail report for a seismic concrete wall would cause the program to quit unexpectedly.
- Corrected an issue which caused a wall to be designed for the wrong rebar spacing when the 'Group Wall' check-box was selected.
- Corrected an error in the bar spacing calculation for concrete walls in tension when an envelope solution is solved.
- Corrected a problem where the optimized shear steel would not fit in the concrete member when metric units were selected.
- Fixed an issue where Custom Wood Material inputs would give an erroneous message about a missing E05 input value.
- Resolved a display bug that affected the Detail Report after sorting the Code Check column in the Stainless Steel Design Results spreadsheet.

- Corrected an error where a nested load combination would solve but the individual load combination caused a divergence.
- RISAConnection integration improvements:
    - Added RISAConnection integration for Flange Plate Moment connections and Direct Weld Moment connections into a column web.
    - RISAConnection integration now considers positive and negative shear sign convention when exporting connections for design.
    - Added RISAConnection integration for double-sided Column/Beam and Girder/Beam shear connections.
    - Corrected an error which prevented HSS Truss connections from exporting to RISAConnection.
    - Corrected an error where Chevron Brace Connections would not export to RISAConnection if the vertical axis was set to Z.
    - Fixed an error which prevented Vertical Brace Connections from exporting to RISAConnection when a similar beam member runs perpendicular to the connection node.

Version 16.0.1 Enhancements/Corrections

- Added Stainless Steel spreadsheets to the options for the printed report.
- Fixed a problem where opening a model with results from the current version would give an erroneous message about the results being from an older version.
- Fixed a problem where selecting the Canadian *CSA S136-16: LSD* code would cause the program to shutdown.
- Fixed a problem with the Controlling Criteria being set properly for the Suggested Shapes optimization.
- Fixed a problem where using the undo command and saving would modify Custom Rebar Layouts in your model.
- Updated Tension/Compression-Only behavior to solve one more iteration after converging to use the correct model stiffness.
- Updated Subscription licensing behavior to prevent an erroneous failed log-in.
- Added an option to export a welded web plate on a Direct Weld Moment connection to RISAConnection.

Version 16.0 Enhancements/Corrections

- Analysis:
    - Added deflection optimization and design checks for beam members.
    - Improved convergence procedure for Tension Only members.
    - Corrected a minor issue where torsional warping stresses where not considered fully in the member optimization routine.
    - Fixed a problem with Tau Beta iterations where we could have a stiffness oddity if the there was a problem with convergence. This would have resulted in a failure or deflection problems in the model.
- Hot-Rolled Steel:
    - Added Stainless Steel member design per *AISC 14th (360-10): ASD & LRFD*.
    - Added the 2014 EuroCode for steel member design (*EN 1993-1-1:2014*).
    - Added consideration of the L-Torque unbraced length for all EuroCode(*EN 1993-1-1*) member design.
    - Added the *British Annex 2014* to into the 2014 EuroCode member design (*EN 1993-1-1:2014*).
    - AISC Direct Analysis Method Stiffness Adjustment for both axial and flexural now applies to all member types, not just Beams, Columns, Vbraces.
    - *AISC 341/358* Seismic design updates
        - Corrected an error in the slenderness checks for braces in OCBF frames per the *AISC 341-10* seismic detailing checks.
        - Removed an erroneous check in the seismic detailing results which required Wide Flange columns on braced frames.
        - Fixed overlapping text in the detail report for seismic detailing checks on columns.

    - Corrected an error where EuroCode Pipe and HSS shapes were using a Buckling Curve Imperfection factor of 0.34 instead of 0.49.
    - Fixed display of governing equation for *CSA S16-09* code check in detail report.
    - Changed the buckling curve for EuroCode (*EN1993-1-1:2014*) HSS members to be based on imperfection factor for cold formed (0.49) instead of hot finished (0.21 or 0.13) which was used previously.
- Concrete:
    - Added Seismic Design of concrete walls per *ACI 318-14*.
    - Added the 2014 European concrete code (*EN1992-1-1:2014*).
    - Enhancements to the Custom Rebar Layout dialog:
        - Added spreadsheet functions for easier data input (TAB and ENTER keys).
        - Added the option to highlight and copy data from several cells at once.
        - Added access from the Concrete Members spreadsheet directly to the Custom Rebar Layout dialog through a new Set Layout dialog.
    - Added custom Cm inputs for concrete wall panels.
    - Updated the Concrete Reinforcing spreadsheet region labels when the Transfer check-boxes are used for concrete wall panels.
    - Updated the effective flange thickness calculations for concrete T-Beams per the *ACI 318-14* code to account for the span limit changing due to overhang distance.
- Masonry:
    - Added the *TMS 402-16* masonry code.
    - Fixed the camera tool for Masonry Summary Reports; they will now be saved to the report.
    - Corrected a problem that would cause the program to shut down if the design code is set to None and a detail report is opened.
    - Fixed a problem where the in-plane shear reinforcement spacing design was over-conservative per the the *ACI 530-13 ASD* Masonry code.
- Wood:
    - Added design of wood shear walls per the Canadian *CSA O86* wood design codes.
    - Added design of Structural Composite Lumber materials per the Canadian *CSA O86-14* code.
    - Corrected an error in the CF factor calculation for Custom Wood Species. Now the program will always default to CF = 1.0 unless the user manually enters a value.
    - Corrected an error in the design of wood members using the Custom Wood Species. Previously custom wood species were always designed per the Sawn Lumber chapter of the code, now the program designs them per the appropriate chapter depending on the input Type.
    - Corrected the graphical display of wood wall panel top plates on walls with sloping tops or parapets.
    - Corrected a unit conversion issue for wood wall deflection in the detail report.
    - Corrected erroneous capacity equation references for wood members designed per the *CSA O86-14* code.
    - Corrected a display issue with hold downs in the detail report.
    - Fixed a problem where the program would check the overall material for a wall rather than the custom chord material for a wall, which would cause an erroneous message.
    - Increase factor of 40% is now applied to wood walls in models with load combinations for wind applied to roofs.
    - Updated the program open behavior for structural composite lumber databases to minimize problematic start-ups.
- Cold-Formed Steel:
    - Added Cold Formed Steel codes:
        - *AISI S100-16*
        - *CANACERO-2016*
        - *CSA S136-16*
    - The Distortional Buckling factor Beta from *AISI S100 Eqn C3.1.4-7* is now taken as 1.0 for all unbraced lengths except those left blank or using the segment command.
    - Corrected a calculation that affected the lateral-torsional buckling for face-to-face Cee shapes.
- Aluminum:

    - Corrected an error where Aluminum members gave a design check value of infinity (reported as '-nan(ind)' in the output) when they were set as non-physical members.
    - Corrected an issue where some aluminum members were not checking yielding and rupture limit states for flexure.
    - Corrected an issue when changing units after solving the model where the values would not update properly.
    - Corrected an error in the bending capacity calculation for aluminum pipes in tension.
- Integration:
    - RISA-3D & RISAFoundation:
        - Added the ability to see RISAFoundation footings in RISA-3D in an integrated model.
        - Fixed a problem with pile punching shear capacity that would cause an incorrect value if different concrete codes were selected in a combined RISA-3D/RISAFoundation model.
    - RISAFloor & RISA-3D:
        - Fixed an issue with semi-rigid wind loads, where a wind code update would cause loads to double. Also, changing the wind code to None would not cause the semi-rigid wind loads to delete.
        - Fixed an error in RISAFloor that caused a line load applied along a wall, that extends past the wall, to show up as two loads in RISA-3D.
        - Corrected an issue for certain models where RISAFloor beams were transferred to RISA-3D as sloped.
        - Corrected an error where the seismic weight of floors with manually applied Dynamic area loads was not calculating correctly in RISAFloor to RISA-3D integrated models.
    - RISAFloor, RISA-3D & RISAConnection:
        - Added the option to save custom shapes to the local database when exporting a connection with a custom shape from RISA-3D or RISAFloor to RISAConnection.
        - Updated the graphical view of RISAConnection results in RISA-3D to show for all members at the connection, rather than just one as previously displayed.
        - Fixed an issue in a combined RISAFloor, RISA-3D and RISAConnection model where base plates would not be transferred if Connection Rules were only applied in RISA-3D.
        - Corrected an error where custom Connection Rule labels caused the connections to be ignored during the RISAConnection design export.
        - Corrected an error where Connection Rules with a quotation mark in the label did not properly export to RISAConnection for design.
        - Fixed a problem with RISA-3D to RISAConnection integration where a sloping tower face connection wouldn't transfer connections because of the slope.
        - Fixed an error where the axial force in the column in RISA-3D was not transferring correctly to RISAConnection.
        - Corrected an error where Knee Brace connections would export from RISA-3D into RISAConnection with an incorrect brace direction.
- General:
    - Added Plate elements to the Material Takeoff results spreadsheet.
    - Enhanced the Load Combination Generator to include response spectra Load Categories.
    - Updated the Copy/Paste functionality so that the column headers would not erroneously paste into the program. They now will only paste if you're in an external program.
    - Added the option to specify a Design Rule at the time of drawing a member.
    - Project Grid Improvements:
        - Added the ability to draw snap points between radial and straight grids.
        - Corrected the coordinate order of the DXF import of Project Grids.
        - Corrected the Project Grid spreadsheet for Z axis vertical.
        - Corrected the Project Grid generator for the X & Z project grid labels.
    - Fixed an issue where the Load Combination Generator would generate multiple identical load combinations for the same code.

- Corrected wrong units reporting in the Wall Panel Forces spreadsheet. Force in pounds was reporting as kips.
- Corrected a unit conversion issue for the wall panel axial and shear forces.
- Corrected an error where the Seismic Load Generation Approximate Period (Ta) was being calculated at the parapet height, rather than the floor height.
- Corrected a unit conversion issue in the detail report for unbraced lengths after the model is solved.
- Corrected a units issue with the 'Create Point Load from Moving Loads' tool.
- Fixed an error that caused multiple Boundary Conditions on the same wall panel.
- Corrected the Time History Trace Export to include the RX, RY and RZ directions.
- Corrected an error message that was mistakenly generated for story drifts using Elevation type.
- Discontinued the support of RISAFoot inside RISA-3D.

Version 15.0.3 & 15.0.4 Enhancements/Corrections

- Updated the program install to improve behavior for network licenses.
- Improved the subscription license functionality to make it more robust.
- Added the framework to import a Tekla Structures model into RISA-3D once the RISA-Tekla V7 Link is released.
- Added "Frequencies" "Mode Shapes" topics to the Report Printing options. They were erroneously removed in V15.0.2
- Improved the area load mesh to work better for odd framing situations.
- Corrected an un-conservative error with the strong axis flexural strength for channels.
- Corrected an issue where opening a model with saved moving load results would cause a crash.
- Corrected an issue in the maximum tab of the Member Forces spreadsheet where the program was not giving the correct values in specific instances.
- Corrected an issue where the Exclude feature would not work properly in RISA-3D in a RISAFloor/RISA-3D integrated model.
- Corrected an error where base plate loads were not properly transferred from RISA-3D to RISAConnection.
- Discontinued support of the 32-bit version of the program.

Version 15.0.2 Enhancements/Corrections

- General:
  - Added two new tabs to the Member Forces spreadsheet to display the maximum force based on internal sections and end reactions.
  - Major improvements to the automatic model backup functionality.
  - Improved the STAAD import functionality to give better error messaging and better steel material defaults for unsupported values.
  - Fixed a problem where the deflection values displayed on the cursor didn't match the Joint Deflections spreadsheet if the Magnification Factor was not set as 1.0.
  - Corrected an issue where RISA-3D models created members that referred back to RISAFloor for the unbraced length value.
  - Using the Copy to Clipboard command from spreadsheets no longer copies blank cells to the clipboard.
  - Fixed a problem where the Truss High Level Generation Tool would create web members that didn't attach properly to the chords if the Out to Out option was selected.
- Wall Panels:
  - Updated the P-little delta calculations for concrete walls to show the location along the wall where it was considered.
  - Updated the P-little delta calculations for concrete walls for the odd case where both axial forces and moment forces were below program minimum thresholds.
  - Fixed a problem where the 2011 and 2013 ASD masonry code was over-conservative in designing the in-plane shear reinforcement spacing.

    - Fixed a problem where the Exclude command did not work for the Wall Panel Forces spreadsheet.
    - Fixed a conservative problem where wall force diagrams in the detail report would report a min/max of 0 even if the forces didn't go to zero.
    - Fixed a problem with printing out-of-plane concrete lintel detail reports where the program would print the in-plane report instead of the out-of-plane report.
    - Fixed a automatic meshing error where perpendicular walls framing into one another were causing the internal mesh to fail.
    - Corrected an issue in the reported masonry wall panel output to show results based on a consistent effective width.
- Analysis:
    - Improved the integrated automatic meshing of semi-rigid plates and wall panel plates in a RISAFloor/RISA-3D model.
    - Corrected an issue where plate and wall panel contour tools were mistakenly linked.
    - Fixed a problem where the plate contour tool would not work with very small plate models (less than a foot total length/width).
    - Corrected a problem where the shear check on a multi-span concrete column was reported as controlling for the wrong span.
- Loading:
    - Added a new Member Distributed Load type that is applied as a pressure to the face of the member. The program will automatically calculate the load in terms of force/length.
    - Improved the member area load mesh accuracy.
- Hot Rolled Steel:
    - Added a new steel shape database for Paco Steel & Engineering.
    - Eliminated an erroneous warning about beam depth for seismic detailing checks.
- Wood:
    - Fixed a problem in the NDS 2012 and 2015 codes where equation 3.9-4 was implemented but the text in the detail report would report Eqn 3.9-3.
    - Corrected an erroneous change to the NDS 1991/97 Wood Design Code label name.
    - Fixed a problem that showed null values for wood shapes and materials that were not existent.
- Aluminum:
    - Corrected an error which caused aluminum member forces to differ in subsequent solutions using different design codes.
- RISAConnection Integration:
    - Added the ability to apply a column Baseplate Connection Rule to column members. Now column Baseplate connections may be exported to RISAConnection for design.
    - Added the ability to apply Knee Brace Connection Rules to kicker braces. Now these brace connections can be exported to RISAConnection for design.
    - Corrected an error where invalid connection rule application crashed the program during Connection export.
    - Corrected an issue where a Chevron Brace connection would erroneously be reported as invalid due to other bracing framing in near the brace intersection point.
    - Fixed an issue where connections were being grouped improperly.

Version 15.0.1 Enhancements/Corrections

- Corrected a problem that could cause Story Drift Definition data to become corrupted when joints were added or deleted.
- Corrected a problem with Story Drift output where the drift values reported were divided by Rho even if Rho wasn't used in the load combination.
- Corrected an issue in wood design where the data could become corrupted if a custom Cfu (flat-use factor) value was used.
- Corrected a problem with single angle bending for aluminum members where the code check equation, H.3.1, was erroneously reporting a failure.

- Corrected an interface issue where Load Categories with a (-) sign could not be selected by the user in the Basic Load Cases spreadsheet.
- Corrected a problem where a very short wall height would cause the program to shut down. A check has been added requiring a wall to be at least 6 inches tall.

Version 15.0 Enhancements/Corrections

- General:
  - Added compatibility with IBC 2015.
  - Added a new & improved Project Grid system that supports skewed and arc grid lines.
  - Added the live display of coordinates and deflection values to the mouse cursor.
  - Added a No Wind/Drift checkbox to the Diaphragm spreadsheet to allow mezzanine floor levels to be ignored for wind and drift calculations in integrated RISAFloor/RISA-3D models.
  - Added parapets for walls.
  - Added parapet wind loading for main wind force resisting systems in integrated RISAFloor/RISA-3D models.
  - Flexible diaphragms on sloped roofs can now attribute loads to the sloped members instead of just the members at the ceiling in integrated RISAFloor/RISA-3D models.
  - Added error checking for generation of sloped roof wind loads on non-planar roof planes.
  - Improved the reaction description in the graphic information label for the model view display.
  - Added the deflection ratios to the member label toggle button menu.
  - Re-added the ability to automatically relabel 3D-only elements under a RISAFloor model. This had been removed in RISAFloor v10.0.1.
  - Fixed a display error which prevented the Wall Panel Editor to open for walls with a large number of nodes in its plane.
- Hot Rolled Steel:
  - Added the CSA S16-14 Canadian steel design code.
  - Implemented L-torque input for the CSA S16-14 code clause 13.3.2 similar to how it is done in the AISC 13th/14th editions.
  - Added a notification to the Detail Report whenever the Canadian Steel Code overrides the user-inputeffective length (K) factor.
  - Improved reporting of effective yield stress for Canadian steel class 4 sections.
  - Corrected weak axis KL/r checks where K =1.0 was conservatively used instead of the actual input K factor.
  - Corrected a minor error in the Lateral Torsional Buckling limit state for a custom input tapered wide flange shape.
  - Corrected a problem with the 2005 and 2001 Canadian Steel Codes with compression capacity of class 4 sections.
  - Corrected an issue with Canadian steel code checks where the unity check reported was wrong for members with near zero (but not zero) moments.
- Concrete:
  - Added the CSA A23.3-14 Canadian concrete design code.
  - Improved the concrete reinforcement optimization to fix a problem where reinforcement design could produce a code check of 1.02 instead of 1.00.
  - Corrected an error where T-beam effective flange widths were being incorrectly calculated per the ACI 318-14 design code.
  - Fixed an erroneous Kl/r > 100 message for Canadian concrete columns that use explicit reinforcement.
  - Corrected an error where a concrete beam detail report would crash after an Envelope Only solution.
- Aluminum:
  - Added the AA ADM1-2015 aluminum design code.
  - Added bending code checks for aluminum single angles per the 2015 code.
  - Added Tau B display into the detail report.

    - Updated the strong-axis bending capacity for wide flange members to not be dependent on K for the 2010 and 2015 codes. An update to the specification between 2005 and 2010 changed this behavior.
    - Updated messaging in the spreadsheet for aluminum design results to notify the user when a P-Delta solution is required.
    - Corrected a problem in the 2010 code where Local Buckling Interaction (section E.4) was being used as the capacity instead of as the upper limit.
    - Corrected an issue where the moment strength for pipes could be based on yield instead of rupture. The error was due to a difference in the phi factor.
    - Fixed an error in the governing equation display for aluminum pipe bending capacity.
    - Corrected an over conservative error with the weak axis code check for Z sections in the AA ADM1-10.
- Wood:
    - Added wood member design per the Canadian CSA O86-2014 design code.
    - Updated the Structural Composite Lumber databases for updated material tables.
    - Updated incorrect headers for Canadian wood members with an enveloped solution.
    - Corrected Wood Cv factor to only apply to weak axis.
    - Fixed a problem with FTAO wood wall design where certain walls within a multi-story wood wall stack would give N/A for the results when actual results should be given.
    - Corrected an error in wood member area calculations for NDS 2012 & 2015 design codes.
- Masonry:
    - Removed all reference to bond stress for masonry. This check was a holdover from the UBC-97 code and is not present in the current codes so it was removed from the program.
    - Fixed a problem with masonry walls where a wall custom region that used staggered reinforcement would use an incorrect grout spacing internally for self-weight and stiffness parameters.
- Cold-Formed Steel:
    - Added the design of Cold-Formed Tubes and Face-to-Face shapes.
- Analysis:
    - Added new / advanced Story Drift checks and calculations.
    - Replaced the existing Top of Member Offset feature with new Analysis Offset feature which allows any member to be offset from its center-line in any direction for analysis.
    - Updated rigid end offset behavior to allow framing, loading and wall panels to interact within the rigid end offset location.
    - Changed / improved behavior of wall panels when part of a Response Spectra Analysis.
    - Corrected an error where compression-only spring reaction forces were not updating in a solution with many iterations.
    - Fixed a mesher issue where semi-rigid diaphragms were having a problem with joints located near but not on the diaphragm.
    - Corrected an error where very long and skinny member area loads would not solve.
    - Corrected an inconsistency related to plate shear modulus calculations.
- RISAConnection Integration:
    - Added a warning in RISA-3D about brace orientation for RISA-3D and RISAConnection integration.
    - Corrected an error with RISA-3D to RISAConnection integration where braced connections were incorrectly recognizing perpendicular framing as part of the connection.
    - Corrected an error in the RISA-3D to RISAConnection integration where a brace connection would incorrectly recognize another brace member near the connection as part of the connection.
    - Fixed RISAConnection integration errors due to RISA-3D not properly recognizing connection members.

Version 14.0.2 Enhancements/Corrections

- Made significant improvements to the behavior of Subscription licensing, including adding the ability to view current license usage.
- Fixed a mesher problem that was giving a slaved node error in a combined RISAFloor/RISA-3D slab model
- Disabled design of wall panels for Response Spectra Analysis with no Dominant Mode

- Fixed a problem where moving between tabs in the double-click dialog of RISA-3D under RISAFloor, or RISAFoundation under RISA-3D, would result in an erroneous error about node labels.
- Corrected an issue where using the graphical exclude tool for material takeoff would remove previously excluded elements from the material takeoff spreadsheet.
- Changed the way that time history analysis works at the first time step. Previously the static load was being applied as part of the first time step, now the static load is applied prior to the first time step. In 14.0.1 the program was essentially "dropping" all of the static load onto the structure on Step 1, similar to an impact load.
- Restored ability to have steel use a manually input Cb factor other than 1.0.

Version 14.0.1 Enhancements/Corrections

- Hot Rolled Steel:
  - Added a limit to the *AISC 360 H1-1b* code checks so that they are never allowed to be below the pure axial code check.
  - Updated the Adjust Stiffness behavior of the *AISC 360-10 (14th edition)* steel code Direct Analysis Method. Previously the program was not taking the axial stiffness adjustments for beam members, though the code specifies this should occur for all members.
  - Fixed a problem with steel and aluminum design where using an unbraced length of zero could result in a divide by zero error in the Design Results spreadsheet or the member detail reports.
  - Corrected an issue where KL/r errors may not have been reported properly in a envelope solution that contained overstrength load combinations.
  - Corrected an error where all rectangular Hot Rolled Steel bars were being assumed to be compact and non-slender. Now, they are properly checked per *AISC 360 Table B4.1a Case 3* (all other unstiffened elements).
  - Corrected an issue with *CSA S16* code checks where members with axial compression force greater than Euler buckling would report an erroneously low code check (though still greater than 1.0).
  - Corrected over conservative assumptions related to bending capacity calculations of members in combined stress equations for the Indian steel code.
  - Fixed a problem for single angle bending where the program was conservatively using the Leg Local Buckling limit state even when the leg was in tension.
- Concrete:
  - Governing load combinations for concrete beam shear and bending code checks have been added to the member results spreadsheets and detail reports.
  - Added the consideration of Icracked for concrete members for the Indian, Australian, New Zealand and Eurocodes.
  - Updated concrete wall out-of-plane shear checks to consider shear friction for vertical reinforcement in cases where there is axial tension in the wall.
  - Added a "13M" bar option to the *ASTM A615M* rebar set.
  - Updated concrete wall panel behavior to better handle batch solutions when there are design failures in the wall.
  - Updated the out-of-plane shear capacity calculations for wall panels to use the exact "d" based on the vertical bar in the wall. Previously we were using the average "d" between the vertical and horizontal bar.
  - Fixed an issue with concrete and masonry wall panels where the forces in full-height walls were overconservative due to incorrect transfer of loads from regions above and below openings.
  - Corrected an issue where the T-beam effective slab width was not adjusting properly for the *ACI 318-14* code.
  - Corrected the detail report for cases where an explicit rectangular reinforcement layout was used for a circular section. Previously the detail report information was only partially given.
  - Corrected an issue with concrete column interaction code checks for Response Spectra Analysis.
  - Corrected an issue where adjusting the thickness of a concrete wall panel did not change the self-weight of the wall panel.
- Wood:

    - Added the ability to use Effective Length (K) Factorsfor both stud and chord axial compression design in wood wall panels.
    - Segmented wood wall panels with slender end regions now get design results for their conforming regions. Previously, no design was done at all for these walls.
    - Suppressed the wood material validity check for models which do not contain wood members.
    - Fixed an Envelope Only solution issue with the wood wall panel Force Transfer Around Openings design method.
    - Fixed a problem with glulam wood members where the "d" in le/d considerations was using a value equal to d + 1/2".
    - Corrected an error where wood PSL Parallam columns were using the incorrect compressive capacity design value.
    - Corrected an issue with units conversion for the Canadian wood design code.
    - Corrected errors in the maximum shear panel capacity checks for wood wall panels.
    - Fixed an error in Canadian wood member design where the compressive capacity reduction factor was not properly applied to nailed built up members.
- Masonry:
    - Added the option to change the cover in a masonry wall for out-of-plane design.
    - Added the option to define a single non-centered bar in a masonry wall for out-of-plane design.
    - Fixed a tolerance issue with the shear code check for in-plane masonry wall design that conservatively provided more boundary zone bars than necessary for code checks near 1.0.
    - Fixed a Batch solution problem with masonry lintels where, if shear reinforcement is required, a spacing of 0" is incorrectly reported.
    - Corrected the reported maximum axial force in the detail report for out-of-plane strength design of masonry walls.
    - Corrected an error where the governing masonry wall panel results would change when the model was re-solved.
    - Fixed an issue with out-of-plane masonry wall design where a fully grouted wall would give different results than a similar partially grouted wall with reinforcement spaced at 8" oc.
- Analysis:
    - Added live load reduction for beams and columns in RISA-3D models that are linked to RISAFloor.
    - Corrected a minor unconservative error with the torsional shear stress calculations for rectangular wood and steel members.
- Dynamics:
    - Improved the dialog behavior for Time History- Advanced Settings.
    - Updated the Spectra Scaling Factor dialog to work better for models that do not have rigid diaphragms.
    - Corrected an issue with the graphical display of deflected members for mode shape views when color coded or rendered display is used.
    - Fixed a minor Warning Log problem when importing a time history where an erroneous message could be given.
    - Fixed a problem where viewing a detail report after running a time history analysis could cause the program to shut down.
- Wall Panels:
    - Added a tool to delete all wall panel regions. Regions are automatically regenerated the next time a model is solved.
    - Added a warning message to inform users that point moments will not apply to a wall panel without a dummy member.
    - Corrected an error with the Wall Panel Editor grid display when more than 100 characters are entered.
    - Corrected a problem that caused overconservative shear forces at the ends of masonry lintels, wood headers and regions above concrete openings.
- Licensing/Installations:
    - Updated the RISA Key Manager to work properly from remote desktop without giving a false error message (Error #12).
    - Added WMVCore.dll to installs so that program can operate in Windows Enterprise environments.

    - Added an option for subscription licensing.
- RISAConnection Integration:
    - Added the ability to export connections with wide flange braces in diagonal and chevron brace connections.
    - Added the ability to export seismic brace connection data into RISAConnection.
    - Added an automatic repair when opening models with corrupted Connection Rules.
    - Fixed an integration problem between RISA-3D and RISAConnection where the connection grouping was not being controlled by the Connection Rules and a connection was ending up in the wrong group.
- General:
    - The Material Takeoff spreadsheet can now be filtered using the Exclude Unselected Items button from the model view.
    - Updated the wording in message boxes about shape database changes to clarify the behavior.
    - Fixed an issue where the program would not give a message at start-up about custom shapes in the model and whether those shapes should be saved to the database or not.
    - Corrected an issue that could cause extra member area loads to be created when using the Copy command.
    - Corrected an error in the elastic section modulus (Sy) calculation for singly symmetric RISASection imported shapes.
    - Fixed a problem with the signage on reversible wind loads with quartering where the signage on some of the partial load factors was incorrect.
    - Changed the program function regarding seismic detailing results and envelope solutions to prevent inconsistent results.

Version 14.0 Enhancements/Corrections

- Added Time History analysis:
    - Direct Integration (HHT) or Modal Superposition solution options.
    - Sinusoidal load generator with ramp up and coast down adjustments.
    - Ability to import or export time history functions.
    - Option to directly define boundary / soil spring damping.
    - Joint trace plots with user plot controls.
    - Ability to batch export joint trace data.
    - Ability to modify the frequency and magnitude of forcing functions via spreadsheet input.
    - Deflection animation views with ability to export MP4 or WMV movie files.
- Steel:
    - Added an SJI virtual joist database and associated design list.
    - Added missing AISC 6th edition double angle shapes to the AISC_Historic database.
    - Fixed a problem where single angle KL/r was being incorrectly reported in the detail report for Canadian codes.
    - Corrected an error where Hot Rolled steel shapes were not properly checked for compactness before calculating the compressive capacity of the member.
- Concrete:
    - Added the *ACI 318-14* concrete code.
    - Fixed a problem with concrete wall panels where the axial/bending checks were omitted and gave a "-1" value if there was a very high axial tension in the wall.
    - Corrected an error where concrete columns with closely spaced nodes along the length caused the member detail report to shut the program down.
    - Corrected an error in the Canadian *CSA A23.3-04* design code shear capacity strain value calculation.
    - Fixed an issue with the concrete column solver that could cause the interaction diagram capacity point to land inside of the interaction diagram when it should land directly on it.
    - Corrected an issue where concrete wall panel interaction diagrams could be plotted incorrectly.

    - Corrected an issue where shear strength for circular concrete columns was being calculated conservatively.
    - Added Warning Messages that indicate that concrete wall design requires P-Delta for both in-plane and out-of-plane design.
    - Fixed an error where some portions of the concrete wall panel detail reports were not using consistent units.
    - Fixed an issue with concrete wall panels where the wrong governing load combination was reported if Pu>0.75 *Pc for slender wall checks.
- Masonry:
    - Added a masonry wall summary detail report.
    - Fixed a problem in the masonry wall detail report where the shear strength due to steel reinforcement (Vs) could be negative.
    - Corrected an error with the masonry wall shear reinforcement calculation. The gamma factor is now applied to the Fvm calculation.
    - Corrected an error in the calculation of "a" for out of plane masonry wall panels.
- Wood:
    - Added the *AWC NDS-2015 (ASD)* wood code.
    - Added *NDS-2015* Mechanically Graded (MSR & MEL) material databases.
    - Added the *2015 AWC SDPWS* diaphragm and wood shear wall panel schedules for both OSB and plywood.
    - Updated the Custom Wood Materials spreadsheet to allow more specific material input (material Type and custom CF size factor).
    - Updated Weyerhaeuser Trus Joist materials in the wood SCL material database per updated published values.
    - Fixed an error where full sawn wood shape names were not properly reflecting the selected metric units.
    - Corrected an issue where the custom wood material strengths were not properly reflecting the unit selection.
    - Fixed an error where the Flat Use Factor (Cfu) was incorrectly calculated for square timbers.
    - Corrected an error where the Canadian wood design System Factor (KH) was not properly applied to built up members.
    - Fixed an error where the Canadian wood design System Factor (KH) would not save with the model.
    - Corrected a problem with wood member allowable stress values being reported as zero graphically in the double-click dialog.
- Cold-Formed:
    - Added 4" and 8" HDS shapes to the Dietrich Cold-Formed Shape database.
    - Fixed a member capacity discrepancy when I-J end is flipped for CFS channel shapes.
- Aluminum:
    - Fixed a discrepancy for the axial capacity when L_{torque} is set to zero for aluminum members.
- Program Integration:
    - Corrected an issue where RISA-3D can now read in RISASection files which are saved to a location other than the C drive.
    - Corrected an issue that added extra dead load into a slab floor semi-rigid diaphragm once brought into RISA-3D from RISAFloor.
    - Fixed the auto-generation of boundary conditions in walls over semi-rigid diaphragms in a combined RISAFloor/RISA-3D model.
    - Fixed an issue in combined RISAFloor and RISA-3D models where end offsets were causing an incorrect error which prevented the model from solving in RISA-3D.
    - Updated the program to allow export from RISA-3D to RISAFoundation if Tension-Only members are present.
    - Added the ability to use HSS columns and beams for Vertical Brace and Chevron Brace connections for export to RISAConnection.

    - Removed the restriction that a valid tnxTower license was required to open a .RT3 file. Now, only a valid RISA-3D license is required.
    - Updated the defaults in the Dynamics dialog in a combined RISAFloor and RISA-3D model so that the "Include Load Combination…" option is unchecked.
- General:
    - Added enveloped member detail reports for Hot Rolled steel, Cold Formed steel, Wood, Aluminum, and General material members.
    - Added a Wall Panel Forces results browser.
    - Added the display of the governing moving load step for wall panel design results.
    - Added the ability to inactivate wall panels.
    - Fixed an error where Canadian *NBC 2005* seismic design period (Ta) values were not being saved with the model input.
    - Optimized the processing of wall panel results to speed up the solution time by remembering the cut locations for each wall region and use it for every load combination.
    - Corrected an issue where the AISC Direct Analysis Method amplification of second order effects could be mistakenly applied to models which did not include any members or materials which require the application of this method.
    - Fixed a problem where the programs wouldn't close down properly from the taskbar.
    - Fixed a problem where the wrong deflected shape was animated when viewing the animation prior to displaying the static deflected shape.
    - Fixed an issue with the graphical display of enveloped reactions displaying with the opposite signage.
    - Corrected an error where Euler Buckling members were giving full code check results even though they were only seeing a small amount of compression.
    - Removed Planar Diaphragms from the program. Previous models' diaphragms are automatically converted to Membrane.
    - Corrected the Internal Force Summation Tool for walls and slabs with unselected elements.
    - Corrected the categorization of beam and column Extended End Plate Splice connections as moment connections in the Connection Rules spreadsheet.
    - Fixed a problem caused by the Repeat Current Line command in the Connection Rules spreadsheet which caused the Connection Rules to become corrupted.
    - Corrected an issue with the sorting tool in the Envelope Joint Reactions spreadsheet.
    - Corrected an error where the Application Settings "Lock Isolated Instabilities" option would not apply until the program closed and re-opened.
    - Fixed a problem with Help files not working when the program was installed to a folder with a period in the name.
    - Corrected a graphical display and printing problem with Footing detail reports.
    - Updated the orientation of a landscape image so the image is rotated counter-clockwise instead of clockwise.
    - Corrected an error in the printout nomenclature for projected loads.
    - Fixed an error where the time stamp was no longer showing up on printed reports.

Version 13.0.1 Enhancements/Corrections

- Installation & Licensing Updates:
    - Released an update version of Sentinel RMS License Manager to be compatible with Windows Server 2012 R2.
    - Fixed the Network.ini behavior to allow for the file to be placed in the root RISA directory and still be seen by the client installs.
    - Corrected an issue with tnxTower .RT3 models not opening in the current version unless the user had administrative privileges.
- Masonry Updates:
    - Updated the "a" calculation for masonry in-plane strength design. Previously the "b" was always using the effective thickness. Now the program checks the "a" value against the length of the boundary zone. If

the "a" is greater than the boundary zone then the effective thickness is used. If the "a" is less than the boundary zone then the nominal width is used.
    - Corrected an error that could cause masonry out-of-plane bending capacity of an over-reinforced wall to be reported as zero.
    - Corrected the out-of-plane stiffness calculation for partially reinforced masonry walls.
    - Addressed an issue with masonry wall panels where the tolerance between the design UC and the user's max UC was increased to alleviate changes in reinforcement for the same load combination.
- Miscellaneous Updates:
    - Added the ability to save a video of the animated deflected shape and mode shapes.
    - Added links to all Warning Log messages that take you directly to the relevant section in the help file.
    - Added new icon to "Select Marked Lines in the Model View" toolbar icon.
    - Added a graphic verification that confirms if you are running in a demonstration version.
    - Changed the name of the Global Parameters dialog to Model Settings. Changed the name of the Plot Options dialog to Model View Options. Changed the name of the Preferences dialog to Application Settings.
    - Improved the calculation of Cb values in RISA-3D where the steel beam bracing is based on RISAFloor data.
    - The detail report for footings in RISA-3D will now be updated/refreshed when switching between unit systems.
    - Diaphragms at unselected floor levels no longer are rendered, making it much easier to investigate mutli-floor models.
    - Added a Degenerate Plate Check tool to identify and fix plates that are not planar, or that are poorly shaped.
    - Added a non-coplanar warning message to RISAFloor models with roof wind loads where the wind load can't be applied because the roof joints are not coplanar.
    - Corrected an issue where the footer for PDF reports was not included on the last page.
    - Corrected flexible diaphragm load attribution to no longer consider "Column," "VBrace," or "None" member types.
    - Corrected an issue related to envelope solution reporting a moving load step for a non-moving load combination.
    - Corrected an issue with the detail report display of KL/r values for tapered members in the AISC 13th / 14th editions. Code checks were correct, but KL/r values could be incorrect for yy value and show na for zz value.
    - Fixed a rare memory allocation issue with the Joint Reactions calculation that could cause the program to shut down if an unstable model with multiple load combinations was run with tension-only members.
    - Fixed a unit conversion error for wood members in tension per the Canadian design code.
    - Corrected an issue where wall panel in-plane transfer parameters were not being updated when solving one LC from another. This affected the Δ_{NS} value for a batch solution.
    - Corrected an issue with the Delete Joints routine which could cause items (usually members) to reference joints that no longer exist.
    - Corrected an issue when clearing an eigensolution between dynamic analyses that would cause the program to shut down.
    - Corrected an issue that caused a pedestal in a RISAFoundation from RISA=3D integrated model to display incorrectly in Metric units.
    - Corrected a problem where an error message flag caused negative capacity results for hot-rolled steel members.
    - Corrected the DXF export display for metric Footings Details.
    - Corrected an issue where RISA-3D was not automatically creating boundary conditions at the bottom of wall panel stacks.
    - Fixed a problem where the internal PDF writer would print spreadsheet results as images rather than text, causing PDF sizes to be much larger than necessary.

Version 13.0 Enhancements/Corrections

- Cold Formed Steel:
  - AISI S100-12
  - CANACERO-2012
  - CSA S136-12
  - Added code checks for back to back cold formed steel members.
  - Added L-Torque to CFS members. L-Torque applies to AISI-12 C4.1.2 & C4.2.
  - Updated unbraced length assumptions for CFS members.
- Masonry:
  - Added the ACI 530-13 masonry code.
  - Corrected an issue where the masonry wall panel shear check results where displaying values that did not correspond to the governing load combination.
  - Fixed a problem with the calculation of "a" for out-of-plane strength design of masonry walls, where the program was producing bending capacities smaller than actual.
  - Fixed an issue with the detail report for masonry walls where the shear and moment diagrams could be inaccurate if the wall thickness was changed during that session.
- Hot Rolled Steel:
  - Added the AISC Historic shape database.
  - Added Kaiser Bolted Bracket moment connections for Seismic Detailing code checks.
  - Revised OCBF brace connection force reporting for seismic detailing results to be limited by the overstrength load combinations.
  - Updated an error in the Chinese Single Angle Shape Database where the program was previously taking rx as rz.
- Wood:
  - Added wood member design per the Canadian CSA Standard O86-09 design code.
  - Added new glulam material databases per NDS Tables 5B and 5D.
  - Improved error reporting for mismatched wood sizes/species/grades.
  - Fixed a problem where a wood wall would give erroneous warnings about mis-aligned straps due to the presence of perpendicular walls.
  - Fixed an issue where we were not properly filtering out the non-full height region results for wood wall panels with a segmented design.
  - Corrected a problem with explicit wood header materials unintentionally changing when deleting lines from the Wood Materials spreadsheet.
- Aluminum:
  - Added L-Torque to aluminum members when calculating the member's axial compression capacity for the ADM 2010.
- Concrete:
  - Updated the dimensioning of column reinforcement in the detail report to account for the presence of stirrups.
  - Updated the shear area of steel output to be on a per foot basis vs a per inch basis in the detail report.
  - Corrected an issue with the viewing of detail reports for concrete round columns for the NZS code.
- Dynamic Solution Improvements
  - Added a Ritz Vector dynamic solution option.
  - Added a dynamics solution option for considering residual rigid response.
  - Minor changes to simplify the dynamic solution dialog.
  - Corrected the Spectra Scaling Factor calculation to include the importance factor.
  - Corrected an issue where modes with a frequency higher than the last frequency defined in the spectra did not get assigned the proper zero period acceleration.
- Improved Install Behavior
  - Improved ability of Network Client versions to find a license server.
  - Reorganized all files (databases, defaults, etc) into new sub-folder locations.

    - Added an option in the installer to install to the Program Files and Documents folders.
- RISAFloor/RISA-3D to RISAConnection Integration Improvements.
    - Update to include new end plate moment configurations.
    - Update to allow transfer of channel connections as beams and braces.
    - Update to allow transfer of seismic moment connection parameters per AISC 341-10 and AISC 358-10
    - Added a Connection Type field to the Connection Rules spreadsheet to filter list of connections.
    - Corrected an issue with RISA-3D/RISAConnection interaction where having Z as your vertical axis could incorrectly produce member / connection orientation errors.
    - Addressed erroneous RISA-3D and RISAConnection integration warning related to invalid member slope.
- Loading:
    - Moving loads can now be included in a Batch + Envelope solution.
    - Increased the width of the Load Combinations to allow for 10 Basic Load Cases per Load Combination.
    - Added a feature to generate point loads per a specific moving load time step.
    - Enhanced the Load Combination Generator in order for each RISA program to read its own default settings.
    - Corrected load combination equations for the SBC 301 2007 Saudi Arabia code.
    - Corrected an issue with the Append command that caused the Mx loads to turn into X direction loads.
    - Corrected an error where nodes for the Perp member area load were being re-arranged in the spreadsheet.
- Wall Panels:
    - Added the option to detach a wall panel from a diaphragm.
    - Added a Point to Point Internal Force Summation Tool for Walls and Slabs.
    - Enhanced the Wall Panel Editor with local dimensions for openings and design regions.
- General:
    - Semi-Rigid diaphragms added to a linked RISAFloor ES/RISA-3D model.
    - Added an option to the truss generator to allow for pinned end releases.
    - Added a "Memory" to the Copy Loads with Members checkbox in the Copy Offset tool
    - Improved the capability of tnx Tower to integrate with RISA-3D and RISAFoundation. Previously RISAFoundation input would not be read in after the .rt3 file was created.
    - Common input spreadsheet entries will be merged for appended models.
    - Linked the unbraced length and K factors for columns between RISA-3D and RISAFloor. Now the model will use the same values in both 3D and Floor instead of maintaining separate values.
    - Corrected a units conversion issue with joint reaction COG calcs when units where changed with existing calculations.
    - Fixed an issue where project grids were omitted from the creation of a flat file incorrectly.

Version 12.0.2 Enhancements/Corrections

- Eliminated the need to manually edit the Windows registry for Network Client Installations.
- Improved the reporting of the local buckling limit state for Aluminum members.

Version 12.0.1 Enhancements/Corrections

Enhancements

- Updated the design of the Wall Panel Editor dialog. This includes adding the saving of wall drawing grids and viewing wall panel nodes within the editor.
- Added an external utility to specify a license server for network client installs to use.
- Added the “No_Cars” and “Full” options to the Cooper-E80 loads in the Moving Load Database.

- Added a new unbraced length code "Lbyy" for Lcomp-top and Lcomp-bot, which allows you to reference and use the Lbyy unbraced length.
- Redefined the blank/empty condition for Lcomp-top unbraced length entry so that it now uses the full length of the physical member.
- Updated the Hot-Rolled Steel calculations for shear capacity. There are h/tw thresholds used where h = d - 2*k. The program was previously using h = d - 2*tf.
- Re-ordered the Member Spreadsheet so “Type” comes before “Design List”.
- Modified the lateral torsional buckling code checks for tapered members (per AISC Design Guide 25) to better handle cases with zero moment at the ends of a member.
- Added notes to report printing options when envelope results are unavailable for printing during a batch solution (or vice versa).
- The equations of local buckling per ADM-05 Section 4.7 are now referenced in the member Detail Report.
- The program now ignores axial forces less than 0.5% of the compression capacity for Aluminum member analysis in order to avoid major code check differences in members with axial force close to zero.
- Licensing enhancements:
    - Added an auto-save during a Windows shut down.
    - Updated the program to allow remote desktop connections for standalone versions.
    - Created an install / initialization log file to better diagnose license commuting issues.

Corrections

- Corrected an issue with two-way area load attribution for cases with extremely light load or extremely small area load mesh size.
- Corrected an error in which units were not being shown in the Concrete Shape Database.
- Fixed a display issue with projected tapered wall panel surface loads.
- Fixed a few Model Display Options settings that were not able to save into the defaults.
- Separated the color contour controls for the wall panels and plates.
- Removed the reporting of erroneous seismic detailing information from the Model Settings portion of the printed report.
- Corrected an issue related to the number of decimals when printing Dynamics results.
- Resolved the missing graphics legend when printing in Windows 7.
- Corrected an issue where code checks for Cold Formed Steel sections with a user defined Cb value could over conservatively use a Cb of 1.0.
- Fixed incorrect code references for seismic detailing checks using the AISC 341-10 and AISC 360-10 specifications.
- Fixed an issue where RISAFloor/RISA-3D/RISAFoundation integrated models with generated lateral loads and flexible diaphragms did not pass all load category information into RISAFoundation.
- Fixed a problem with the Canadian automated Wind Load Generator where the wind pressures used for a rectangular structure were transposed.
- Fixed a problem with Custom Wood Material entry which could cause an erroneous message.
- Corrected an issue where Masonry Wall Panels could report incorrect reinforcement for in-plane forces if the Load Combination which controlled design did not have the maximum moment force.
- Corrected a problem with the shear reinforcement total steel area and capacity for concrete column design.
- Fixed a problem with the Contour Cutting Tool, where it would not work if only certain portions of the model were selected. Now it works in all cases.
- Corrected an issue with code checks on single angle members for the CSA-05 steel code.
- Corrected an error in Aluminum round tube analysis where the code check was calculated using force/stress rather than force/force.
- Corrected a bug in which the "Delete Displayed Loads on Items by Clicking the Items Individually" tool was not working for member area loads.
- Corrected an error in which printing single solution moving load results would cause a program crash.
- Corrected an issue where RISA-3D may not hand over the "distance to top of column" value to RISAConnection. This resulted in over conservative calculations for some column stiffener checks.

- Corrected a bug which caused a program crash when adding new lines to the Concrete Materials spreadsheet.
- Corrected a bug which caused a program crash when deleting lines from the Member Design Rules spreadsheet.
- Corrected an issue where member force diagrams could display with incorrect units if the unit settings were changed post-solution.
- For Aluminum design the program was incorrectly (conservatively) using the omega for tensile rupture rather than the smaller omega it was supposed to.
- Fixed a units problem with the headers in the Design Results spreadsheet for Aluminum if the units are not set as Standard Imperial.
- Fixed an issue where an irregular framing situation could cause a Wall Panel meshing problem.
- Corrected an issue related to the graphic display of enveloped Joint Reactions.
- Fixed a calculation error for the axial compression capacity of a tapered wide flange column.
- Fixed a problem in a combined RISAFloor, RISA-3D and RISAFoundation model where saved RISA-3D and RISAFoundation results could be erroneously erased.
- Corrected a problem with user entered values of Cb in Cold Formed Steel.
- Fixed a problem with the design of Concrete Shear Reinforcing in RISA-3D where RISAFloor interaction could cause some over conservative tie spacing.
- Fixed a Masonry Wall Panel problem where the allowable bending stress, Fb, in plane was using 1/3*f'm rather than 0.45*f'm for the 2011 ASD design.
- Corrected a tolerance problem with the Copy-Rotate tool.
- Fixed a problem for Cold Formed Steel members where fully braced members would provide a lower moment capacity than non-fully braced members.
- Corrected an issue with concrete L-beams that didn't indicate the correct negative reinforcement width in the detail report.
- Corrected an incorrect code reference for the bending capacity of singly symmetric Aluminum shapes.
- Removed the solution warning related to Tau_beta when using any code other than the AISC 13th and 14th Editions since it is not applicable for any other code.
- Removed an irrelevant error message related to inadequate wall panel reinforcing.
- Enhanced the Section Sets to better locate the RISASection database.
- Updated out of plane masonry design to de-couple the location of the axial and bending checks. Previously both checks were always taken from the location of maximum bending, rather than having them taken from separate locations when appropriate.
- Corrected a code check calculation error for an axial member in compression when using the AA ADM1-10: ASD Building Code.
- Fixed an issue where beam thermal force calculations are conservatively incorrect when using Metric units if the load combination factor is not 1.0.

Version 12.0 Enhancements/Corrections

Enhancements

- Enhanced Report Printing options:
  - Added the ability to include Detail Reports.
  - Added the ability to include RISA Screen Shots/Graphics.
  - Added the ability to include non-RISA images.
  - Now the user can add a Custom Logo to the report header.
- Add the ability to view Batch and Envelope results simultaneously.
- Moving Load enhancements:
  - Added the step location for moving load results to indicate where the moving load is located when it gives the reported results.
  - Updated the moving load animation with play/pause control.
  - Added the ability to view a specific moving load step in the moving load animation.

    - Added the AREMA Chapter 15 Cooper E-80 (Railway loading) to the moving loads database.
- Added a Trim/Extend tool.
- Enhanced Concrete Design Rules to give a dialog with an image to show exactly what is being updated. An easier explicit reinforcement option is also available.
- Moved Basic Load Case dropdown to the top of all Apply Load dialog boxes.
- Added a Geodesic Dome to the High Level Generation options.
- Added compatibility with Windows 8.1.
- Updates to hold-downs and straps:
    - Updated the wood wall hold-down databases, adding USP hold-downs and updating the design values for Simpson hold-downs.
    - Added the ability to add the hold-down eccentricity to wood shear walls.
    - Strap forces have been adjusted to account for the chord width.
- Wood Updates:
    - Updated wood allowable stress values based on several NDS Addenda.
    - Applied the 2007 Addendum to the AF&PA NDS-05/08 regarding wood design values, changing the Northern Species and adding Coast Sitka Spruce and Yellow Cedar.
    - Added the Hem Fir North, No. 1 & Btr species grade combination to the wood material database.
    - Clarified the CF (size factor) and Cfu (flat use factor) variables for visually graded timbers per NDS Table 4D.
- Added ASTM A1085 material and Design Lists to U.S. program defaults.
- Masonry wall updates:
    - Added the Icr Factor and Effective Height Factor, K, to be used for masonry wall design and analysis.
    - Added many additional pieces of information to masonry wall detail reports to make hand verification easier.
    - Added maximum horizontal bar spacing provisions for masonry shear walls.
    - Updated the masonry wall design output spreadsheets to show the governing code check value for both In Plane and Out of Plane results. Masonry gives multiple checks in the detail report for both combined checks and shear checks and previously only the first value was reported in the spreadsheet results rather than the maximum.
    - Corrected an issue with staggered and both faces reinforcement for masonry walls where the bending capacity was overly conservative.
    - Corrected an error where masonry wall panels would report the incorrect governing shear load for wall regions that require shear reinforcement.
    - Corrected reporting of allowable shear and controlling load combinations.
- RISA-Revit Link enhancement: RISA wood walls now export sheathing and nailing information into Revit.
- General graphical interface updates:
    - Added the ability to graphically select items from various input and results spreadsheets.
    - Added a color coding option (3D/2D) based on maximum deflection ratio.
    - Added the ability to turn off the input of Detailing Information used only for exporting information to a steel detailing program.
    - Enhanced the Wall Panel Editor to allow deletion of Boundary Conditions.
    - Added the ability to specify plate element size in the Rectangular Tank Generator.
    - Added the ability to view Joint Reactions graphically with an Enveloped solution.
    - Added the right-click menu option to "Select Items in Current View" to a number of results spreadsheets.
    - Updated the Node/Member labeling so that labels are synchronized in combined RISAFloor/RISA-3D/RISAFoundation models.
- Moved registry information from HKey Local Machine to HKey Current User to better comply with Windows best practices.
- Add the 1.43 stiffness adjustment for service-level loads for concrete wall panels per ACI 318-11 Section R10.10.4.1.
- Enhanced reinforcement checks on members with custom rebar layouts to include ACI 10.5.3 checks.

- Revised dynamic results to now always show Mass Participation regardless of whether or not RSA was included.
- Updated general shape stress analysis to use the square-root-sum-of-squares method to combine orthogonal stresses on doubly symmetric shapes. Previously the orthogonal stresses were directly summed as a conservative approach.
- Enhanced both Indian 2007 and Euro 2005 code compression routines to treat Tapered WF members as welded.

Corrections

- Updated RISA-3D to work properly with a RISAFoot network version that requires the LS Query List registry setting to work.
- Corrected the printed report Projected Load nomenclature to be consistent with the terms used in the program.
- Graphical cover measurement for concrete members in the Detail Report have been corrected.
- Corrected an error where the program was not correctly applying the user-entered K value in the calculation of the compressive capacity per the CSA S16 Canadian Hot Rolled Steel design code.
- Corrected an issue with the spreadsheet reporting of strap forces where in certain instances the spreadsheet would report NC even if there were tension forces.
- Corrected an error in the calculation of strong axis bending capacity of WT members for the Canadian steel code.
- Corrected an issue where enveloped results may not correctly report envelope deflection ratios when local deflections are negative.
- Corrected a problem with permanently saving General Arbitrary shapes to the Shape Database.
- Corrected an issue with enveloped saved Cold Formed member results where the Phi factor was not being applied in the displayed moment capacities.
- Corrected a unit conversion issue with wood wall stiffness.
- Corrected an issue in Indian 2007 and Euro 2005 codes which could lead to incorrect buckling calculations for members with a flange thickness greater than 100mm.
- Corrected an issue in Euro 2005 code which affects the buckling calculations for S460 steel.
- Corrected a problem in the calculation of Mdv (moment capacity for high shear) per the IS 800: 2007. Capped "beta" value at 1.0.
- Rectangular Tank Generator changes:
    - The Generator now uses full length physical members instead of the piece wise members previously generated.
    - Corrected an offset error with single angles and channels.
    - Corrected an orientation error with channels.
- Corrected a problem that was caused by running the envelope solution in RISA-3D under RISAFloor. If there were gravity-only walls and an envelope solution was run in RISA-3D the program would shut down.
- Corrected an issue where over strength load combinations were being included in code checks even though the load combination material flag was not checked.
- Corrected calculation of the Mv factor for the NBC 2005 Seismic Load Generation.
- Re-enabled the "Adjust Local Axis" option for the Copy-Rotate Tool. This was accidentally disabled in a previous release.
- Corrected an issue that causes the units in RISAFoundation to be off when both the units are changed and an Undo is performed in RISAFloor or RISA-3D in a combined RISAFloor/RISA-3D/RISAFoundation model.
- Corrected an error where unselected loads were being deleted when the "Delete Selected Loads" tool was used.
- Corrected a unit conversion issue with Joint Reaction Center of Gravity calculations when units where changed with existing results.
- Corrected an issue where a load combination with a moving load and over strength factors would cause a crash.
- Corrected an issue with seismic dynamic loads applied as line loads where some of the loads would not be considered.

- Corrected an issue where some wood members were not properly displaying the design values in the Properties tab of the Member Information dialog.

Version 11.0.2 Enhancements/Corrections

Enhancements/Corrections

- Enhanced modeling with wood materials:
  - Revised dialogs for selecting and adding wood materials to be more user-friendly.
  - Easier access to the Custom Wood Materials spreadsheet.
  - New dialogs allow the user to view/confirm the material design properties.
  - Updated the structural composite lumber design lists so that shape selections match proprietary products.
- Added the U.K. National Annex provisions to the 2005 EuroCode Hot-Rolled steel design (NA to BS EN 1993-1-1:2005).
- Custom moving loads are now save with the input file.
- Improved animation window controls.
- Added automatic save of RISAFloor results when transferring a model from RISAFloor to RISA-3D.
- Improved the accuracy of CSA S16-09 member capacity calculations for Class 3 and Class 4 members.
- Updated the display of the units for Mass.
- Corrected a bug in Cold-Formed Cb calculations where Cb could change (conservatively) in a non-AISC Hot-Rolled steel code was selected.
- Corrected an error in the CF factor calculation for 12" wide members.
- Corrected a problem with deleting distributed loads using a spreadsheet.
- Updated the masonry P-Little Delta procedure to properly account for all support conditions.
- Corrected an issue where 64-bit network clients were not displaying the Key ID in the Help-About dialog.
- Fixed values for H and HN sections in the Chilean Steel shapes database.
- Corrected a member optimization issue in RISA-3D under RISAFloor where RISA-3D would not recommend smaller shapes for members which were now well below failing due to a decrease in loads.
- Corrected an issue with the Australian steel code where members with axial force greater than Euler buckling capacity would calculate a negative moment capacity.
- Fixed a refreshing issue with General shapes where they would not show up within the "Assign Shape Directly" dialog.
- Corrected a bug in which sorting the member force results for a concrete member would cause the detail report force diagram to change.
- Fixed an issue with concrete and masonry walls where the code check would incorrectly produce "INF" or some design forces could be reported as zero.
- Fixed an issue that didn't remember user entered seismic Ta for Canadian codes.
- Corrected DXF grids import to include arcs.
- Corrected errors in the Chinese shape database for the following shapes: TM170X250 and TW150X300A.
- Corrected a problem with reading CIS/2 files containing quotation marks.
- Fixed an issue with the Cm calculation for out of plane concrete wall design. The program was previously using a value of 0.6 when it should have been using 1.0.
- Fixed an issue that caused a major error while using the Out-of-Plane-Flip tool on a wall panel.
- Fixed a tolerance issue which could cause the seismic self-weight calculation to be incorrect when member area loads are used as part of the self-weight.
- Corrected an issue where h/w ratios for wood walls with multiple openings could be calculated incorrectly for the FTAO design method.
- Corrected a problem with exporting models using Rigid Links to DXF.
- Removed "Trimmer" from wood wall opening detail reports, as it had no impact on the design.
- Fixed a units issue with the Deflection Ratio value on the detail report for out of plane concrete wall design. Previously this ratio was conservatively off by a factor of 12.

- Fixed an issue with out of plane design of concrete walls where the in plane axial force (entire wall) was being used instead of the per foot axial force.
- Corrected an issue with lintel forces for masonry walls where the design ignores any applied forces if the lintel depth went to the top of the wall.
- Fixed an issue that didn't save the dynamic solution inside RISA-3D from under RISAFloor.
- Fixed an issue with out of plane concrete walls where the minimum moment was not being used in all cases.
- Fixed an issue where some footings would not be designed if the allowable soil bearing was set to "Gross."
- Corrected an error where a RISA-3D model under RISAFloor would not solve a dynamic solution unless the user had previously used the Seismic Load Generation to generate nodes on the diaphragm.
- Corrected an error where user-input seismic parameters were being incorrectly reported on the printed output.
- Corrected a display bug in which the graphical display dimensions for a General Arbitrary shape did not update when the shape properties were edited.
- Corrected an issue with shear and deflection diagrams of single angles with nodes along the length of the physical member.
- Fixed an issue with the axial, shear and moment enveloped diagrams for concrete walls in the out-of-plane direction.
- Corrected an error in which area loads were not being properly copied when using the Mirror Copy command.
- Changed Le/d calculation for SCL wood members to use actual rather than nominal dimensions.
- Corrected an issue with ACI threshold torsion calculations which caused them not to be reported for envelope solutions.
- Updated Append behavior to compare the Section Set information between two models before appending. Previously a member defined as Section Set 1 in one model would become Section Set 1 in the 2nd model even if the two shapes were not the same.
- Corrected a minor issue with AISC 13th and 14th editions where incorporating torsional shear stresses into the code check was overly conservative.
- Corrected an issue where outdated information was sent to RISAConnection from RISA-3D and/or RISAFloor due to inconsistencies.

Version 11.0.1 Enhancements/Corrections

- RISA-Revit Link Updates
  - Compatible with RISA-Revit Link 2013 version 2
  - Added BIM ID's for RISAFloor slab openings.
  - Fixed a wall panel issue where changes made to walls would affect all walls except one.
- RISAConnection Integration
  - Corrected column connection orientation when using the RISAFloor/RISA-3D to RISAConnection integration. Previously the integration was always producing a connection framed to the flange.
- RISAConnection/Tekla Structures Link Updates
  - Added compatibility to support the upcoming release of the RISAConnection/Tekla Structures Link
- Cold-Formed Steel Updates
  - Added AISI provision B4 to the check of the flanges for weak-axis bending.
  - Added the full elastic computation for the "I_s" values in the AISI B4 provision.
  - Fixed an error in the calculation of S_{ey} for ZS shapes.

Version 11.0 Enhancements/Corrections

Enhancements

- Added 64-bit version capability.
  - The program will run in 64-bit addressing space, expanding Windows memory limits.
  - Allows for increased program limits when running on a 64-bit operating system.

- Added the ability to import a DXF underlay; Allows users to snap to the underlay when drawing members and walls.
- Added the AF&PA NDS-12 (ASD) wood code.
- Added the ACI 530-11 (ASD & Strength) masonry code.
  - Added many supplemental values and extra messaging to masonry wall detail reports.
  - Added option for masonry walls to define the wall area (RMEH or NCMA). Prior versions used only the Reinforced Masonry Engineer Handbook.
- Added the AISI S100-10 (ASD & LRFD)/CSA S136-10: LSD/CANACERO 2010 (ASD & LRFD) cold-formed steel code.
- Added the AA ADM1-10 (ASD & LRFD) aluminum code.
- Added design for tapered members per AISC Design Guide 25.
- Added the AISC 341/358-10 seismic design provisions.
- Added the CSA S16-09 Canadian steel code.
  - Added code checks for class 4 sections.
  - Added code checks for single angles for both bending and tension/compression.
  - Updated the Canadian steel database per the 10th edition manual.
- Added the NBC 2010 Canadian building code provisions.
  - Added wind and seismic load generation.
  - Added the design response spectra.
  - Added the load combinations (service and strength) to the Load Combination Generator.
- Reduced start-up times by using a faster shape-to-database comparison.
- Updated hold-down databases for newer Simpson catalogs (per IBC 2006/2009).
- Added a Virtual Joist Girder database and design list per SJI recommendations.
- Added the ability to perform concrete member design for overstrength load combinations.
- Added an upper limit on design moment for ordinary moment frames per AISC 341 commentary Section 11.2a.
- Increased the maximum number of modes allowed in a dynamic solution from 500 to 2,000.
- Added new connection features for integration with RISAConnection 3.0.
  - Added the AISC 360-10 (ASD & LRFD) code for RISAConnection integration.
  - Added support for slightly non-concentric braces.
  - Added new Connection Types to the Connection Rules spreadsheet.

Corrections

- Corrected an issue which would cause color-coded code checks to display all black for concrete members.
- Corrected an issue which would cause the program to shut down if viewing color-coded code checks.
- Corrected an issue where seismic factors (Rho, Omega, Sds) were not properly applying to structure self weight. These values were using a value of 1.0 to factor the self-weight portion of the load.
- Corrected the calculation of the weak axis bending capacity of non-compact and slender channels designed to AISC 13th or 14th edition steel codes.
- Corrected an issue with the seismic detailing calculations where the horizontal component of the unbalanced brace force (for Chevron brace frames) was reported incorrectly.
- Corrected an issue where wood wall design results were not given for a wall with two regions stacked on top of each other with no diaphragm present.
- Corrected an issue where the 2b/h calculation for slender piers on segmented wood walls could be incorrect for version 10.
- Corrected an issue where the program was incorrectly calculating some cross section properties for the principal axes of single angles.
- Corrected an issue with area load attribution which caused odd transient area loads.
- Corrected a calculation error relating to minimum vertical reinforcement in concrete shear walls.
- Corrected an issue where seismic web compactness check could erroneously fail for brace members.
- Corrected some issues with concrete column optimization which could cause overly conservative code checks.

- Corrected an issue where an install path with long file / directory names could cause the program to fail to launch when using file association.
- Corrected issues related to masonry wall design regarding unreinforced walls.
- Corrected a problem with RISA-3D clearing results when using the Director tool to switch between RISAFloor and RISA-3D.

Version 10.0.1 Enhancements/Corrections

Enhancements

- Enhanced performance on 64-bit operating systems to allow use of up to 4 GB of memory.
- Added spacing and minimum steel reinforcement area checks for concrete walls.
- Added Seismic Design Rule selection to the member double click dialog.
- Added ability to do concrete member design for overstrength load combinations.
- Added automatic flipping of gravity loads and diaphragms to the Switch Vertical Axis tool in the Tools menu.
- Added the calculation of Cv for shear capacity of single angles for the AISC 14th Edition.
- Principal axis notation was added to the detail report for aluminum single angles.
- Added detail report warnings for members and wall panels when these elements are not considered for overstrength load combinations.
- Enhanced spreadsheet behavior so that column widths will be remembered when they are updated.
- Simplified database shape comparisons to reduce program start-up time.
- Updated the Draw Wall Panels dialog to remember a previous action.
- Updated the program to account for story shear in the Seismic Detailing Panel Zone shear demand calculations.
- Updated saving results behavior when working in linked programs so that clicking the Save Results button once will save the results for all linked programs.
- Updated the Copy Rotate tool default settings and updated the Status Bar to better prompt the user.
- Added validation to confirm that all Design Rules are valid upon opening a model.
- Changed member detail reports to show AISC-style report when AISC design is used. This happens when foreign codes are unclear on provisions.
- Updated the model deflected shape to now include solid elements. Previously when viewing the deflected shape the solids were not visible.
- Updated wood wall header output to state whether the header is controlled by bending or shear.
- Added a restriction on single angles such that "depth" leg cannot be shorter than "width" leg.
- Renamed AISI NAS-07 to S100-07 based on code naming conventions.
- Removed the upper limit of 3.0 on Cb for bending capacity for the AISC 14th Edition.
- Removed moment magnification for the ACI 318-08 code, as a P-Delta analysis is required.
- Removed a limitation on rebar Fy on the Concrete tab of the Materials spreadsheet and added a warning for ACI codes when rebar Fy exceeds allowable.
- User-defined wall panel boundary conditions are now consistent across masonry, concrete, and general wall types.
- Made the calculation of the total seismic weight consistent between the Spectra Scaling Dialog and the Insert Seismic Loads dialog. Both now compute any load between the diaphragms (or base and 1st floor diaphragm) based on the distance of the load to the floor or base.
- Removed Ltorque from the bending capacity calculations for AISC 13th and 14th editions. Ltorque now only affects axial capacity calculations.
- Changed column Euler buckling slenderness violations of AISC 341 Seismic Detailing from a failure to a warning.
- Updated shear panel optimization and hold-down selection in wood walls to be based on wall design rule's Max Shear Check and Max Bending Check respectively. Previously this value was always taken as 1.0.
- Updated masonry design for both ASD and Strength so that the Wall Design Rules - Max Shear Check column works properly. Previously it was assumed that the maximum shear check was always 1.0.

- Updated the M2 calculation for out of plane design of concrete walls so that there is an interior and exterior value. Previously the maximum value was being used in both instances.
- Updated the calculation of the M2 moment for concrete wall panels at each section along the height of the wall. Previously it was taking maximum M2 moment at any place along the height of the wall and using it for every section.
- Updated Chilean Steel database per Acero Diseño Estructural Manual – Segunda Edicion

Corrections

- Corrected an issue with network license validation that could cause a slow down with the user interface.
- Corrected an issue where network client computers could not find databases when launching the program in demonstration mode.
- Corrected the bending capacity of double angles in the AISC 14th Edition.
- Fixed an issue in the ASCE 7-10 Seismic Model Settings where Omega and Rho could not be anything other than 1.0.
- Fixed a unit conversion issue with the Material Take Off output so that the volume of concrete is only based on the density unit.
- Corrected a problem where wall panel stiffness was incorrectly overestimated when using metric units due to a unit conversion error.
- Fixed a problem with the load meshing for flexible diaphragms that would produce error code 2136.
- Fixed the Load Combination Generator so that the notional load direction will always be the same as wind load direction for an individual combination.
- Fixed a metric units problem with masonry lintels where check to make sure that the reinforcement fits within the member geometry was not working correctly.
- Fixed the flexible area load attribution in a RISA-3D under RISAFloor model so that inactivated members do not have load attributed to them.
- Fixed an issue with the calculation of the tributary area of double angle members for Open Structure area loads.
- Corrected a load attribution issue with area loads and metric units not matching the same attribution as imperial units, although total load was still correct.
- Corrected an issue where concrete columns in tension would not design shear reinforcement spacing in the center span region.
- Fixed the display of incorrect governing equation numbers for bending capacities on flat aluminum plates in the detail reports.
- Corrected an issue where the Web Yielding limit state could be overestimated in the continuity plate checks of the Seismic Design results.
- Corrected an issue where the phi factor was not being applied for Web Buckling calculations within the Seismic Design results.
- Updated an issue with wood wall panel optimization where having multiple design rules could cause an individual wall to be designed to a different wall design rule.
- Fixed an issue with masonry walls where the stiffness was not being reset when you make a change in the Wall Design Rules spreadsheet.
- Fixed multi-story wood walls in RISA-3D only models so that you would get results for all regions.

Version 10.0 Enhancements/Corrections

Enhancements

- Added AISC 360-10 (14th Edition) ASD and LRFD code checks for hot rolled steel members.
- The AISC Database has been updated to include new shapes in the 14th Edition AISC Manual.
- Added ASCE 7-10 to the Wind / Seismic Load Generation and to the Load Combination Generator.
- Added ACI 318-11 code checks for concrete members.

- Added a "Threshold Torsion" check for concrete beams.
- Added ability to assign openings in concrete wall panels.
- Added a user defined torque length to the design properties for AISC 360-05 (13th Edition) and the AISC 360-10 (14th Edition).
- Added Canadian Parametric Design Spectra per NBC 2005 to the Response Spectra Library.
- Added CSA S136-04 code checks for cold formed steel members.
- Added CSA S136-07 code checks for cold formed steel members.
- Added the location of demand and capacity points on interaction diagrams for concrete walls.
- Added a Tools-Application Settings option to add the individual Load button options back to the Data Entry Toolbar.
- Added a Copy Offset tool.
- Added Load Combination Generation files for the Saudi SBC 301-2007 code.
- Added the ability to print Response Spectra and Moving Load input data.
- Added tension code checks for Aluminum single angles.
- Added hydrostatic loads to the circular tank generation utility.
- Added the ability to click a joint to define the origin of the copy-rotate or move-rotate commands.
- Added the ability to flip local axes of Wall Panels without flipping the opening locations.
- Added the ability to print section properties from the Shape Database dialogs.
- Added optional ability to copy headers with spreadsheet data. (Optional based on a Tools-Preference setting.)
- Expanded the Torsional Buckling / Flexural Torsional Buckling code checks for AISC 360-05 (13th Edition) and AISC 360-10 (14th Edition) to apply to shapes other than WT's and LL's.
- Modified the treatment of masonry and wood Wall Panels to automate stiffness updates within the optimization / Suggested Shapes results.
- Improved the graphical Copy tools.
- Improved masonry Wall Panel definitions to be based on Wall Design Rules so that it will be easier to change multiple walls at the same time.
- Improved reporting of Overturning Moment Safety Factors when RISAFoot runs from within RISA-3D. (This affects Load Combinations built with Basic Load Case numbers rather than load Categories).
- Improved / reorganized the Solution tab of Model Settings to be more user-friendly and easier to read.
- Updated properties in the Cold Formed Steel Database (based on bend radius changes).
- Improved the code checks for concrete columns for cases where the column is subjected to net tension plus bending.
- Removed the obsolete Trade Arbed database from the installation routines.

Corrections

- Corrected an error with Canadian NBC 2005 Seismic Load Generation where the program was using the Sa(0.2) value instead of the S(0.2) value.
- Corrected an issue where shapes from older RISASection files (version 1.1 and earlier) had issues with shear deformation.
- Corrected a bug that caused the weak-axis bending strength of wide flanges members with slender flanges to be overestimated in the AISC 360-05 (13th Edition) code.
- Corrected an issue with distributed loads on tapered Wide Flange steel members where a portion of the distributed load could get ignored.
- Corrected an issue with Canadian design of single angles where compression code checks were reporting a value of 0.0 rather than 'No Calc'.
- Corrected an issue related to aluminum databases and single angle flexural-torsional buckling code checks.
- Corrected an issue with the aluminum code related to the allowable bending stresses for rectangular tubes subjected to a minor axial force.
- Corrected and issue where seismic detailing slenderness limit failures were reported in the wrong column of the Seismic Design Results spreadsheet.
- Corrected a seismic design results issue where the connection design moments for SMF frames were being conservatively reported at the center line (rather than the face) of the column.

- Corrected some issues related to how overstrength load combinations were included in an envelope solution.
- Corrected an issue where Notional Load Generation was not properly accounting for effects of openings in wall panels.
- Corrected an issue with the Load Combination Generator where the program was producing extra (and unnecessary) load combinations.
- Corrected a units conversion issue related to rebar strength for custom rebar layouts.
- Corrected a units conversion issue related to thermal loading on plate elements.
- Corrected an issue where several Model Settings values were omitted from printed output or were printed incorrectly.
- Eliminated lateral-torsional buckling code checks for Cold Formed HU sections bent about their y-y axis.
- Fixed a units conversion problem with RISASection shape properties used in RISA-3D/RISAFloor.
- Corrected an issue with the RISA-Revit Link which could result in loads being deleted during a round-trip.
- Corrected a display issue where envelope solutions for cold formed steel were not properly showing phi and omega values.
- Corrected an issue where the Replace and Resolve function was not properly interacting with the graphical Exclude feature.
- Corrected an issue with the shear code check of multi-span concrete columns where the controlling shear location was always assumed to be at the end of the member.
- Corrected an issue where the 'j' value displayed in a masonry wall detail report could be erroneously shown as 1.0. (This was a display issue only; the calculations were correct.)
- Corrected an issue with the calculation of As_max for the IS456 Indian concrete design code.
- Corrected an issue where the Gupta modal combination method would cause a wall panel model to crash during an Response Spectra Analysis solution.
- Corrected an issue with Open Structure area loads where round members were receiving over-conservative loading.

Version 9.1.1 Enhancements/Corrections

- Added integration with RISAConnection for hot rolled steel connection design.
- Made a number of enhancements associated with database shape values and presentation:
    - The AISC Database has been updated to include new shapes in the 13th Edition AISC Manual.
    - The section properties of AISC shapes have been updated to reflect new values in the 13th Edition AISC Manual.
    - When installing over an older version, the database of obsolete AISC shapes is retained as an “AISC_Backup” shape database.
    - AISC shapes in existing models, which have section properties that differ from current database values by less than a specific tolerance, are automatically assigned the new section properties. However, if the difference in section properties exceeds the tolerance then the existing section properties are retained with a new shape name which has an _HRA suffix.
    - Added "k" values to hot rolled steel databases to allow for better integration with RISAConnection
    - Design Lists updated for the new AISC shapes. Backups of older design lists are saved with a *.bak extension.
    - Enhanced integration with RISASection (version 2.0) to allow for code checks on imported Hot Rolled Steel shapes
    - Added a Print function to the Edit/View dialog in the Shape Database.
    - Enhanced the graphical rendering of General and Arbitrary Shapes to allow for easier identification of stron and weak axes
- Added the IS 800-2007 Indian Steel code.
- Added tie down forces and shear forces to the Wood Wall In-Plane results spreadsheet.
- Updated the cold-formed steel databases to be fully editable.
- Improved the processing time for the creation of results browsers or flat file printing.
- Improved the "Model Merge" utility so that the trim/extend wall panels option will also correct for non-coplanar walls.

- Improved the interaction diagrams for concrete wall panels to make them more continuous.
- Added an upper limit to the lip/width ratio for cold formed steel lipped channel sections in order to properly calculate k (the plate buckling coefficient).
- Added a warning log message for masonry walls that use uncommon material strengths with uncommon block sizes. Self-weight will not be accounted for these walls and must be applied manually.
- Added a graphical Re-Labeling options so that users can selectively re-label existing items based on the current selection state. This also allows user to apply a different prefix to selected items.
- The EuroCode for Hot Rolled Steel (1993-1-1) now uses the AISC Cb formula to calculate the C1 coefficient for beam lateral-torsional buckling. this variable will be overridden when the user enters a value in the design data for the member.
- Fixed an issue with seismic detailing checks so that the "frames into column strong axis" check will now only be performed for beams with fully fixed ends.
- Fixed an issue where running a load combination with a moving load in a model with concrete walls would cause an error.
- Corrected an issue regarding member forces calculated from a Response Spectra Analysis when using the Direct Analysis Method which could result in un-conservative values for member moments and code checks.
- Fixed a problem that caused an overstrength error message and no results to be displayed when a moving load was solved.
- Corrected an issue with calculation of seismic and notional loads where the self weight of walls was not being properly attributed to intermediate diaphragm levels. Issue existed only for RISA-3D models that were not linked to RISAFloor.
- Corrected an issue where RSA load combinations were not properly triggering the AISC Seismic detailing calculations.
- Corrected an issue where applying seismic detailing to Hbrace members caused a results browser error.
- Corrected an issue where the Seismic Detailing Results would not display properly for members defined with the function set to "gravity only".
- Corrected the calculation of effective section modulus for Mny in HU cold-formed shapes.
- Corrected an issue where point moments could be lost if applied at the same end of a member as a pinned moment release.
- Corrected a problem with wall surface loads that touched opening edges, which caused results to be reported as infinity.
- Fixed miscellaneous errors with detail reports for concrete beams when custom shear rebar layouts were used
- Fixed an issue where concrete walls would not be designed if Z is the vertical axis.
- Fixed an issue with wood walls where the header option for "Same as Opening" was not using the same material from the copied header.
- Fixed an error which could cause the Custom Wood Species counter to be off, preventing the model from opening.
- Updated the HDU wood hold-down databases to correct the HDU14 5-1/2" & 7-1/4" capacity values. The update will overwrite the old file and back it up.
- Fixed a Units issue with the chord capacity for wood shear walls
- Fixed a problem that caused wall chord tension to be reported when there was none.

Version 9.1 Enhancements/Corrections

Enhancements

- Added Concrete Wall Panels per ACI 318-05 and ACI 318-08 specifications:
  - Ability to design reinforcement (both shear and axial/bending).
  - Ability to design reinforcement for out of plane wall loading (axial bending and shear)
  - Provides story deflections for each story in a multi-story wall.
- Added Seismic Detailing code checks per AISC 2005:
  - Moment Frame design per AISC 358 (RBS, BFP, BUEEP, BSEEP, WUF-W)

    - Strong Column / Weak Beam calculations
    - Column checks for connection forces (i.e. continuity plate stiffeners)
    - Calculation of required strength and stiffness of beam bracing
    - Panel Zone column checks
    - Concentrically Braced Frames per AISC 341
    - Calculation of unbalanced forces for V and inverted V braces.
- Single Angles:
    - Added ability to designate that axial code checks should be based on geometric or principal axis buckling. See the Help File Single Angle sub-topic of Member Results for more information.
    - Added bending code checks for single angle members based on bending about geometric or principal axes. See the Help File Single Angle sub-topic of Member Results for more information.
- Made changes to the Masonry and Concrete Materials spreadsheets:
    - Moved the definition of the yield strength of the reinforcement (Fy) from the Design Rules spreadsheet to the concrete and masonry tabs of the materials spreadsheet.
    - Moved the masonry self weight definition from the Design Rules spreadsheet to the Materials spreadsheet.
    - This could result in reduced backwards compatibility of Concrete and Masonry Materials with older versions of the program.
- Added a number of improvements for the Cold Formed Steel code checks
    - AISI 2004 Cold Formed Steel code
    - AISI 2007 Cold Formed Steel code
    - Added Mexican (Canacero) 2004 and 2007 codes
    - Updated the AISI and SSMA database shape properties to reflect the new 2007 code provisions.
    - Added Omega and Phi factors to cold formed steel detail reports and spreadsheets.
- Added AF & PA NDS-08:ASD Wood code.
- Added ACI 530-08 Masonry code.
- Added ACI 318-08 Concrete code.
- Added back in the ability of the program to launch in "Demo Mode" when a license is not detected. Feature now requires the creation of a Demo sub-folder.
- Added a tool to flip the local axes of existing wall panels.
- Modified the CL calculations for glu-lams with d/w < 2.0.
- Added the ability to graphically display wall panel Design Rules.
- Added the Cb calculation for cold formed steel members.
- Simplified the interface by splitting the Design Rules spreadsheet into a Wall Design Rules and a separate Member Design Rules spreadsheet. This could result in reduced backwards compatibility of design rules with older versions of the program.
- Simplified the Data Entry Toolbar bar moving the access of the individual load spreadsheets to be within the Basic Load Cases spreadsheet.
- Added P-Delta calculations for wall panels.
- Removed internal wall panel joints from the program limit for maximum number of joints.
- Improved the graphic display of sloped distributed loads to be more legible.
- Improved the treatment of wood wall schedules when using the Append feature.
- Improved wood wall hold down reporting in the detail report for cases where the allowable hold down force was adjusted for load duration factor or such.
- Added a Note/Warning to the detail report to alert the user when a hold down requires a chord size greater than that specified for the existing wood wall.
- Changed the stiffness used for dynamic analysis to ignore the Direct Analysis method stiffness reductions.
- Changed the Modify Member Properties dialog to allow for independent adjustment of member types, material, and design list.
- Changed the Modify Member Design dialog to be more user-friendly by introducing group boxes and re-organizing existing data.
- Improved the code checks for perforated wood shear walls by adding a check for NDS SDPWS section 4.3.5.3 (maximum unit shear capacity). This only affects walls panel with +1370plf shear capacity.

- Removed the KL/r limitation check for members that are marked as "tension only."
- Updated the ASCE 7-05 minimum base shear calculation to account for Supplement #2(0.044*I*Sds > 0.01).
- Added the ability to append R3D or RT3 files into an existing RT3 file.
- Improved the shear code check reporting for masonry walls with a shear stress greater than Fvm. Previous results were accurate, but could be misleading about the location of the governing code check.

Corrections

- Corrected an issue with the Tee beam flange width calculations for the Canadian Concrete code. Previously, slab thickness (conservatively) and span length (non-conservatively) limits were based on the ACI code.
- Corrected an issue with the Chinese shape database where the x-bar values for channels were incorrect and were preventing code checks from being calculated.
- Corrected an issue with the Euro Steel code checks for class 4 (slender) sections which could result in over conservative code checks.
- Corrected an issue where Floor models with flexible diaphragms would not properly solve an envelope solution which contained moving loads.
- Corrected an issue with the axial code check of aluminum tubes and Rectangular members where the allowable axial stress was incorrectly being multiplied by the member area.
- Corrected a tolerance issue with the code checking of concrete columns. The program was unnecessarily switching from Exact Integration Method to PCA Load Contour method for cases where the moments were very close to zero.
- Corrected a typo in the wood panel hold down database for HDU 14-5.5 hold downs.
- Corrected an issue where aluminum members would not display force and stress values when their design code was set to none.
- Corrected an issue with the Cm calculation for ENV2005.
- Corrected an issue where "tapered members" which do not have any taper were getting incorrect code checks.
- Corrected an issue with the Australian and New Zealand steel code check where members with only axial force could give a code check of zero.
- Corrected an issue with aluminum code checks when the allowable tension force controls the allowable bending force. Previously, the governing equations were not being reported correctly.
- Corrected an issue where the program was transposing the SX and SZ spectra scaling factors in the load combinations.
- Corrected an issue where seismic redundancy factor (rho) was being taken as zero if it was included with loads applied to a flexible diaphragm that came over from RISAFloor.
- Corrected an issue with the AS and NTC concrete codes where the reduction factors (phi) were not displaying properly on the column interaction diagrams.
- Corrected an issue which caused 1992 Eurocode equation numbers to be mistakenly referenced when the 2005 Euro Steel code was used. Code checks were correct; only the displayed equation numbers were wrong.
- Corrected a problem which could cause file corruptions associated with wood material counters.
- Corrected a tolerance issue with the BS 5950 Steel code which could cause the Table 9 stress adjustments to be ignored for members with a thickness of up to 2.5mm greater than what would normally require reduction.
- Corrected an issue with lintels for masonry wall panels where the Mn was being calculated as a negative value.
- Corrected an issue which could cause a crash when opening an RT3 (RISATower) file with saved results.
- Corrected an issue which could cause models with wall panels to crash when exporting to DXF.
- Corrected a number of issues with load attribution for sloped floors.
- Corrected an issue with wood shear walls where putting the assumed tension chord in compression (or the assumed compression chord in tension) could result in an incorrectly reported chord force. These cases no longer affect the chord force reporting.
- Corrected an issue with the concrete column rebar diagrams which could cause the detail report to crash.
- Corrected a display issue in the detail report for General wall panels where the length of the wall could be reported incorrectly.
- Corrected a tolerance issue with projected area loads where a projected load which was nearly parallel to the plane of the area load could result in -1.#IND member results.

Version 9.0.1 Enhancements/Corrections

Enhancements

- Added drawing of flexural reinforcement in the column cross section to concrete column detail reports.
- Added an option to use a non-iterative (Tau = 1.0) method for the AISC 360 / 13th edition Direct Analysis method.
- Modified the AISC direct analysis method to ignore the sway flags. See the Limitations - Stiffness Adjustment section of the help file for more information.
- Improved the wall mesh routines interaction with member area loads. See Area Load Distribution in the help file for more information on the interaction between walls and area loads.
- Improved the plotting of the deflected shape for members with shear and axial releases.
- Modified the Concrete Column detail reports so that they always show the interaction diagram regardless of what loading is applied to them.
- Improved the custom rebar layout dialog to be easier to use.

Corrections

- Corrected an issue where the rho and Omega factors used in the Load Combinations spreadsheet were always set to 1.0 regardless what parameters were entered in the Seismic tab of the Model Settings.
- Corrected an issue that caused over conservative calculations of allowable flexural stresses for aluminum round tubes and channels.
- Corrected an aluminum design issue which resulted in incorrect slenderness parameters (S1 and S2) being used for tube shapes.
- Corrected an issue with the expanded force diagrams for concrete members.
- Corrected an issue where an inactive diaphragm (combined with auto-generated seismic loads) could cause a file corruption and prevent the model from opening in version 9.0.
- Corrected an issue where information changed in the Footings tab of Model Settings would not be remembered when closing out of the dialog.
- Corrected an issue associated with P-Delta analysis in the AISC 13th edition (ASD only) for members subjected to thermal loads. The 1.6 amplification factor on P-Delta effects was not being taken into account for the thermal loads.
- Changed a misleading Warning Log Message to be more descriptive. Instead of "Not enough solution data", the message will now inform the user that their results were generated by an older version of the program.
- Corrected a bug where some unstable plate models failed to generate the warning log message about reactions not equaling the sum of applied forces.
- Updated notation for design coefficients for EuroCode. Previously, the EC3 2004 code was mistakenly using the naming convention from the 1992 version of the code.
- Corrected an issue where appending a model could cause the wall material to be read incorrectly.
- Corrected an issue with the wood database for the "Western Cedar" species.
- Corrected an issue where the program was refusing to do a code check (because fb>FbE) even though the member was in tension.
- Corrected an issue with the displayed units for wind load generation.
- Corrected an issue where rigid end offsets and custom rebar layouts could result in an overly conservative shear check.
- Fixed a units conversion issue where code checks for wood wall panels could be overly conservative.
- Fixed an issue where hard-coded wood wall panels would always give a seismic load combination as the governing load combination, even if a non-seismic load combination controlled.
- Corrected a display issue where the member detail report displayed a different Fv value than was actually used in the F'v calculation for Glulam members.

Version 9.0 Enhancements/Corrections

Enhancements

- Added Aluminum member design
  - Added all shapes in the 2005 Aluminum Design Manual.
  - Added code checks per the AA ADM1-05 ASD for both buildings and bridges.
- Enhanced Seismic capabilities within the program:
  - Added a Seismic tab to the Model Settings to permanently store seismic code information.
  - Added redundancy factor (rho) to the Load Combination Generator
  - Added vertical seismic force (Ev) to the Load Combination Generator
  - Added automatic linking between parametric design spectra and the seismic tab of Model Settings
  - Added automated I/R scaling to the Response Spectra Scaling dialog.
  - Automated the Non-Orthogonal earthquake load options (100% + 30%) within the Load Combination Generator
- Enhanced loading for sloping roof models that are transferred from RISAFloor.
  - Enabled flexible diaphragm load attribution (wind and seismic) for sloped roofs.
  - Added the ability for the Wind Load Generator to include perpendicular sloped roof wind loads per Figure 6-6 of ASCE-7.
  - Added wind load calculations for walls and wall areas that extend above the base roof elevation. These were previously ignored.
  - Gravity loads are now brought into RISA-3D at the tops of sloped walls. They were previously applied at the base floor level elevation.
  - Added sloped roof wind load category option to the Load Combination generator.
- Added notional loads to the Load Combination Generator per AISC requirements.
- Updated the names assigned to all design code options to match ANSI naming convention.
- Added the ability to selectively include or exclude roof load options (RL, RLL, SL) from the Load Combination Generator.
- Added the ability to apply member area loads perpendicular to the plane of the load.
- Added the ability to apply distributed and point loads oriented along wall panel local axes.
- Improved load attribution for member area loads to be more accurate for non-uniform loads.
- Enhanced wood shear walls to use the controlling shear panel design for code checks of every region.
- Improved the design of headers and studs within wall panels so that only gravity load combinations are considered.
- Reduced input file size by eliminating nailing schedules and hold down schedules from all but explicitly defined wood walls and diaphragms.
- Added the multi-ply wood column design adjustment factor per NDS 15.3.2.
- RISA-3D no longer includes internal wall panel joints when checking against the program limits for maximum number of joints.
- Added network file security to prevent multiple users from opening / editing the same file at once.
- Reduced the memory usage associated with envelope results for wall panels.
- Added a Tools - Application Settings option to turn off the Sum of Reactions check.
- Added a new utility to the Tools menu to assist with aligning stacked wall panels.
- Added equation C-F9-1 from steel code commentary (AISC 360) to account for the bending capacity of a fully braced WT with stems in compression

Corrections

- Corrected a display issue with the Canadian steel code where the KL/r shown in the detail report was based on the user entered K value rather than the value of 1.0 required by the clause which governed the code check.
- Corrected a database issue where some HSS round members had an incorrect wall thickness listed.
- Corrected the allowable shear stress calculations for the Indian Steel Code per section 6.4.2

- Corrected an issue where the Cb behavior was not properly tied to a user entered Lcomp-bot value.
- Corrected a unit's conversion issue within the bar strain calculation for concrete. This could cause ACI code checks (when using the exact integration method) to use an incorrect phi value, especially for columns subjected to biaxial bending.
- Corrected an issue where the Cb value was being over-conservatively taken as 1.0 for cases where the user defined both the Lcomp and the Cb. This was overly conservative.
- Corrected an issue where Canadian code checks were not being performed on single angles designated as Euler buckling members.
- Corrected a minor units display issue for wood wall shear capacity.
- Corrected a problem which could cause a crash when solving any load combination #1000 or higher.
- Corrected issues where program could erroneously report that input forces did not equal the sum of reactions.
- Corrected an issue where RISA-3D could write out a RISA-3D file with an erroneous RISA-2D file extension.
- Corrected an issue with the Revit Link where RISAFoundation data embedded in a RISA-3D model could get stripped out of the model after round tripping to Revit.
- Corrected a problem where header/ lintel design above wood or masonry wall openings was being skipped for headers / lintels close to the top of a wall.
- Corrected an issue where the RISAFloor grout spacing was not correctly brought into RISA-3D. Required a re-solve to get the Masonry wall code check correct.
- For masonry bending the nominal wall thickness (instead of the actual wall thickness) is now used per provision 2.3.3.3b of ACI-530.
- Corrected an issue with masonry shear walls where the location of the governing code check was reported incorrectly.
- Corrected an issue where the use of design lists with tapered members could cause the code check for tapered members to be based on an incorrect gamma value. This could also result in an incorrect error message.
- Corrected a problem with batch solutions for wood walls that caused a non-controlling chord force to be reported as controlling.
- Corrected an issue with masonry shear walls which could cause the moment capacity to be reported as zero.
- Corrected an issue in wall panel forces that caused random sign reversal of internal wall forces.
- Corrected an issue with tapered members which could cause them to ignore member point loads applied at 100% of the member length.
- Corrected an issue where some report printing sections were printing out the wrong sections.
- Corrected an issue in the RISA-3D flexible diaphragms detail report where the required capacity for wind load cases was being increased by 40% for models transferred from RISAFloor.
- Modified the wind load calculations to use the mean roof height for sloped roofs rather than the base roof elevation for models coming over from RISAFloor.
- Corrected an issue with explicitly assigned diaphragms where a failed code check would result in a warning message stating that a satisfactory panel could not be found in the panel group for models transferred from RISAFloor.
- Corrected an issue with the Revit Link where RISAFoundation data embedded in a RISA-3D model could get stripped out of the model after round tripping to Revit.
- Corrected a Euro code issue where the program calculated a zero moment capacity for one direction of a tube shape.
- Corrected an issue where duplicate / overlapping members could cause the program to freeze during solution.
- Corrected an issue with the append command where materials with non-unique labels could cause the wrong material to be assigned to members from the appended model.

Version 8.1.3 Wood Wall and Diaphragm Enhancements

- Automated the 40% stress increase for wind load combinations (compared to seismic) for wood shear walls and diaphragms.
- Added a checkbox for Green Lumber per the NDS footnote which reduces wall stiffness when the wall has a high moisture content.

- Improved the 2b/h shear strength reduction factor so that it will not affect combinations that include wind load.
- Improved the 2b/h shear strength reduction factor for segmented walls so that each region of the wall receives its own adjustment factor rather than using the worst case for all regions.
- Modified the chord force and strap force calculations to more closely match typical design practice. See Wood Wall - Design for more details.
- Improved the load attribution for vertical loads applied to the "ineffective" sections of a segmented shear wall.
- Improved rigid diaphragm behavior to better error check and correct for models which have duplicate nodes or near zero length members.
- Added code to prevent instabilities in slender walls. Slender regions will still be ineffective for shear force, but should not result in instabilities.
- Improved reporting and warning messages for straps.
- Changed default boundary conditions for wood walls so that FEM stiffness would more closely match the NDS three term stiffness equation.
- Improved reporting for situations where no panels could be found within the limits specified in **Design Rules.**
- Changed the nomenclature for the diaphragm nailing schedules. The term "_OT" was replaced with "_RS". Both terms were always intended to mean "Other Rated Sheathing".

Version 8.1.3 Other Wall Panel Enhancements

- Enhanced the graphic display of wall panel reactions to coincide with wall select states.
- Continuous boundary conditions are now stored separately for wood and masonry walls. Ensures that switching back and forth between materials will not permanently change the wall data.
- Added a warning log and detail report message to clarify that the program does not design masonry walls for net tension.
- Added a more sophisticated 'j' calculation for masonry walls. Previous version had automatically assumed a value of 0.9.
- Improved the trim-extend portion of model merge to deal more effectively with wall panels.

Version 8.1.3 General Enhancements

- Added automatic Notional Load generation utility similar to the existing wind and seismic load generation.
- Added the 2007 edition of the Saudi concrete code (*SBC 304*).
- Added stiffness adjustment factor (tau_b) to detail reports for AISC 13th edition.
- Added **Bending Span** results to column detail reports for members with custom rebar layouts
- Modified program to be more compatible for future link to the 2011 release of Revit Structure.
- Modified custom toolbar registry settings to allow users who are not administrators to customize their toolbars.
- Removed option for creating new models with the "consistent" units option.
- Modified the legend range for wireframe plate contours to more closely match the range shown for color coded contours.
- Added an automatic check for "ghost reactions." Any time the applied lateral forces are not equal to the calculated lateral reactions then a warning message will appear to alert the user.
- Modified concrete shear tie design to round to the nearest 10mm when metric units are being used.
- Modified RISA-3D/RISAFloor optimization routine for members explicitly defined by the user.
- Implemented clause 13.8.2b of the Canadian Steel Code (S16-05) which can provide lower code checks for special cases of uniaxial bending
- Improved the auto update detection sequence so that it cannot falsely report the presence of an update.
- Updated Sentinel libraries to better support Windows 7. Requires an update to Sentinel SuperPro driver 7.5.0 or higher.

Version 8.1.3 Corrections

- Updated the criteria for masonry lintel reinforcement spacing checks. Previously some bar arrangements would give a false warning message about the spacing.
- Corrected the calculation of the Beta coefficient for Canadian Steel Code bending check.
- Adjusted the axial capacity calculation for double angles and WT's using *AISC 13th Edition* to explicitly assume Cw equals zero per the User Note / code commentary.
- Added a 3.0 upper limit to the Cb calculation for *AISC 13th Edition*. Previous versions of the LRFD code did not include this limit.
- Corrected an issue where a dynamic solution could erroneously solve with tension only members specified. Issue was associated with reading in data from saved results that may not have been consistent with the data file.
- Corrected an issue with the plate contour plotting for models with applied plate thermal loads.
- Corrected an issue where having the default Model Display Options set to display a specific Load Combination number would cause problems when viewing loads in models with fewer Load Combinations.
- Corrected an issue where running a K factor auto-calc from a spreadsheet with no members defined would cause a crash.
- Corrected a problem with the units conversion of wall panel reactions.
- Corrected an issue where the spacing of shear ties was not properly taking into account the **Global Parameter** setting for increments.
- Corrected an issue where wood walls without openings were not getting their capacity adjusted based on the 2b/h ratio for seismic loads.
- Corrected an issue where the program was not properly reading in explicitly set wall panel schedules.
- Corrected an issue where the program was not fully accounting for a difference in the CD (load duration factor) used in the hold down database versus the one used in the load combination.
- Corrected issue where header design was reported for the wall material even if a different material was specified for the header.
- Corrected issue where strap forces for batch and single solutions were not consistent.
- Corrected an issue where wall panel results would not be remembered when opening a saved solution.
- Corrected an issue where *2001 NDS* stress values were used for when doing code checks for Glu-Lam beams per *91/97 NDS*.
- Corrected a units conversion issue with the self weight of wood wall panels.
- Corrected an issue where the self weight of masonry lintels was being applied over-conservatively for batch solutions.
- Corrected an issue where the self weight of walls was not included in the weight used in the automatic Seismic load generation.
- Corrected an issue where the wall meshing routine could come up with a different mesh for static and dynamic solutions.
- Corrected an issue with distributed wall loads where changing the height of the wall could move the location of the applied load.
- Corrected a units conversion issue with the Canadian Seismic Force generation for braced frames.
- Corrected issues with Phi*Mn Masonry strength calculations which could result in results being reported in the wrong units or with a negative value.
- Corrected an issue associated with opening a model that had saved dynamic results for wall panels.
- Corrected an issue where torsional warping normal stresses were not being accounted for in the code checks for members with no weak axis bending moment.
- Corrected an issue with the envelope display of wall panel reactions in the Joint Reactions spreadsheet. This could result in some joint reactions being replaced with a duplicate copy of a wall panel reaction.
- Corrected an issue where wall panel surface loads applied with total height exactly equal to the mesh spacing would be excluded from the analysis.
- Corrected an issue where Wall Panel reactions would be erroneously removed from the **Joint Reactions** spreadsheet when a graphical exclude was performed.

Version 8.1.2 Enhancements

- Enhanced the Perforated wall panel detail report to more clearly show shear capacity considering 2w/h reduction.
- Added 1% loading method for seismic loading for structures assigned to Seismic Design Category A.
- Improved displayed Fv and Fv' values for Glu-Lam beams to better distinguish between strong and weak axes.
- Improved the reporting of concrete column results designed by the PCA Load Contour Method.
- Changed the torsion tolerance to 20% for HSS combined stress checks for LRFD 2nd edition to match 13th edition specification. Previous tolerance of 10% was used only because of a lack of code guidance.
- Changed display of continuously free boundary conditions for wall panels to improve clarity.
- Added the ability to put a sketch number (and prefix) with graphic printing.
- Added the ability to specify Plane Stress plates when using RISA-3D under RISAFloor.
- Added RSA method and damping ratio to the input file. Previously this information did not get stored with the file.
- Corrected the tolerance for reporting the KL/r limit for compression member. Limit now enforced for compression members where compression demand is 1% or greater of the compression capacity. Previous tolerance could result in members with high KL/r ratios failing to report the KL/r > 200 message.
- Added ability to use Design Results spreadsheets to select or unselect members in an envelope solution.

Version 8.1.2 Miscellaneous Corrections

- Corrected automatic out-to-out depth adjustments for non-symmetric chords generated using the Truss Generator.
- Added a warning message to the Euro Steel detail report which reports a flaw in the Euro spec which creates moment capacities equal to zero whenever rho approaches 1.0.
- Corrected an issue where tapered members with multiple partial length distributed loads could eliminate the 2nd load if the load transition occurred at an intermediate joint.
- Corrected an issue which could cause the undo/redo counter to get off track resulting in an inability to redo changes that were made.
- Corrected an issue with the reading of the Model Display Options default file which could cause interface issues and / or incorrectly trigger error messages.
- Corrected the Izz value for the 358TSB18 shape in the Dietrich database.
- Corrected a unit's conversion issue associated with the embedded RISAFoot results. No issue occurred if model was re-solved after the unit's conversion.
- Corrected a unit's conversion issue with member distributed torque loads.
- Corrected a couple of issues with the calculation of NBC Seismic Loads.

Version 8.1.2 Wood Design Changes

- Added Select / Unselect functionality in RISA-3D for diaphragm regions that came from RISAFloor.
- Modified diaphragm deflection calculation for diaphragms especially for diaphragms with multiple nailing zones. Only affects diaphragms that came from RISAFloor.
- Changed a number of miscellaneous things in the design of wood shear walls:
    - Changed enveloping of Strap forces
    - Changed enveloping of studs and chords to be based on maximum code checks rather than maximum forces.
    - Application of 2w/h adjustment factors for shear capacity.
    - Controlling shear force for FTAO walls with multiple openings.
    - Re-defined the 2w/h adjustment factor for FTAO walls to apply to the height of the opening.
    - Added the 2w/h adjustment factor to segmented walls.
    - Changed the wall to wall connectivity of stacked segmented walls. This results in FEM deflection results that are closer to hand calculations.

- Changed default boundary condition of wood shear walls to be continuously pinned. This results in FEM deflection results that are closer to hand calculations.
- Removed the upper bound of 1.0 on the SSRF (Shear Stiffness Reduction Factor) to allow for this to INCREASE the stiffness of the wall
- Corrected various issues with units conversion
- Ability to read saved results.
- Elastic deflection calculations for perforated walls were applying the Co factor twice.

Version 8.1.1 Enhancements / Corrections

- Added the upper and lower bound limitations for the diaphragm design forces per ASCE 7-05 section 12.10.1.1.
- Added the ability to attach wood wall panels to a beam or column via a strap.
- Enhanced the diaphragm nailing optimization to pick more appropriate nailing selections.
- Added the ability to search for members by their Member Function in the Criteria Select dialog.
- Enhanced the error checking so that the P-Delta only applies to hot-rolled steel models.
- Enhanced the seismic force calculations to less conservatively account for Seismic Design Category A (per ASCE-7 2005 section 11.7).
- Improved the graphical display of hold downs and straps in the wall panel editor.
- Added option to graphically delete wall straps and hold downs for wood shear walls.
- Added undo / redo functionality to hold down and strap creation / modification.
- Enhanced the error / warning reporting for nodes that are completely unconnected. Previously these were getting locked without any user notification, even if there was a joint load applied to them.
- Enhanced the Wind Load Generation utility to better detect invalid data (building height is less than or equal to zero).
- Added a warning message to the detail report and design results for Eurocode steel design when a shear failure causes the combined stress code checks to become infinite (i.e. rho is greater than 1.0).
- Corrected an issue where, when running an envelope solution with the graphical display of code checks based on color, no values would display.
- Corrected a wall panel load attribution issue where a point load defined in the middle of the wall panel did not properly attribute to the wall.
- Fixed an issue with the detail report where the Cb value was not being displayed for cold formed members.
- Corrected a problem where unbraced length values entered in RISA-3D were not getting saved when the model was brought back and forth from a RISAFloor model. Issue affected beams, but not columns.
- Fixed a units conversion problem associated the *display* of some of the factors for wood Perforated and FTAO wall panels in their detail reports.
- Corrected an issue where the Internal Force Summation Tool was only updating units during solution time. Therefore, switching units with an active solution could result in incorrect force display until the model was re-solved.
- Corrected some issues with the Append command which could cause duplication of wall panel labels.
- Fixed a program crash which originated from large number of bars (200+) in a Custom Rebar Layout.
- Corrected an issue with FTAO and Perforated walls where walls with multiple openings or offset openings could report incorrect unit shear values or hold downs / chord forces.
- Fixed an issue where RISA-3D detail reports for wood wall panels would be cleared when entering RISAFoundation.
- Corrected an issue that could cause models with a large number of instabilities to crash during an envelope solution.
- Corrected a display issue with the moment diagram for slender masonry walls that diverged during slender wall calculations.
- Corrected an issue where using the Section Sets spreadsheet to modify database shape data was not automatically clearing the stiffness matrix.
- Corrected issue where some spreadsheet operations (Fill block, et cetera) were not available in some spreadsheets (Design Rules).

- Corrected an issue with the warning log where the program was incorrectly generating messages about the straps for stacked wall not properly lining up.
- Corrected an issue with the graphical copy command where the wall straps were not getting copied with the wall panel.
- Corrected an issue where the Fv' for wood members could be incorrectly displayed in the member detail reports for Glu-Lam members.
- Corrected an issue with the FTAO wood shear walls where the program was enforcing the 2w/h limitations based on the full height of the pier rather than the opening height.
- Corrected an issue with Perforated walls where the wall capacity reduction factor (2w/h) was being applied to the chord forces.
- Corrected an issue where older files (v 8.0 or older) that are opened in 8.1 or 8.1.1 may get their wind code or seismic code read in incorrectly. Files created in version 8.1 and newer could still have the wrong wind and seismic codes displayed if they are opened with an older version of the program.
- Corrected meshing errors associated with wall panels.
- Fixed a bug where duplicate nodes were being created during the transition from RISAFloor to RISA-3D.
- Fixed a problem where the diaphragm loads from a RISAFloor model with saved results would incorrectly read the transient loads in RISA-3D.
- Corrected a problem in the Canadian steel code calculations for members classified as "slender". This allowable moment capacity was being reported as negative when it should have provided an error message.
- Corrected an issue with the processing of multiple partial length distributed loads on tapered members. Issue could result in an un-reported loss of input forces if a node occurred at the location of the load transition.

Version 8.1 Enhancements / Corrections

Enhancements

- Added the ability to model wood shear walls with openings, incorporating three design options: segmented, perforated and force transfer around openings.
- Added flexible diaphragm analysis / loading option for RISAFloor diaphragms that are brought into RISA-3D
- Added wood diaphragm design for flexible diaphragms that are brought from RISAFloor into RISA-3D.
- Added a customizable graphic toolbar with new Model Display Options button for easier graphical view of results.
- Added an automatic region generator for shear wall panels to expedite the creation of regions especially for walls that have openings.
- Added EC3 2005 Euro steel code.
- Added BSEN 2004 Euro concrete code.
- Added NBC 2005 Canadian automatic Wind and Seismic load generation.
- Added a Shear Stiffness Adjustment factor for wood shear walls to allow the user to adjust the FEM stiffness of the walls to match the code equations reported in the wall detail reports.
- Added Custom Wood Species for commonly used composite lumber species.
- Added re-design lists for newly added composite lumber Species.

Corrections

- Corrected an error with plate corner releases which caused the plate moment releases to be reversed. i.e. a corner release that was specified as an Mx release was really an My release.
- Corrected a compatibility issue in the concrete code settings between the current version and RISA-3D version 7.0. Issue could cause an incorrect concrete code to be chosen when reading a version 7.0 (or older) file into version 7.1 or 8.0. Correction only applies to older files being opened in the new version (8.1 or higher). New files opened in old versions can still experience the issue.

Version 8.0.3 Enhancements / Corrections

Enhancements

- Enhanced the status bar display for multi-monitor or odd resolution screens.
- Enhanced masonry detail reports to give more clear and relevant output.
- Enhanced the masonry horizontal shear reinforcement graphics in the wall panel editor.
- Improved wood wall panel detail reports to give more relevant output.
- Added general wall panel region detail reports.
- Enhanced wood wall panel detail report to explicitly show chord and hold down forces with the controlling load combination.
- Improved truss generator to allow user to specify “Segment” for unbraced lengths.
- Improved truss generator to recognize triangular trusses and thereby not create duplicate chord end joints.
- Improved wall panel mesher to account for joints with boundary conditions that fall within wall panels.
- Modified the way wood schedules were checked, thus removing unnecessary warnings from the warning log.
- Added code to prevent creation of non-rectangular wall panel regions which could cause errors.
- Enabled users to delete point loads using graphical delete load feature.
- Improved load generation treatment of Base Elevation to properly allow for negative elevations.
- Enhanced the Wall Panel reactions to include the display of the total moment reaction as measured from the mid point of the wall base.
- Modified Masonry Wall Panel detail reports to more consistently report out of plane forces on a per foot basis instead of a basing it on the distance between reinforcing bars.

Corrections

- Fixed a bug where the self-weight of masonry wall panels had values reversed between 140 pcf grout and 105 pcf grout.
- Corrected some unit conversions from imperial units to metric for the output in masonry detail reports.
- Fixed a bug where the allowable stress increase factor was not being considered correctly for masonry wall panels.
- Corrected calculation for stress in the steel for out of plane calculations with bars in both faces of masonry wall panels.
- Fixed miscellaneous inconsistencies between region editor input and the detail report output for masonry.
- Corrected a Wall Panel detail report error where regions that were auto-split could report an over-conservative axial force.
- Corrected graphics in masonry out of plane detail report for "both faces" and "staggered" locations of reinforcement.
- Fixed a bug where wall panel reactions were not being included in response spectra analysis scaling of base shears.
- Corrected units conversion error with the y1 and z values in custom rebar layouts.
- Fixed a units conversion problem with the Canadian code where the moment value was reported as a negative number.
- Removed wall panel end releases because they were being applied incorrectly. They will be added at a later time.
- Modified hold down design and database procedure for wood wall panels to eliminate errors.
- Corrected over-conservative wood wall panel chord force calculation in certain cases.
- Corrected an issue in the load combinations spreadsheet, where adding a line in the spreadsheet would confuse any nested load combinations below.
- Fixed a bug that would cause distributed loads to be cut off if a model merge was performed on non-physical members.
- Corrected an error where duplicate nodes would be created in a RISA-3D model that came in from RISAFloor.

- Corrected a K-factor issue where Nodes with blank lines in the Boundary Conditions spreadsheet were being interpreted as restrained joints for the K approximation.
- Enhanced program mesher for wall panels, eliminating errors.
- Fixed a problem in wall panel detail reports where envelope force and moment diagram were reported as a maximum of batch forces, as opposed to an absolute maximum of batch forces. Issue occurred only for wall panels defined with a "General" material type.
- Fixed Miscellaneous database and default issues associated with the Wood Wall Design Rules.
- Corrected an issue with the wall panel detail reports where the Window Title could list the wrong wall panel label.
- Fixed a problem in wood design where the R_B calculation was computed as if the bottom flange was in compression when the top flange was actually in compression.
- Corrected a bug that was causing surface loads applied to wall panels to be neglected over the area of the opening.

Version 8.0.2 Corrections

- Corrected dimensions in Euro Steel database for HD360x147, HE1000A, HE1000AA.
- Corrected the contours and contour legends display.
- Fixed a bug where all wall panel surface loads were being placed in Basic Load Case 1 regardless of the specified BLC.
- Fixed a bug where wall panel thickness changes did not automatically clear the stiffness matrix
- Fixed a bug where envelope and batch solutions were considering the last load combination as the controlling one for wall panels only.
- Corrected miscellaneous hold down database errors for wood wall panels.
- Corrected results for wall panels with surface loads applied in the local axis directions.
- Corrected Wall Panel force diagrams in detail reports for models when the Z-axis was set to vertical.
- Corrected the "d" value calculation for masonry wall panels design.
- Corrected out of plane strength design for masonry wall panels.
- Corrected the display of the controlling location masonry wall panel design.
- Corrected miscellaneous wall panel meshing errors.

Version 8.0.1 Enhancements / Corrections

- Added option to view the local axes of wall panel elements.
- Activated the "Detail Report For Current Item" in cases where it was not working.
- Changed the sorting of joint coordinates to include wall panel nodes
- Corrected the graphical display of wall panel surface loads and reaction values
- Corrected the display of grout weight in the wall panel editor.
- Corrected the top value of the wall panel surface load to consider the load factor.
- Corrected the interaction between RISA-3D and RISAFoot to allow footing design within RISA-3D.
- Corrected the calculation of rz (radius of gyration about principal axis) of custom single angles created in RISA-3D.
- Corrected the importing of steel joists from a STAAD file.
- Fixed a bug where the program was not properly re-assigning a rebar layout for naming conflicts.
- Corrected an issue where crack control requirements for concrete members could produce tight bar spacing.
- Corrected printing of Project Grids and Wall Panel Surface Loads.

Version 8.0 Enhancements / Corrections

Walls Panels Enhancement

- Added Wall Panels, giving user the ability to model entire portions of walls without using plates.
    - Ability to create Masonry walls with openings to get reinforcement design for in plane and out of plane forces, as well as the ability to design lintels.
    - Ability to create Wood walls (currently without openings) and get design results for in plane and out of plane loads
    - Ability to create General walls with uniform properties and openings for analysis. A way for analysis of concrete walls.

Interface & Graphics Enhancements / Corrections

- Changed notation for “projected” global axes from L, V, and H to Px, Py, and Pz
- Correct the display of incorrect stress block selection in the detail reports.

Interaction Enhancements / Corrections

- Added the ability for the Lbyy and Lbzz values to be transferred from RISAFloor when using the Director tool.
- Added the ability for the RISAFloor selection of an "inactive diaphragm" to be saved between the RISA3D /RISAFloor transfer.

Concrete Design Enhancements/Corrections

- Corrected concrete beam code checks to consider the last span in continuous concrete beams for the governing code check. The steel reinforcing design optimization was not affected.
- Corrected the Shear UC to not always be taken at the first section of a continuous beam.

Sloping Members

- Ability to bring sloping members over from RISAFloor for analysis.

Miscellaneous Enhancements / Corrections

- Added orthotropic plates. Plate materials with inconsistent E and G will now use both in the element stiffness formulation rather than internally defining G based on the entered E value.
- Changed Emin calculation for SCL members
- Added warning to prevent poorly formed plate from being extracted into a corrupted solid element.
- Fixed a bug where changes to the "Detach from Diaphragm" option did not automatically clear the stiffness matrix.
- Corrected possible corruption of the Report Name database which could result in seemingly unrelated memory errors.
- Corrected printing for the Project Grid spreadsheet
- Fixed Unity Check for columns under the Mexican code that need rebar close to the maximum specified.
- Corrected an issue where editing a model in the embedded version of RISAFoundation could temporarily break the existing RISA3D deflection diagram.
- Corrected member orientation issue associated with the opening of RISA-2D files in RISA-3D

- Corrected an issue with the Material Take Off results which would occur anytime more than 500 section sets were used in a model.
- Removed the potential for "padded spaces" from dialog boxes. When these fields were being padded this would prevent user from entering data in those fields.
- Corrected the display of saved Cold Formed code checks. Phi was not being properly stored in the results file.

Version 7.1.3 Corrections

- Corrected a bug that could result in a crash while using the embedded version of RISAFoot 3.0. The problem only occurred when one of the Load Combinations used for footing design included an AISC 13th Edition code check with the “adjust stiffness” option of the Direct Analysis method.
- Corrected a serious bug that could result in the deleting of embedded RISAFoundation data. If a RISA-3D file with embedded RISAFoundation were saved without having first viewed the Footing data during that session, then the Foundation information would NOT be embedded in the 3D file.
- Corrected a bug related to the validation of RISAFoot version 3.0 licensing. Previously the network version of RISAFoot was not correctly authorizing.
- Corrected a 2nd bug related to RISAFoot authorization that related to launching RISA-3D from within a RISAFloor session.
- Corrected a bug related to the reading of the results file. There were instances where saved results were being discarded even when they were present and valid.
- Corrected a crash on the re-use of eigen solution results for the accelerated dynamic solver.
- Corrected a bug with the optimization of concrete reinforcement. The bug would have prevented the program from adding steel that is above the min flexural steel requirements.
- Corrected a Steel Database error in AISCDB32.FIL associated with HSS6.625x0.375.

Version 7.1.1 Corrections

- Corrected a bug where the use of the Automatic Response Spectra Scaling Factor in a solution could cause a crash.
- Corrected a bug in the single angle code that did not allow for single angles to bend about their Geometric axes even when this was specifically requested by the user.

Version 7.1 Enhancements / Corrections

Interface and Graphics Enhancements / Corrections

- Improved dialog behavior by highlighting the Use? Checkboxes and added in a Clear Use Boxes button
- Fixed a bug with the rendering of deflection diagrams for pipe shapes
- Dynamic_graphics in the INI file

Steel Design Enhancements / Corrections

- Added changes to the AISC database based on the 13th Edition Manual. Including round HSS design thickness.
- Added a Roll Back On Cancel action to the Model Settings – Code settings to properly account for cases where users change from 13th Edition ASD to 13th Edition LRFD and cancel the change before exiting
- Changed logic for using R value for cold formed / light gage steel
- Slenderness checks for Indian code IS 800
- Updated P-Delta error messages for AISC 13th Edition Manual
- Corrected K value calculation for Indian code. Only affects cantilever type end conditions.
- Corrected K calculation issue that could cause a crash

Concrete Design Enhancements / Corrections

- Added ACI 2005
- Changed Fy in the rebar layout dialog so that it is tied to stress units to be consistent with definition of Fy in the Design Rules
- Corrected warnings in shear rebar layouts for Floor
- Concrete T-beams modified in RISAFloor (negative reinforcement over L/10)
- Fixed bugs related to rebar optimization for extremely, extremely wide beams
- Corrected bug where user defined layouts may not be correctly interpreted at the exact end of the member. Only occurred when support had a width of zero (i.e. boundary condition support).
- Corrected bar callouts for custom column rebar arrangements. Only affected bars defined from left and right side of columns. Bar layers defined based on the bottom or top of section were not affected.

Solution & Analysis Enhancements / Corrections

- Added routine to clear stiffness matrix for cases where Design parameters (member type or sway flag) could result in a required change to the stiffness matrix. Should only affect AISC 13th Edition.
- Internal Force Summation tool adjusted to ALWAYS be defined Left to Right or Top to Bottom

Loading Enhancements / Corrections

- Increased Load Combination limit to 5000
- Added check box for copying loads when using translational, rotational, or mirror copy options
- Added torque Point Loads into the program
- Changed Seismic Use Group to Occupancy Category for ASCE7-2005.

Miscellaneous Enhancements / Corrections

- Corrected bug with the Mirror command that could create poorly defined solid elements.
- Corrected a bug where the program was incorrectly handling duplicate shapes. This bug only occurred when a file was opened which contained a shape that matched the name (but not the properties) of an existing database shape. Program would incorrectly re-assign the member to the database shape.
- CIS/2 Detailing
- CF correction for SCL lumber in 2005 NDS
- Added in better status bar support for Dual Monitors
- Added restrictions on spreadsheet printing for Demo versions. Now limited to a maximum of 5 rows for each spreadsheet.
- Corrected report printing to re-adjust report widths to allow for wider / Landscape pages
- Corrected a bug where copying and pasting from results browsers could result in a memory error based on an “out of range” spreadsheet setting
- KeyID added to input file
- Demo Versions will now run out of HKEY_Current_User if Local_Machine is unavailable
- Ability to turn off the time / date stamp
- Log of members that had invalid or missing design lists
- Added a warning log that will tell you which entries were not read properly or caused the file to be considered "corrupted"
- Corrected a bug where dynamic solutions could cause some "hot keys" to stop functioning in combined 3D / Floor models
- Corrected an error with reading default program settings created by an older version (pre-7.0)
- Corrected bug where Plates Spreadsheet would not open properly from the Main Menu toolbar

- Corrected bug in the truss generator that mis-calculated chord centroids when the 'Maintain Out-to-Out' distance option was selected
- Added code to prevent infinite iteration issues for footings and One-Way elements
- Added dialog to calculate detailing offsets for CIS/2 translator

Version 7.0.2 Enhancements / Corrections

Miscellaneous Enhancements/Corrections

- Primarily released to address some corrections in the RISAFoundation program. Refer to RISAFoundation release notes for more information.
- Corrected a length conversion bug in the rebar database. If length units were other than feet, the program had been erroneously converting rebar cutoff lengths entered in as a % of length.
- Added Security Codes for REVIT Structure Versions. There is no direct impact to the program.
- Enhanced CIS/2 link to allow for complete round trip data transfer.
- Fixed a bug in the subspace solver so that models with more than 100 DOFs, but less than 40 mass terms will solve properly.

Version 7.0.1 Enhancements / Corrections

Enhanced Loading Features

- Added ASCE 2005/ IBC 2006 Wind Loading Code
- Added ASCE 2005/ IBC 2006 Seismic Loading Code
- Added ASCE 2005/ IBC 2006 Response Spectra
- Added Mexican Seismic Loading Code
- Added Mexican Response Spectra
- Negative Base Elevations for Calculation of Wind and Seismic Forces are Now Allowed
- Seismic Load Associated with the Base of the Structure is Now Displayed
- Added Ability to Ignore Base Weight in Calculation of Seismic Loads

Enhanced Analysis Features

- Added Submeshing of Solid Elements
- Added Plate Moment Releases
- Increased Program Limits for Joints, Plates, and Solids to 100,000 Each

Enhanced Steel Design Features

- Correction to the AISC ‘Cb’ Calculation when Using the "Segment" Code
- Correction to EC3 Steel Code Check for Columns with Bending and Tension

Enhanced Concrete Design Features

- Added Mexican Concrete Design Code

Interaction With Other Programs

- Added Integration Capability with RISATower Program

- Added Member Detailing Information to be Used with Upcoming CIS/2 Translator

Miscellaneous Enhancements

- Added Graphical Filtering for Shape Optimization
- Double Wheel Click Now Calls Up a Full Screen View
- Render Button Is Now a 3-Way Toggle Between Wire Frame - Color Coded - Rendered
- Added INI Only Option to Turn off the Dynamic Mouse Graphics Features
- Enhanced Handling of Instabilities in the Sparse Solver so They Are Locked and the Solution Continues

Miscellaneous Corrections

- Corrected a Bug with the Mouse Wheel Pan / Zoom that Resulted In Numerous Crashes when Color Coding Legends Were Present
- Correction to the Units Conversion of Saved Drawing Grid Data
- Correction to the Units Conversion for Parametric Concrete Shapes
- Correction to the Area Load Attribution for Members with Partial Area Loads and Rigid End Offsets

Version 7.0.0 Enhancements / Corrections

Enhanced Loading Features

- Added ASCE-7 2005 Load Combinations to the Load Combination Generator
- Corrected an error with the attribution of Member Area Loads that was eliminating the load associated with Rigid End Offsets

Enhanced Analysis Features

- Added a Sparse Solver to speed up solution times and reduce memory requirements
- Added an 8-node Solid Element

Enhanced Steel Design Features

- Added AISC 13th Edition Steel Code
    - Ability to use 1.6*P-Delta effect for ASD Design
    - Ability to reduce flexural stiffness for certain members of lateral resisting system based on the axial load in the members (this is done on a LC by LC basis)
    - Ability to reduce axial stiffness for certain members of the lateral resisting system
- Changed the BS steel code to distinguish between H and I sections when choosing which strut curve to use

Enhanced Wood Design Features

- Added NDS 2005 Wood Code
- Corrected a bug in the 2001 wood database that was using a lower Fc value for DFL #2 Post and Timbers

Miscellaneous Enhancements / Corrections

- Corrected a bug with the Block Fill command that was only allowing the first 3 cells of the block to be filled
- Corrected a bug with the internal force summation tool that could cause a crash for models with triangular plate elements

- Corrected a bug where changing the Member Type of a concrete member did not clear the stiffness matrix