Release Notes for RISA-2D

Version 15.0 Enhancements/Corrections

- Hot Rolled 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 KL/r for single angle members was being incorrectly reported in the detail report for Canadian design codes.
  - Corrected an error where Hot Rolled steel shapes were not properly checked for compactness before calculating the compressive capacity of the member.
  - Updated the Stiffness Adjustment behavior of the *AISC 360-10 (14th edition)* Direct Analysis Method. Previously the program was not taking the axial stiffness adjustments for beam 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 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 the Euler buckling force would report too low of a code check (though still greater than 1.0).
  - 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.
  - Corrected over conservative assumptions related to bending capacity calculations of members in combined stress equations for the Indian Steel code.
  - Fixed a problem in the single angle bending capacity calculation where the program was conservatively using the leg local buckling limit state even when the leg was in tension.
- Concrete:
  - Added the *ACI 318-14* concrete code.
  - Governing load combinations for concrete beam shear and bending code checks have been added to the member results spreadsheets and detail reports.
  - Added consideration of Icracked for concrete members designed with the Indian, Australian, New Zealand, and Eurocodes.
  - Added a "13M" bar option to the ASTM A615M rebar set.
  - Fixed a problem with concrete wall panels where the axial/bending code check results 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 may have been 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 a P-Delta analysis for in-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.
  - Fixed an issue with concrete and masonry wall panels where the forces in full-height walls were over conservative due to incorrect transfer of loads from regions above and below openings.

    - 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.
    - Updated concrete wall panel behavior to better handle batch solutions when there are design failures in the wall.
    - Corrected an issue where adjusting the thickness of concrete wall panel did not change the self-weight of the wall panel.
- 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.
    - Fixed a problem with masonry lintels where a spacing of 0" is incorrectly reported if shear reinforcement is required per the Batch solution.
    - Corrected an error where the governing masonry wall panel results would change when the model was re-solved.
    - Fixed a problem with optimization with boundary zone reinforcement for in-plane masonry wall design. The program would choose more bars than necessary.
    - 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.
- Wood:
    - Added the *AWC NDS-2015 (ASD)* wood code.
    - Added *NDS-2015* Mechanically Graded (MSR & MEL) material databases.
    - Added the *2015 AWC SDPWS* 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.
    - Added the ability to use Effective Length (K) factors for both stud and chord axial compression design in wood wall panels.
    - Suppressed the wood material validity check for models which do not contain wood members.
    - Segmented wood wall panels with slender end regions now get design results for their conforming regions. Previously, no design was done for the entire wall.
    - 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 file.
    - Corrected a problem with wood member allowable stress values being reported as zero graphically in the double-click dialog.
    - Fixed an issue with the wood wall panel Force Transfer Around Openings design method when an Envelope Only solution was present.
    - Fixed a problem with glulam wood members where the "d" in le/d considerations was using a value larger than the actual by 1/2".
    - Corrected an error where wood PSL Parallam columns were using the incorrect compressive capacity design value.
    - Corrected an issue with the unit conversions 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.
- 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 cold formed steel channel shapes.
- Aluminum:
    - Fixed a discrepancy in the axial capacity calculation when the L_torque unbraced length is set to zero for aluminum members.
- Dynamics:
    - Corrected an issue with the graphical display of deflected members for mode shape views when color coded or rendered display is used.
- Wall Panels:
    - Added a tool to delete all wall panel regions. Regions are automatically regenerated the next time a model is solved.
    - Added a Wall Panel Forced results spreadsheet.
    - Added the display of the governing moving load step for wall panel design results.
    - Added the ability to inactivate wall panels.
    - Optimized the processing of wall panel results to speed up the solution time by remembering the cut locations for each wall region. This information can then be used in all load combinations.
    - Corrected an error with the Wall Panel Editor grid display when more than 100 characters are entered.
    - Added a Warning Message to inform users that point moments will not apply to a wall panel without a dummy member.
    - Corrected a problem that caused over conservative shear forced at the ends of masonry lintels, wood headers, and regions above concrete wall panel openings.
- Licensing/Installations:
    - Updated the RISA Key Manager to work properly from a Remote Desktop connection without giving a false error message (error #12).
    - Added WMVCore.dll to the installations so the program can operate in Windows Enterprise environments.
- General:
    - Added enveloped member detail reports for Hot Rolled steel, Cold Formed steel, Wood, Aluminum, and General material members.
    - The Material Takeoff spreadsheet can now be filtered using the Exclude Unselected Items button from the model view.
    - 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.
    - 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.

- Corrected a minor unconservative error with the torsional shear stress calculations for rectangular members.
- 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 error in the Sy calculation for singly symmetric RISASection imported shapes.