

**Institute for Business &
Home Safety:
Building Codes and Insurance**

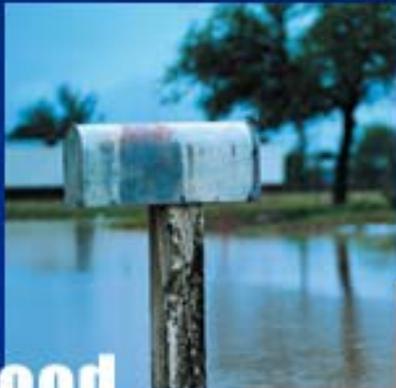
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**National Workshop on State Building Energy
Codes**

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Institute for Business & Home Safety

*An initiative of the property casualty
insurance industry to reduce deaths,
injuries, property damage, economic losses
and human suffering caused by natural
disasters*



Flood

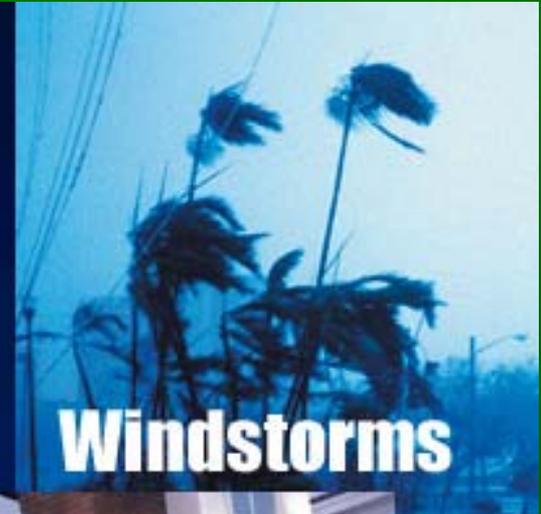
Earthquake



Hail



Windstorms



Wildfire

Freezing Weather



Effects of Building Codes

- Controlling losses by:
 - Affecting claims and claims processing
 - Improving risk assessment
 - Reduce overall losses from natural disasters
 - Reduce losses from fire and other perils

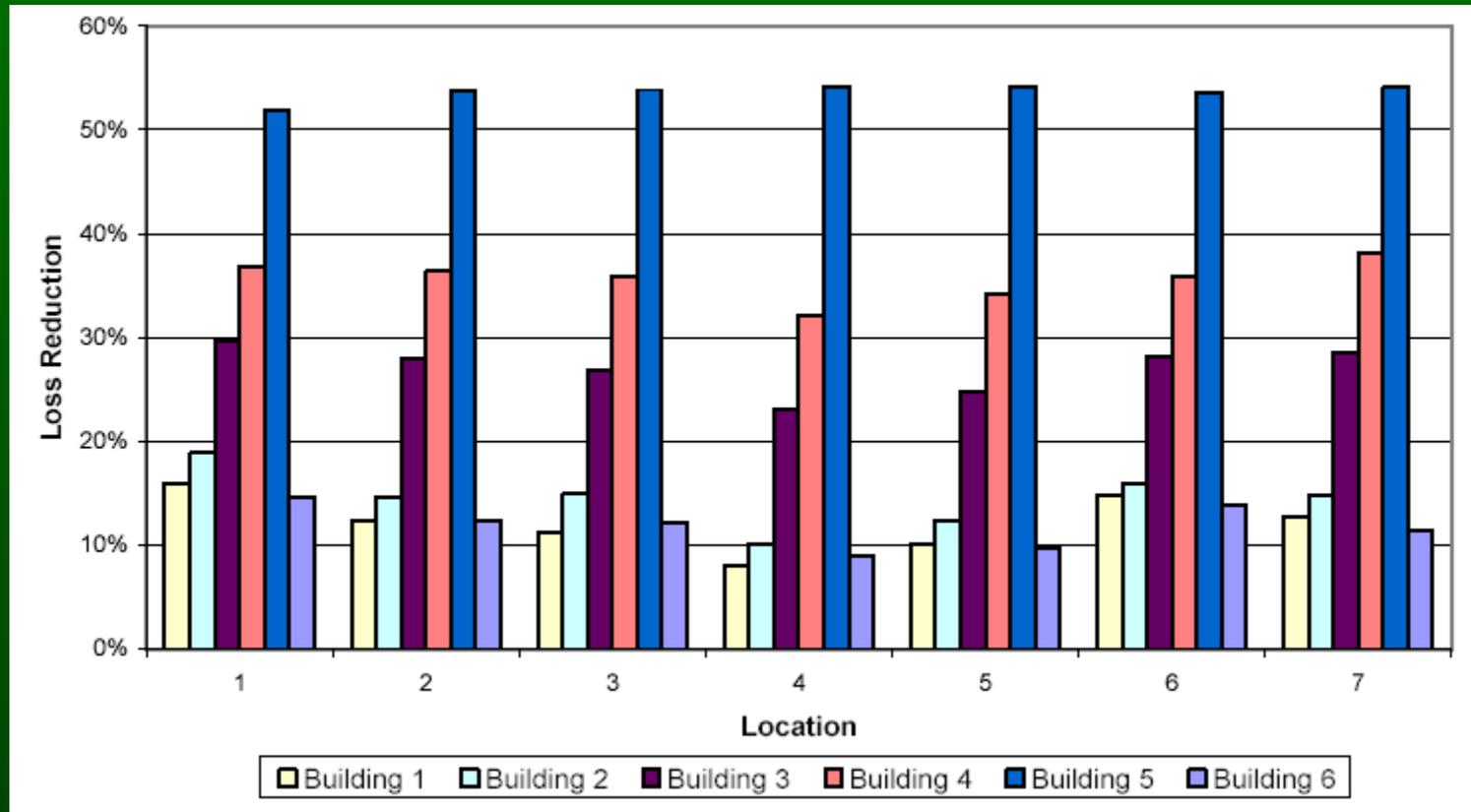
CODES WORK!

Table 4-1. Loss Relativities for Minimum Design Construction to FBC200

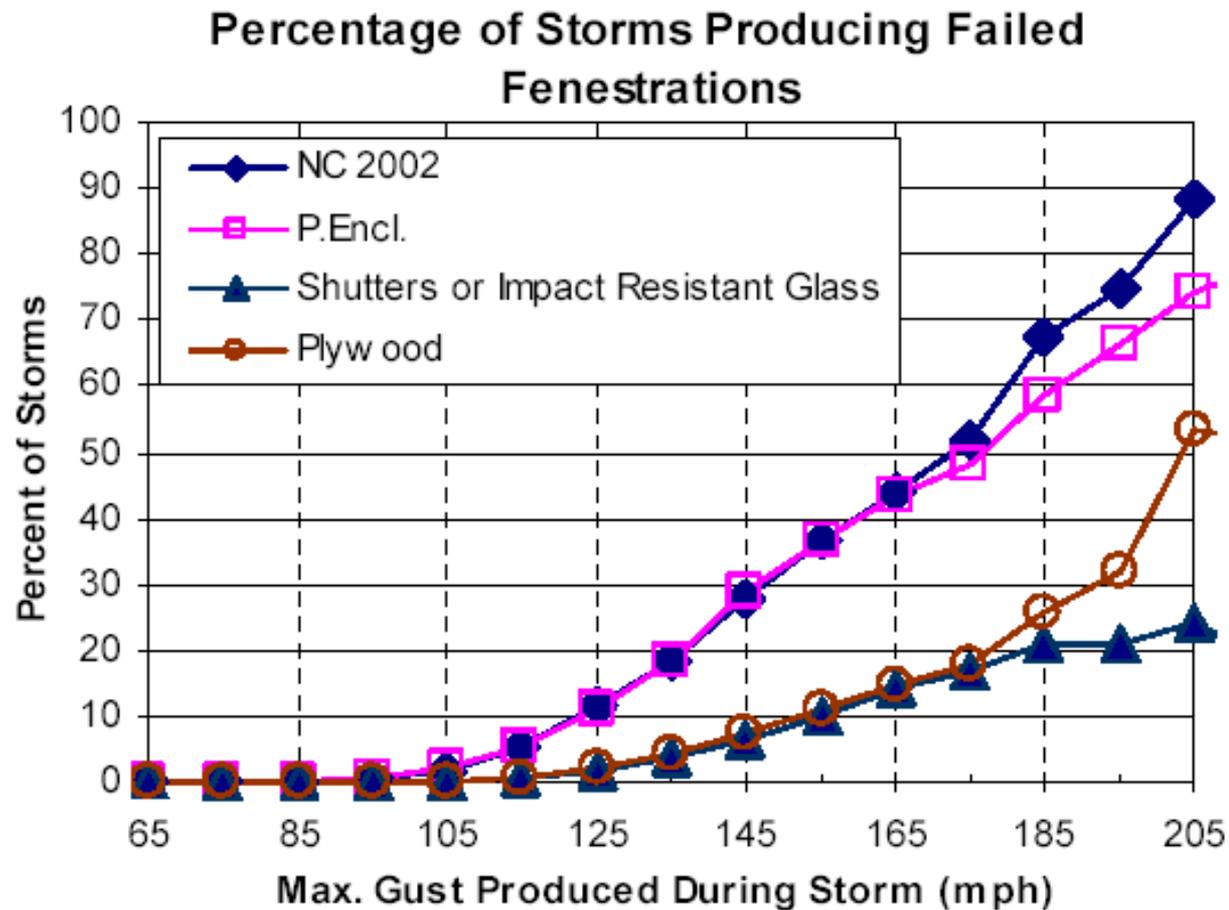
FBC 2001 New Houses					Other Roof Shape		
Roof Deck	Terrain Exposure ²	Design Wind Speed	Internal Pressure Design ³	WBDR ⁴	No WBD Opening Protection ⁴	WBD Opening Protection	M
Other Roof Deck ⁹	B	100	Enclosed	No	0.76	- ⁵	
		110	Enclosed	No	0.66	- ⁵	
		120 & up	Enclosed	No	0.61 ⁶	-	
	Yes			-	0.48		
	C	120 & up	Enclosed	Yes	-	0.27	
				Yes	0.37	- ⁷	
		HVHZ	Enclosed	Yes	- ⁸	0.26	

From: Development of Loss Relativities for Wind Resistive Features
 Prepared by Applied Research Associates for Florida DC

NC: Reducing Severity



NC: Reducing Frequency

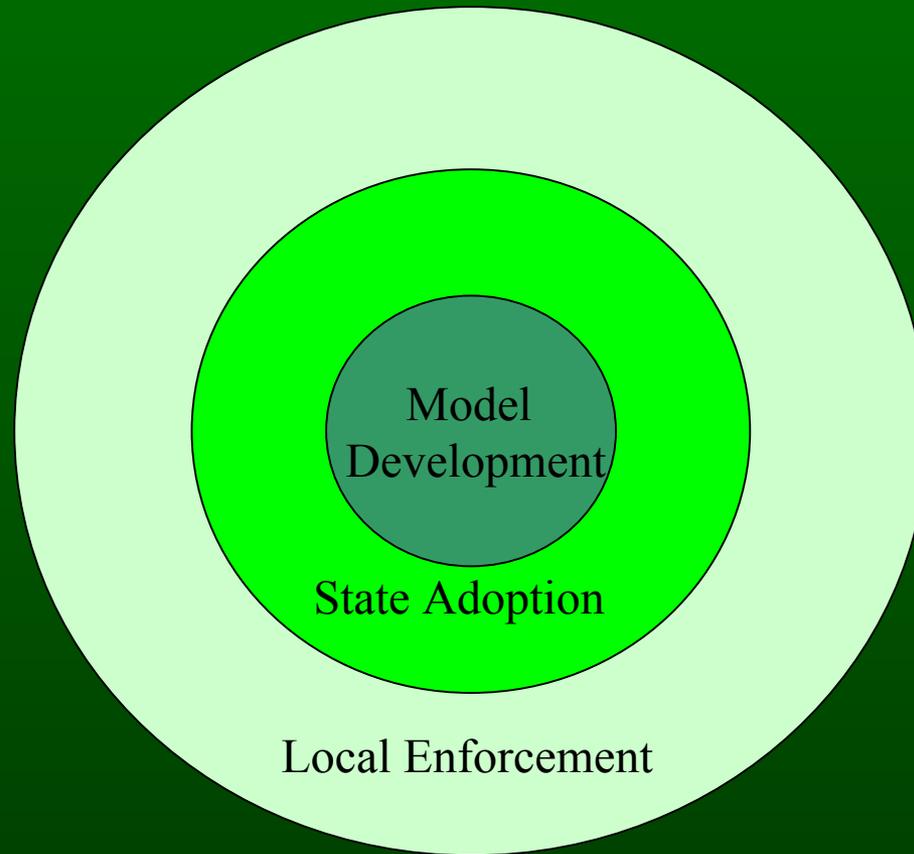


NC: Increase Net Present Value

Table 4-3. Example of Details of Net Present Value Analysis for Building 4 at Location 5

Cost-Benefit Parameter	NC 2002	Option B	Option C	Option D	Option E
		Partially Enclosed	Shutters	Impact Glazing	Plywood
Increase in Cost of Construction (\$)	0	6,164	1,755	27,064	1,336
Future Salvage Value of Increase in Cost (\$)¹	0	11,166	3,179	49,024	2,420
Estimated Savings in AAL (annually) (\$)	0	246	2776	2776	2212
Net Present Value (analyzed over 30 years)					
Increase in Cost of Construction (\$)	0	-6,164	-1,755	-27,064	-1,336
Present Salvage Value of Increase in Cost (\$)²	0	2,584	736	11,343	560
Present Value of AAL Reductions (\$)²	0	4,775	53,756	53,756	42,833
Total NPV (\$)	0	1,194	52,736	38,034	42,057
<p>¹ Assumes that construction costs increase at 2% per year</p> <p>² Assumes a discount factor of 5% per year.</p> <p>³ Positive Total NPV indicates design option benefits outweigh cost.</p>					

IBHS Building Code Strategy



Building Code Development

- ICC Process
- NFPA 5000
- Standards Committees
 - NFPA 501 and 299
 - Various ASTM and ANSI Committees
 - ASCE 7 Wind Loads and Main
 - Building Seismic Safety Council

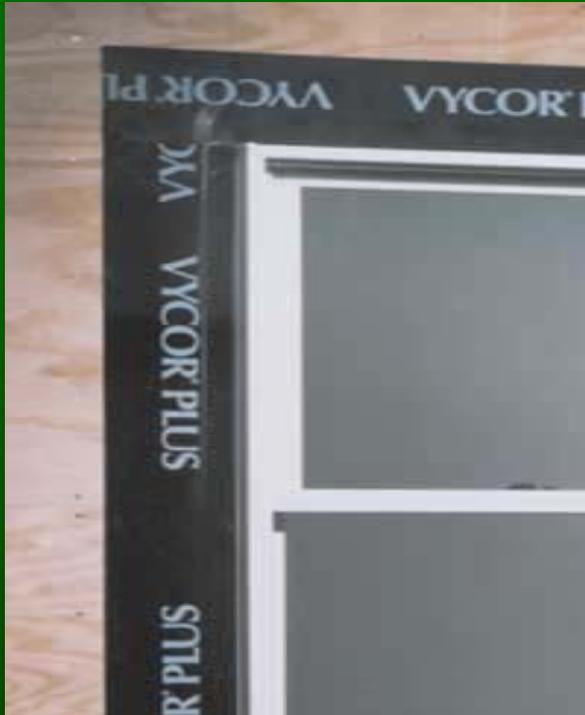
Major Development Issues

- Protecting the building envelope
 - Wind borne debris protection
 - Enhancing roofing requirements
 - Ice Dam protection
- Incorporation of latest seismic provisions
- References to consensus national standards

Mold Strategy

- Include water damage measures in building code and Fortified programs
- Develop communications
- Information resource for members

Moisture Barriers and Flashing



Current Insurance Industry Issues

- Rising Frequency and Severity of “mold” claims
- Unpredictable Liability due to:
 - Lack of quantifiable risk indicators
 - Lack of clean-up standards
 - Subjectivity of “Indoor Air Quality” (IAQ)
 - No definition of reasonable care for claims

“Mold” is a SYMPTOM

- Over 100,000 known species
- Naturally occurring
- Comfort zone is the same as ours
- Water, Food, Oxygen and Temperature
- **Cannot live without water**
- **Where there is mold, there is water damage**

Intrusion vs Accumulation

- Intrusion – from the outside
 - Storm damage
 - Materials wear out
 - Poor construction techniques
- Accumulation – from the inside
 - Pipe leaks
 - Condensation
 - Excessive humidity
- Lack of Maintenance

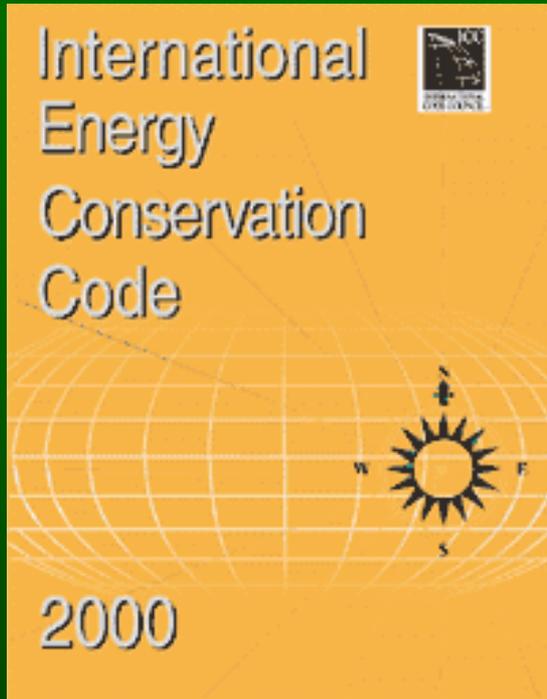
Controlling Water Intrusion and Accumulation by Design

- Roofs
 - Venting, overhangs, secondary moisture barriers
- Exterior Walls
 - Barrier installation, flashing, sill slope drainage
- Foundations
 - Drainage, barrier, slopes
- Air Conditioning
 - Design
- Maintenance Plan

Building Codes

- Structural - Windows, doors and roofs
- Mechanical - Humidity levels
- Plumbing - Water
- Fire - Air
- All these codes affect water damage/mold

Energy Codes



- **Fastest growing adoption 20 states**
- **Independent adoption efforts**
- **Most complicated to understand and enforce**
- **Affects all other codes**

Better Construction

Well Integrated and Enforceable Building Codes

+

Appropriate Regulation, Enforcement and Training

+

Stronger Local Amendments



New Construction

(2% of building stock)

Renovation/Retrofit

(98% of building stock)

Integration of Multiple Codes

- **How do they all work together?**
 - **Ventilation vs. tightness in residences**
 - **Independent adoption efforts**
 - **Inconsistent local amendments**
- **Energy Efficiency vs. Affordability**

Working Together

- **Code Development**
 - Identification of conflicts between codes
 - Development of solutions
- **Code Adoption**
 - Limiting technical amendments
- **Code Implementation**
 - Education
 - BCEGS