

# **State of Florida's Housing and Minimizing Windstorm Damage**

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## *The State of Florida's Housing, 2004*

- Compendium of Florida housing facts.
- Population growing, but not uniformly.
- Growth most often a coastal phenomenon.
- Differences in age, income, race, ethnicity, and country of origin characterizes the growth.

# Population Change

- 1990-2000 Florida grew by 24%.
- Over age 65 fell by 1% to 18%.
- Under 18 age group grew by 27%
- Of 3,044,452 new residents, 33% were foreign born
- Foreign born population grew from 13% to 17%
- In 2000, 48% of Floridians were born in another US state (that is down from 55% in 1990)

# County Growth

- 1990-2000 growth widespread, but not uniform.
- Largest % increases in Flagler, Sumter, Collier, Wakulla, & Osceola ranging from 74-60% respectively.
- However, all were <100,000 increases.
- Miami-Dade & Broward populations increased over 300,000 each.

# Income Changes

- All but 5 counties experienced positive real increase in family income from 1990-2000. (Brevard, Hardee, Hendry, Miami-Dade, and St. Lucie).
- Largest increases in Dixie, Holmes, Jefferson, and St. Johns.

# Housing Supply

- Mix of single-family, multi-family, and manufactured units. (We also separate condominium ownership.)
- Single-family dominates with 58% statewide.
- Multi-family concentrated in large MSAs.
- Condo ownership is a coastal phenomenon.
- Lack of data on manufactured housing.

# Age of Housing Stock

- Single-family housing average age is 24 years.
- Average in Pinellas & Hamilton is 34 years.
- Average age of multi-family stock is 23 years.

(Note: 40 years is regarded as the age when serious repair or remodeling work begins to occur.)

# Florida's Two Housing Markets

- Large urban areas and coastal counties
  - High density, multi-family, and condominium ownership
- Small, rural inland counties
  - Low density, single-family, and manufactured units

# Windstorms

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How can we protect lives and property  
from the ravages of our hurricane  
season?

# Technology for Windstorm Damage Protection

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- Alternative building systems
- Window shutters
- Protective fabric
- Garage door reinforcement
- Safe rooms
- Sheathing adhesive

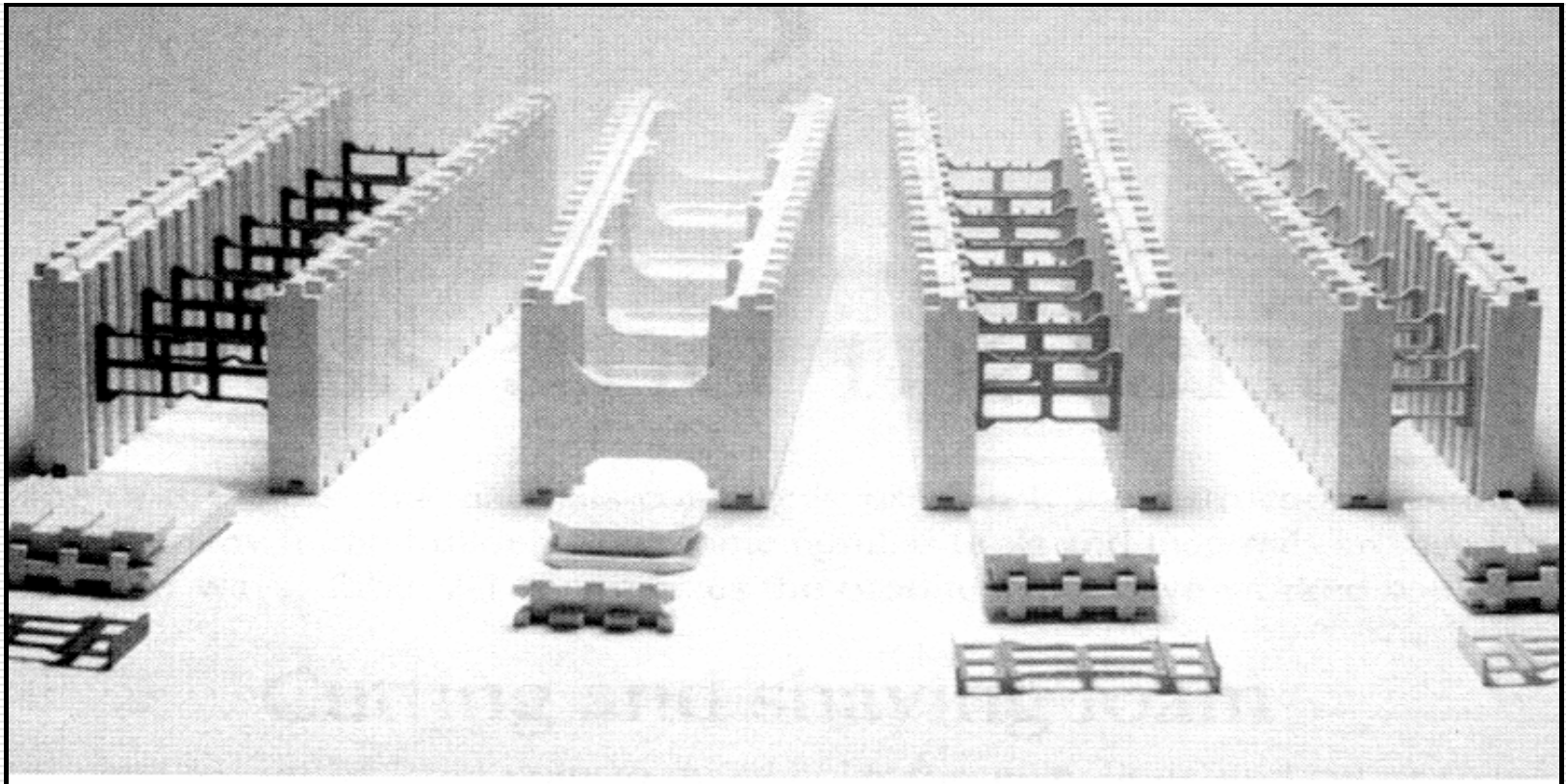
1946 idea, produced in 1970s

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# Insulated Concrete Forms

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# First course starts the wall

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# Concrete is pumped to fill ICFs

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# Solid Roof-to-wall Attachment

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# In use since the 1930s

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# Structural Insulated Panel

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In use since 1920s

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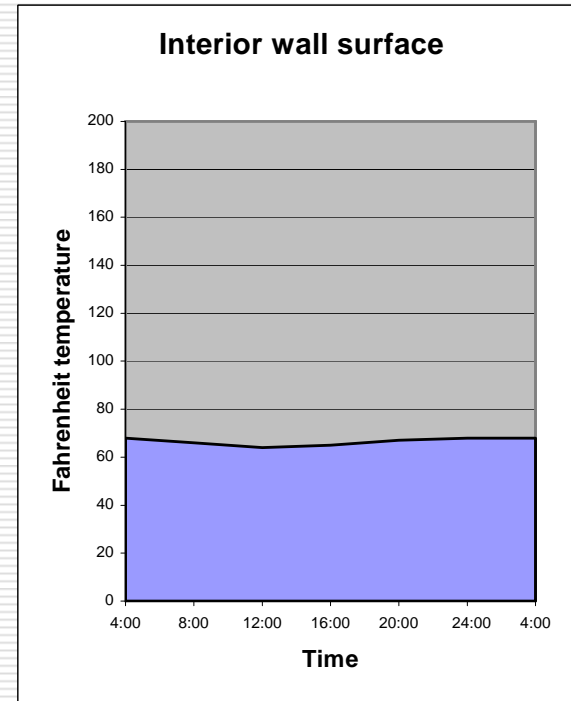
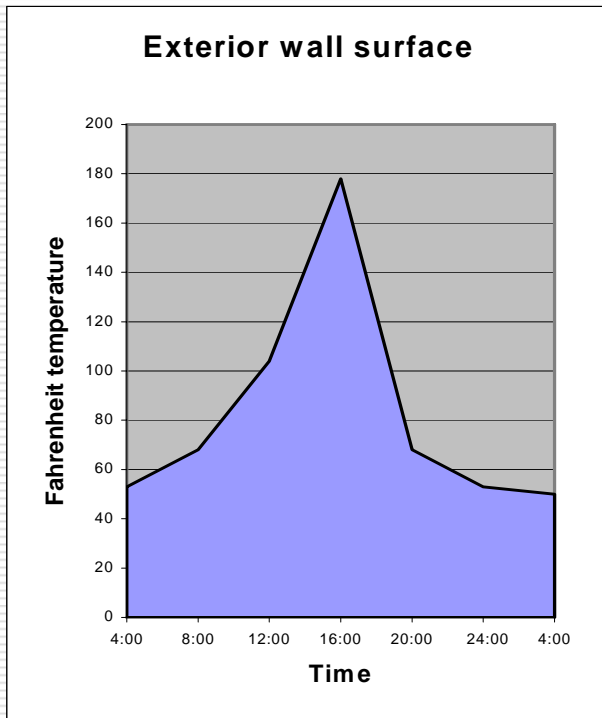
# Aerated Autoclaved Concrete

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# Resists Heat Flow

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Once built, it is hard to tell one home  
from another.

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What about the 4 million homes in which we are already living?

What can be done to improve resistance to wind pressure and impact from flying objects?

“Retrofit” is the term used to describe upgrading an existing home.

# Windows

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Windows should be the starting point.

Protection options available:

- Storm shutters
- Protective fabric covering
- Impact resistant glass

# Storm Shutters

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## □ Plywood

- Minimum 1/2" thick, 3/4" is recommended
- Fasteners (screws, nails) on 6-12" spacing
- Permanently-mounted metal tracks
- Least expensive, least protection, cumbersome to install on upper stories, brick or concrete block homes take some special preparation.

# Storm Shutters

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## Commercial storm shutter systems

- Electric powered roll-up
- Accordion style
- Panel inserts

# Electric roll-up Shutter

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# Accordion Shutters

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# Panel Shutters

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Steel, Aluminum, or Polycarbonate



# Three Shutter Types

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# Protective Fabric

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## Anchoring

- ❑ To structural element of house
- ❑ To sidewalk, driveway, or “soil anchor”

## Custom made

- ❑ Area is measured & screen is custom made for specific opening size, fastening method, and allowable flex.
- ❑ Cost ranges from \$8.00 - \$15.00 per sq. ft. (\$120 - \$225 for 3' x 5' window)

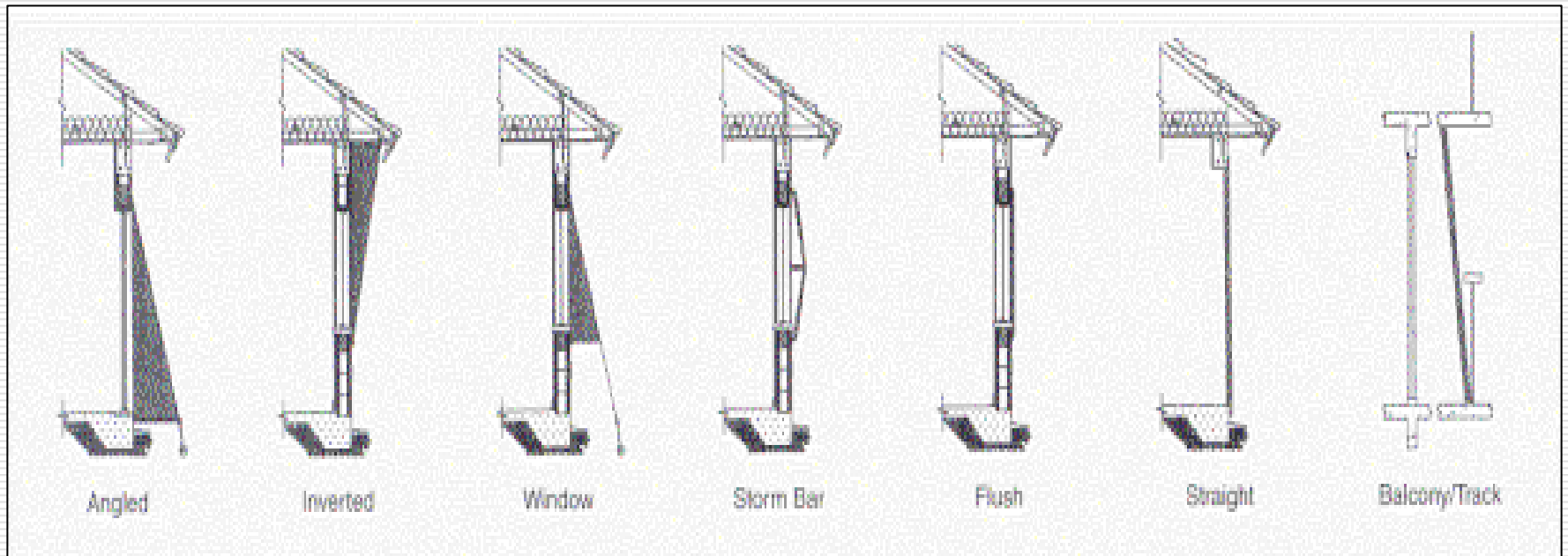
# Installing Protective Fabric

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# Fabric Attachments

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Some light passes through the screen

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# Reinforce the Garage Door

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# Garage Door Reinforcement

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- ❑ Horizontal & vertical bracing
- ❑ Track reinforcement
- ❑ Long-barrel rollers in the track
- ❑ ~\$150 - \$200/brace

# Safe Room in Home

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- ❑ Build into new homes or add to existing



# Another Built-in Safe Room

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- Adding to home cost range from around \$2,000 to around \$5,000



# Glue the Roof to the Trusses

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- ❑ Spray polyurethane foam.
- ❑ Serves as an adhesive to glue roof sheathing to roof trusses or rafters and to minimize roof leakage.
- ❑ Can be used in existing home.
- ❑ Costs run \$1.35 to \$1.50/sq. ft.

# Sheathing glued & seams sealed

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**Thank you**

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**Go GATORS!**

