RESNET ANNUAL CONFERENCE FEB. 27 – MARCH 1, 2006



ENERGY STAR Qualified Homes:

2006 Spec

OUTLINE



- Why Change
- How Changed
- Implementing New Spec
- Selling New Spec

WHY CHANGE? **ENERGY STAR GROWING BRAND**



60%+ awareness in 2004

70%+ households would recommend

95% likely to buy again in future

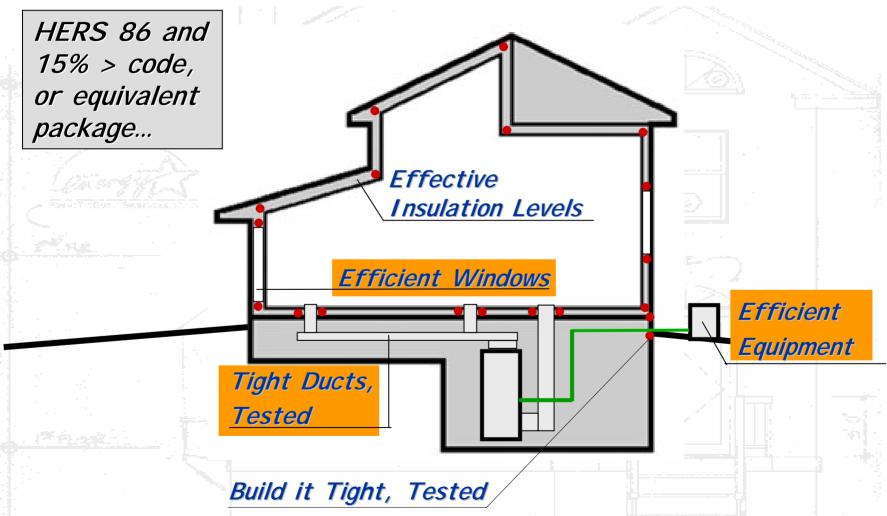
WHY CHANGE? BRAND PROMISE



- Much greater efficiency than code
- Third-party verification
- Performance advantage

WHY CHANGE? WHAT OLD SPEC DELIVERED...





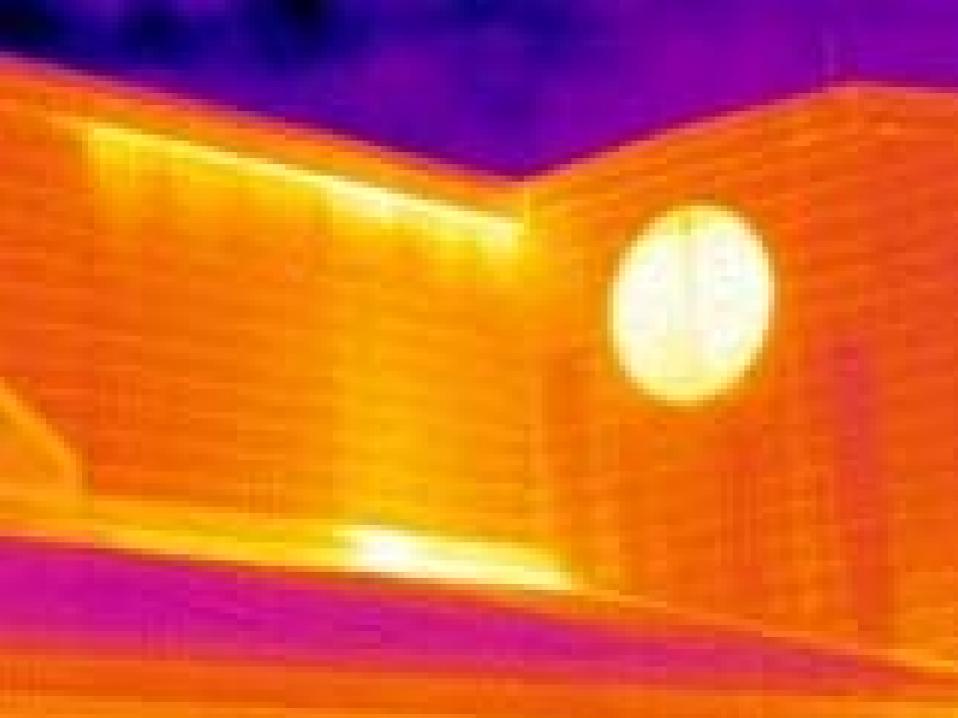
WHY CHANGE? EXTERNAL FORCES



- Increased adoption of IECC
- HERS Guidelines Reference Home to IECC
- NAECA increase
- Lack of quality control:
 - insulation installation
 - air barrier details
 - HVAC best practices (e.g., sizing, balancing)
 - moisture control















WHY CHANGE? WHY RAISE THE BAR?



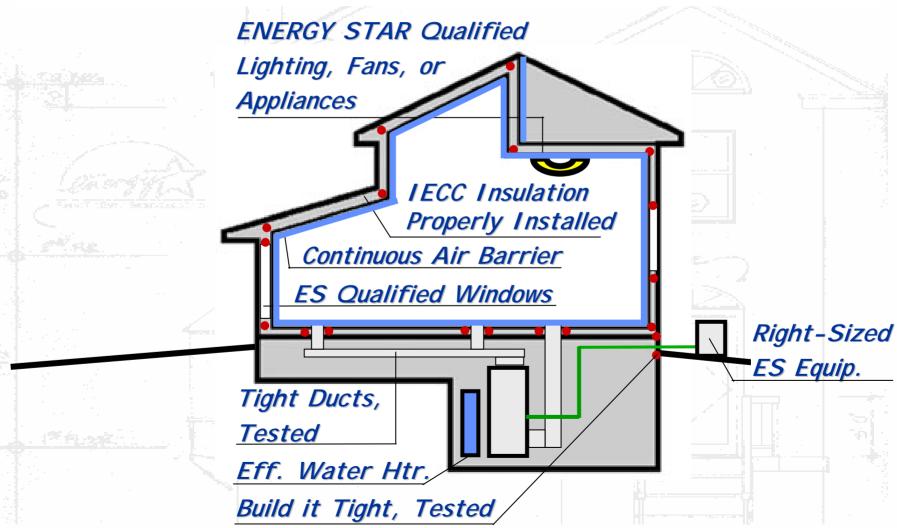
- Assure greater efficiency than code
- Enhance third-party verification
- Assure performance advantage

...in other words,

protect the brand!

WHY CHANGE? PROTECTING THE BRAND





WHY CHANGE? ADDITIONAL PERFORMANCE WITH IAP





OUTLINE



- Why Change
- How Changed
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HOW CHANGED? PERFORMANCE PATH



HERS Index Threshold:

• 80 in North

• 85 in South

Note:

Exceptions are CA, OR, WA, HA and Manufactured Housing

HOW CHANGED? PERFORMANCE PATH REQUIREMENTS



- Insulation inspection for full R-value
- Thermal Bypass Inspection Checklist
- Leakage < 6 cfm to outdoors/100 sq. ft.
- Min. 1 ENERGY STAR Product category
- No on-site power generation trade-off
- Max. 20% screw-in CLF light sockets
- "Right-sized" cooling equipment
- Programmable thermostats with heat pumps must have "Adaptive Recovery"

HOW CHANGED? PERFORMANCE PATH ISSUES



Compliance with Infiltration + Ventilation Cold Climates (e.g., Vermont)/ Mixed-Warm Climate (e.g., Dallas):

- <IECC insulation
- Clear glass windows
- NAECA min. equipment

Hot-Dry Climate

- <IECC insulation
- Almost comply with clear glass windows

HOW CHANGED? PERFORMANCE PATH ISSUES



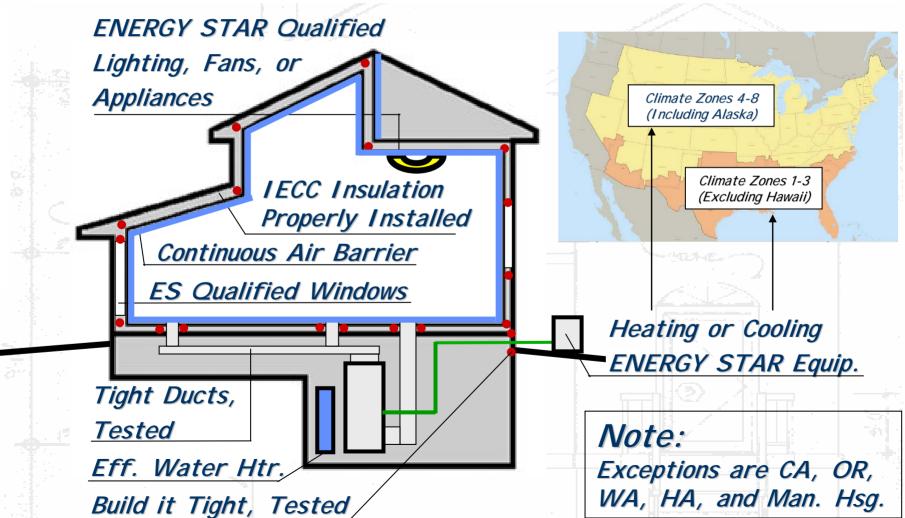
Compliance with Reduced Glazing Area

All Climates:

- <IECC insulation
- Clear glass windows
- NAECA min. equipment

HOW CHANGED? PRESCRIPTIVE PATH: BOP





HOW CHANGED? ADDRESS INSULATION VALUE KILLERS



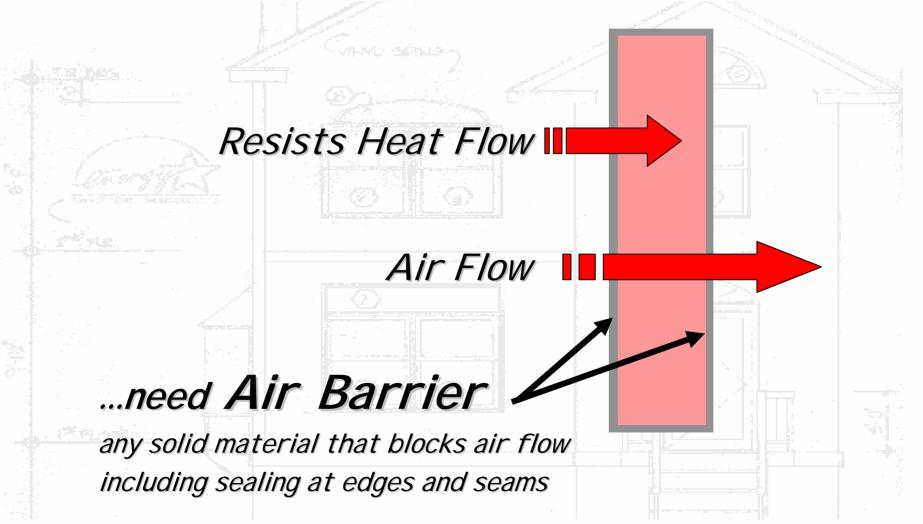
- Gaps
- Voids
- Compression
- Incomplete Air Barrier
- Misalignment with Air Barrier
- Wind Intrusion

Insulation
Installation
Inspection

Thermal Bypass Checklist

HOW CHANGED? THERMAL BYPASS CHECKLIST





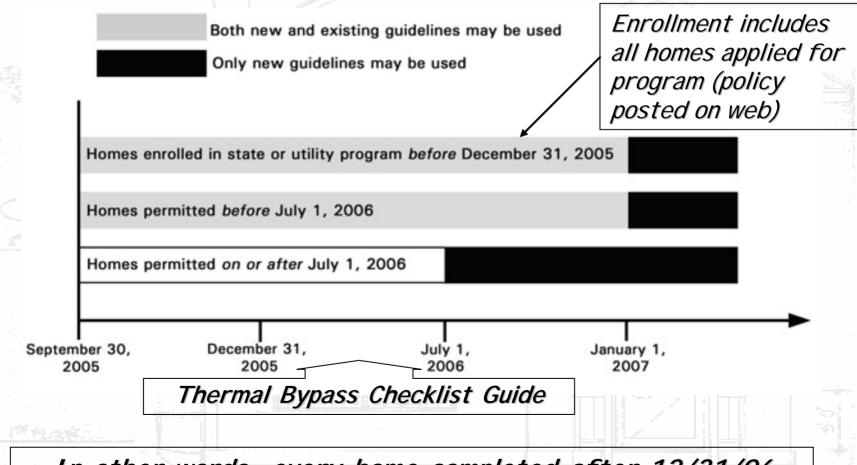
OUTLINE



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NEW SCHEDULE





In other words, every home completed after 12/31/06 must use new spec

IMPLEMENTING NEW SPEC RATER CHALLENGES



Unknowns:

- Cost of 14 SEER equipment
- Builder willingness to pay for TBC Inspection
- Subcontractor infrastructure to deliver TBC
- Utility rebate availability
- Changing HERS rating and scoring methods
- Rating software availability (e.g., Energy Gauge, Rem/Rate ventilation adjustment)

New Requirements:

- Developing cost lists for new inspections (TBC, insulation installation, sizing verification)
- New RESNET requirements (e.g., QC, Sampling)

IMPLEMENTING NEW SPEC PREPARE YOUR BUILDERS



- Benchmark Readiness
 - new HERS software plan evaluations
 - installation practices
- Coordinate New Requirements/Costs
 - Thermal Bypass Checklist inspection
 - insulation inspection
 - right sizing (by HVAC or rater)
- Offer Subcontractor Training
 - framing
 - insulation
 - thermal bypass checklist manual

IMPLEMENTING NEW SPEC **EXCEPTIONS**



California

- 15% > Title-24
- Thermal Bypass Checklist required, but based on Title-24

Pacific Northwest

- Continue with existing prescriptive program just started
- No Thermal Bypass Checklist requirement
- I daho and Montana can do either PNW or EPA spec

Hawaii

- Solar Hot Water package remains
- AC w/Solar Hot Water modified to new NAECA requirements

Manufactured Housing

- Continue with existing HUD-code based spec

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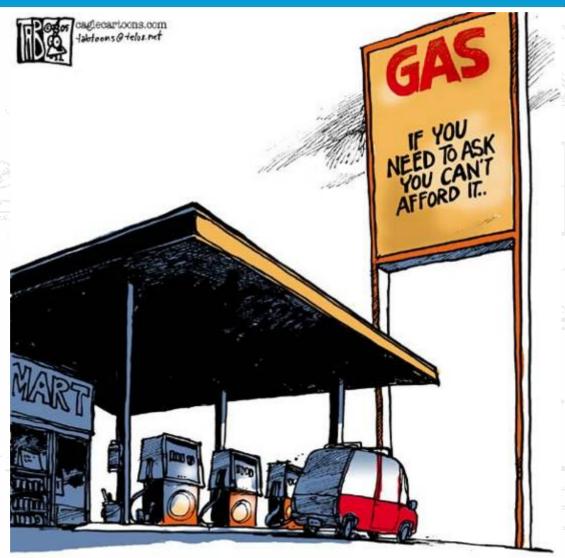
ENERGY STAR?



A Changing World

A CHANGING WORLD: ENERGY COST AWARENESS





A CHANGING WORLD: WHO WILL BE PREPARED?



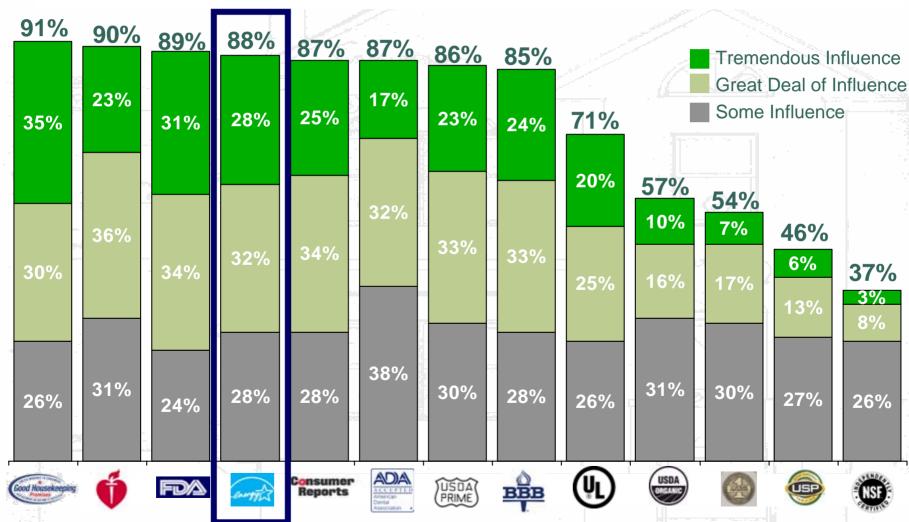
Small Cars in Focus As Gas Prices Rise

By MATT MOORE
The Associated Press
Tuesday, September
13, 2005; 11:52 AM
Power Information
Network expects the
number of compacts
and sub-compacts on
the U.S. market grow
to grow from 33 this
year to 40 in 2010.



ENERGY EFFICIENT IS EASY TO FIND





A CHANGING WORLD: INCREASED BUILDING DIAGNOSTICS





A CHANGING WORLD DEFECTS NO LONGER HIDDEN







A CHANGING WORLD: GROWING QUALITY AWARENESS



JD Powers and Assoc. 2005 Builder Quality Rankings

	Market	2005		
	Major Market Total	112	Raleigh/Durham	113
		in 197	Seattle/Tacoma	113
ENERGY STA	Austin	122	Denver/Colorado Springs	111
ENERGY STA	Orange County (CA)**	122	San Diego	111
ENERGYST	Sacramento	120	San Francisco Bay Area	111
ENERGY STA	Houston	118	Portland*	109
ENERGY STA	Tucson	118	Atlanta	108
ENERGY STA	Dallas/Ft. Worth	117 🚙	Detroit	108
ENERGY STA	Los Angeles/Ventura Counties**	116	Ft. Myers/Naples	108
Energy STA	Minneapolis	116	Palm Beach	107
3	Charlotte	115	Baltimore*	106
	Chicago	115	Albuquerque*	104
	Tampa	115	Orlando	104
enth	Phoenix	114	Washington, D.C.	104
emp	Inland Empire (CA)**	113	Philadelphia	101
ently.	Las Vegas	113	Jacksonville	98

A CHANGING WORLD: SMARTER CONSUMERS





of New Homes Buyers use the Web before purchasing a new home

A CHANGING WORLD: INCREASED LIABILITY



Liability insurance is scarce and expensive

"If you deliver a safe, durable and efficient home, you typically won't be sued."

Stan Luhr, Risk Auditor

A CHANGING WORLD: CORPORATE LEADERSHIP AWARENESS





THELMA & LOUISE



What is ENERGY STAR?

WHAT IS ENERGY STAR?



The national, US government-backed Symbol for energy efficiency

ENERGY STAR BACKGROUND



- Launched in 1992 for computers
- Grown to products across 40+ categories
 - 1995 new homes
 - 1999 efficient buildings
 - 2003 updated logo





Before

- **Sold** 1+ billion products
- Prevented greenhouse gas emissions equivalent to those from 20 million vehicles

WHAT IS ENERGY STAR? ENERGY STAR LABELED HOMES

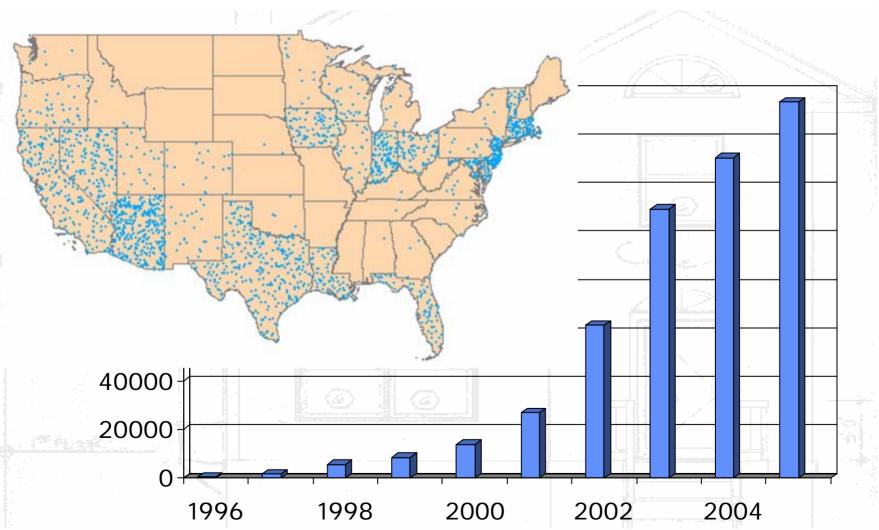


- Voluntary
- Truly Energy Efficient
- Builder Recognition
 Third-Party Verified

Government-Backed Label Marketing Tools/Awards

WHAT IS ENERGY STAR? A GROWING LABEL FOR HOMES





WHAT IS ENERGY STAR? A GROWING LABEL FOR HOMES



- 500,000+ Labeled Homes Cum.
- ~15-60% Market Penetration
- 3,000+ Builder Partners
- 60%+ 100 Largest Builders





Energy Efficient?

WHY BUILD ENERGY EFFICIENT? COMPARATIVE BUSINESS MODELS



Builder Business Model:

Wait for consumers to ask for new technology

Other Industries Business Model:

Exploit new technology to improve performance and cost advantage

WHY BUILD ENERGY EFFICIENT? EXPLOITING TECHNOLOGY EXAMPLE



Audio Casette to CD:

- Easier to use
- Better Sound
- More Durable
- Fraction of Cost to Produce
- Twice the price!

WHY BUILD ENERGY EFFICIENT? WHY EXPLOIT NEW TECHNOLOGIES?

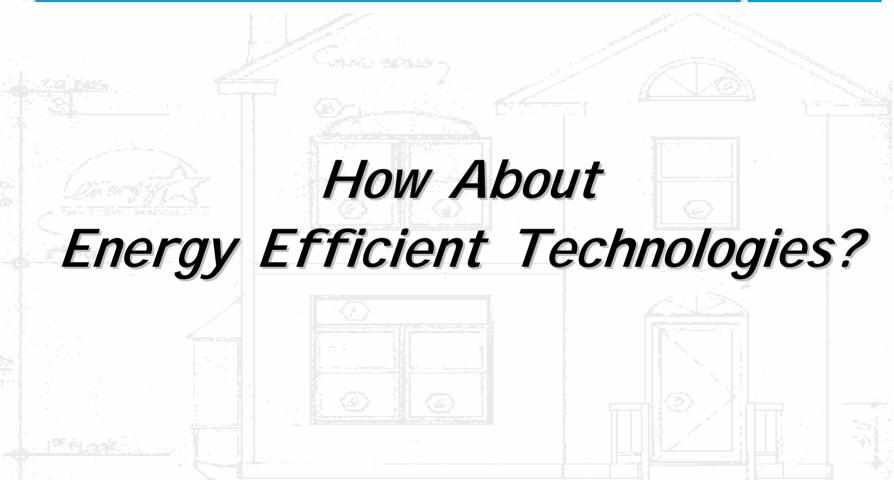


- Renders competition obsolete
- Increases revenues
- Increases consumer satisfaction
- Reduces risk

...in other words, more profit!

WHY BUILD ENERGY EFFICIENT? EXPLOITING TECHNOLOGIES: HOMES





WHY BUILD ENERGY EFFICIENT? THOSE PESKY LAWS OF PHYSICS...



- Driving forces are from More to Less
 - Heat
 - Moisture
 - Pressure (e.g., wind)
- Where there is a Driving Force, air moves through largest hole with least resistance
- One Out = One In
- Warm air holds more moisture than cold air
- All action is at the surface
- Mean Radiant Temp. dominates comfort

WHY BUILD ENERGY EFFICIENT: INSULATION: VALUE KILLERS



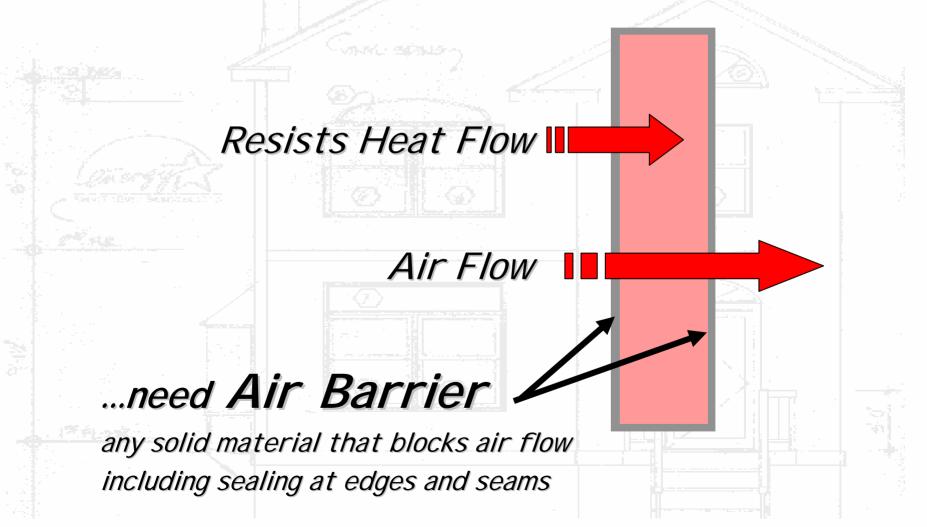
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Insulation
Installation
Inspection

Thermal Bypass Inspection

WHY BUILD ENERGY EFFICIENT: CONTROLLING THERMAL BYPASS

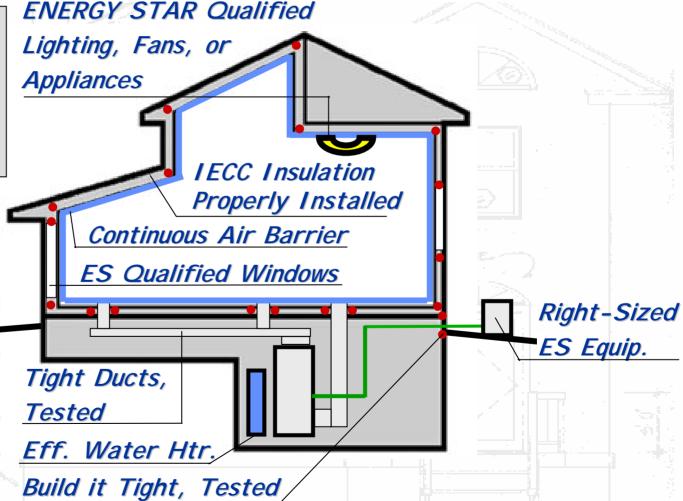




WHY BUILD ENERGY EFFICIENT? ENERGY STAR FOR HOMES SPEC



HERS Index: 83 in South; 84 in North, or equivalent package...



WHY BUILD ENERGY EFFICIENT? PERFORMANCE ADVANTAGE



Unless you're prepared to break the laws of physics, energy efficiency delivers:

- Lower Utility Bills;
- More Comfort;
- More Durability;
- Improved Indoor Air Quality; and
- Environmental Protection

Read: Significant Risk Reduction

WHY BUILD ENERGY EFFICIENT? HOW MUCH DOES IT COST?



Additional	Debit	A CHICLE

Additional Credit

High-Perf. Windows \$500 Right-Sized AC (\$500 - \$800)

Air Sealing \$200 Reduced # AC (\$500 - \$1,000)

Tight Ducts \$200 Compact Ducts (\$200 - \$400)

Effective Insulation \$400 Reduced Framing (\$200 - \$400)

Air Barrier Details \$500 Eliminate Furnace (\$ 0 - \$500)

Lighting/Appliances \$200

High-Eff. Equip. \$500

~\$2,500 vs. (\$1,500-\$2,000)

WHY BUILD ENERGY EFFICIENT? COST ADVANTAGE

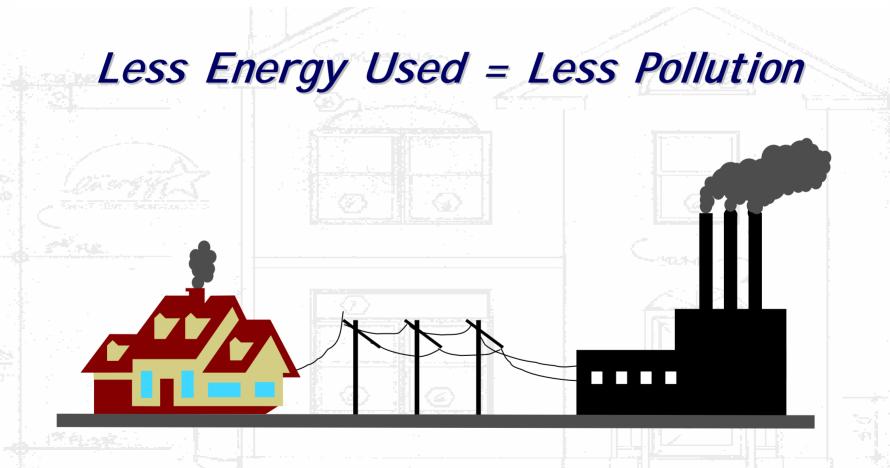


Control extra	Monthly	Annual
Utility Savings	\$35	\$420
Added Mortgage	\$15	\$180
Cost Savings	\$20	\$240

= \$1,000'S for typical ownership period

WHY BUILD ENERGY EFFICIENT? ENVIRONMENTAL ADVANTAGE





WHY BUILD ENERGY EFFICIENT? ANSWER:



- Renders competition obsolete
- Increases revenues
- Increases consumer satisfaction
- Reduces risk

...in other words, more profit!

- **72% drop** in qualityrelated callbacks at after joining ENERGY STAR **Gunstra Homes in Indiana**
- 70%+ drop in service center costs

David Weekly Chicago

•50-80% drop (\$80 million) in service center costs since joining Building America/ENERGY STAR Pulte West



Why Label Homes ENERGY STAR?

WHY LABEL HOMES ENERGY STAR? **ENERGY STAR GROWING BRAND**



60%+ awareness in 2004

70%+ households would recommend

95% likely to buy again in future

WHY LABEL HOMES ENERGY STAR? QUALTIY ADVANTAGE



"Our subcontractors send their best crews because they know their work will be inspected."

ENERGY STAR Partner Astoria Homes, Nevada

WHY LABEL HOMES ENERGY STAR? ENERGY STAR RECOGNITION



- Logos/Stickers
- Partner Recognition/Awards
- Outreach Campaign
- ENERGY STAR Web Site







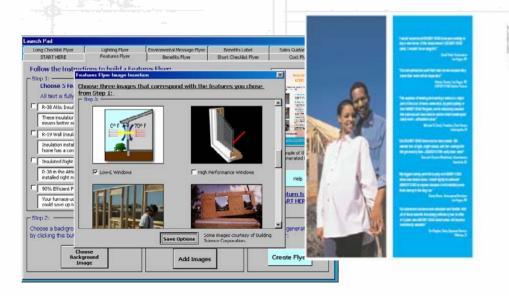


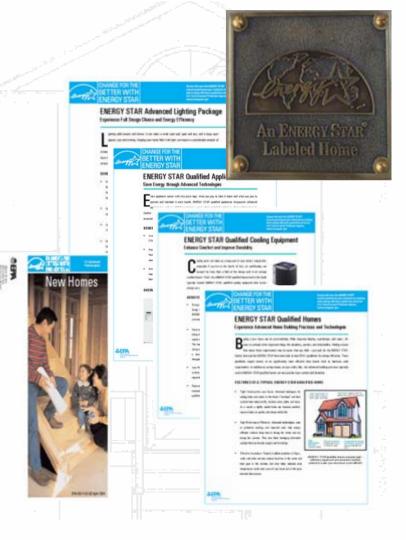
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WHY LABEL HOMES ENERGY STAR? ENERGY STAR SALES TOOLS



- Consumer Brochure
- Sales Toolkit
- ENERGY STAR Plaques
- Consumer Fact Sheets





WHY LABEL HOMES ENERGY STAR? MARKETING ADVANTAGE



"80% of single-family home builders think ENERGY STAR has had a positive impact on the marketability of their homes."

RLW 2002 Study of California ENERGY STAR for Homes Program for California Investor Owned Utilities

WHY LABEL HOMES ENERGY STAR? A WORD OF CAUTION...



Good News:

- Better Product
- Lower Cost

Bad News:

- People can't see it
- People won't know to ask for it

...Commitment to Sell is Critical!

WHY LABEL HOMES ENERGY STAR? SUMMARY



- Energy efficient homes is better business.
- Get credit for building truly energy efficient homes with ENERGY STAR.
- But, you must commit to selling benefits.

HOW TO GET MORE INFORMATION



On the Web at:

http://www.energystar.gov/homes