

# HUD REGIONAL TELECONFERENCE

April 5, 2007



Florida  
Green  
Communities™



*A Collaboration Among:*  
**Florida Green Building Coalition**  
**Florida Community Loan Fund & Enterprise**





## **Florida Green Building Coalition**

Sets the standard for Florida Green Building in Florida and provide assistance via membership network

## **Florida Community Loan Fund**

Statewide lender to nonprofits for affordable housing and community development projects

## **Enterprise Community Partners**

National affordable housing intermediary launched the Green Communities™ Initiative



Florida Community Loan Fund's funding partners:





# Transform the Affordable Housing Industry

- From “Decent, Safe and Affordable” Housing....
- To....
- “Healthy, Sustainable and More Affordable Housing”



## Purpose of Our Collaboration

- Foster affordable housing development that brings economic, health and environmental benefits to communities
- Finance and provide incentives to developers for green affordable housing
- Impact State and Local Public Policy
- Develop additional resources to assist in the development of affordable Green housing



✓ **Grants**

✓ **Loans**



✓ **Equity**

✓ **Technical  
assistance**



## Special Loan Fund Green Loan Product

- Special discounted fixed interest rate available on qualified Green loans (currently .5% discount)
- Term: Up to 3 years
- Special Requirements: Meeting Green Communities™ or Florida Green Building Coalition “Green Home” criteria
- Technical assistance is available for loan requests as well as grant requests



## Green Communities™

- Integrated Design Process
  - Location and Neighborhood Fabric
  - Site Improvements
  - Water Conservation
  - Energy Efficiency
  - Healthy Living Environment
  - Materials Beneficial to the Environment
  - Operations and Maintenance
- [www.greencommunitiesonline.org](http://www.greencommunitiesonline.org)

## Florida Green Home Standard

- Energy Efficiency
  - Water Conservation
  - Site Improvements
  - Healthy Living Environment
  - Materials and Resources
  - Disaster Mitigation
  - General
- [www.floridagreenbuilding.org](http://www.floridagreenbuilding.org)

# Introduction to Green Building

**Eric Martin**

Senior Research Engineer

Florida Solar Energy  
Center

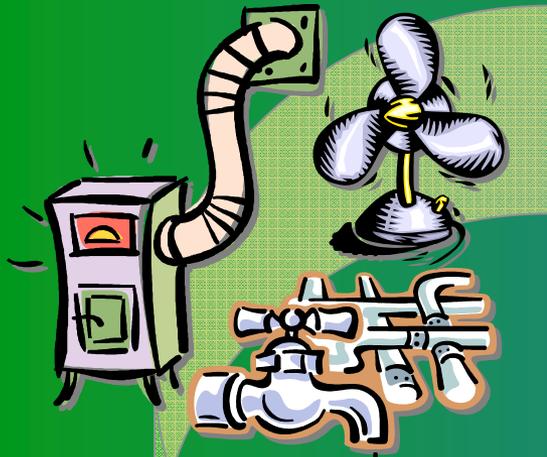


**FLORIDA SOLAR  
ENERGY CENTER®**

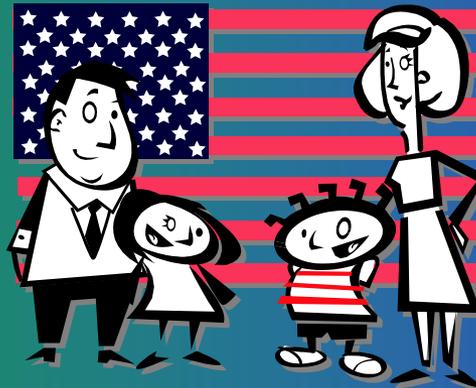
A Research Institute of the  
University of Central Florida



# What is a green building?



Health & Safety  
Building Durability  
Comfort  
Energy efficiency  
Resource efficiency



# What does a green building do?

## ❖ Manage the Water

- Keep liquid water out of building
- Control water vapor
- Conserve water during operation



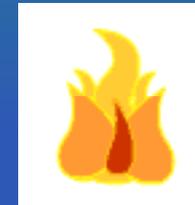
## ❖ Manage the Air

- Produce dry air inside the building
- Direction of air flow (positive pressure)
- Control contaminants



## ❖ Manage the Heat (Energy)

- Building envelope
- Windows & lighting
- Heating, Cooling & Ventilation systems
- Parasitic loads
- Alternate energy sources



## ❖ Manage the Earth

- Erosion control
- Landscape / site selection
- Habitat preservation
- Resource Efficiency



# What environmental benefits does a green building achieve?

- ❖ Energy Conservation / Renewable Energy
- ❖ Water Conservation / Alternative Sources
- ❖ Preservation of wildlife habitat / Green Space
- ❖ Healthy atmospheric and aquatic environments
- ❖ Materials conservation / recycling and waste management
- ❖ Durability: general longevity and surviving disasters
- ❖ Access & Transportation
- ❖ Environmental Education

# What is the reality?

## Attractive, affordable homes that benefit property owners / occupants:

- Enhancing affordability of operation.
- Enhancing indoor air quality and comfort.
- Increasing durability.
- Providing greater access to mortgage money.
- Enhancing the profitability of resale.

# Benefits of Green Building

## Builders / Developers

- Adding marketing value to property.
- Increase profits.
- Differentiation from competition.
- Reduced callbacks.
- Gain valuable promotion and advertising.
- Qualify for various incentives.

## Local and State Government

- Management of solid waste.
- Management of air and water resources – pollution prevention.
- Providing and maintaining affordable housing.
- Energy security.
- Managing growth.

# Specifying Green Building through Standards

- ❖ Certification / guidance programs
- ❖ Help “define” green in the Marketplace
- ❖ Create mechanisms for technical assistance
- ❖ Help provide market differentiation
- ❖ Help ensure benefits are realized
  - Quality and efficiency through 3<sup>rd</sup> party inspections
  - Mechanism to keep project on track



Florida  
**Green Building  
Coalition, Inc.**



**LEED**  
for **HOMES**



Green  
Home Building  
Guidelines



A partnership between Enterprise and  
the Natural Resources Defense Council



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ENERGY CENTER**

# Elements of Green Standards

- ❖ Performance based, not prescriptive.
- ❖ Generally a long list of categorized “options” that lead an applicant down a path to achieve a goal.
- ❖ Option list includes leveraging of other established national and state programs rather than “reinventing the wheel”.
- ❖ A point system is generally employed to gauge achievement of the goal.
- ❖ Flexibility incorporated.

# Site Location and Linkages

- ❖ Proximity to existing infrastructure.
- ❖ Proximity to transit.
- ❖ Proximity to community amenities.
- ❖ Proximity to environmentally sensitive areas.
- ❖ Possibility of compact development.

# Energy Efficiency



- Building Envelope
  - Walls, windows, roofs, insulation
- Mechanical Systems
  - Heating/air conditioning, ductwork, water heating
- Lighting
- Appliances

# Water Efficiency



**FLORIDA  
YARDS &  
NEIGHBORHOODS**



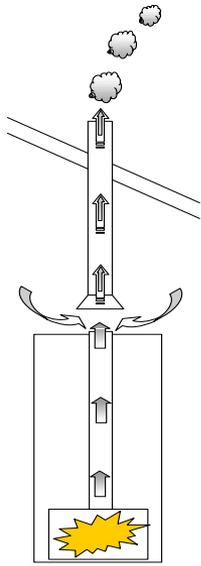
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ENERGY CENTER**

# Site Preparation

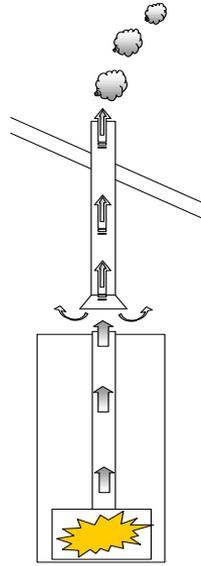


# Indoor Environmental Quality

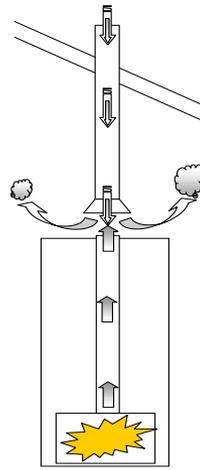
## Combustion Safety Problems Caused by Depressurization of the Combustion Zone



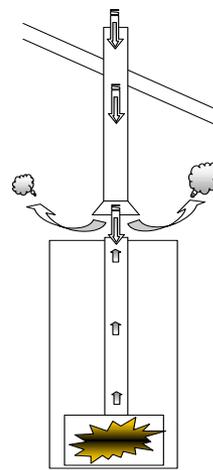
Normal Draft  
CAZ wrt Out  
0 pascal



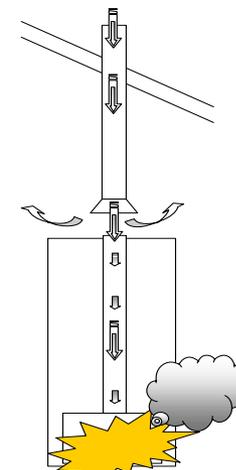
Spillage  
CAZ wrt Out  
-5 pascals



Backdraft  
CAZ wrt Out  
-8 pascals



Incomplete Combustion  
CAZ wrt Out  
-15 pascals



Flame Rollout  
CAZ wrt Out  
-25 pascals



# Indoor Environmental Quality

- Air holds moisture and moves across a hole by a air pressure difference carrying the moisture with it.

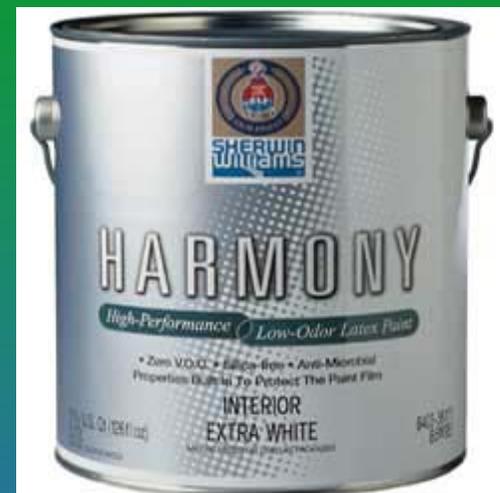


ONE CUBIC FOOT OF AIR PER MINUTE



150 Pints of Water  
*During cooling season  
in Orlando*

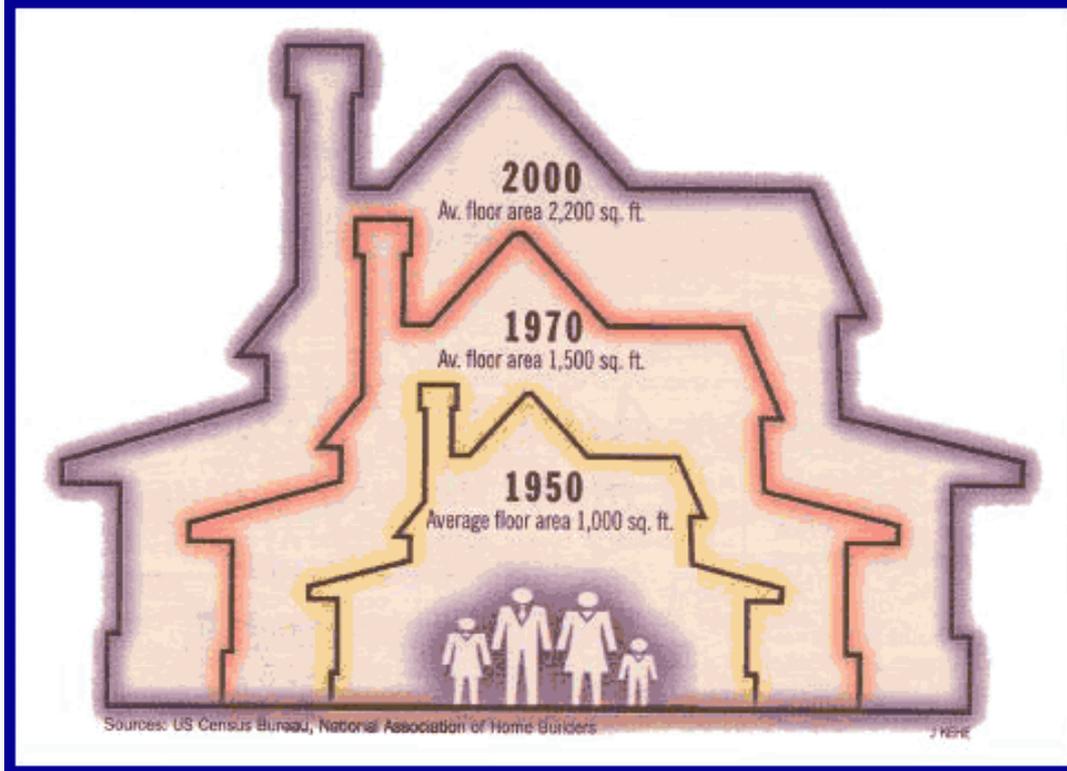
# Indoor Environmental Quality



# Materials and Resources

## Small Home

1950 3.37 people per household - 297 s.f. per person  
1970 3.14 people per household - 478 s.f. per person  
2000 2.62 people per household - 840 s.f. per person



# Waste Management



Delivery or Disposal?



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# Durability

## Maintenance

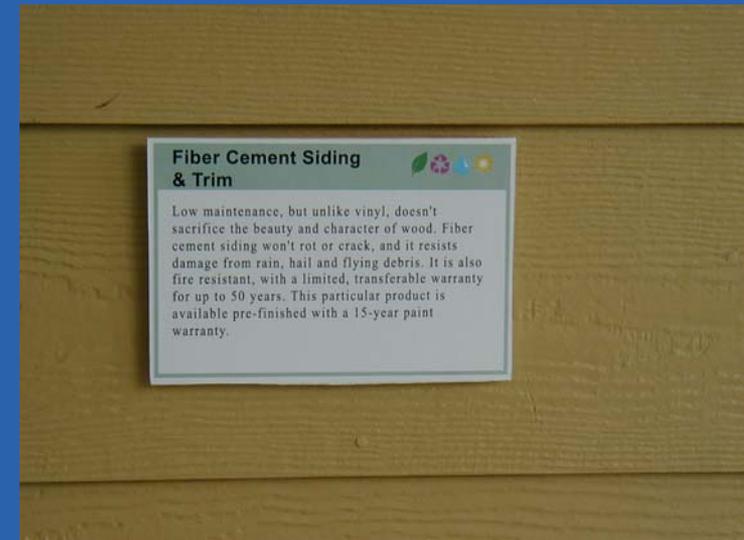
## Moisture

## Hurricanes

## Flood

## Wild Fires

## Termites



# Operations & Maintenance

- Owners manuals and orientations
- Help residents understand proper operation and upkeep
- Ensures green building benefits are realized

## TROLLEY SQUARE LIVING GREEN GUIDE



Jane C. Jones  
Matthias Rosenfeld

Homeowner's Rehab, Inc./Trolley Square LLC  
2401 Massachusetts Avenue  
Cambridge, MA 02140



**HRI**  
HOMEOWNERS  
REHAB, INC.

# Total Systems Approach

## Field of Building Science:

- ❖ The House as a System
- ❖ All Parts Work Together – Walls, Windows and Doors, Mechanical Equipment, Ventilation and the Movement of Moisture – just to get started....
- ❖ Healthy Living Environment – Avoiding Toxins in Materials, Controlling Mold and Pests, Designing so Toxins brought in are Removed.
- ❖ Sustainability – The way the Building uses the Land it sits on, It's Impact on the Environment – initially and into the future, durability and minimizing waste





**For more information:**

**Green Communities™**

**Enterprise Community Partners**

**410.715.7433**

**[greencommunities@enterprisecommunity.org](mailto:greencommunities@enterprisecommunity.org)**

**[www.greencommunitiesonline.org](http://www.greencommunitiesonline.org)**

**To View Past Live Online Events Click on “Training” and view archived events**



# Florida Green Building Coalition

- Network of members from all sectors of housing industry
- Accredited agents for design/verification
- Interacting with local governments to create policy and incentives for green



[www.FloridaGreenBuilding.org](http://www.FloridaGreenBuilding.org)



# Florida Solar Energy Center

- **Technical assistance for Green Communities™**
- **Building science training**
- **Discounted Energy Ratings for affordable green projects**

[www.fsec.ucf.edu](http://www.fsec.ucf.edu)



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A Research Institute of the  
University of Central Florida





# University of Florida

- Program for Resource Efficient Communities
- Florida Energy Extension Service
- Florida Yards & Neighborhoods Program

[www.energy.ufl.edu](http://www.energy.ufl.edu)

[www.hort.ufl.edu/fyn](http://www.hort.ufl.edu/fyn)

[www.floridayards.org](http://www.floridayards.org)





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