

# Release Notes for RISA-3D

## Version 18.0.5 Enhancements/Corrections

- General:
  - Added the ability to increase and decrease the text size displayed in a model.
  - Improved the Automesh feature to detect and create plate corners at existing nodes.
  - Improved the Move-Rotate tool by rotating all elements when the 'Apply to Selected' option is clicked, despite no elements being selected.
  - Added a message to alert the user when an invalid value for the shear modulus has been entered for a Material.
  - Added the ability to cut a Contour Diagram through the right click menu.
  - Enabled the option to Pan from the right click menu.
  - Improved the behavior of templates such that newly created elements will be selected with the Dim Lock feature enabled.
  - Resolved an issue where deflections were reported for Inactive members.
  - Resolved an issue that prevented the generation of members to 'Connect Bays' when copying.
  - Fixed an issue where design properties edited through the Properties Panel were not properly applied to the member.
  - Corrected an issue where Model Merge deleted duplicate nodes which were defined by other elements.
  - Resolved an issue where incorrect values of Ct were reported in models created in version 17 or earlier.
  - Resolved an issue where drawing an area load would, in some cases, create a duplicate node.
  - Resolved an issue where changes in the Application Settings would be applied even when the Cancel button was selected.
  - Resolved an issue where the warning log was not cleared after re-solving using Suggested Design.
  - Resolved an issue causing a Member to rotate about its own local axis when using the Move-Rotate command about a global axis.
  - Resolved an issue where incorrect node labels were defined while drawing new plates.
  - Corrected an issue that enabled the user to edit lateral loads generated by the program.
  - Corrected an issue allowing duplicate Seismic Design Rule Labels.
  - Resolved an issue where some generated seismic loads were displayed as zero kips.
  - Resolved an issue where open structure area loads were not being applied to all members.
  - Resolved an issue where the span direction was incorrect for area loads defined perpendicular to an edge.
  - Resolved an issue with changing the section set material for shapes using internal sizes.
- Interaction:
  - Added functionality to link models with ArchiCAD.
- Speed:
  - Improved the speed of opening input and results spreadsheets.
  - Improved the speed of cancelling while a solution is in progress.
  - Improved the speed of opening new model files from outside of the program while the program is open.
  - Improved spreadsheet functionality and speed as the program is used over time.
  - Improved the speed of the program when animated results are displayed.
  - Improved the speed of toggling the results display spreadsheets between Load Combinations and Elements.
- Wood:
  - Added the E05 wood parameter into the Custom Wood dialog.
  - Added factored compression resistance into the Combined Bending + Axial section for glulam Detail Reports per Clause 7.5.12 (CSA 086).
  - Added the ability to open the Custom Wood Database without needing to define a Custom Wood Material prior.

- Resolved an issue that prevented SCL materials from being recognized for wood members designed with CSA 086.
- Resolved an issue where lambda was not correctly considered in the wood flexural capacity.
- Resolved an issue to correct the governing location for wood members designed with CSA 086.
- Resolved an issue where the moment component was not being considered in the Bending and Axial Compression Analysis for wood members designed with CSA 086.
- Corrected an issue where material type was not correctly displayed in the Shape Selection dialog for wood materials.
- Corrected an issue where the incorrect value for unbraced length was used in the calculation for the slenderness ratio of wood members.
- Corrected a display issue where incorrect metric units were shown in the wood Shape Selection dialog.
- Resolved an issue where negative bending allowable stress was used for glulam members when positive bending allowable stress should be used.
- Corrected an issue that prevented the Wood Type from saving for newly added Custom Wood Species.
- Wall Panels:
  - Added the Flip Wall Axis option to the Modify ribbon toolbar.
  - Enhanced the Flip Wall Axis option to consider openings.
  - Improved the display of selected wall panel edges when applying loads.
  - Added a warning message to alert users when attempting to draw on wall panels without first deleting regions.
  - Improved Diagram Report to show discontinuity in the force diagram where openings occur.
  - Fixed an issue where hold downs were not designed for interior boundaries of segmented wood wall panels.
  - Resolved issues preventing edits to be made to the Design Rules for openings in wood wall panels.
  - Resolved an issue preventing point loads from being applied to wall panels.
  - Resolved an issue that prevented wood wall header results to be shown when using FTAO in Wood Walls.
- Graphics:
  - Added the ability to display loads on a deflection animation.
  - Improved 3D view of locked nodes when instabilities are detected.
  - Improved the display of plates when showing an animation of deflection.
  - Enhanced display of Degenerate Plates by activating Dim Lock.
  - Corrected a display issue with the values on the X-axis in the Contour Diagram Report.
  - Resolved an issue preventing the color coded unity check to be viewed while animating the deflected shape.
  - Resolved an issue preventing the graphical display of member forces while using the Filter Results command.
  - Resolved an issue where the display of a Load Combination did not include all applied area loads.
  - Resolved an issue where the magnitude of animated moving loads were always displayed in units of kips.
  - Corrected a display issue where Partial Length line loads were reported as 0-100% in the Property Grid.
  - Corrected an issue where the Diagram Report displayed a different force diagram than the Wall Panel Contour Cut.
  - Resolved a display issue caused by making an animation window full screen.
  - Corrected a display issue where details in the information box were incorrectly reported when member deflection ratio labels were displayed in the 3D view.
  - Resolved an issue where a Contour Diagram for a single wall would display on several walls.
  - Corrected the graphic display of transient wall panel loads.
  - Resolved an issue where the Contour Diagram reset the contour basis to Qx.
- Detail Reports:
  - Added the Unity Check to the top of the Detail Reports.
  - Added a vertical tracking line that follows the cursor when viewing enlarged force diagrams.
  - Improved enlarged deflection diagrams by indicating support locations for multispan members.

- Resolved a graphical display issue with metric units in Masonry Wall Panel detail reports.
- Resolved an issue where column interaction diagrams were erroneously displayed in Detail Reports for concrete members when no rebar layout was defined.
- Resolved an issue where the Multiple Screen Window Behavior was preventing a previously opened detail report from staying open.
- Corrected the display of maximum and minimum forces in enlarged force diagrams for members with custom rebar defined.
- Spreadsheets:
  - Added the ability to reset the spreadsheet column widths to Default values.
  - Added the ability to sort by relative deflections in the Beam Defl tab of the Member Deflections spreadsheet.
  - Added the ability to use the Fill Cells, Copy, and Paste commands into cells with drop down lists.
  - Improved Member spreadsheet by filtering available Design Lists for each material.
  - Enabled the Fill Cells command in the Wall Design Rules spreadsheet.
  - Improved the Seismic Design Rules spreadsheet by disabling the ability to edit the Overstrength Req'd check box for columns.
  - Improved the Member Deflections spreadsheet by filtering out material types where deflections aren't calculated for Service and/or Strength Load Combinations respectively.
  - Enabled Math on Block in the Boundary Conditions spreadsheet for boundary conditions defined as springs.
  - Improved results reporting by including an asterisk to indicate which load combinations include overstrength factors in Envelope spreadsheets.
  - Improved the Load Combinations spreadsheet by preventing invalid values from being input in the BLC column.
  - Added error message when trying to create a new line in the Advanced tab of the Wall Panel spreadsheet.
  - Resolved an issue where the order of load combinations was different between the Combination and Design tab of the Load Combinations spreadsheet.
  - Fixed a graphical issue where the header of the Plate Forces spreadsheet did not correlate with the selected length units.
  - Fixed the Copy/Paste command in the Member Advanced Data spreadsheet.
  - Resolved an issue preventing a row from being deleted from the General tab in the Materials spreadsheet.
  - Resolved an issue preventing the Math operation from working in the Wall Design Rules spreadsheet.
  - Resolved an issue preventing a new row from being added to the Drift Definitions spreadsheet.
  - Resolved an issue preventing a valid Section Set from being pasted into another row in the Section/Shape column of the Members spreadsheet.
  - Resolved an issue where the Filter Results selection did not affect the Material Takeoff spreadsheet.
  - Resolved an issue preventing the Ignore After option from working in the Code Check spreadsheet.
  - Resolved an issue for stainless steel members where Fill Cells command filled the wrong cell in the Members spreadsheet.
  - Resolved an issue that prevented information from being pasted into the Function column of the Time History Loads spreadsheet.
  - Resolved an issue causing information to be pasted in the wrong location in the Time History Loads spreadsheet.
  - Resolved an issue with sorting in the Member Forces spreadsheet.
  - Resolved an issue preventing the Fill Cells operation to work for partially fixed advanced members.
  - Resolved an issue where members assigned custom supports did not have an asterisk in the Beam Defl tab of the Member Deflection spreadsheet.
  - Resolved an issue where the Property Grid and 3D view did not update when a shape was copy and pasted in the Section Set spreadsheet.
  - Resolved an erroneous error message that appeared after deleting all Time History Loads from the spreadsheet.

- Printing:
  - Added the option to include the Spectra Scaling Factors report in the Report Printing options.
  - Enhanced printed spreadsheets by adjusting the column widths.
  - Added the ability to adjust the text size of spreadsheets when printing a report.
  - Improved the flexibility of the Print Report Layout to allow for resizing of lists.
  - Reduced the file size of PDF reports.
  - Added the ability to include sections from the Advanced tab in Report Templates.
  - Added the ability to print the Wall Suggested Design spreadsheets for Masonry and Wood wall panels.
  - Improved printed Model Settings by adding sub-headers for each section.
  - Added the ability to change view options of individual detail report within a printed report.
  - Improved Detail Report Options for Wall Panels in Report Printing.
  - Improved the titles of spreadsheets to better represent the tables being included in a report.
  - Enabled a larger Report Preview by rearranging items in the Report Print dialog.
  - Resolved an error in the page numbers when printing reports with non-default page numbering.
  - Resolved an issue where bottom plate stresses were included in the report when Top Stresses Only option was checked.
  - Resolved an issue that prevented all Node Reactions from being displayed in printed reports.
  - Resolved an issue where only a portion of the spreadsheet would print when the Print Entire Spreadsheet option was selected.
  - Resolved an issue preventing the Print Preview to be displayed in its entirety.
  - Resolved an issue where spreadsheets and graphics were overlapping the report footer.
  - Resolved an issue with the flat file to report the correct number of lines in the Global Data section.
  - Resolved an issue where enabling the Member End Point option did not update the reported Member Section Forces.
  - Resolved an issue preventing detail reports from fitting to the page in landscape orientation.
  - Resolved an issue preventing the full expanded detail report for wall panels from being printed.
- Operations:
  - Customized Sentinel RMS 9.6 for use with RISA Network Licenses.
  - Improved messaging when database files are unable to be located.
  - Improved Log File reporting when an error message occurs on startup.
  - Resolved several Exception Messages for specific models.
  - Resolved an issue preventing the ability to scroll through the list of RISASection shapes in the Shape Database dialog.
  - Resolved an issue preventing program initialization when certain file locations are changed from the default in Application Settings.
  - Resolved an issue preventing warnings from being reported when mesher errors occur.
  - Corrected a display issue where the windows taskbar hid the program interface when maximized.
  - Resolved an issue that prevented the program from initializing on first startup.
  - Resolved an issue that caused the program to close unexpectedly during the animation of Time History Loads.
  - Resolved an issue where the program was reporting an 'unable to obtain lock' error message.
  - Resolved an issue preventing nodes from being deleted after using the Undo function.

## Version 18.0.4 Enhancements/Corrections

- General:
  - Enabled the Click to Locate option for the DXF Underlay tool.
  - Enabled the Contour Diagram feature when displaying color contour results for plates and wall panels in the graphical view.
  - Enabled the Contour Cut Diagram Report which displays the contour diagram in an expanded view.
  - Fixed an issue preventing an element from being selected with a single click while using the modify tools.

- Resolved an issue to correct the left and right height options in the truss generator.
- Resolved an issue with Perpendicular Snap Setting creating zero length members.
- Resolved an issue where performing a Full Model Merge was not merging all crossing members.
- Corrected the Model Merge tool to apply to all members when the whole model is unselected.
- Resolved an issue where point loads were always applied at 0' when using the Apply to Selected option.
- Corrected an issue for a specific model where erroneous load was generated using the Wind Load Generator.
- Resolved an issue where the seismic weight reported in the seismic load generator did not match the sum of the node reactions.
- Corrected an erroneous P-Delta warning message after solution.
- Resolved an issue when solving with suggested design when the 'enforce code required P-Delta analysis' option is turned off.
- Corrected the behavior of Story Drift values in the spreadsheet turning red if they exceed the allowable amount.
- Resolved several Exception Messages for specific models.
- Fixed an issue to properly report the version number in the model text file.
- Speed:
  - Improved spreadsheet functionality and speed as the program is used over time.
  - Increased the speed of the Round Off Joint Coordinates tool.
  - Increased the speed for the Degenerate Plate Check tool.
  - Improved the speed of the rectangular tank generator.
  - Resolved an issue where deleting large amounts of selected elements took an excessive amount of time.
- Hot-Rolled Steel:
  - Corrected the display of the slenderness ratio in compression in the Detail Report.
- Concrete:
  - Added the AS/NZS 4671:2001 rebar set.
  - Added the lintel force diagrams to concrete wall panel Detail Reports.
  - Added the concrete design values to the expanded diagrams in the Detail Report.
  - Resolved a graphical issue where the concrete column rebar was not displayed in the Rebar Detailing diagram.
  - Corrected an issue for concrete beams using custom shear reinforcement instead of using the design rule.
  - Resolved a graphical display issue in the Wall Panel Editor results where concrete reinforcement was shown using metric bar sizes.
  - Resolved a graphical issue where concrete lintels were not displayed on the same plane as the wall in the wall panel editor.
- Wood:
  - Corrected the Members spreadsheet to specify the system factor, KH, for Canadian codes.
  - Resolved an issue where the positive and negative bending allowable stresses were switched for glulam materials.
  - Resolved a graphical error for wood members using CSA 086-14 where the shear capacity was reported incorrectly in the Member Detail Report.
  - Resolved an issue where the wood bending capacities using CSA 086 were reported in the wrong units in the Member Detail Report.
- Masonry:
  - Enhanced the masonry wall panel Detail Report to list the total lintel depth in the geometry summary.
  - Fixed the units for required and available forces reported in the Design Summary of the masonry wall panel Detail Report.
  - Corrected the text in the masonry wall Detail Report to display 'Boundary Reinforcement' instead of 'Diagonal Reinforcement'.
  - Resolved an exception message when opening the Detail Report for a masonry wall panel.
- Wall Panels:
  - Added an error message to alert users when attempting to draw openings over wall design regions.

- Resolved an issue to allow multiple grid lines to be specified in the Wall Panel Editor.
- Resolved an issue to enforce the start and end location logic for distributed loads on wall panels.
- Resolved a graphical issue that allowed point loads using percentage to be applied beyond the geometry of a wall panel.
- Resolved an issue where full length distributed loads applied to wall panels retained partial length information.
- Resolved an issue where wall panel reinforcement was not utilizing the Wall Design Rules.
- Increased the visibility of the selected plates when using the Wall Panel Internal Force Summation Tool.
- Resolved an issue where wall panels would show their deflected shape when the Internal Force Summation Tool was in use.
- Graphics:
  - Enhanced the force diagrams displayed graphically by increasing the allowable decimal places for the magnitudes.
  - Resolved a graphical issue where column rotation was not displaying correctly for some members.
  - Corrected a display issue where members were not color coded based on their Section Set.
  - Corrected the member label graphical display to show the correct unbraced length dimensions.
  - Resolved an issue with graphically displayed loads where the magnitudes did not reflect duplicate or seismic factors from the load combination.
  - Resolved a graphical issue where tapered wall surface loads were incorrectly displayed.
  - Resolved a graphical issue where projected line loads were displayed using the full magnitude.
  - Resolved an issue with the graphical display of loads in load combinations with the category set to None.
  - Resolved a display issue for transient area loads.
  - Corrected a display issue where the transient member distributed loads were shown after the results were cleared.
  - Corrected the deflected shape button to behave as a toggle to change display options.
  - Resolved an issue with the Internal Force Summation Tool only displaying results for the first solved load combination.
- Detail Reports:
  - Added the wall panel label into the Detail Report.
  - Enhanced the expanded envelope force diagrams to properly report the maximum, minimum values, and relative load combinations.
  - Enhanced the detail report enlarged force diagrams to behave as a slider.
  - Enhanced the effective shear area reported in the expanded detail report calculations to provide clarity on factors used to account for shear stress distribution.
  - Corrected the display of the deflection ratio in the Detail Report enlarged deflection diagram.
  - Updated the deflection ratio reported in the Detail Report for multi-span beams.
  - Corrected a display issue that caused the detail report axial diagram to be increased by 12.
- Spreadsheets:
  - Added a Spreadsheet dropdown menu where you can open spreadsheets and show open spreadsheets.
  - Added Undo and Redo options into the right-click menu from within spreadsheets.
  - Added a Save As Default feature to the Load Combinations spreadsheet.
  - Enhanced the wall panel point and distributed loads to be edited from the Loads spreadsheets.
  - Added a Re-Solve button to the Suggested Design spreadsheet.
  - Corrected an issue where the spreadsheet width was not saved.
  - Resolved an issue preventing the properties from being changed through the Section Sets spreadsheets.
  - Resolved an issue preventing all section sets from appearing when modifying members through the Members spreadsheet.
  - Corrected the ability to copy and paste flexural rebar design parameters in the Members spreadsheet.
  - Corrected an issue that changed the load type after copy and pasting into Basic Load Cases spreadsheet.
  - Corrected an error in the Load Combination spreadsheet after deleting spreadsheet lines.
  - Corrected an issue where the sorted display was not saved in the Node Reactions spreadsheet after the spreadsheet was closed.

- **Printing:**
  - Added the Model Settings to the Advanced tab in the Report Printing dialog.
  - Added the ability to Print Selected Lines in spreadsheets.
  - Enhanced printed spreadsheets by adjusting the column widths.
  - Enhanced spreadsheet behavior to print as displayed if sorted.
  - Resolved an issue where the printed Model Setting parameters were not updated correctly.
  - Corrected the Print Report to keep the Model Settings from changing locations in the report.
  - Fixed missing column labels when printing the Deflection Design Rules.
  - Corrected the display of the expanded Wall Detail Report to fit to the full print page.
  - Corrected the behavior of the print settings: All Member Sections and Member End Points.
- **Interaction:**
  - Resolved an issue where certain properties were zeroed out for some hot rolled RISASection shapes.
  - Corrected an issue during save that caused incorrect file extensions for RISA-2D files imported into RISA-3D.
- **Operations:**
  - Enhanced the Starting a Model dialog to include access to learning tools.
  - Added options for window behavior to choose between Single Window Focus, Multiple Screen, and Auto-Docking Windows.
  - Resolved an issue where a model could not be opened from the File Explorer while an instance of RISA-3D was in progress.
  - Corrected a display issue where the edges of the application was cut off when the application was moved to multiple monitors of different resolutions.
  - Resolved an issue with online shapes that caused the program to freeze.
  - Resolved an issue where the warning log was not cleared after opening a new model.
  - Resolved some issues causing the program to shut down during initialization.

## 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.
  - Resolved an issue that prevented Selection States to be saved with a model.
- **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.
    - Added the ability to click white space to clear the current selection.
    - 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.
    - Increased the visibility of the selected plates when using the Wall Panel Internal Force Summation Tool.
  - 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  $L_{torque}$  is greater than either  $L_{by-y}$  or  $L_{bz-z}$  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  $C_b$ .
  - Corrected an issue with the reporting of the lateral torsional buckling factor ( $C_b$ ) 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, ( $C_o$ ), 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, ( $F_e$ ), per Section C4.1.2 for doubly symmetric shapes using AISI S100-07 which was incorrectly using  $F_e$  (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.
- Aluminum:
  - Updated Aluminum Round Tube flexural check to use Section B.5.5.4 in ADM 2015.
- 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, ( $C_o$ ), 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.