



Oasis Insights 2026

Bespoke Hurricane Vulnerability Modeling with HurLoss



INNOVATIVE SOLUTIONS
TO COMPLEX PROBLEMS

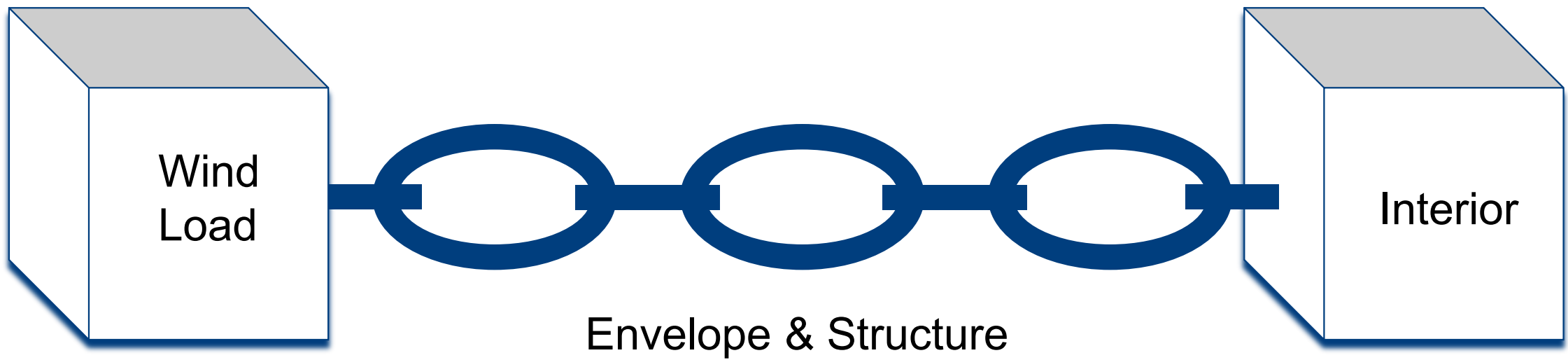




Custom Insights with HurLoss Vulnerability Modeling

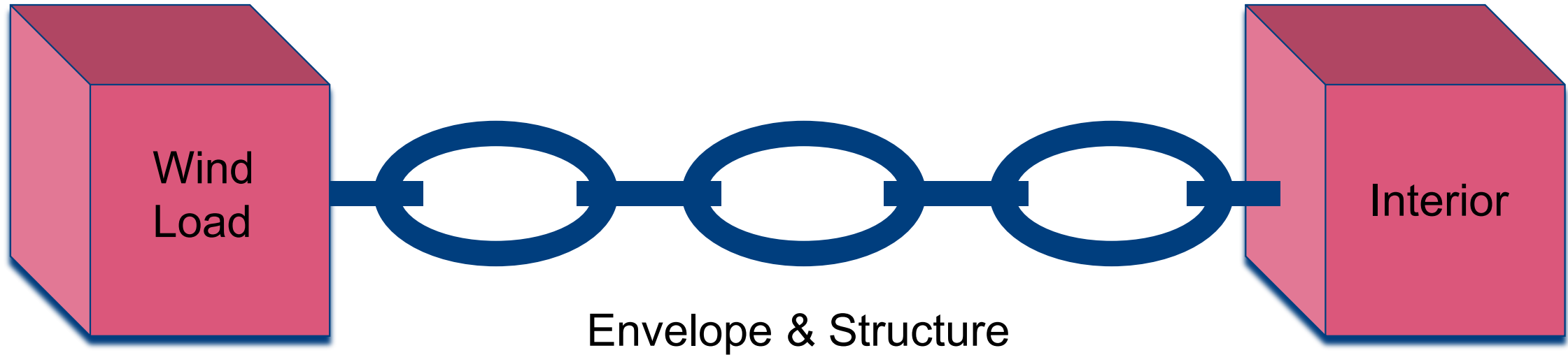
- ▶ HurLoss vulnerability modeling approach
- ▶ Recent applications and insights regarding:
 - Building size and complexity
 - Roof cover aging
 - Roof-only losses & effect of ACV coverage

Load & Resistance Approach





Effects of Building Size and Complexity?



▶ Wind loading changes with:

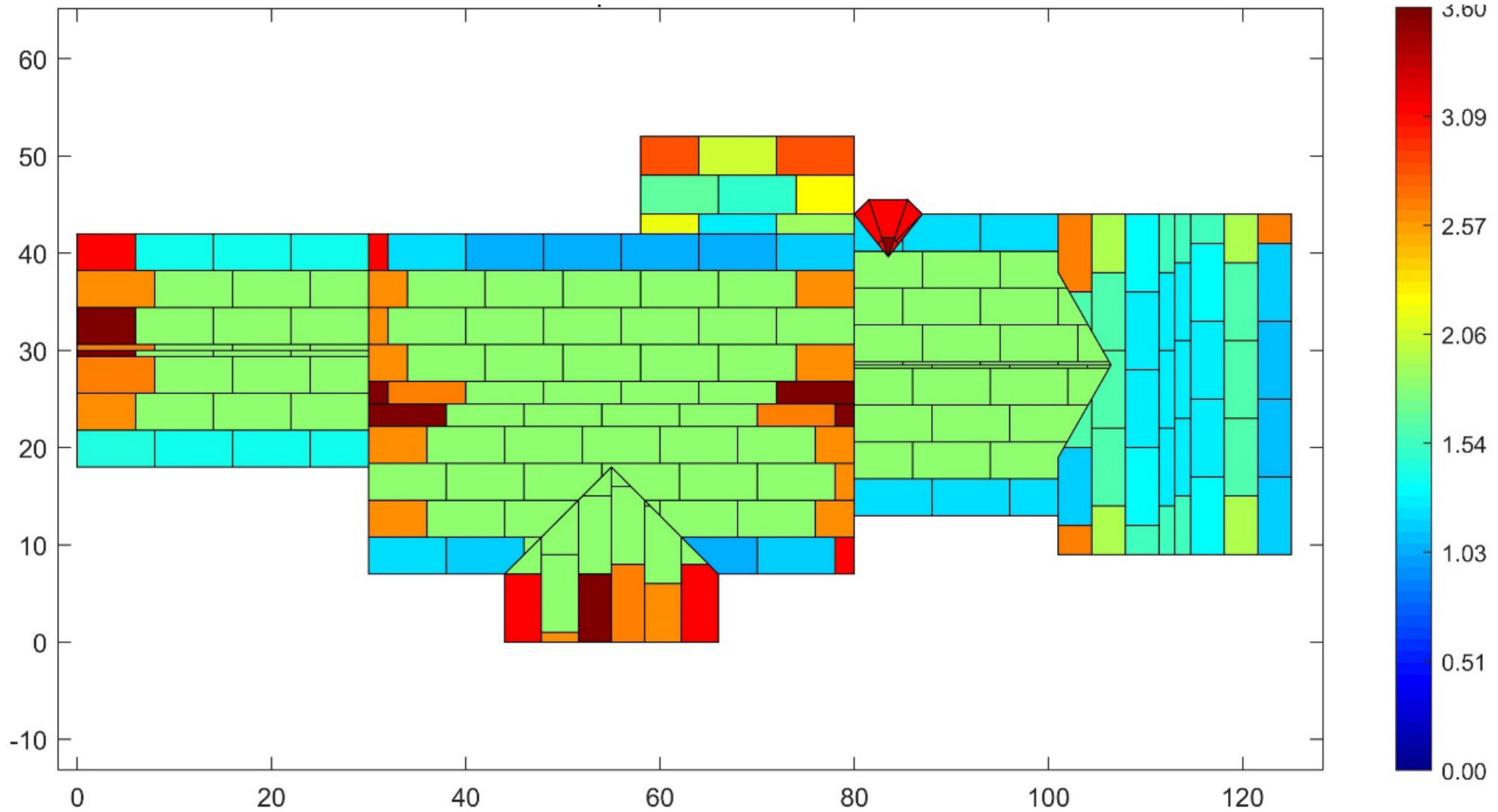
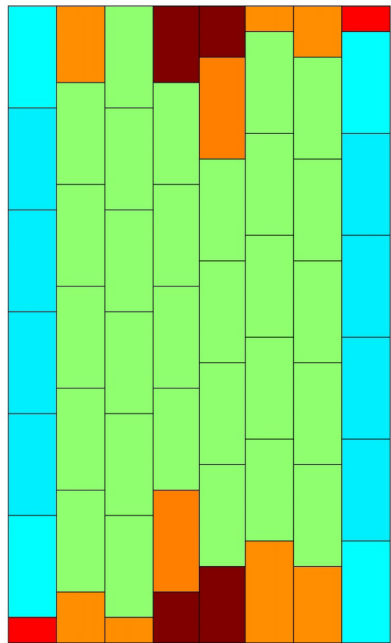
- **Overall size of building**
- **Complexity of roof**

▶ Larger Building → Higher Value

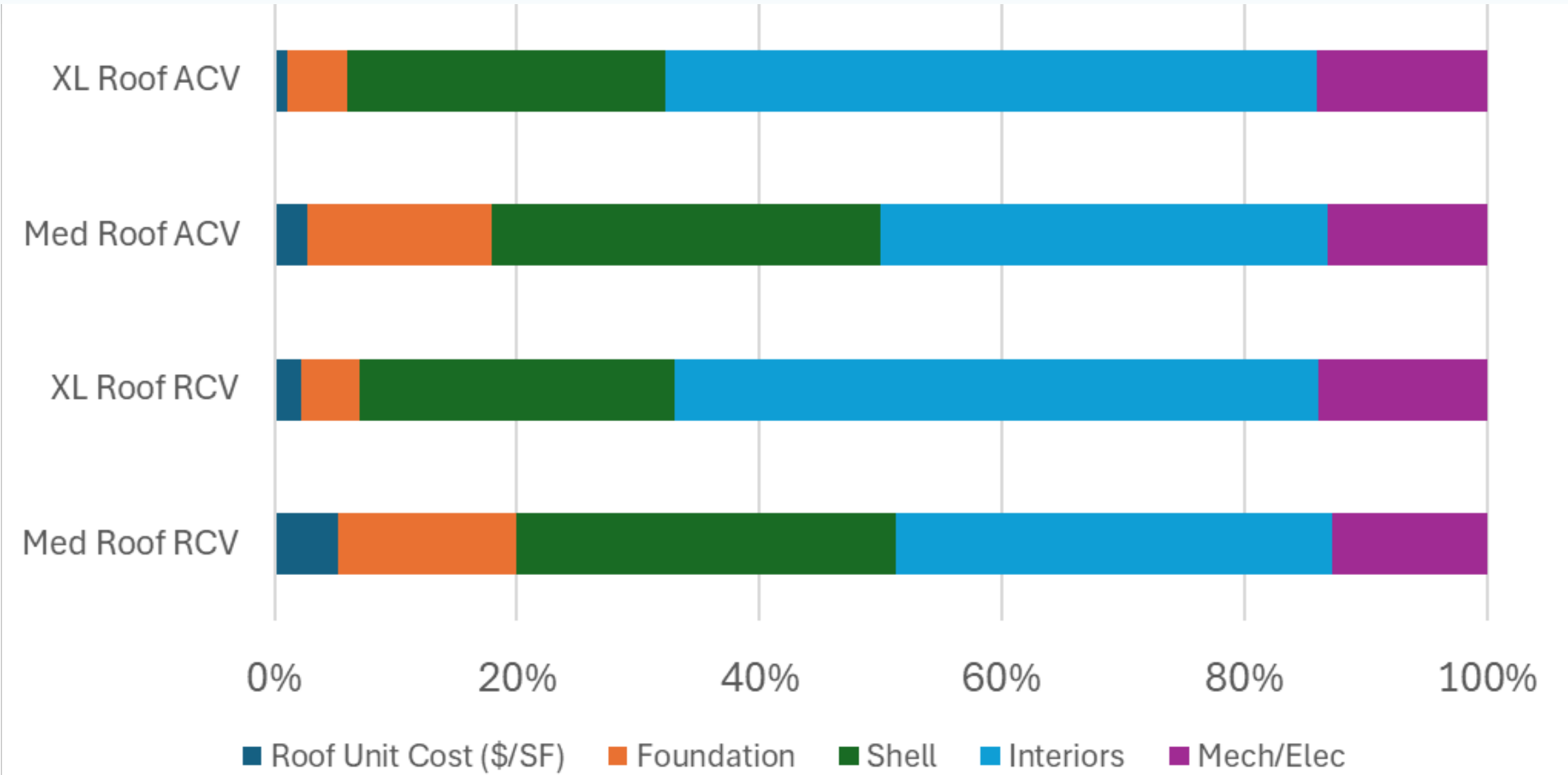
- Additional value tends to be concentrated on interiors
- Minor losses to exterior accessories smaller proportion of value



Minimum Roof Pressure Comparison



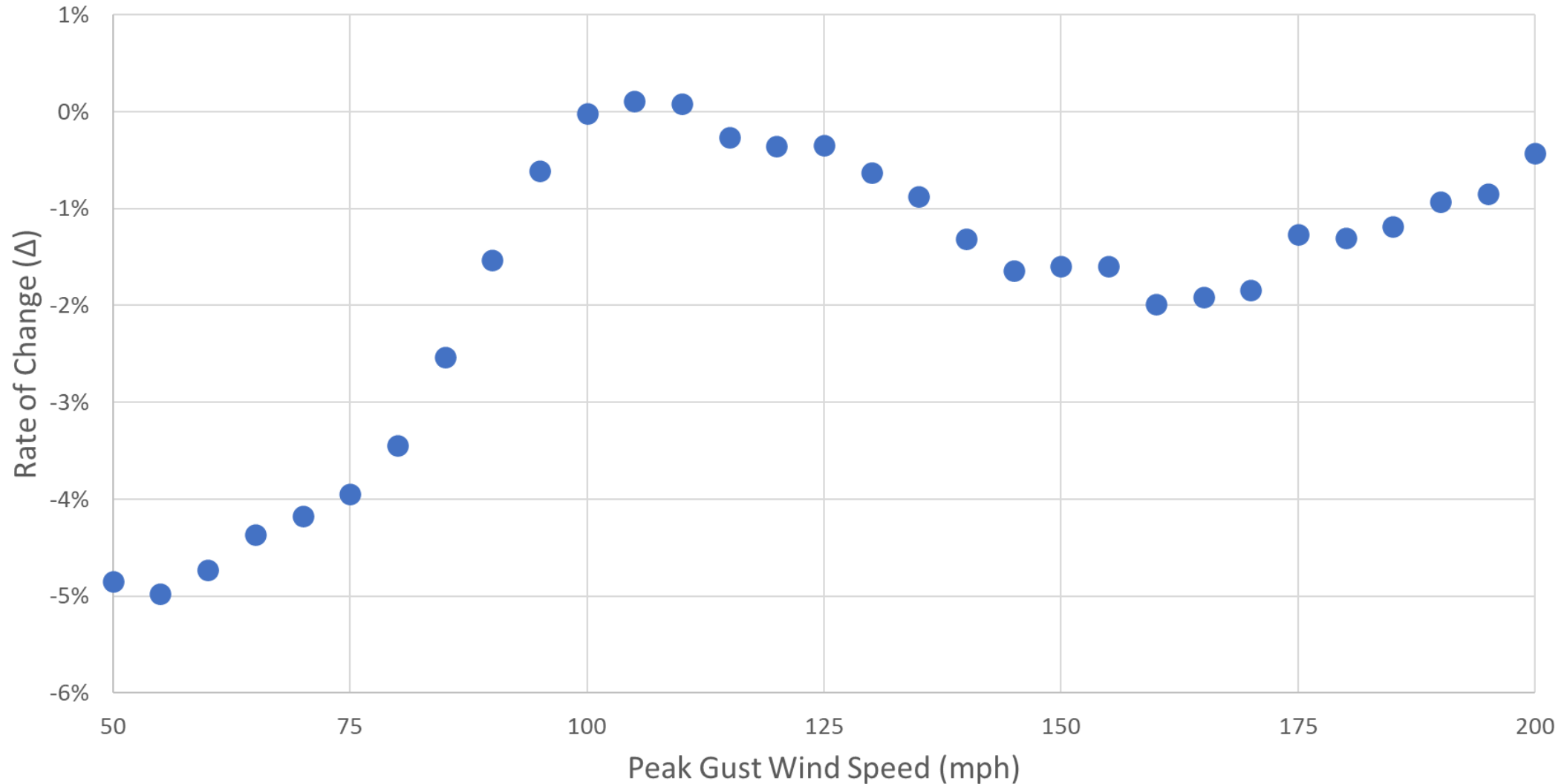
Relative Value of Building Components





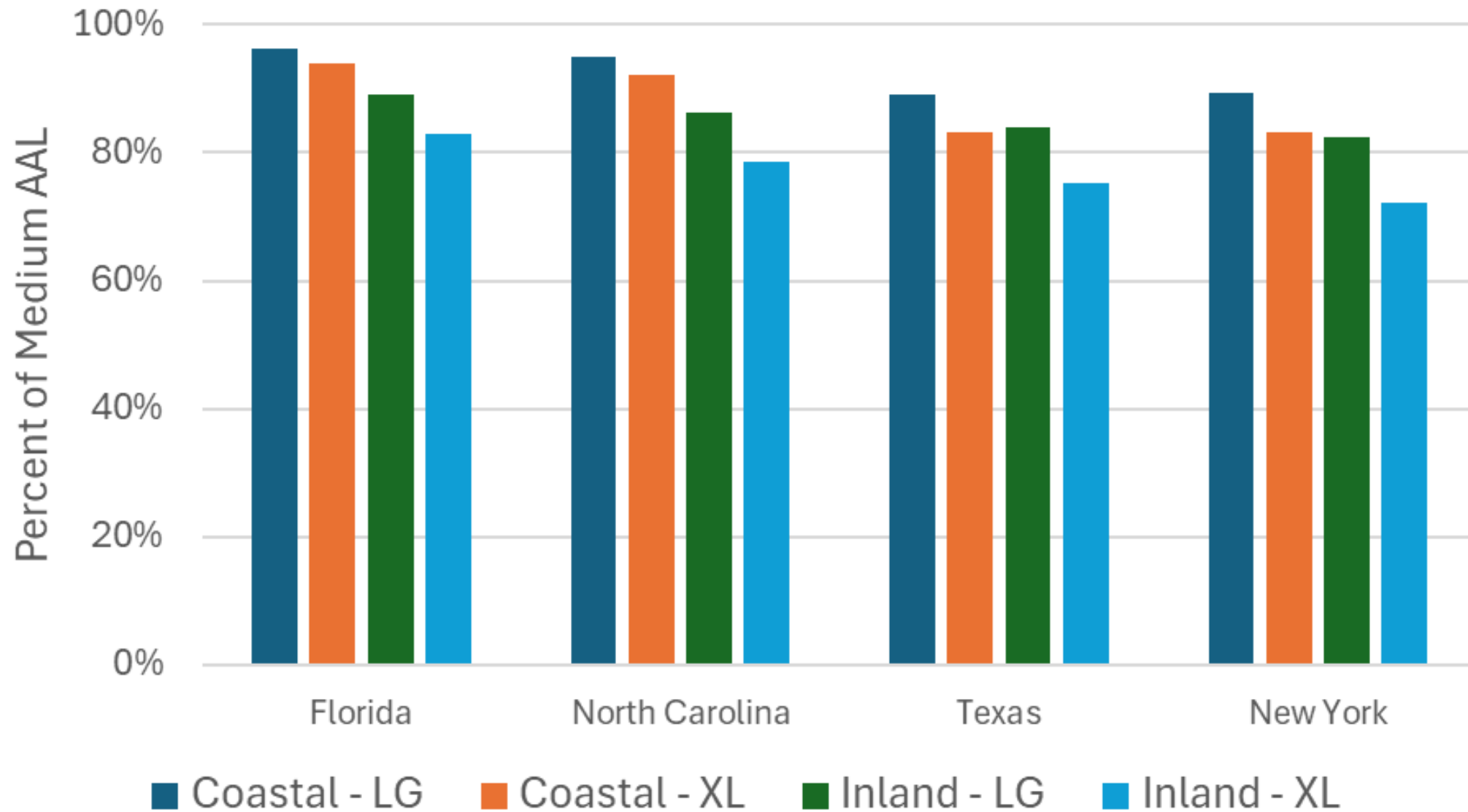
Size Impact on Loss Function by Wind Speed

Rate of Change (Δ) of Relative Loss Ratio per 1000 sf Increase in Living Area

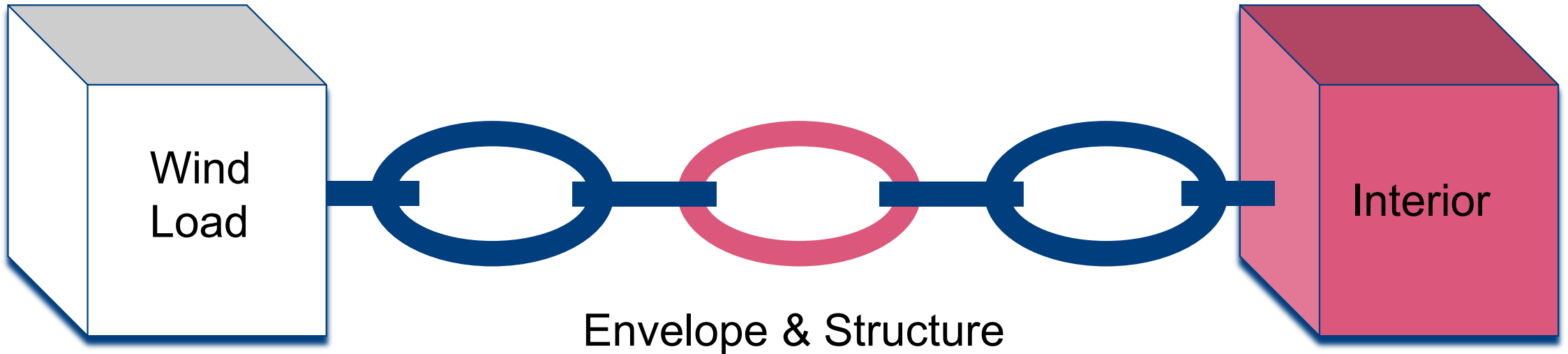




AAL Effect by Building Size & Location



Effect of Roof Cover Age & RC Only AALs?



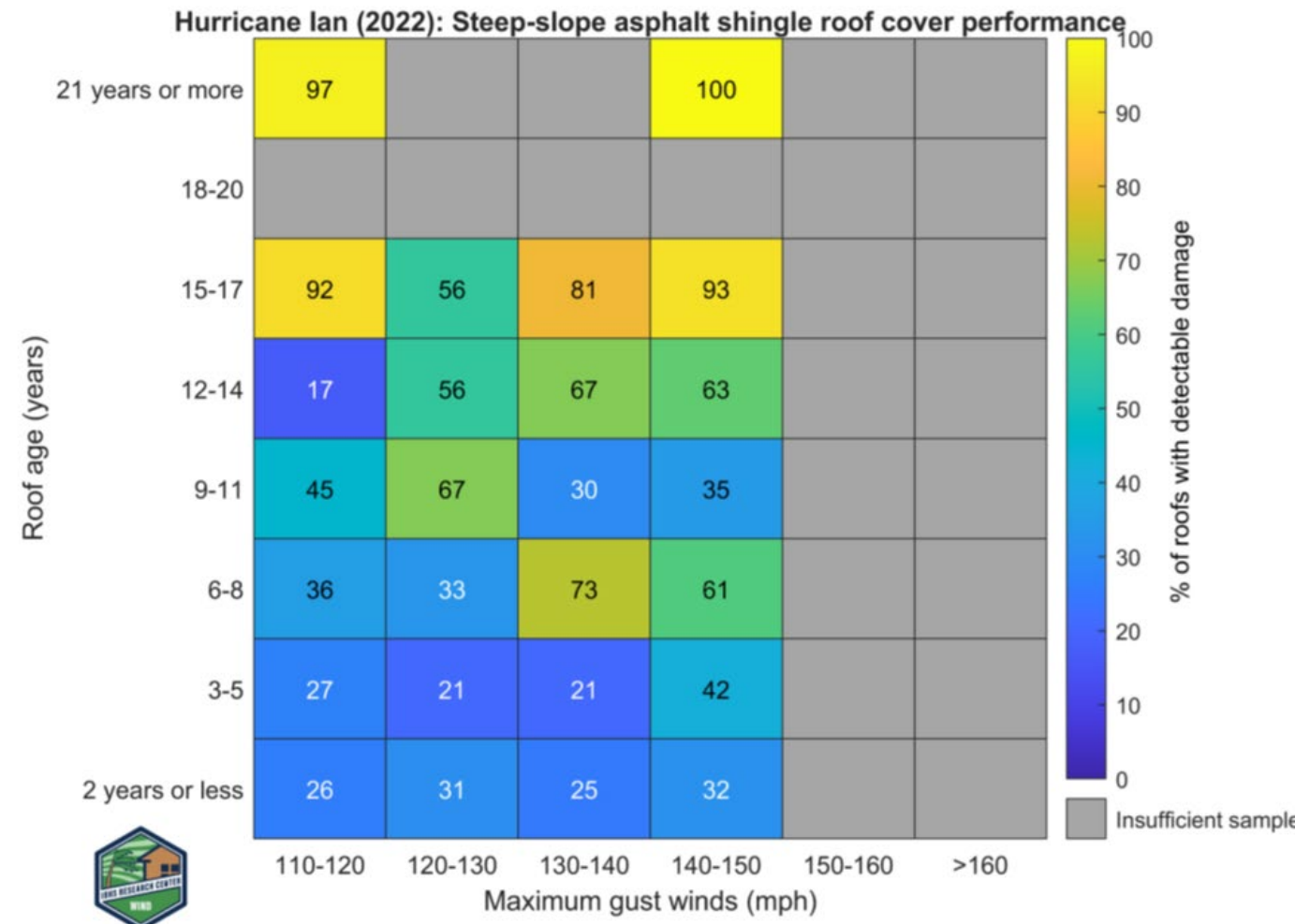
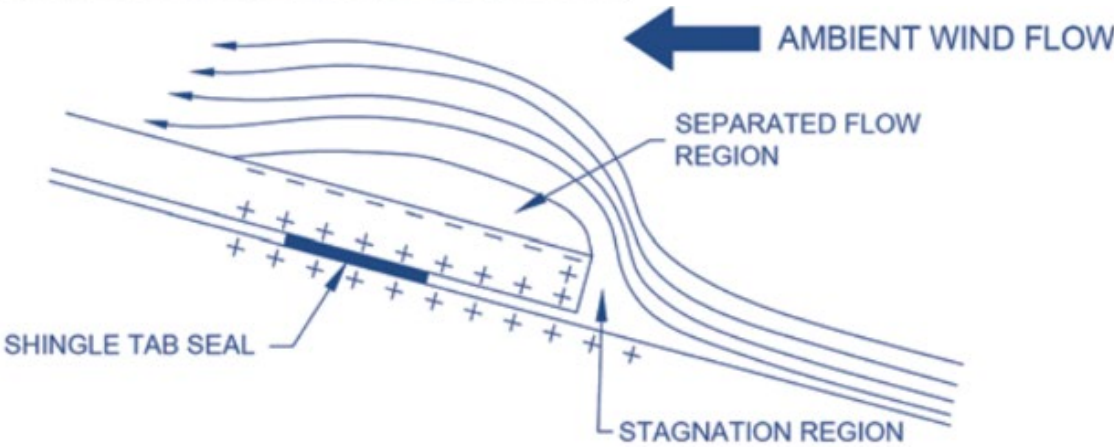
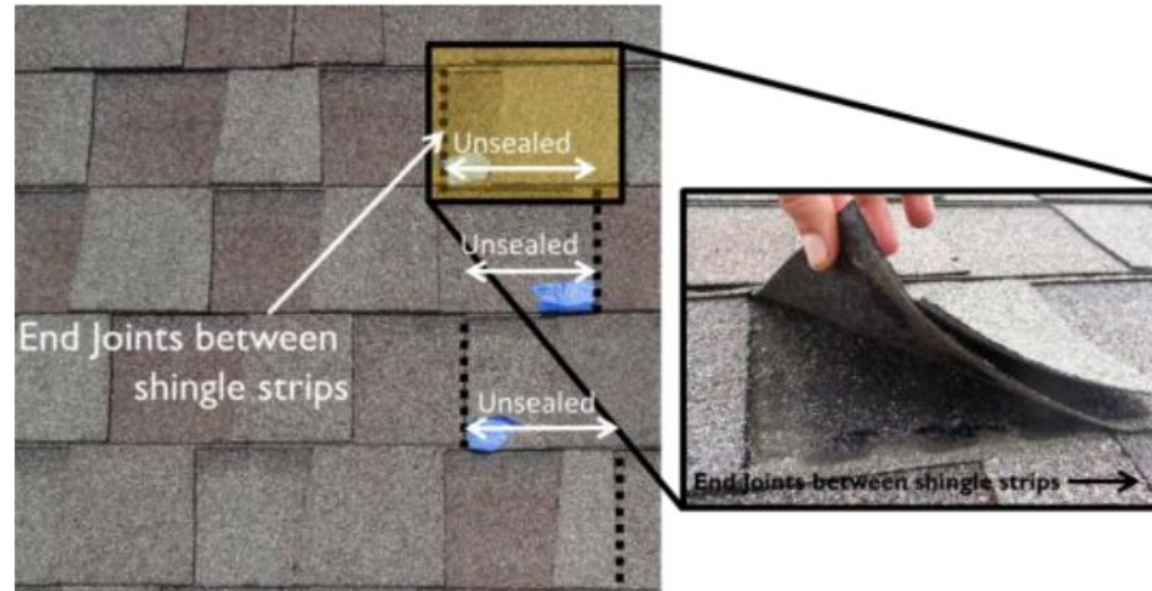
▶ Roof Cover Aging

- Capacity is reduced
- Higher damage in lower winds
- ACV reduces value

▶ Interior Value

- Relative value increases with decreasing roof cover value (ACV)

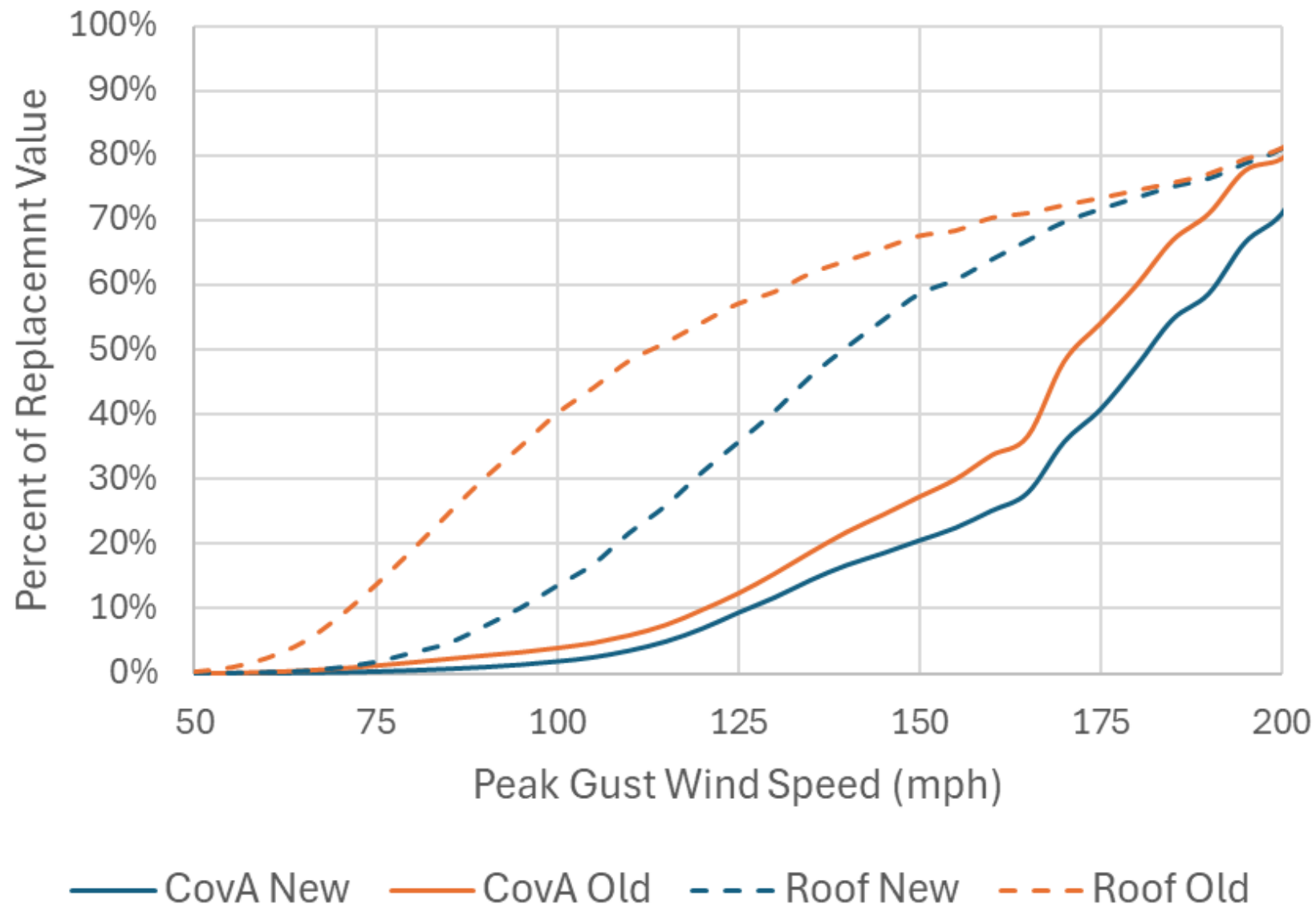
Roof Cover Performance Data



Sources: Dixon et. al. (2013) "The Unsealing of Naturally Aged Asphalt Shingles."
 Dixon et. al. (2012). "An Historical Perspective on the Wind Resistance of Asphalt Shingles."
 IBHS (2023). "Observations of Building Performance in Southwest Florida During Hurricane Ian."

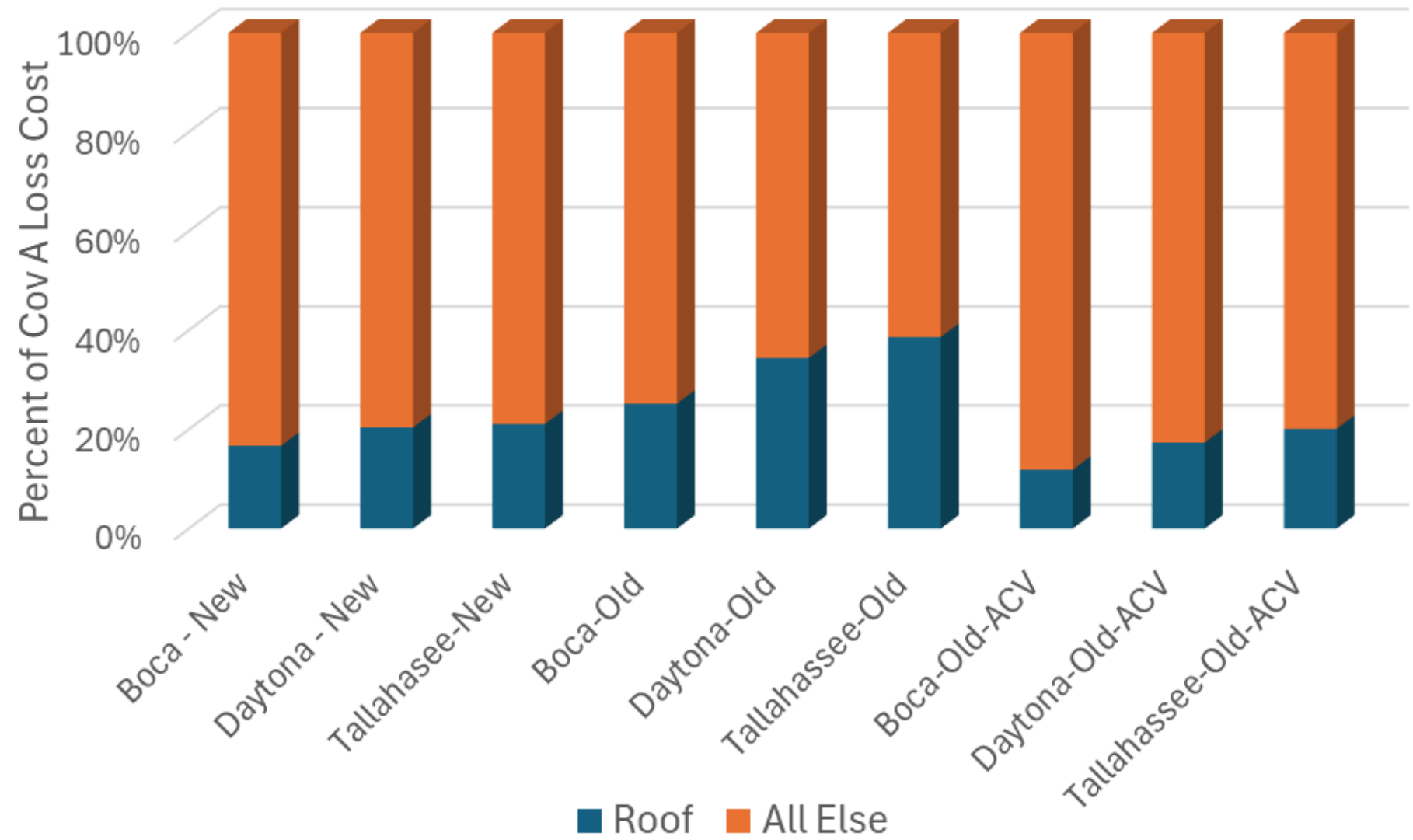


Roof and Coverage A Loss Function Example





Loss Cost Comparison: Roof as % of Coverage A





Custom Insights with HurLoss Vulnerability Modeling

- ▶ Our approach provides **effective**, **actionable**, and **customizable** insights:
 - Approach is flexible and set up to use additional information when available
 - Features evaluated simultaneously, including:
 - Wind loads on structures
 - Strength of individual components
 - Distribution of value for building subassemblies
 - Impacts quantified by wind speed bin – not a simple shift or (de)amplification
 - Component losses can be isolated to evaluate sub-limits and ACV valuations



Questions?

Come see me in the Court Room at Stand 14!

Jeff Sciaudone, Principal Engineer

jsciaudone@ara.com

(+1) 919-582-3325 (o)

(+1) 919-334-8733 (m)