# THE COST OF RECOVERY

## COST EFFECTIVE IMPROVEMENTS FOR AFFORDABLE RESILIENCY

# Introductions

*Tiffani Irwin*

*Mgr. Partners in Sustainable Building*

*Habitat for Humanity International*

# Goals for Today

## Agenda

- **Clarify** terminology around adverse events, disasters and displacement
- **Identify** the individual and community costs of disasters and displacement
- **Review** strategies for resilient construction

## Objectives

- **Understand** the risks inherent in your community
- **Evaluate** options for building resiliency into homes
- **Develop** a disaster response plan for possible Adverse Events

# WE UNDERATTEND TO THE FUTURE, WE TOO QUICKLY FORGET THE PAST AND WE TOO READILY FOLLOW THE LEAD OF PEOPLE WHO ARE NO LESS MYOPIC THAN WE ARE."

*ROBERT MEYER, A PROFESSOR OF MARKETING AT THE WHARTON SCHOOL AT THE UNIVERSITY OF PENNSYLVANIA IN RESPONSE TO SUPERSTORM SANDY*

# Adverse Event or Disaster?

# Adverse Event and Disaster

**Boliver Peninsula (TX) before Hurricane Ike**


**Boliver Peninsula (TX) after Hurricane Ike**

## Climate Change

*The number of natural disasters per year has been rising dramatically on all continents since 1980, but the trend is steepest for North America where countries have been battered by hurricanes, tornadoes, floods, searing heat and drought*

study released by Munich Re

# Disaster-induced displacement

*Large numbers of people are displaced every year due to sudden-onset disasters (32.4 million in 2012); most such displacement is due to weather-related events (98% in 2012).*

[Internal Displacement Monitoring Centre]

## IBHS Mission

"To conduct objective, scientific research to identify and promote effective actions that strengthen homes, businesses, and communities against natural disasters and other causes of loss."

**Institute for Business and Home Safety**

*Specific Strategies for Specific Adverse Events*

# What Is FORTIFIED Home?

FORTIFIED

A program of the Insurance Institute for Business & Home Safety

FORTIFIED is a suite of systematic, inspection-based, resilience programs developed by IBHS

# FORTIFIED Home™

# Fortified Homes

*The construction practices identified by IBHS are inexpensive and volunteer friendly.*

**Costs were as little as 1.5%**

# The Cost of Disaster

***Hurricane Sandy***
***$50 Billion in damages***
***72 direct fatalities***
***87 indirect lives lost***

***Katrina***
***$128 Billion adjusted***
***Over 1000 deaths***
***Huffington Post***

***2000-2012***
***average of 1342 tornados/94 fatalities per year***
***Storm Prediction Center***

# 2014 FLOOD LOSSES IN THE US .. $2,861,426,089.00
# 30 YEAR FLOOD LOSSES AVERAGES
# 7.96 BILLION…………………….82 FATALITIES

**~NOAA**

Downtown Franklin, VA inundated by flood waters. (photo credit: FEMA)

Habitat for Humanity

# Severe Storm Protection Systems

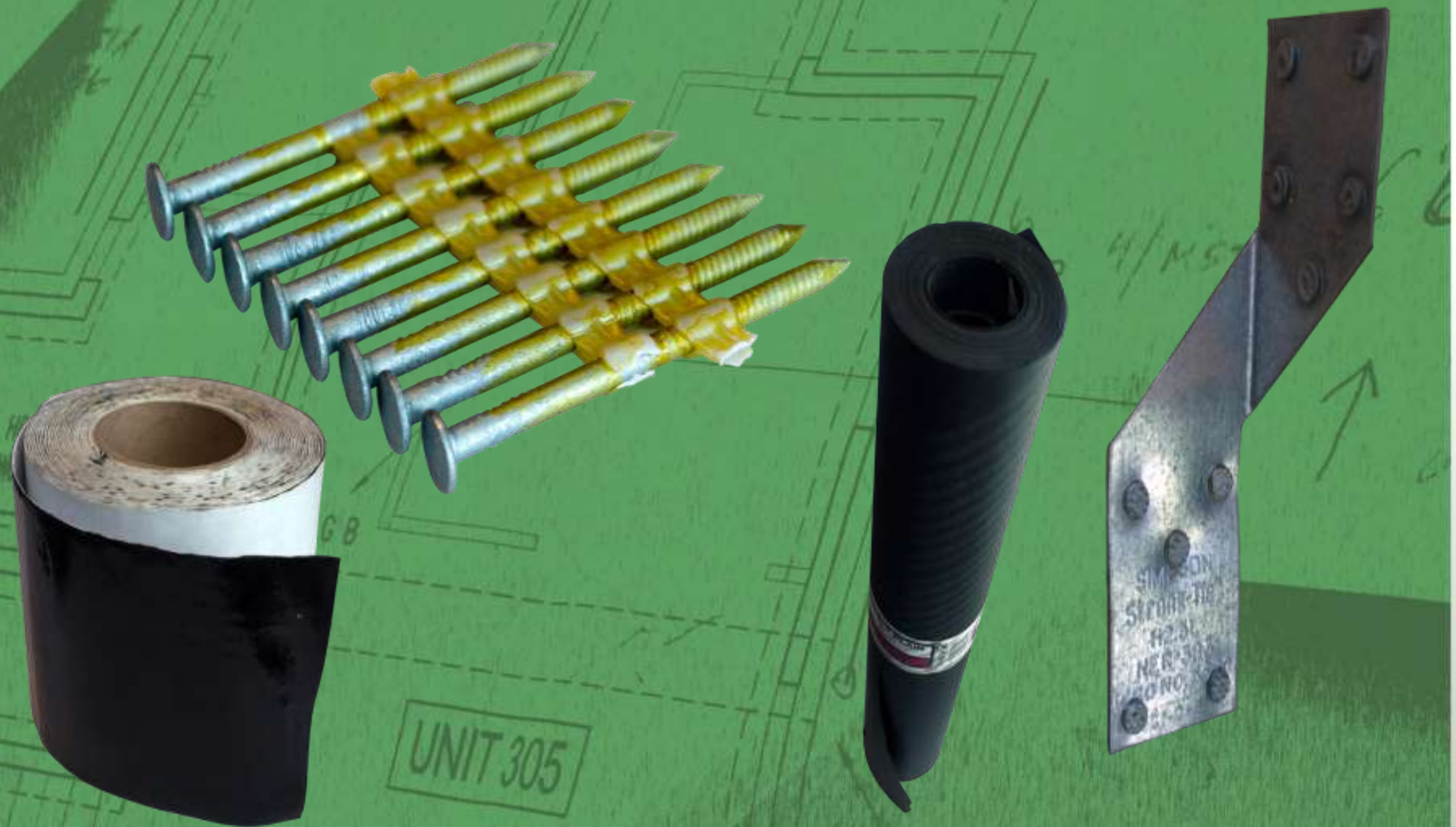
| Hurricane | High Wind and Hail |
|---|---|
| Roof and Attic Vent System | Roof |
| Openings, Gables, Porches and Carports | Gables, Porches, Carports and Chimneys |
| Structure (CLP) and Chimney | Garage Doors and Structure (CLP) |

Location and Design Wind Speed are key determining factors in deciding which standard(s) apply.

# BRONZE LEVEL:

- Utilize ring shank #8 nails for roof decking
- Tape joints with Bitumen tape ( Dow or water and ice shield)
- Use drip edge
- Use wind rated shingles
- Use wind rated vents

# …Because Little Things Matter



# SILVER LEVEL:

- Gable Bracing
- Windows, impact or protected
- Enhanced structural connections
- Garage doors, resistant to high pressure winds
- Proper anchorage of attached structures
- 7/16 OSP or plywood gable end sheathing

# GOLD LEVEL:

- Openings (windows and Doors) must be rated for design wind speed in the area
- Exterior wall sheathing must be 7/16 OSB or plywood
- Continuous load path, roof to foundation(engineered

Insurance Institute for Business & Home Safety


IBHS
Lowe's

# Sealed Roof Deck Demonstration

# FORTIFIED Home™ Program Basics

- Costs of building or retrofitting vary
- Re-designation focuses on the roof
- Designations valid for 5 years
- FORTIFIED designations remain with the property
- Independent verification by a Certified FORTIFIED Evaluator is required

# Who is using FORTIFIED?


FORTIFIED
DisasterSafety.org

# Thank You!