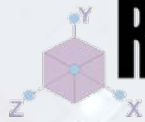


# **RISA Webinar**

## **Plate Design in RISA-3D**

**Presenter: Matt Brown, P.E.**





# **RISA-3D** RISA-3D 9.1.1

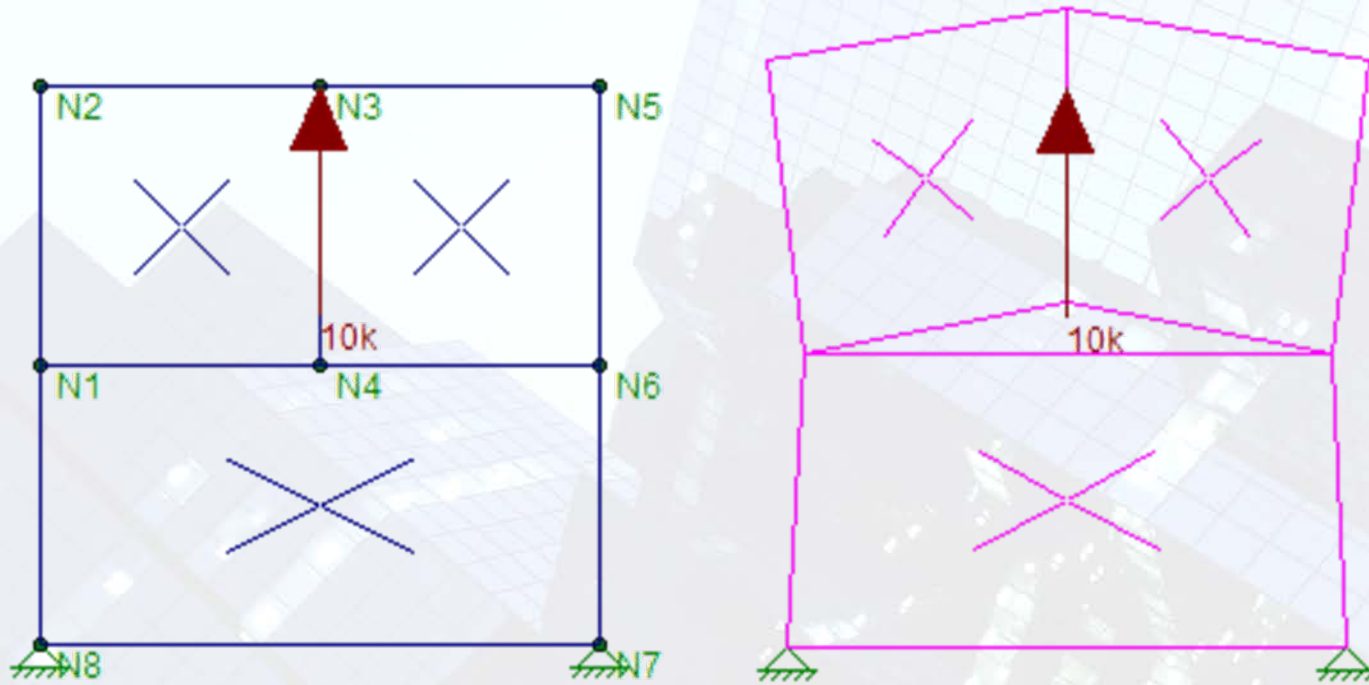
PROGRAM

## Today's Topics

- Plate Connectivity
- Shape Limitations
- Submeshing and Accuracy
- Interpreting Results
- Common Uses and Modeling

OVERVIEW

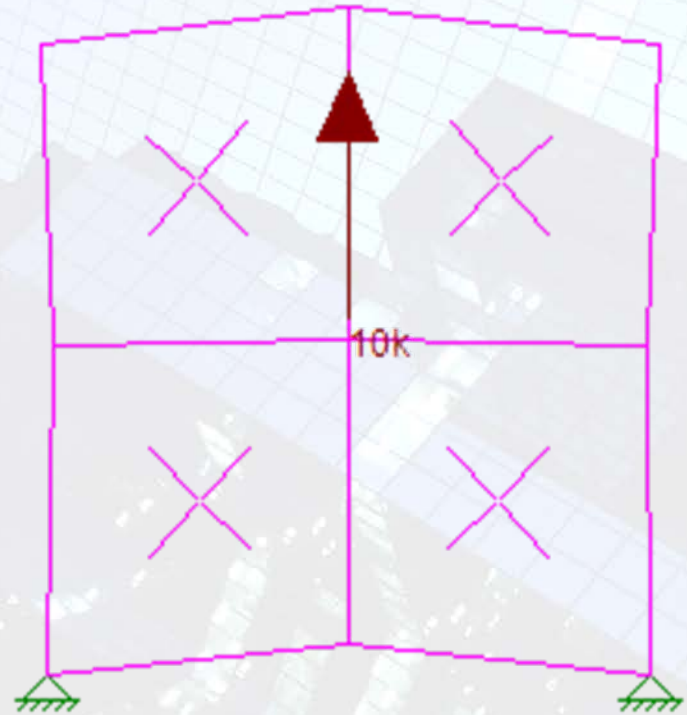
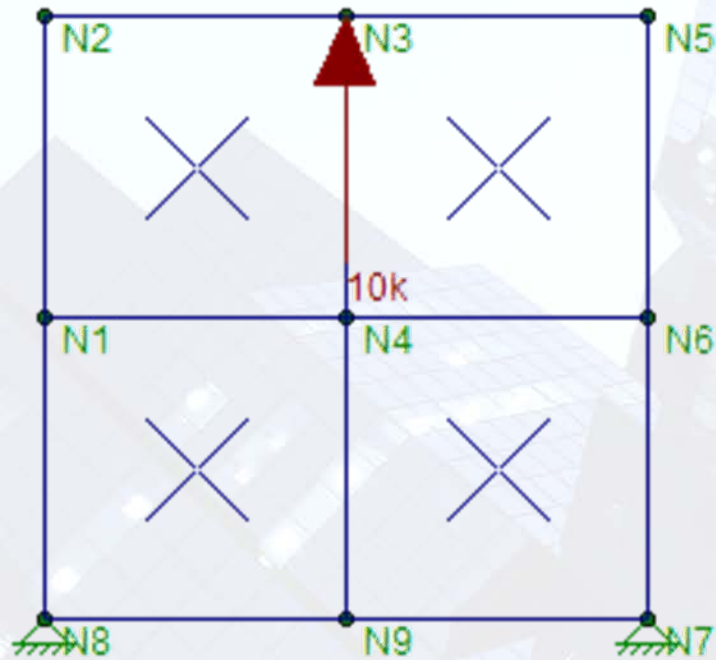
- Plates are *not* physical members
- Plates only connect to plates, members, nodes, etc *at their corners*.
- If a node falls along a plate's edge or interior it is *not* connected to that plate.



Node N4 falls along the edge of the bottom plate. Notice how a “tear” forms

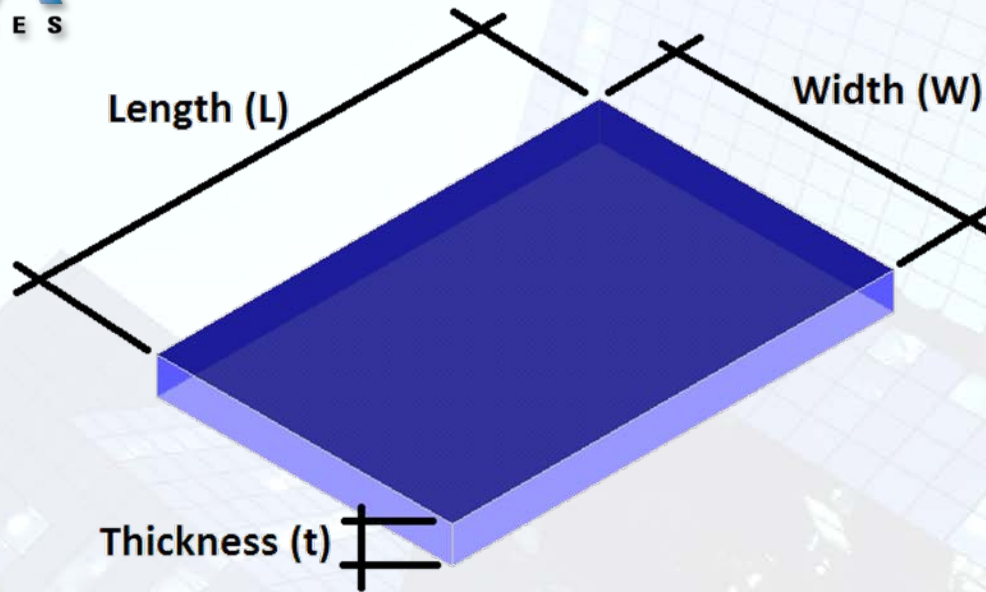
**PLATE CONNECTIVITY**





Submesh the bottom plate so that every plate's corner connects to another corner

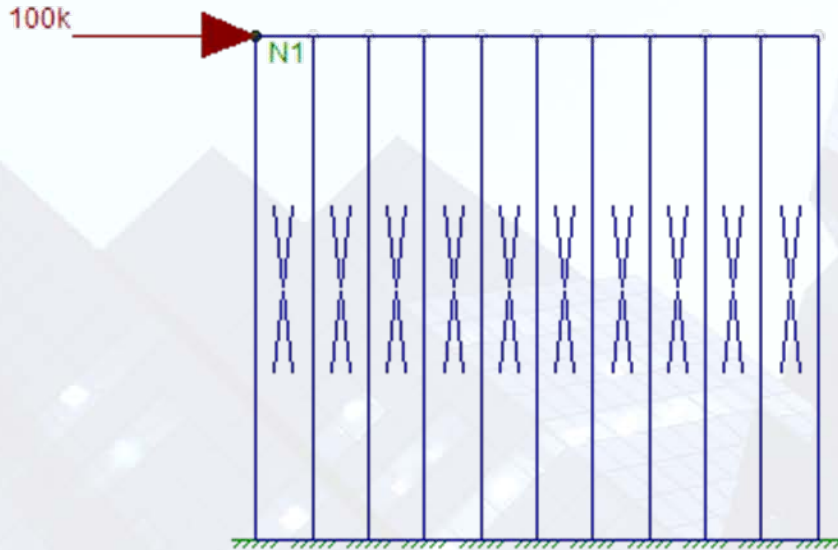
## PLATE CONNECTIVITY



$L/W$  should not exceed 9.0

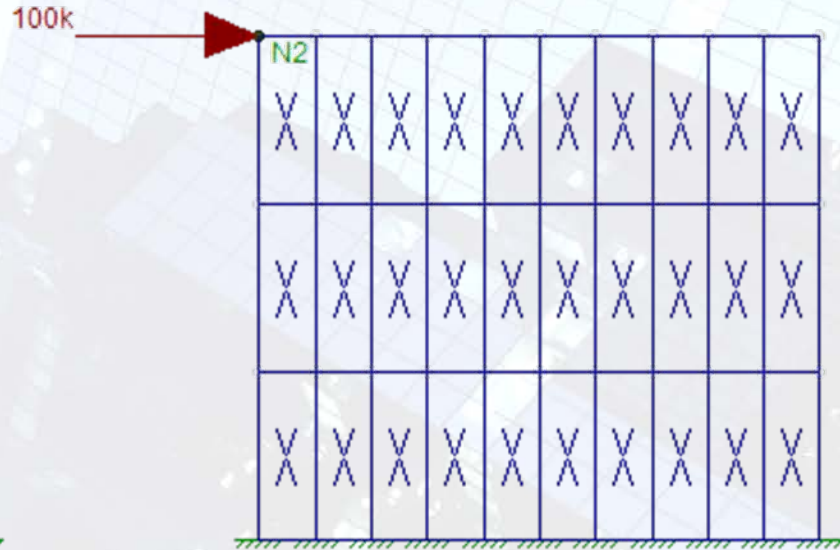
$t/W$  should not exceed 3.0

**SHAPE LIMITATIONS**



L/W ratio = 9

Lateral Deflection = 2.0"

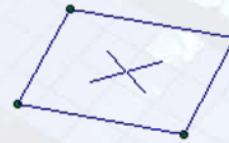
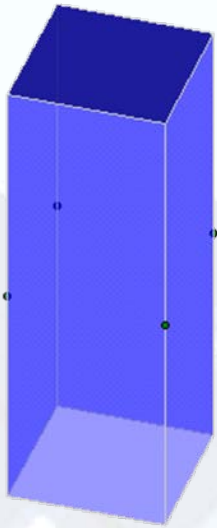


L/W ratio = 3

Lateral Deflection = 3.0"

## SHAPE LIMITATIONS





$t/W$  ratio = 3

vs

8-Node Solid Element

Solid Elements are more accurate than thick plates

**SHAPE LIMITATIONS**



Good Plate

Relatively  
Rectangular



Bad Plate

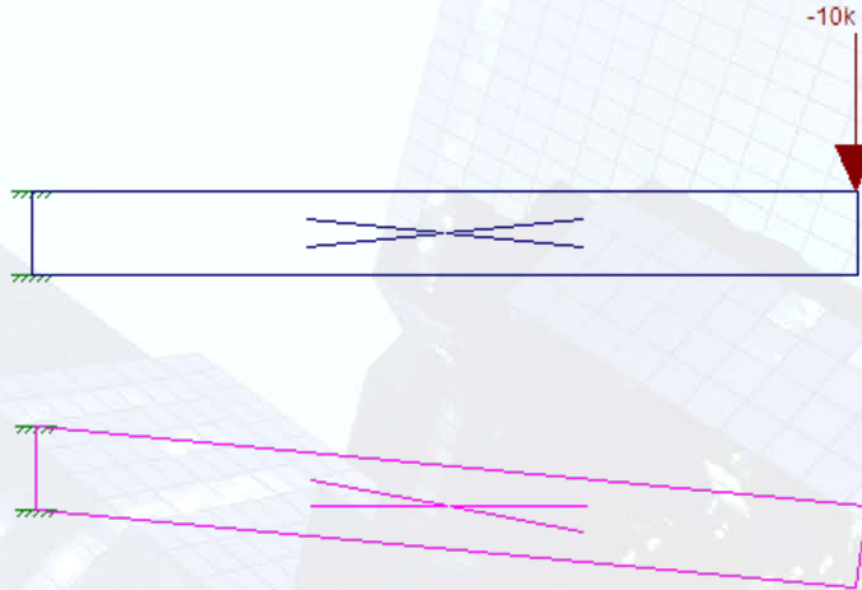
Interior Angle  
Exceeds 155 Degrees



Ugly Plate

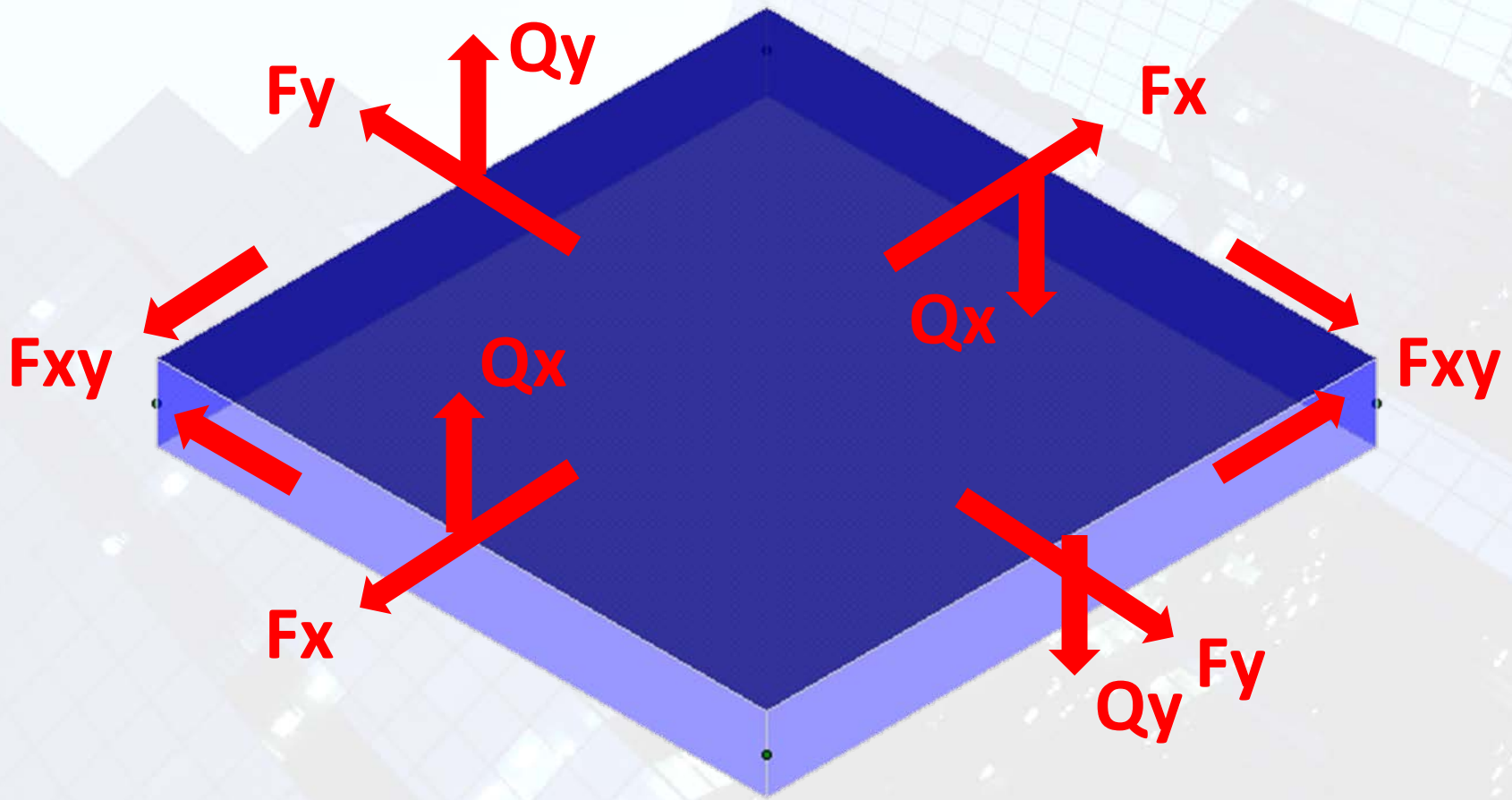
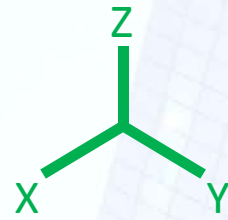
Bowtie Configuration

# SHAPE LIMITATIONS

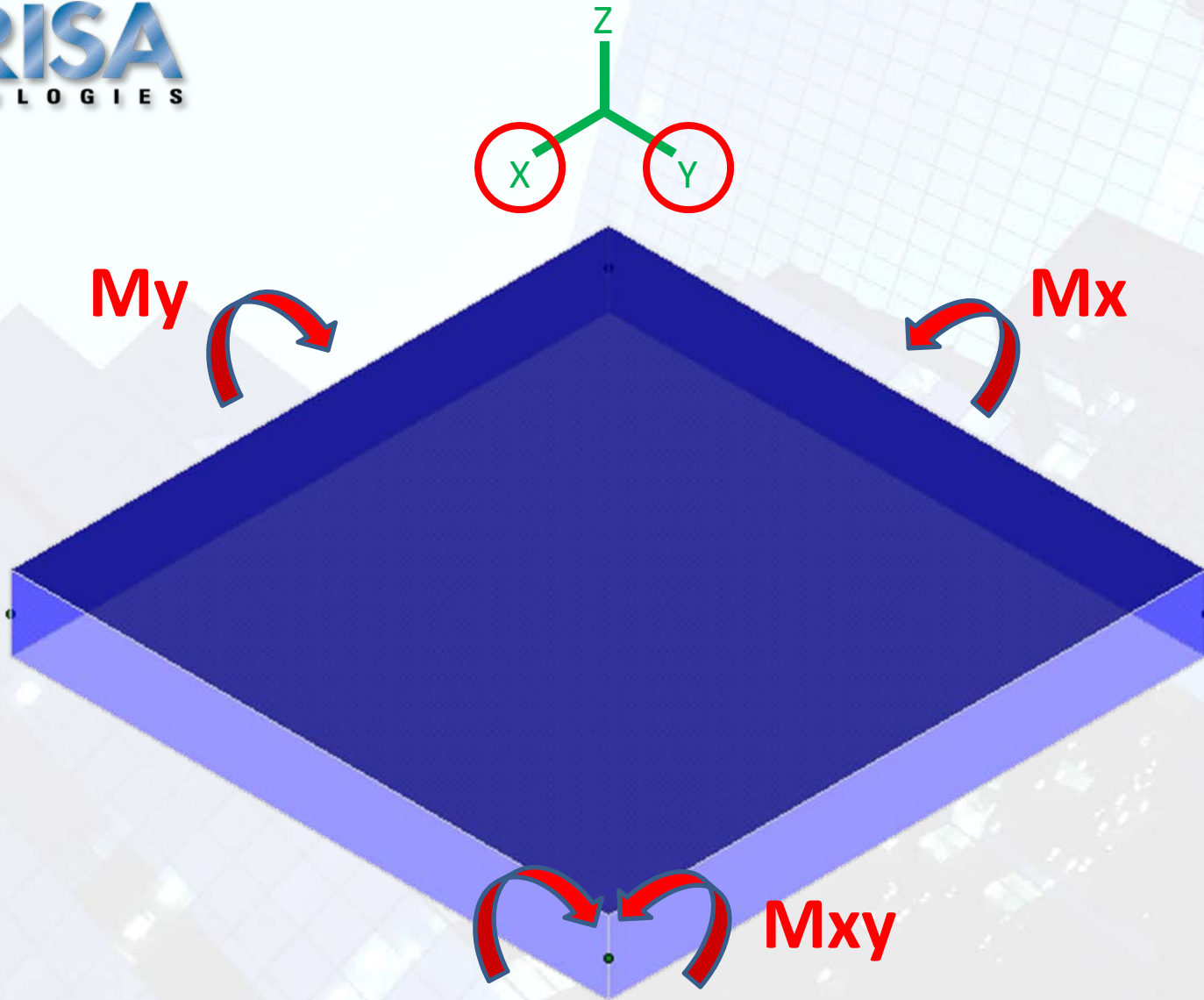


Plates only exhibit shear deflection (not flexural)

In other words, a plate's edge cannot curve



INTERPETING RESULTS



INTERPETING RESULTS



# Additional Resources

- RISA-3D Help File / Manual
- [www.risanews.com](http://www.risanews.com)

Presenter: Matt Brown, P.E.



# 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](http://www.risa.com)

For further information, contact us at: [info@risatech.com](mailto:info@risatech.com)

**Thank you for Attending!**

