

RESNET ANNUAL CONFERENCE  
FEBRUARY 17, 2009



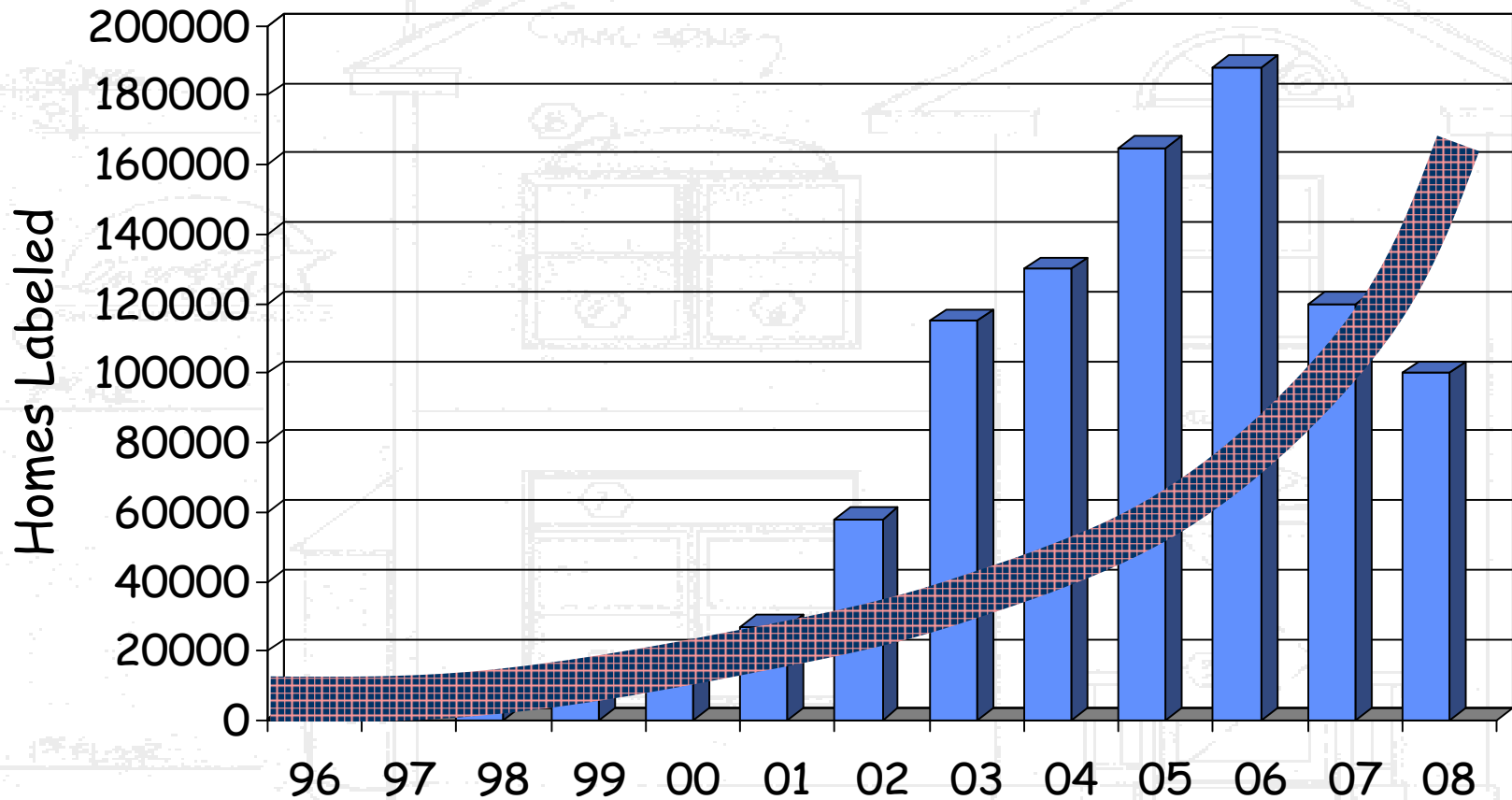
# ***ENERGY STAR***

# ***Manufactured Housing***

*Sam Rashkin, R.A.*

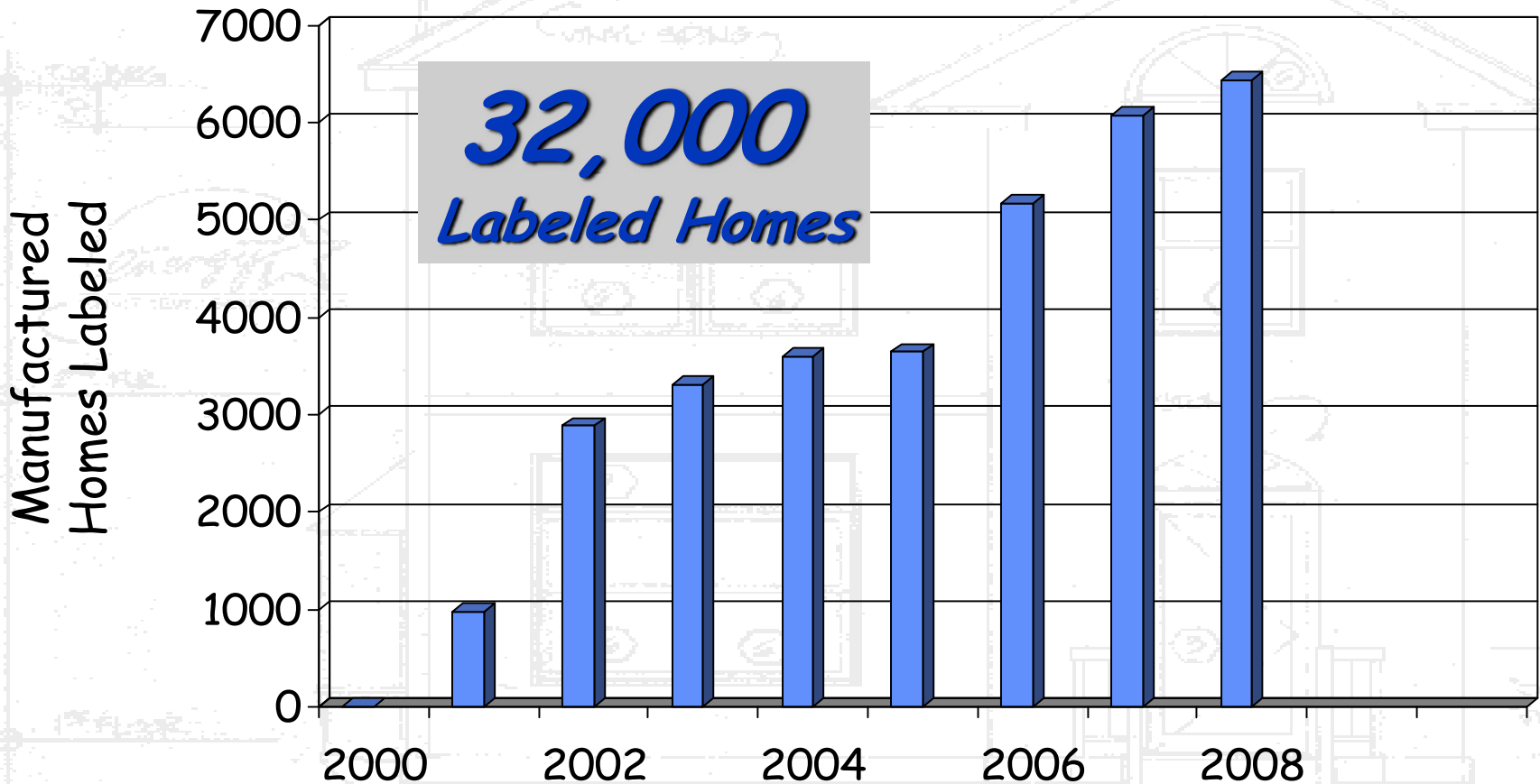
*National Director, ENERGY STAR for Homes*

# ENERGY STAR FOR HOMES GROWTH



*\*Estimate based on Q1 and Q2 reporting results*

# RESULTS: EXPONENTIAL GROWTH

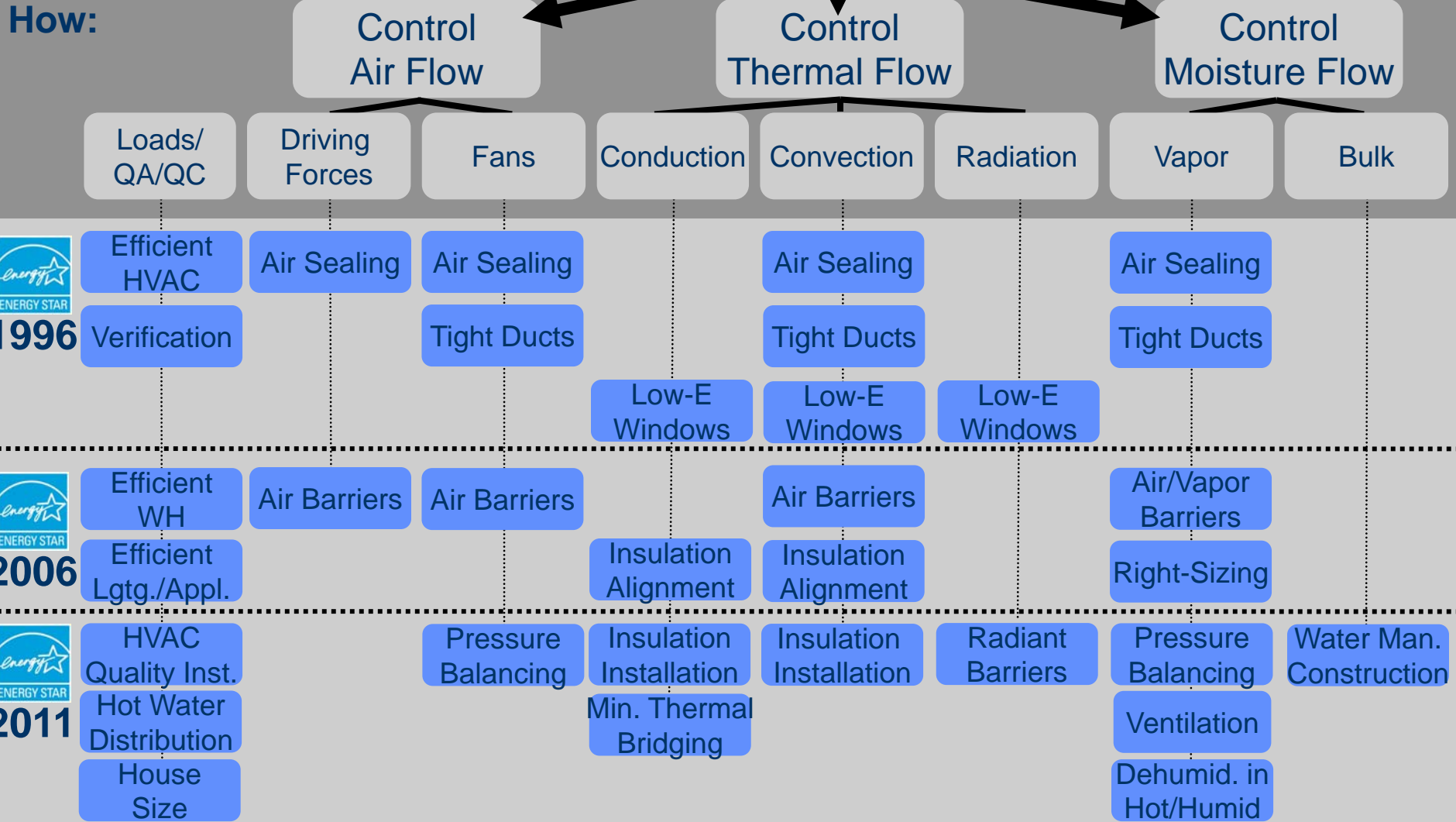


# ADAPTING ENERGY STAR TO MANUFACTURED HSG.

- Goal:**
- < Risk
  - > Customer Satisfaction
  - > Differentiation
  - > Environmental Protection
  - > National Security



**Better Home  
Lower Cost  
Badge of Honor**



# WORKING WITH ENERGY STAR: PLANT GUIDE



ENERGY STAR



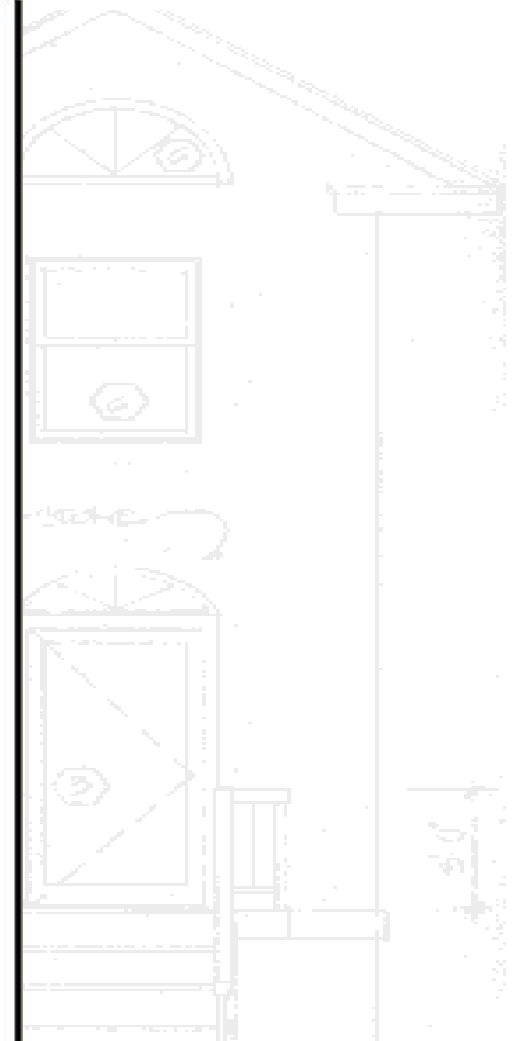
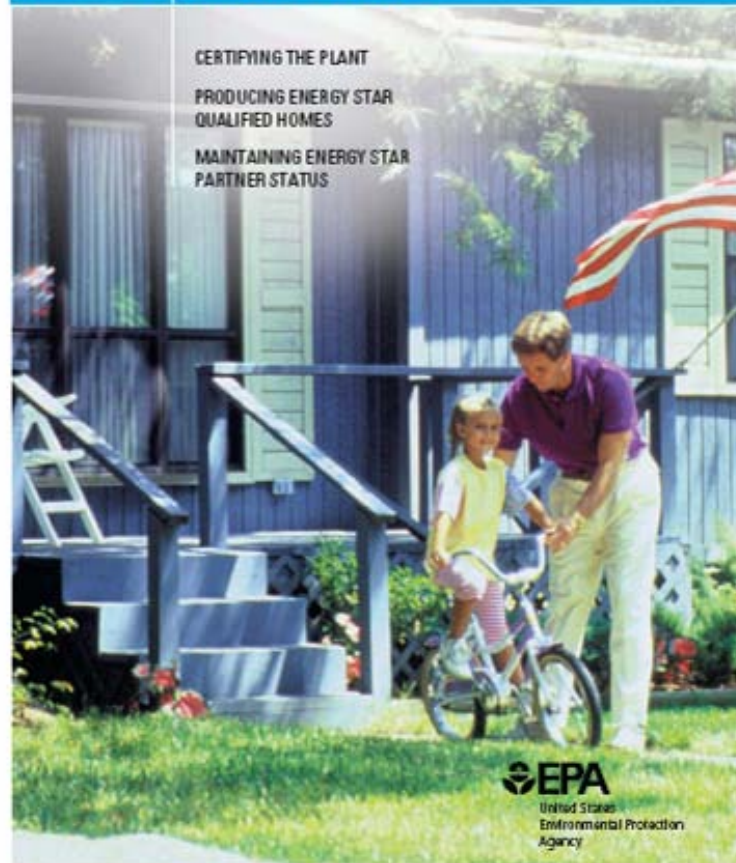
## ENERGY STAR® QUALIFIED MANUFACTURED HOMES

DESIGN, MANUFACTURING, INSTALLATION, AND  
CERTIFICATION PROCEDURES

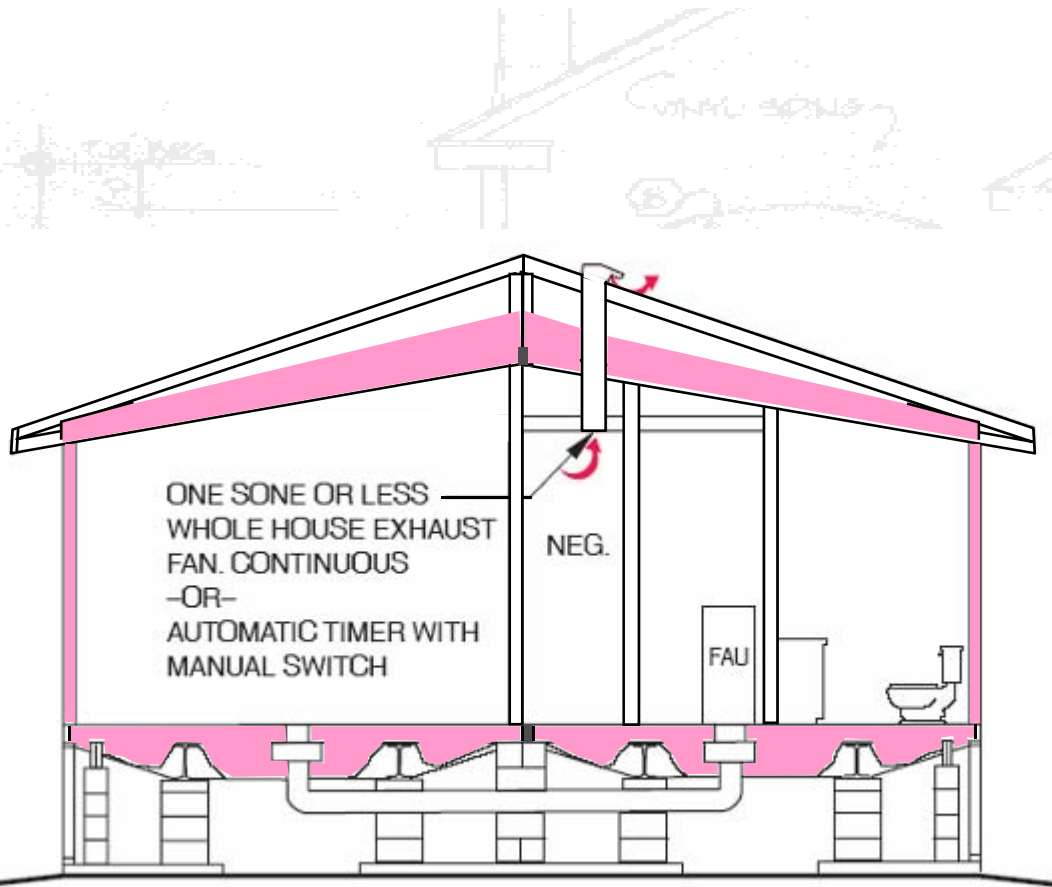
CERTIFYING THE PLANT

PRODUCING ENERGY STAR  
QUALIFIED HOMES

MAINTAINING ENERGY STAR  
PARTNER STATUS



# MANUFACTURED HOMES: INTRINSIC EFFICIENCY ADVANTAGES



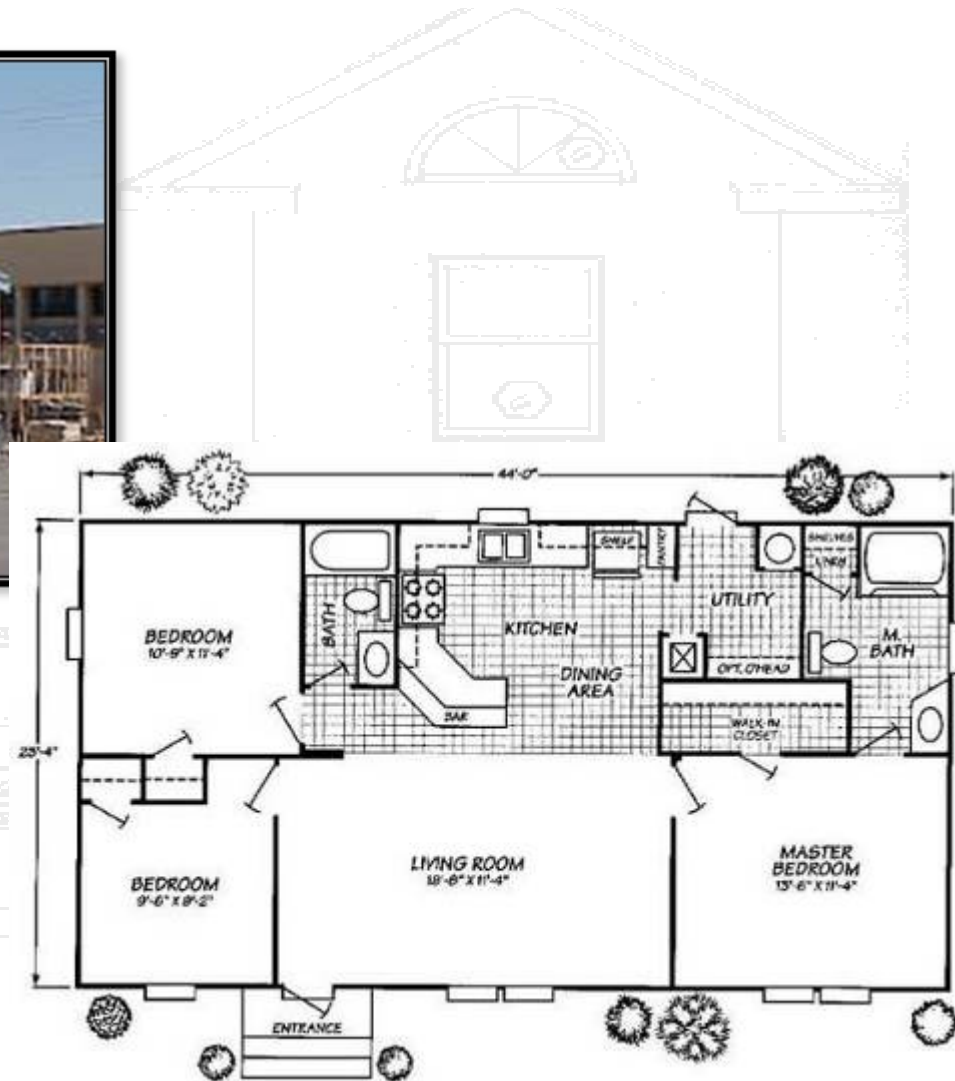
## *Design Advantages:*

- *Simple Architecture*
- *Few Attic Penetrations*
- *FAU in Condit. Space*
- *Ducts most in Condit. Space*

## *Technical Advantages:*

- *Inherently Air-tight*
- *Tight Duct Systems*
- *Inherently Proper Insulation*
- *Less/No Thermal Bypass*
- *Less Thermal Bridging*
- *Mechanical Ventilation*

# INTRINSIC EFFICIENCY ADVANTAGES: SIMPLE ARCHITECTURE





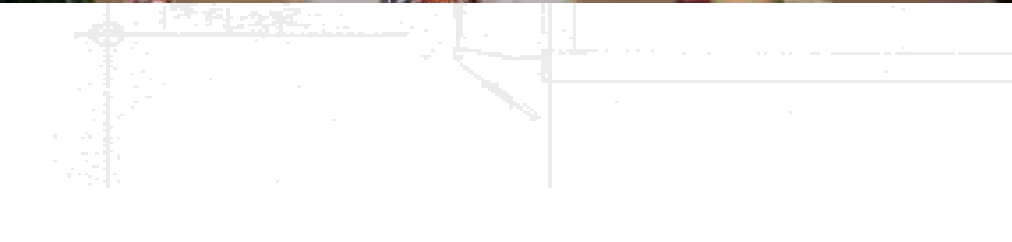
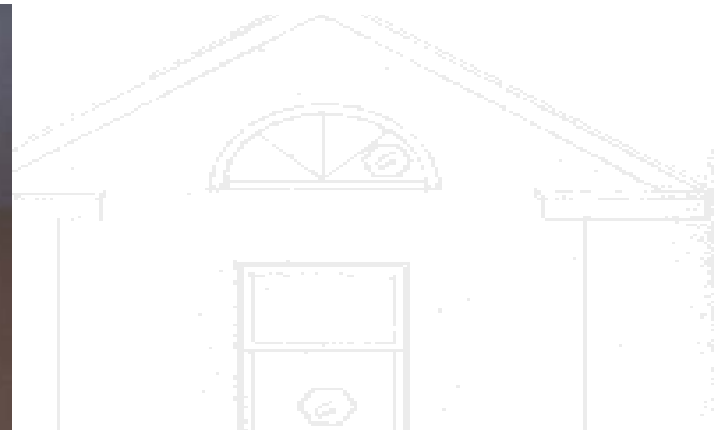
# INTRINSIC EFFICIENCY ADVANTAGES: SIMPLE ARCHITECTURE VS...



# INTRINSIC EFFICIENCY ADVANTAGES FEW ATTIC PENETRATIONS



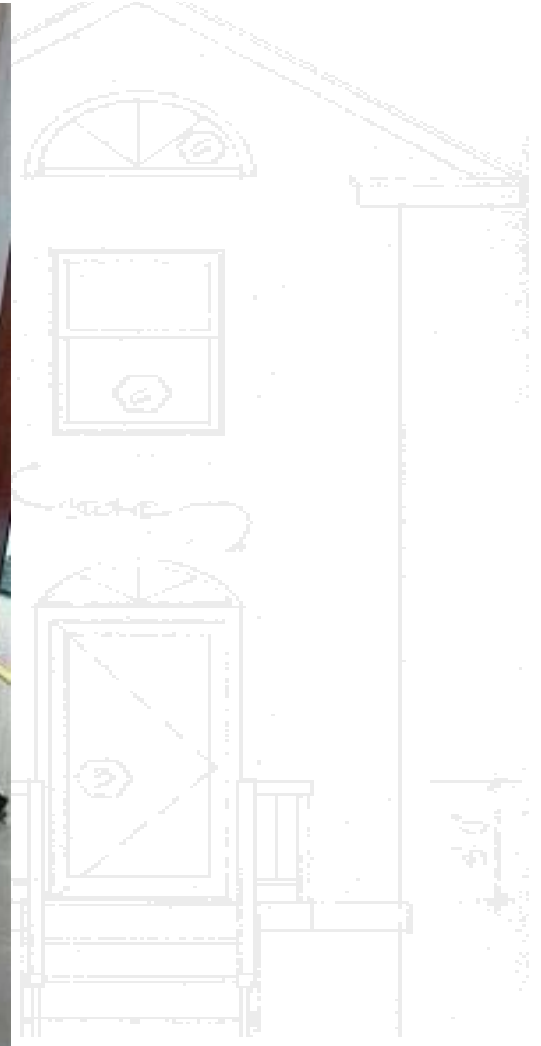
# INTRINSIC EFFICIENCY ADVANTAGES FEW ATTIC PENETRATIONS VS. ...



# INTRINSIC EFFICIENCY ADVANTAGES FAU IN CONDITIONED SPACE



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# INTRINSIC EFFICIENCY ADVANTAGES FAU IN CONDITIONED SPACE VS...



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# INTRINSIC EFFICIENCY ADVANTAGES DUCTS IN CONDITIONED SPACE



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# INTRINSIC EFFICIENCY ADVANTAGES DUCTS IN CONDITIONED SPACE VS....



11-10

PHOTO COURTESY OF ENERGY STAR PARTNER, ENERGY EFFICIENT BLDG. SOLUTIONS

# INTRINSIC EFFICIENCY ADVANTAGES DUCTS IN CONDITIONED SPACE VS....



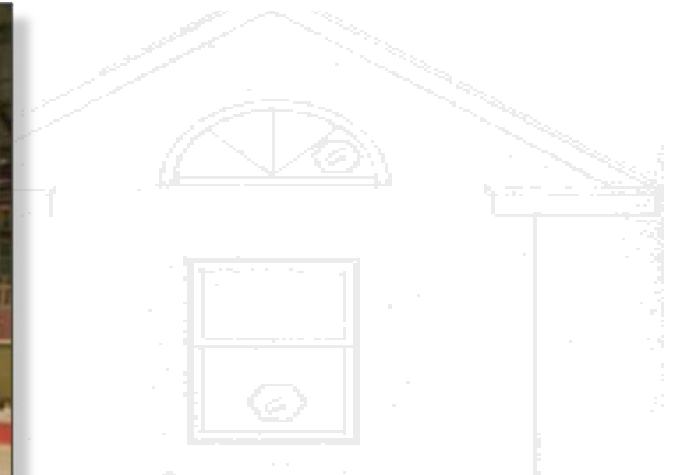
# INTRINSIC EFFICIENCY ADVANTAGES INHERENTLY AIR-TIGHT



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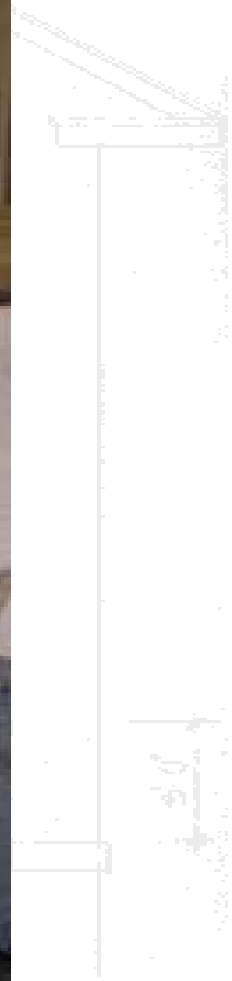
# INTRINSIC EFFICIENCY ADVANTAGES TIGHT DUCT SYSTEMS



# INTRINSIC EFFICIENCY ADVANTAGES TIGHT DUCT SYSTEMS VS....



# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS



# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



*Hot Wall*

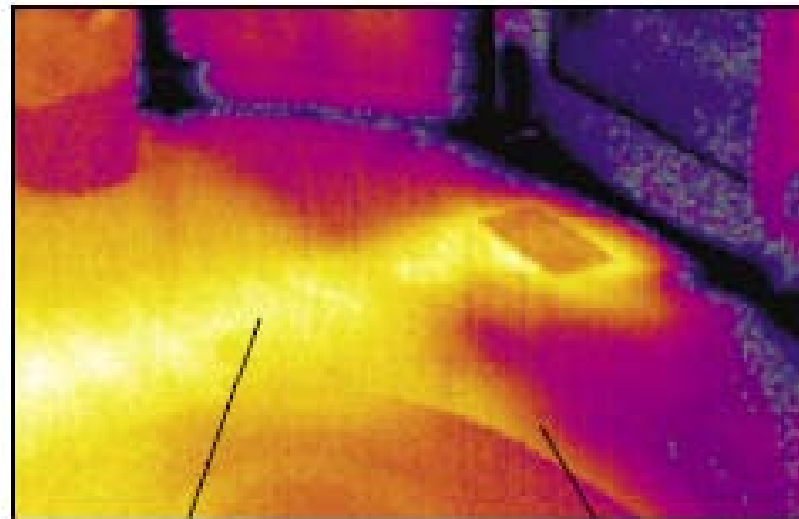
*Courtesy of Building Science Corp.*

# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



Exterior soffit appeared to be tightly fit

As the infrared photo (right) shows, this dining room cantilever was cold due to ineffective insulation and air leakage. (Infrared photo taken with blower door operating.)

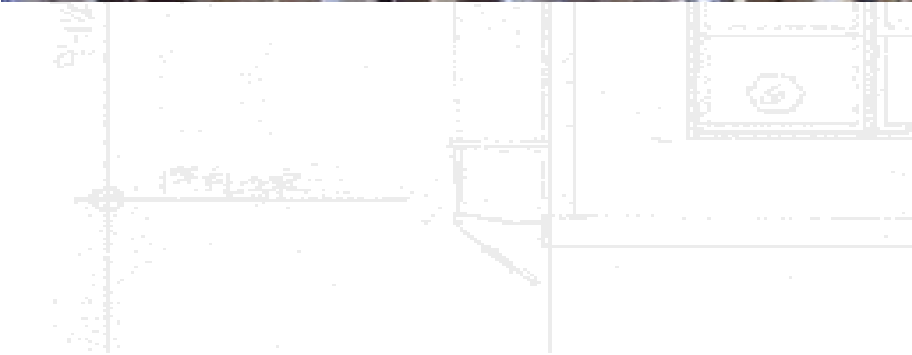


Residual warmth from heat run

Cantilever boundary clearly visible

*Courtesy of Fort Collins Utilities*

# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



ENERGY STAR



# INTRINSIC EFFICIENCY ADVANTAGES LESS/NO THERMAL BYPASS VS....



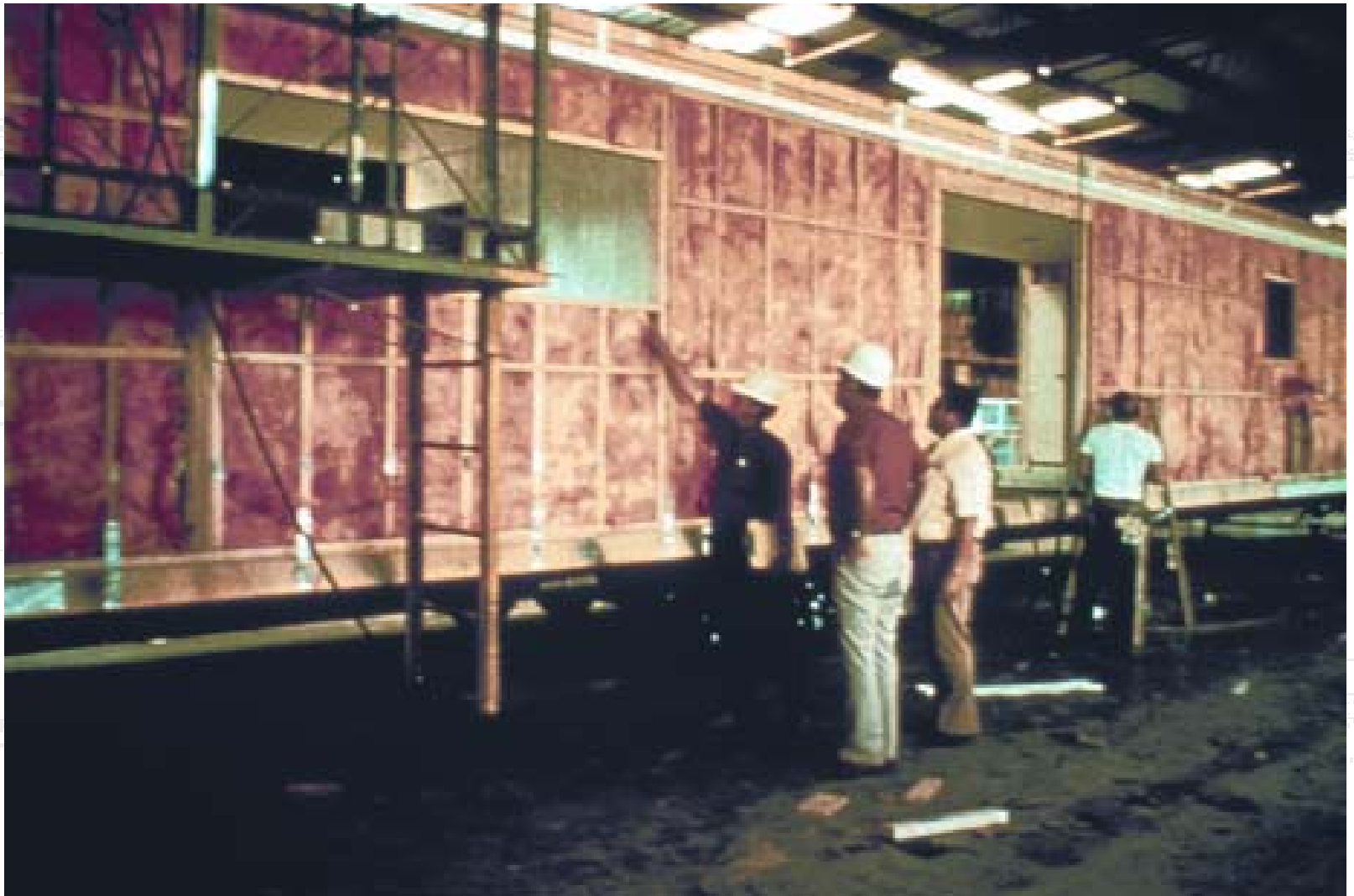
ENERGY STAR



# INTRINSIC EFFICIENCY ADVANTAGES LESS THERMAL BRIDGING



ENERGY STAR



# INTRINSIC EFFICIENCY ADVANTAGES LESS THERMAL BRIDGING VS....



# INTRINSIC EFFICIENCY ADVANTAGES LESS THERMAL BRIDGING VS....



WITH THESE INTRINSIC ADVANTAGES  
FIGHTING CONSUMER PERCEPTIONS



## **FEMA's City of Anxiety in Florida Many Hurricane Charley Victims Still Unsure of Next Step**

By Marc Kaufman  
Washington Post Staff Writer  
Saturday, September 17, 2005

# MANUFACTURED HOMES: CHALLENGES



- *More envelope insulation per IECC 2006*
- *Raised Heel Trusses*
- *High-Efficiency Equipment*
- *Thermal Bypass at Belly Board*
- *HVAC Quality Installation*
- *Efficient Hot Water Distribution*

## *Good News:*

- *Better Product*
- *Lower Cost*
- *Feels Good*

## *Bad News:*

- *Buyers can't see it*
- *Buyers won't know to ask for it*

*...Retailer Commitment is Critical!*

# WORKING WITH ENERGY STAR: RETAILER GUIDE



ENERGY STAR



## ENERGY STAR® QUALIFIED MANUFACTURED HOMES: GUIDE FOR RETAILERS

WITH INSTRUCTIONS FOR INSTALLERS AND HVAC CONTRACTORS  
Excellence in Design, Manufacturing and Installation Series

BENEFITS FOR RETAILERS AND HOMEOWNERS

ROLES AND RESPONSIBILITIES

MARKETING AND SALES TOOLS

ORDERING AND INSTALLING  
ENERGY STAR QUALIFIED HOMES



Manufactured Housing Research Alliance

EPA  
United States  
Environmental Protection  
Agency

# HOW TO GET MORE INFORMATION



ENERGY STAR

*On the Web at:*

*<http://www.energystar.gov/homes>*

