Release Notes for RISA-3D

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.
- 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.