



RISA Webinar

Component Design in RISA

Presenter: Deborah Brisbin, P.E.





RISA-2D

The graphic for RISA-2D consists of a blue wireframe triangle with green lines connecting its vertices to the center, and a blue line forming a square around the triangle.

RISA-2D 10.1

RISA-3D

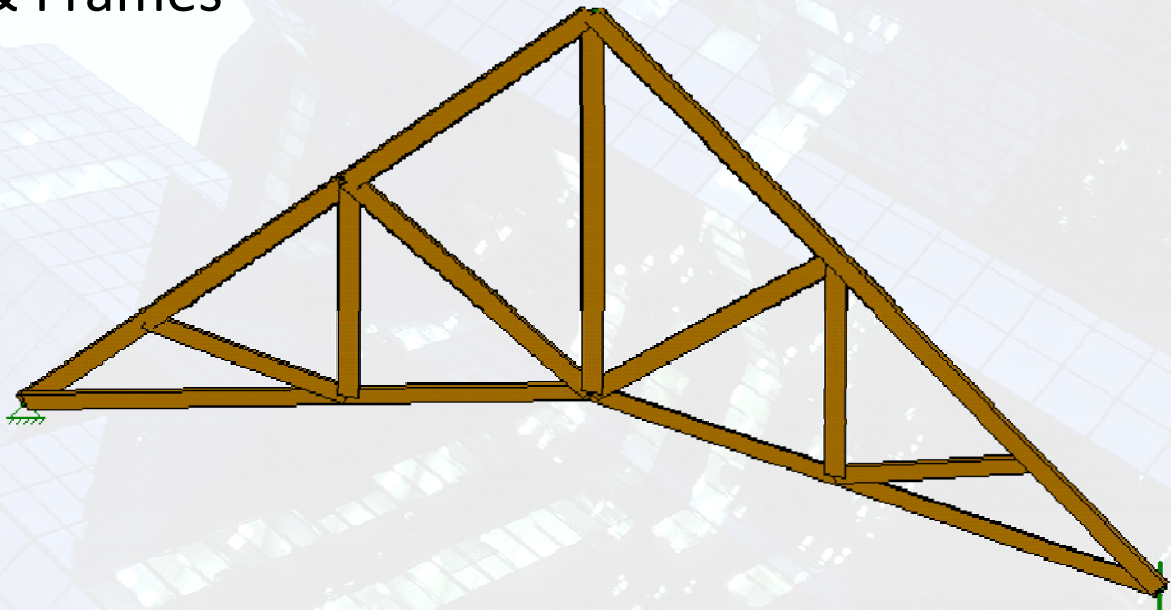
The graphic for RISA-3D features a purple 3D wireframe cube with blue dots at each of its eight vertices. The vertices are labeled with blue letters: 'Y' at the top, 'X' at the bottom right, and 'Z' at the bottom left.

RISA-3D 9.1

RISA PROGRAMS

Types of Models

- Beams, Columns, & Frames
- Trusses



Component Design

Feature Review- Building the Model

- Graphically drawing your model
- Using Member Types
- Section Sets vs Assign Shape Directly
- Physical Members
- Using the Drawing Grid
- Member End Releases

Feature Review- Getting Results

- High Level Generation tools
- Assigning the Unbraced Length
- Creating Load Combinations & Using Load Categories
- Using Suggested Shapes

Lb-out and **Lb-in** (RISA-2D)

Lb-yy and **Lb-zz** (RISA-3D)

- **Definition:** Unbraced length for the member with respect to column type buckling out of plane and in plane.
- Used to calculate KL/r ratios for both directions
- Reference Chapter E and Section B7 of the ASD or LRFD code.

Lcomp-top and **Lcomp-bot**

- **Definition:** unbraced lengths of the compression flanges for flange buckling due to flexure.
- Used to calculate the allowable bending stress, or bending strength.
- Reference Chapter F - specifically the definition of " l " on page 5-47 of the ASD code or the definition of L_b on page 6-53 of the LRFD code.

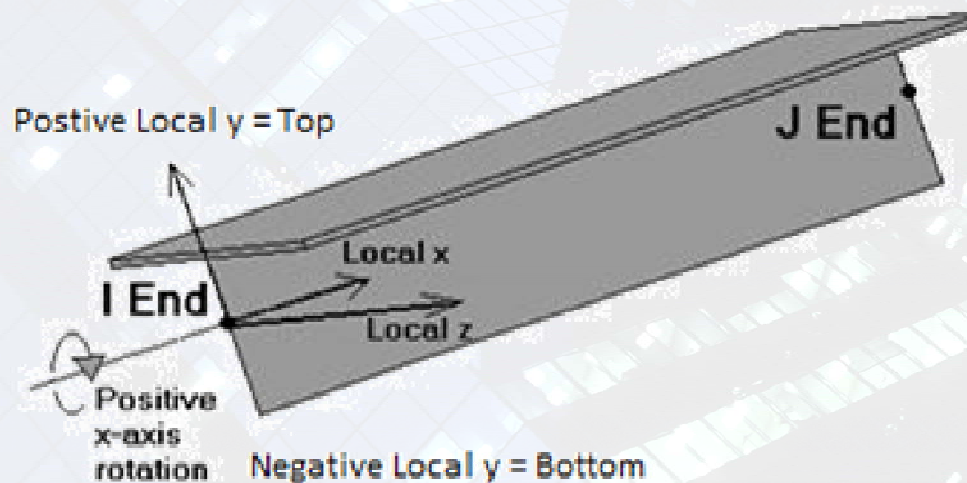
Unbraced Length

Quick tools: Type “Segment” or “S”

- This places a brace point at all intermediate Joints
- Be careful to delete any extraneous joints

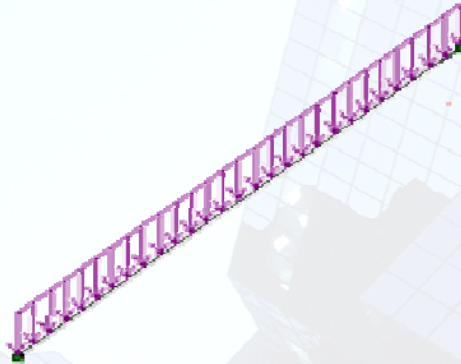
How do you define “Top”?

Turn on your local axis to see Local y direction



Unbraced Length

Dead Loads → Rake

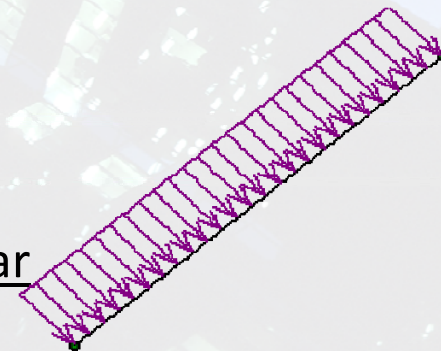


Live Loads, Snow Loads → Projected



Projected = Applied Load x ($\frac{\text{Member Length in Horizontal Plane}}{\text{Actual Member Length}}$)

Wind Loads → Perpendicular

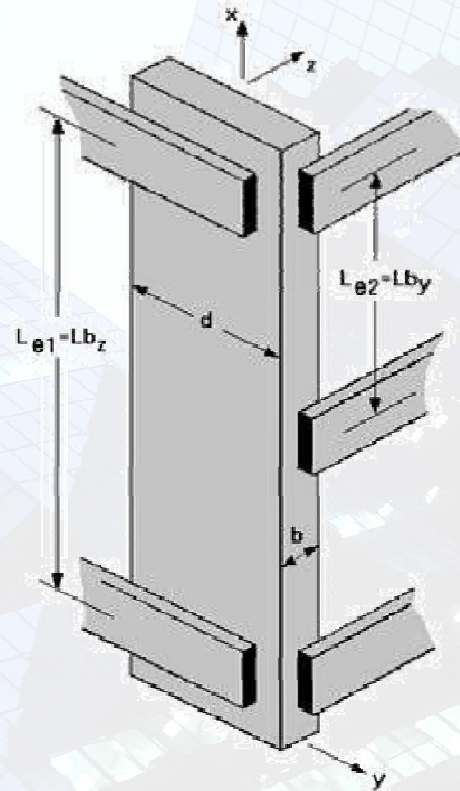


Truss Loading

Wood Unbraced Length

L_{e2} = Out of Plane

L_{e1} = In Plane



Unbraced Length

Additional Resources

- RISA-3D and RISA-2D Help File and Reference Manual
- www.risanews.com
- support@risa.com
- User's Guides available at www.risa.com

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Questions?

Please let us know if you have questions.

We will answer as many questions as time permits during the webinar.

Once the webinar is closed, we will post all Q&A's, as well as the Quick Reference Guide, to our website: www.risa.com

For further information, contact us at: info@risa.com

Thank you for Attending!

