Release Notes for RISA-3D

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.