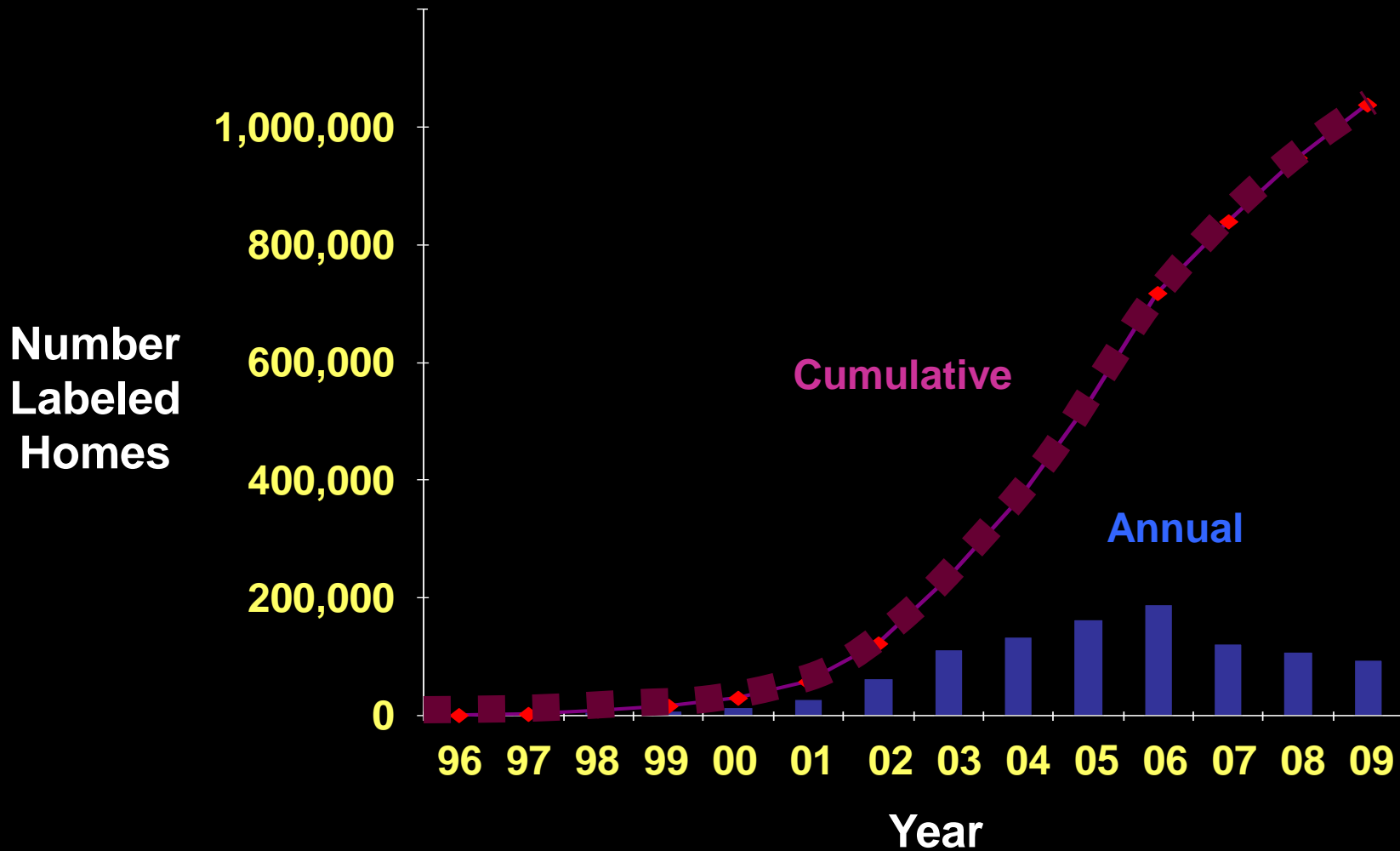




ENERGY STAR Qualified Homes:

**All The Rules  
Have Changed**

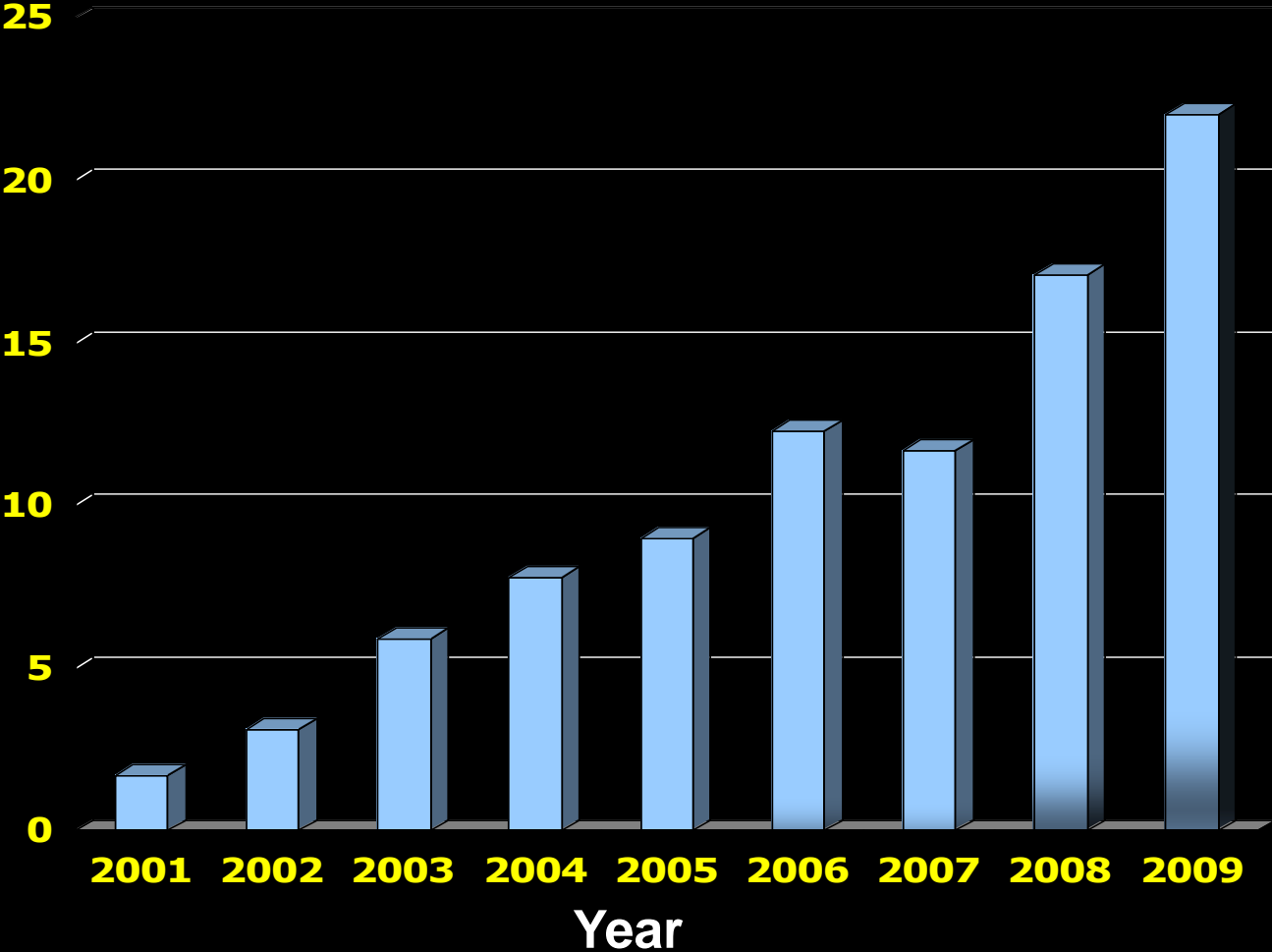
# ENERGY STAR FOR HOMES GROWTH THE ROAD TO ONE MILLION HOMES



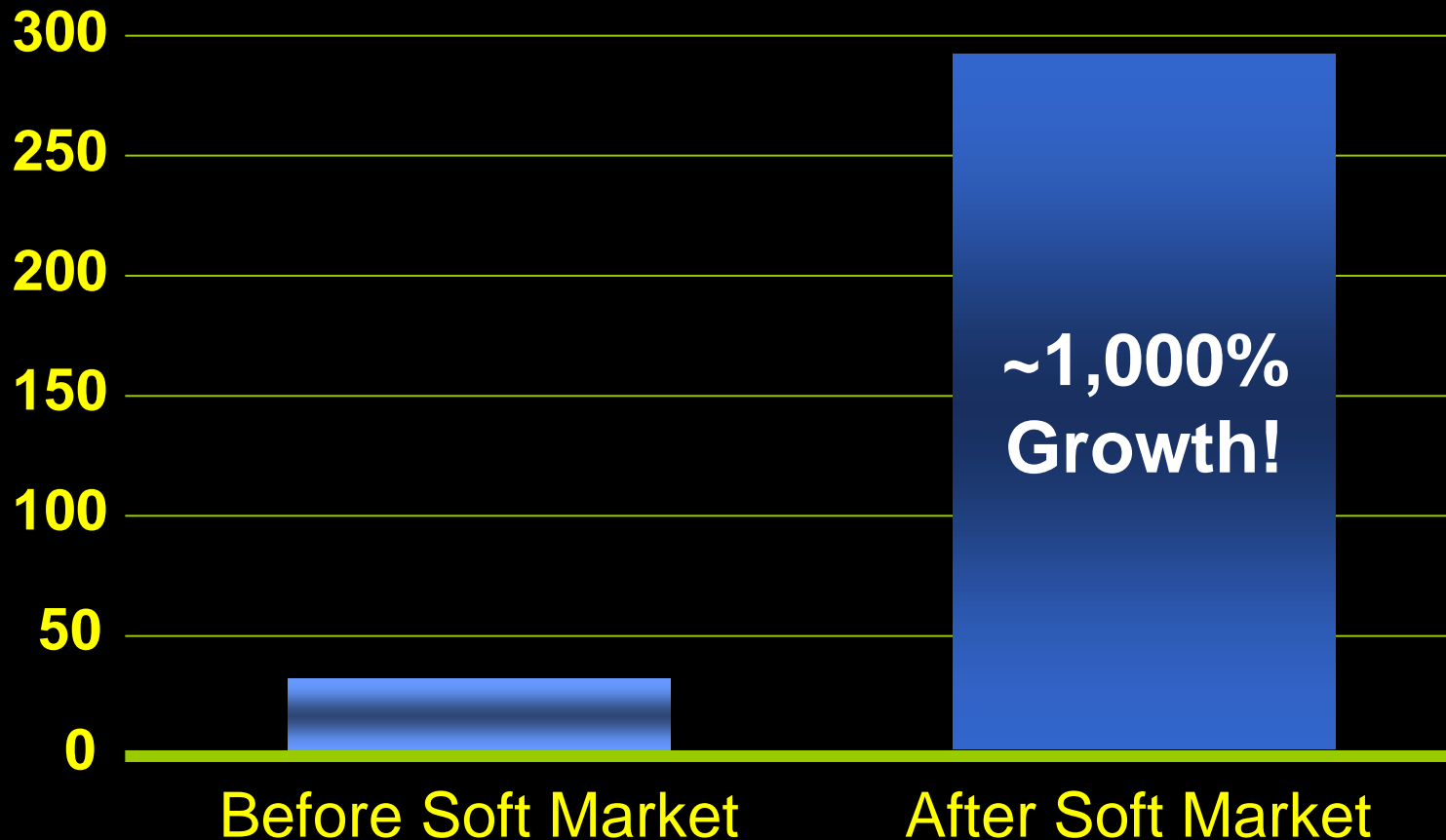
# ENERGY STAR FOR HOMES GROWTH ONE IN FIVE HOMES IN 2009



**% Market  
Penetration**



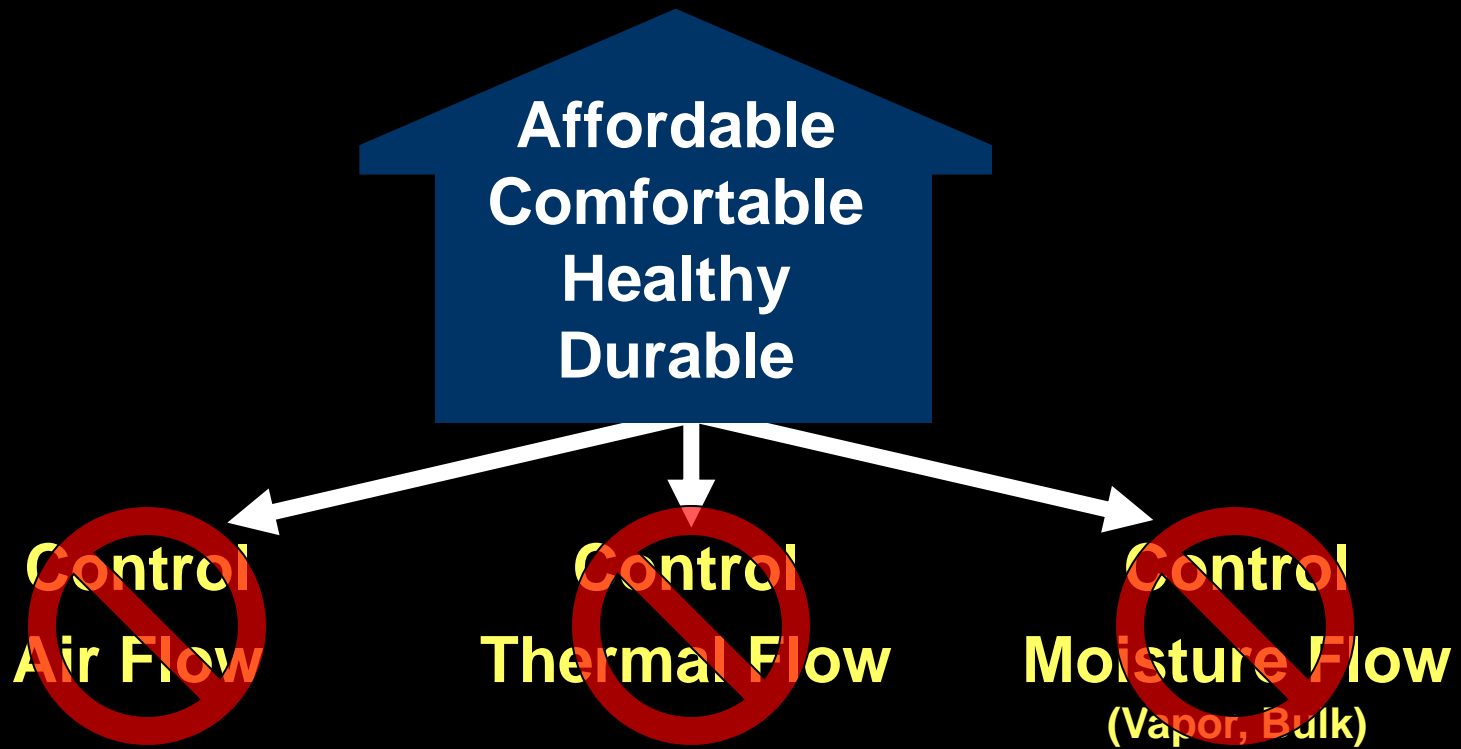
# ENERGY STAR FOR HOMES GROWTH NEW BUILDER PARTNERS PER MONTH



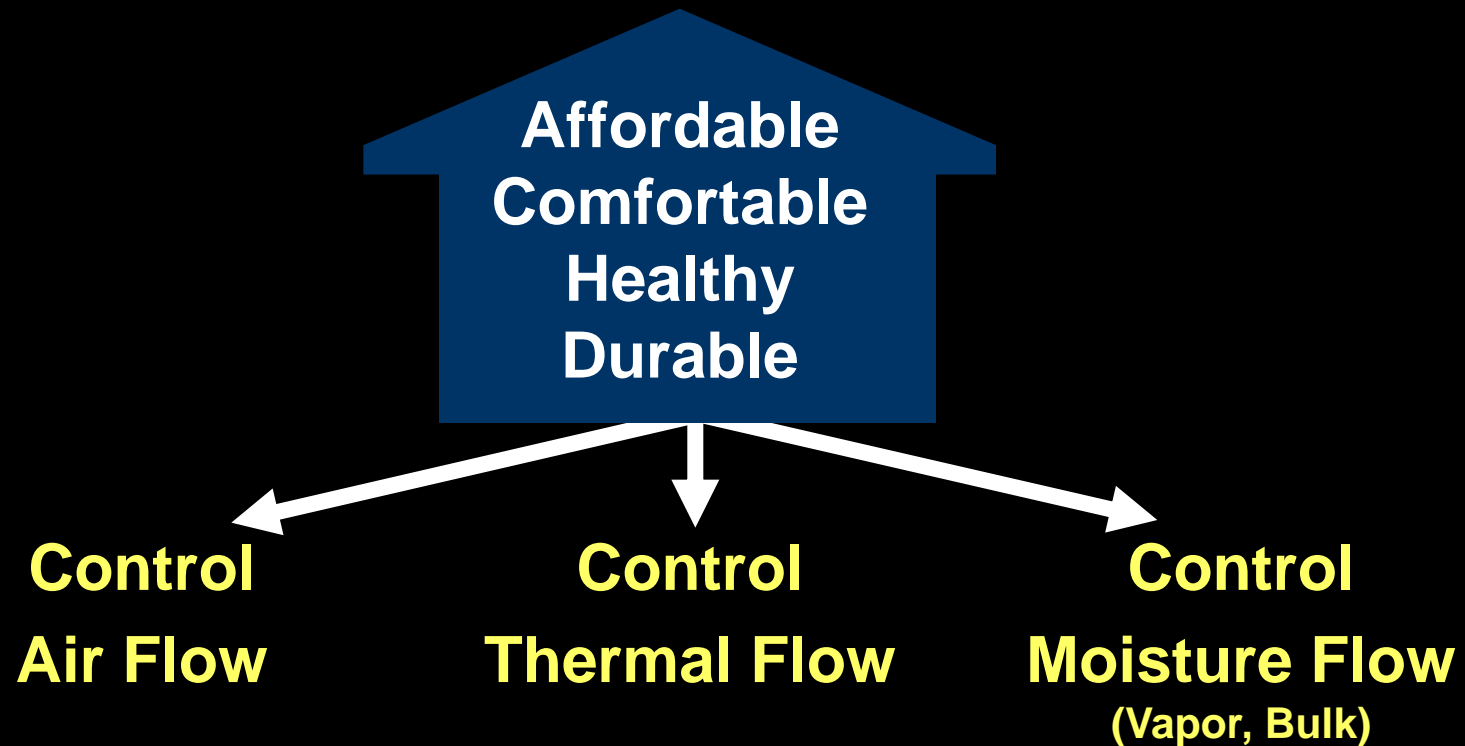
# Why Have to Be Better: We're Not in Kansas Any More

- 75% Fewer Housing Starts
- Massive Inventory of Fire-Sale Homes
- Tighter Credit = Less Qualified Buyers
- Less Compelling Reasons to Buy
- Energy Codes on Hyper Drive

# Status Quo: Homes That Fail



# Better: Homes That Work



# ENERGY STAR Homes That Work



Affordable  
Comfortable  
Healthy  
Durable

Control  
Air Flow

Control  
Thermal Flow

Control Moisture Flow  
Vapor Bulk

Efficient  
Equipment

3<sup>rd</sup> Party  
Verification



# ENERGY STAR Homes That Work



Affordable  
Comfortable  
Healthy  
Durable

Control  
Air Flow

Control  
Thermal Flow

Control Moisture Flow  
Vapor Bulk

Efficient  
Equipment

3<sup>rd</sup> Party  
Verification

Air Sealing

Air Sealing

Air Sealing

Efficient  
HVAC

Inspect  
Features

Tight Ducts

Tight Ducts

Tight Ducts

Test  
Infiltration

Insulation  
R-Value

Low-E  
Windows

Test Duct  
Leakage



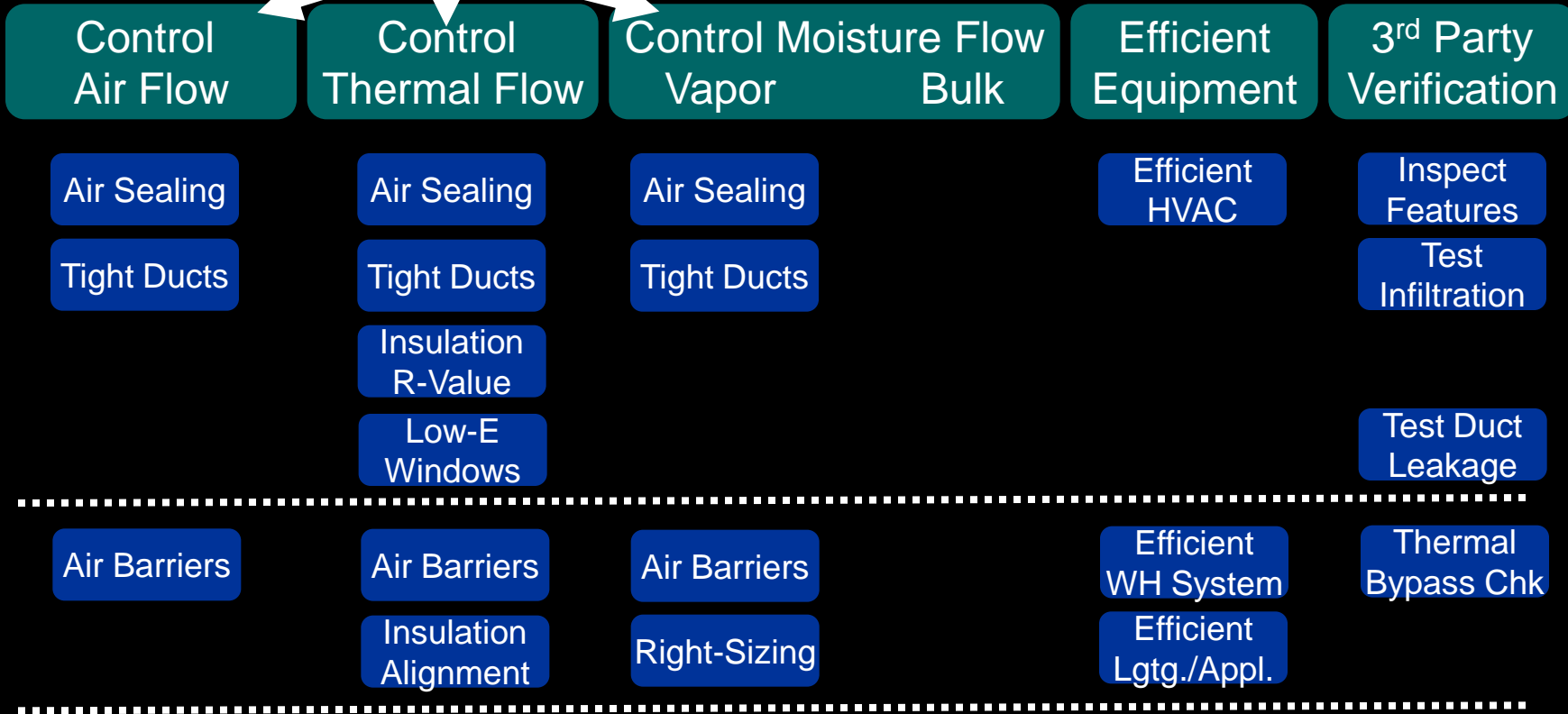
1996

V.1

# ENERGY STAR Homes That Work



Affordable  
Comfortable  
Healthy  
Durable



  
1996  
V.1

  
2006  
V.2

How we sold 2006 spec:  
**First** we asked a question...



**What technology will revolutionize the  
housing industry?**

Hint: it has nothing to do with  
construction...

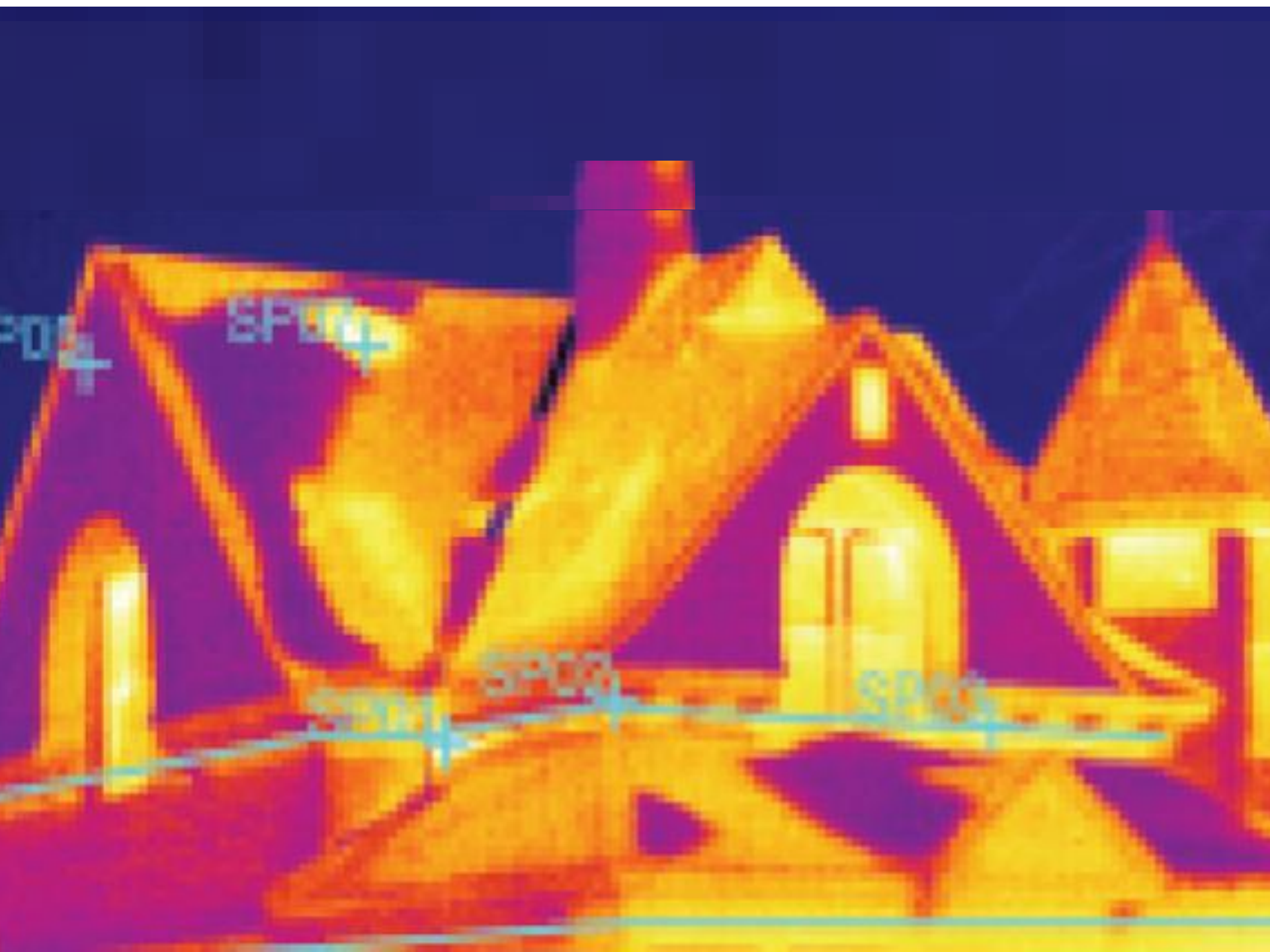
**Answer...**

# **Low Cost Infrared Cameras**



**FREE  
Online  
Training**

Your Price:  
**\$4,995.00**



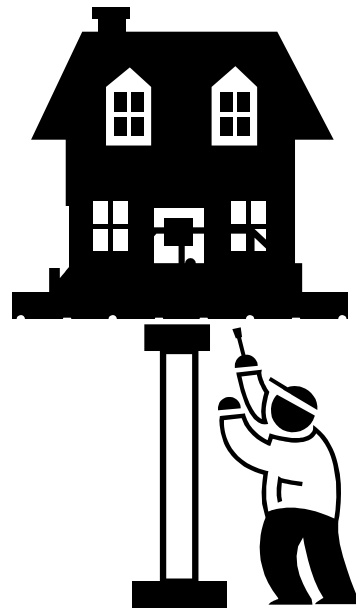
SP04

SP05

SP03

SP02

SP01





# BUILDING SCIENCE SOLUTIONS DROPPED CEILING



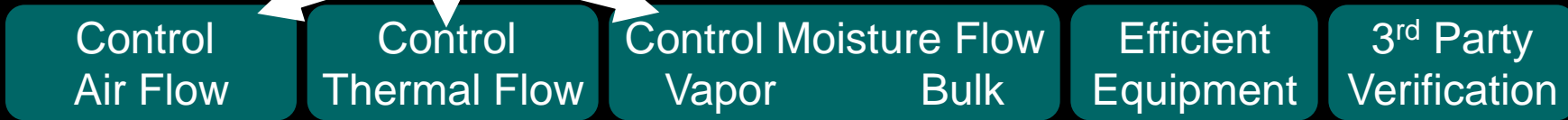
Courtesy of Building Science Corp.



# ENERGY STAR Homes That Work



Affordable  
Comfortable  
Healthy  
Durable



- Air Sealing
- Tight Ducts

- Air Sealing
- Tight Ducts
- Insulation R-Value
- Low-E Windows

- Air Sealing
- Tight Ducts

- Efficient HVAC

- Inspect Features
- Test Infiltration

- Test Duct Leakage

- Air Barriers

- Air Barriers
- Insulation Alignment

- Air Barriers
- Right-Sizing

- Efficient WH System
- Efficient Lgtg./Appl.

- Thermal Bypass Chk

- Pressure Balancing

- Insulation Installation
- Min. Thermal Bridging

- Ventilation
- Dehumid. in Hot/Humid

- Water Man. Construction
- Building Materials

- HVAC Quality Inst.

- Thermal Enclos. Chk
- HVAC Sys. QI Chk
- Water Man. System Chk



1996  
V.1



2006  
V.2



2011  
V.3

**Better:**

# ENERGY STAR Complete Systems



- Thermal Enclosure
- HVAC Quality Installation
- Water Management

# Thermal Enclosure System



- **Effective Insulation Assemblies**
  - Adequate R-Value (Code or Better)
  - Proper Insulation Installation
  - Complete Air Barriers
  - Minimized Thermal Bridging
- **Air Tight**
  - Tested
  - Visually Inspected
- **High-Performance Windows**

# Thermal Enclosure System Value Proposition



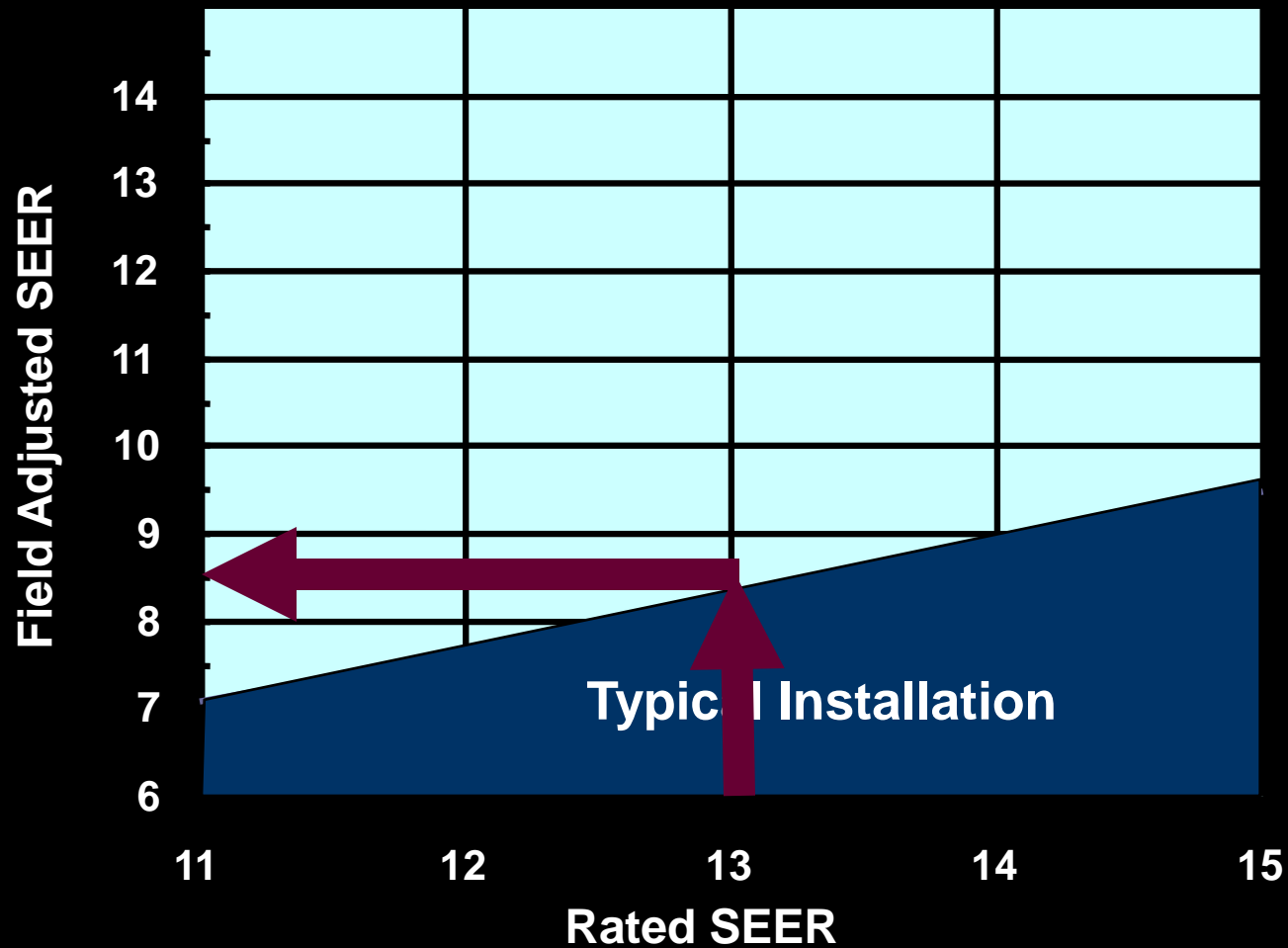
Visibly better **quality**

Superior **comfort**

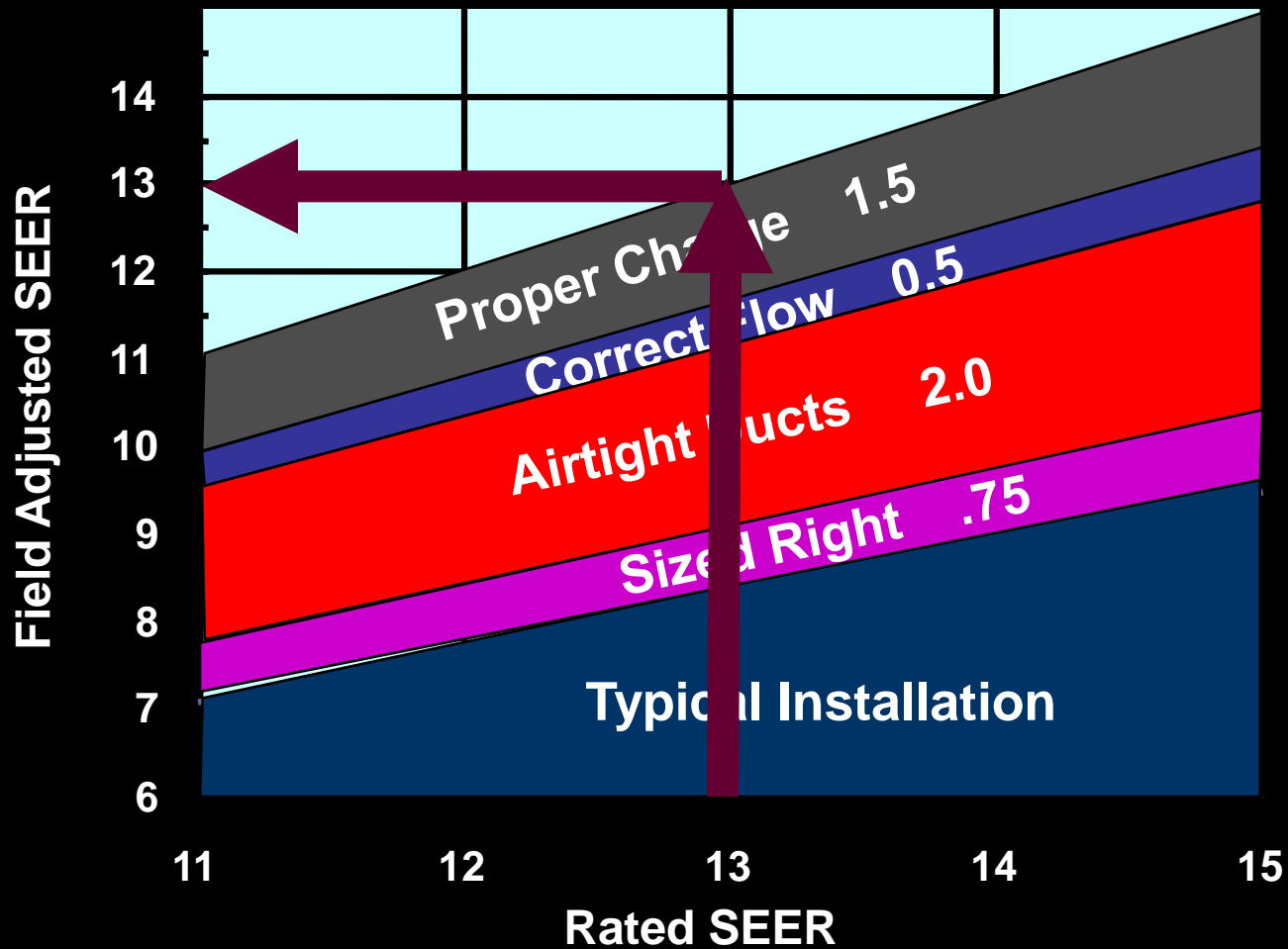
Future **resale value**



# HVAC System Typical Installation



# HVAC System Quality Installation



# HVAC System Quality Installation Value Proposition



- **Engineered Comfort**
  - Thermal Control
  - Humidity Control
  - Noise Control
- **Assured Fresh Air**
- **Filtration that Works**

# Water Management System



- **Water Managed Enclosure**
  - Roofs
  - Walls
  - Foundation
- **Materials**
  - Moisture Resistance
  - Protection



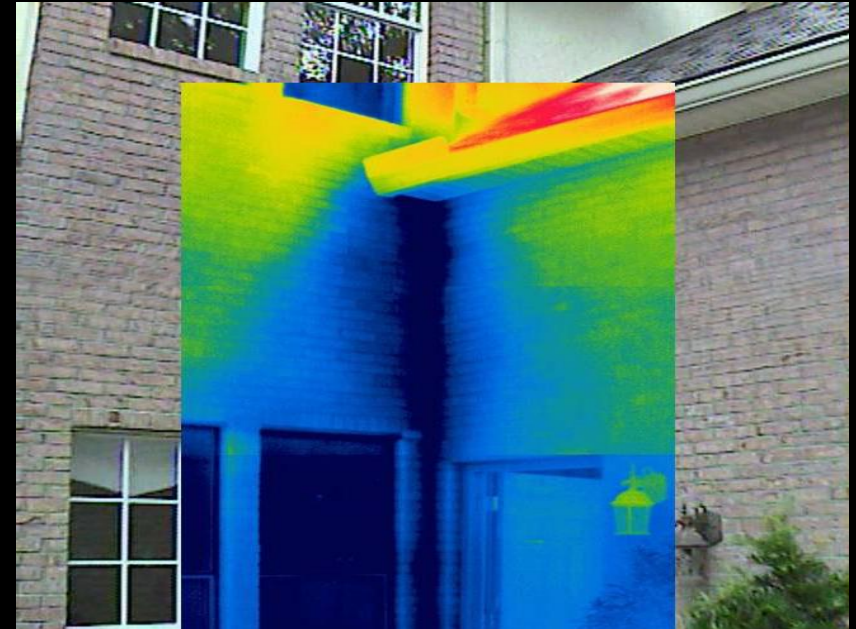
# Water Management System Value Proposition



**Better protection** for largest investment

**Lower maintenance**

**Healthier home**



# ENERGY STAR Qualified Homes V.3

Your home has been constructed to U.S. EPA's latest strict guidelines for energy efficiency including these building science features:



## Thermal Enclosure

- Code or Better Insulation R-Value
- RESNET Grade 1 Insulation Installation
- Air-Tight Construction
- Comprehensive Air Barrier Assemblies
- Reduced Thermal Bridging
- High-Performance Windows

## HVAC System

- Efficient Heating and Cooling Equipment
- Engineered Sizing of Equipment and Ducts
- Air-Tight Ducts
- Verified Proper Duct Installation
- Verified Proper Refrigerant Charge
- Whole-House Ventilation
- Spot Ventilation
- MERV 6 Filter

## Water Protection

- Heavy Membranes at Valleys and Eaves
- Complete Roof Flashing Details
- Complete Wall Drainage Plane
- Pan Flashing at all Doors and Windows
- Fabric Filter at Foundation Drain
- Capillary Break Under Foundation

# Question...

Building better is hard,  
**is it better business?**

# Answer...

Yes...

if making 90% of competition obsolete is  
good for business...\*

\* Refer to notes why not in Kansas anymore

But...

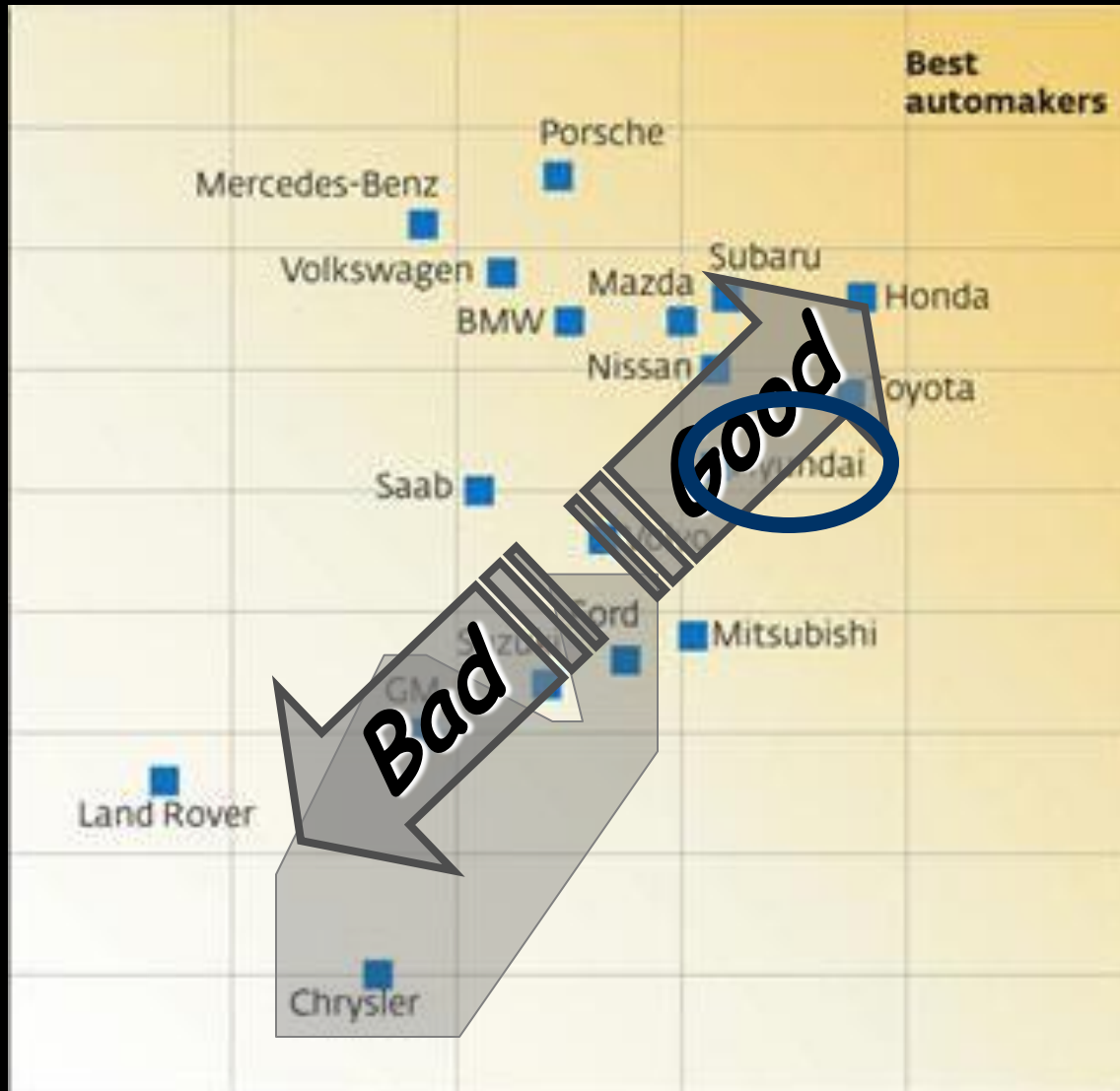
**Better is Not Good Enough**

You have to **back up**

and **sell** compelling

value propositions.

Better Test Scores



Better Reliability

# Better is Not Good Enough... You Have to **Back it Up**

America's Best Warranty™



Award-Winning Hyundai  
Quality Backed By  
America's Best Warranty™

**10-Year/100,000-Mile**  
Powertrain Protection

**5-Year/60,000-Mile**  
Bumper-to-Bumper Coverage

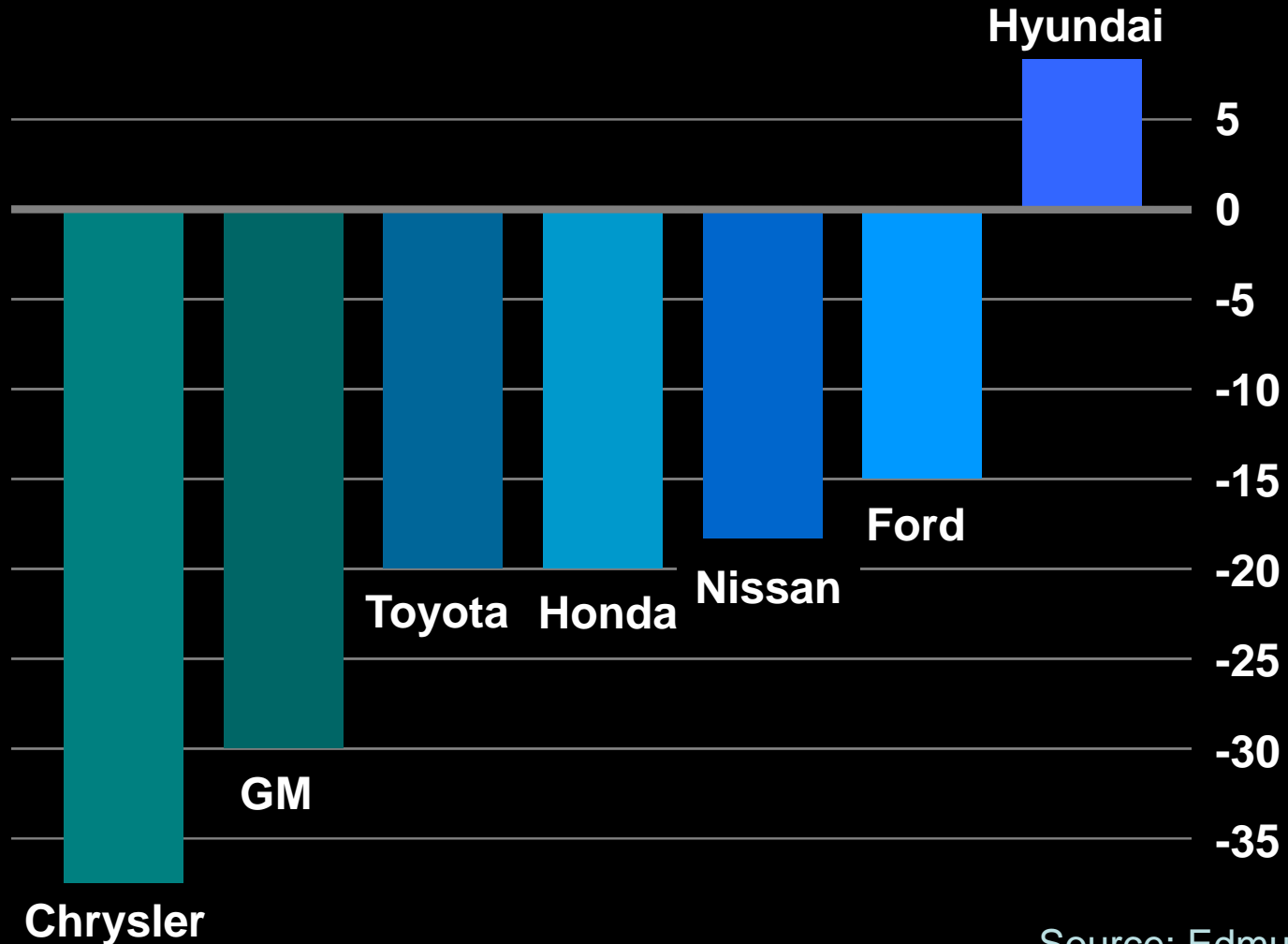
**5-Year/Unlimited Miles**  
24-hr. Roadside Assistance

\*See dealer for LIMITED WARRANTY details.  
America's Best Warranty™, the Hyundai Advantage™



# Back it Up Yields Results

## % Sales Changes 2008-2009





# Recognize This Builder?



# ...Toyota Homes

- \$200,000 - \$800,000 Modular Homes
- 45 Day Construction
- **Brand Advantage**  
[not withstanding recent efforts to destroy it]
- **60 Year Warranty**

# ...Toyota Homes

- \$200,000 - \$800,000 Modular Homes
- 45 Day Construction

- **Brand Advantage**

[not withstanding recent efforts to destroy it]

- **60 Year Warranty**

# ENERGY STAR Qualified Homes

## 30-Year Warranty

### Healthy Air Warranty

- Lead-Free\*
- Asbestos-Free\*
- Particulates Filtered to 3 Microns\*
- Mold-Free\*
- Combustion Gas-Free
- 150,000 CF per Day Fresh/Filtered Air\*
- VOC-Free\*
- Formaldehyde-Free\*
- Pest-Free\*
- Radon-Free\*

### Affordable Comfort Warranty

- \$60/Month Average Heating/Cooling Bill\*
- Even Room-by-Room Temperatures\*
- No Outdoor Drafts\*
- Outside Noise Reduction\*
- No Excessive Humidity\*

### Durability Warranty

- No Moisture Damage to Structure\*
- Dry Basements/Construction\*
- No Thermal Defects\*
- 90% UV Sunlight Blocked
- No Window Condensation\*
- No Termite Damage to Structure\*

# Better is Not Good Enough...

## You Have to Sell ENERGY STAR

- Label Every Home
- Train Sales Agents
- **Hold Agents Accountable**
- **Create 'Value' Experiences**

**And Remember...**

- **Design and Location Trump**

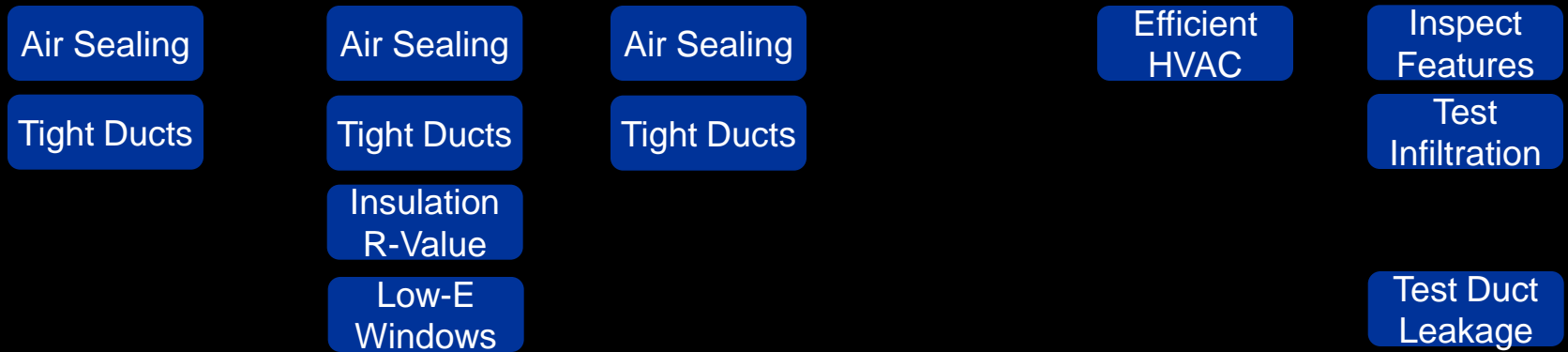
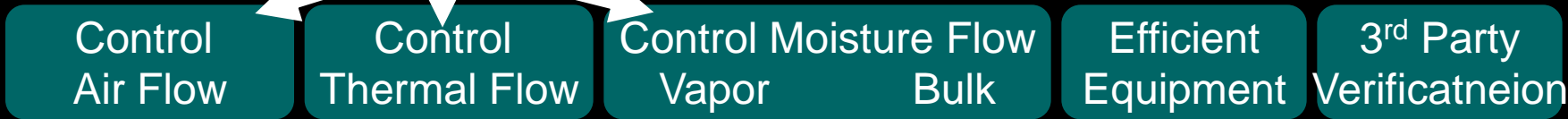




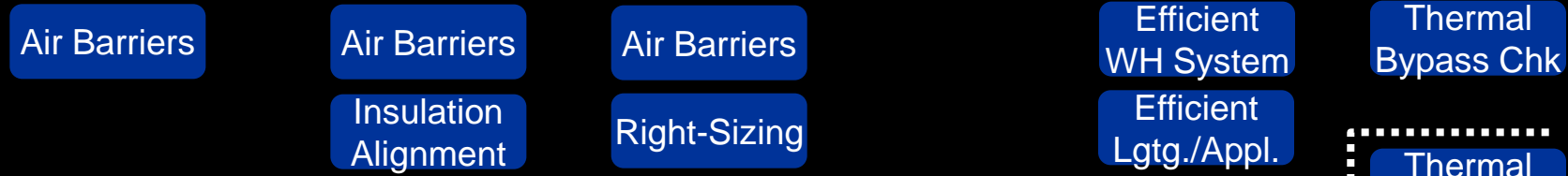
# ENERGY STAR Qualified Homes 2011 Specification:

## Where Go From Here?

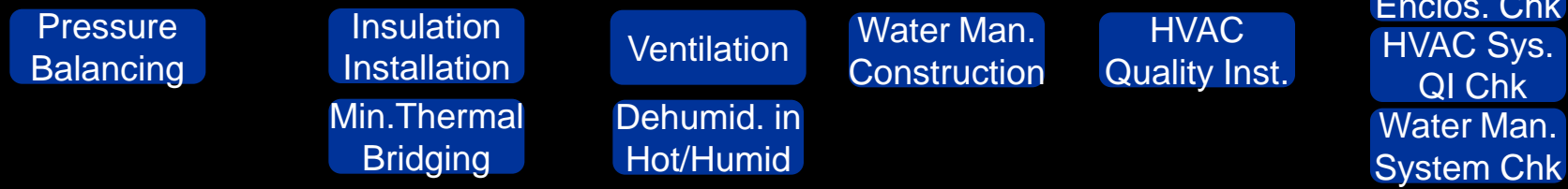
# Where to Go From Here?



1996  
V.1

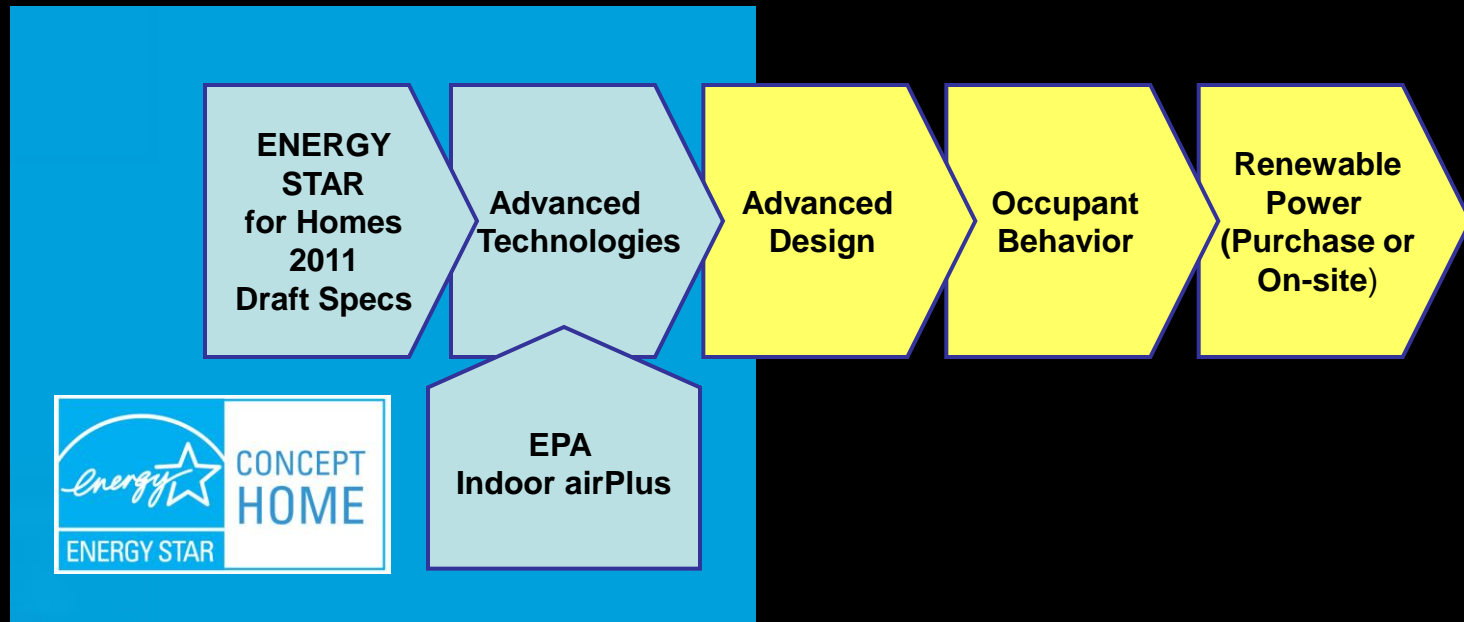


2006  
V.2



2011  
V.3

# PATH TO NO/LOW CARBON





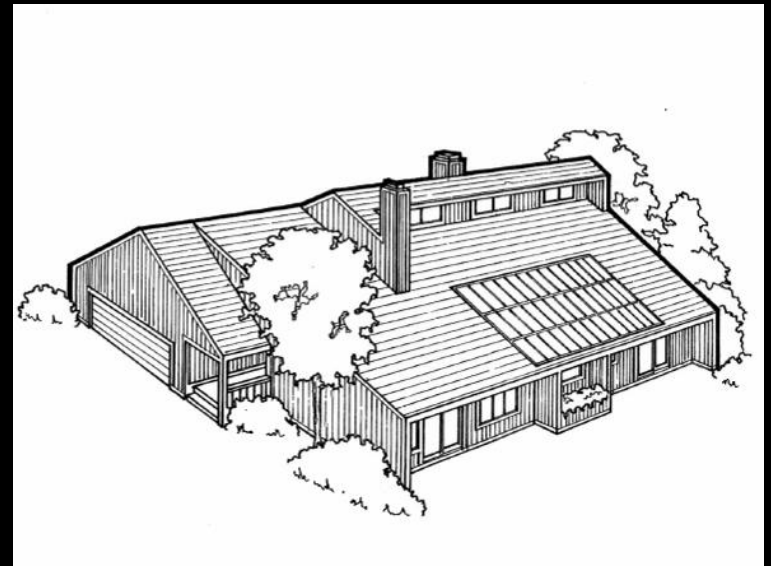
# LOW/NO CARBON HOME BUSINESS CASE



## Net-Zero Ready

**~30% - 50% Less**

- Square Feet with 100% Function
- Cooling/Heating Loads
- Framing
- Ducts
- Plumbing/Wiring
- HVAC Equipment
- Waste
- Construction Time



**~70% Less Call-Backs**

# 2011 SPEC/CONCEPT HOME TIMELINE



- **April 2010**

- Release Final 2011 Spec
- Launch Concept Home

- **January 1, 2011**

- Transition Period for 2011 Spec
- Ongoing Concept Home Fine Tuning

- **January 1, 2012**

- Full Force Implementation of 2011 Spec
- Ongoing Concept Home Fine Tuning

# LAST THOUGHT...



“It is impossible for a man to learn what he thinks he already knows.”

- Epictetus

# HOW TO GET MORE INFORMATION



**On the Web at:**

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