Release Notes for RISACalc

Version 4.2 - July 18, 2023

- Wind Load Generator:
    - Added a wind load generator for components and cladding (C&C). Supported design codes include:
        - ASCE 7-16
        - ASCE 7-10
- Concrete:
    - Corrected the equation used to determine the axial tension capacity of concrete columns from ACI Section 22.4.3 to ACI Section 22.4.2.
    - Updated program to correctly calculate Vc for longitudinal reinforcement by taking the larger value between equations a and b in Table 22.5.5.1 of ACI 318-19.
    - Fixed an issue with the compression strength for concrete columns according to CSA A23.3-14.
- Wood:
    - Updated the wood SCL LVL database for Roseburg based on latest design values.
- Detail Report:
    - Added a table to the Reactions section in the Detail Report to provide unfactored reactions for Beams, Columns, and Composite Beams based on load category.
    - Fixed a graphical issue in the Detail Report for the MWFRS wind load generator where the Mean Roof Height was not updating after adding floors.
    - Fixed an issue where the Flexural and Shear results were not showing in the Detail Report for rotated beams.
    - Fixed an issue where the Point Loads Magnitude units were printed incorrectly in the Detail Report PDF.
- General:
    - Resolved an issue in the canvas where the deflection results were not being shown for the selected deflection load combination.

Version 4.1 - June 15, 2023

- Wind Load Generator:
    - Added a wind load generator for the main wind force-resisting system (MWFRS). Supported design codes include:
        - ASCE 7-16
        - ASCE 7-10
- Hot Rolled Steel:
    - Added the analysis and design of back-to-back hot rolled channel members.
- Retaining Walls:
    - Fixed a graphical issue in the Detail Report where the rebar spacing was not reported in the Rebar Diagram for masonry retaining walls.
    - Resolved a graphical issue in the Detail Report where the governing load combination was not fully displayed in the Wall Force Diagrams section.
    - Fixed a graphical issue in the Detail Report where the horizontal load was pointing in the opposite direction in the Loading Diagram.
- Spread Footing:
    - Resolved an issue where spread footing explicit top bar rebar quantity was not retained.
- Detail Report:
    - Added the ABIF and SF factors to the Load Combinations section in the Detail Report for retaining walls and wall footings.
    - Fixed a graphical issue where -1 bars were reported in the concrete member Detail Report.

- Fixed inconsistencies to report deflection load combinations in both the Loads tab and the Detail Report for beams and composite beams.
- General:
  - Resolved an issue which prevented a project from opening immediately when it was requested from another user.
  - Resolved an issue where the 'Show All' toggle in the Load Combination settings was affecting the load combinations being solved.
  - Fixed an issue where the PDF report was not downloading for some wall footing components.

Version 4.0 - April 20, 2023

- General:
  - Added compliance with the 2021 International Building Code.
  - Added Load Combinations compatible with IBC 2021.
- Detail Report:
  - Added a summary table of results in the Calculations section for Spread Footings.
  - Updated the description for S and Z as the Elastic Section Modulus and Plastic Section Modulus.
  - Fixed an issue where the deflection results were not showing in the Detail Report for rotated beams.
  - Fixed a units issue where the retaining wall and wall footing components were multiplying the reported weights by 12.
  - Resolved a units issue where steel joist UTL and capacity were in units of plf despite being reported as klf.
  - Resolved various graphical display issues within the Detail Report across multiple materials that were inconsequential to the final results.
- Aluminum:
  - Resolved a graphical issue for the calculation of Bc in the Axial Compression check for aluminum members that referenced incorrect equations from Table B4.2 when the value used equations from Table B4.1.
- Cold Formed Steel:
  - Resolved an issue where the P-Delta amplification factor was not included for theAISI S100-16 ASD solution.
- Concrete:
  - Added a warning message when no strength Load Combinations are solved for concrete members.
  - Enhanced the calculation of the moment gradient factor to include value limits in compliance with the CSA code.
  - Fixed an issue with the wall shear capacity calculation for strip footings and retaining walls using the ACI 318-19 code.
  - Corrected the governing concrete shear strength calculation for concrete beams, columns, and drilled piers.
  - Resolved a graphical error for the PCA Notes equation reference in the Detail Report for multiple ACI 318 building codes.
  - Fixed a graphical issue with the equation for the minimum development length.
- Hot Rolled Steel:
  - Added more information to variables that are used within the detail report for hot rolled steel members.
  - Added the L-torque design parameter for hot rolled steel beams, columns, and composite beams designed with CSA S16-14.
  - Corrected the calculation of the elastic critical buckling stress (Fe) when calculating critical buckling stress.
  - Resolved an issue with the properties of certain HSS shapes in the Canadian Hot Rolled Steel database.
- Masonry:
  - Implemented larger reinforcement spacing options for masonry wall design.
- Wood:

- Resolved an issue displaying detail reports for wood members solved with CSA O86-09: Ultimate design code.