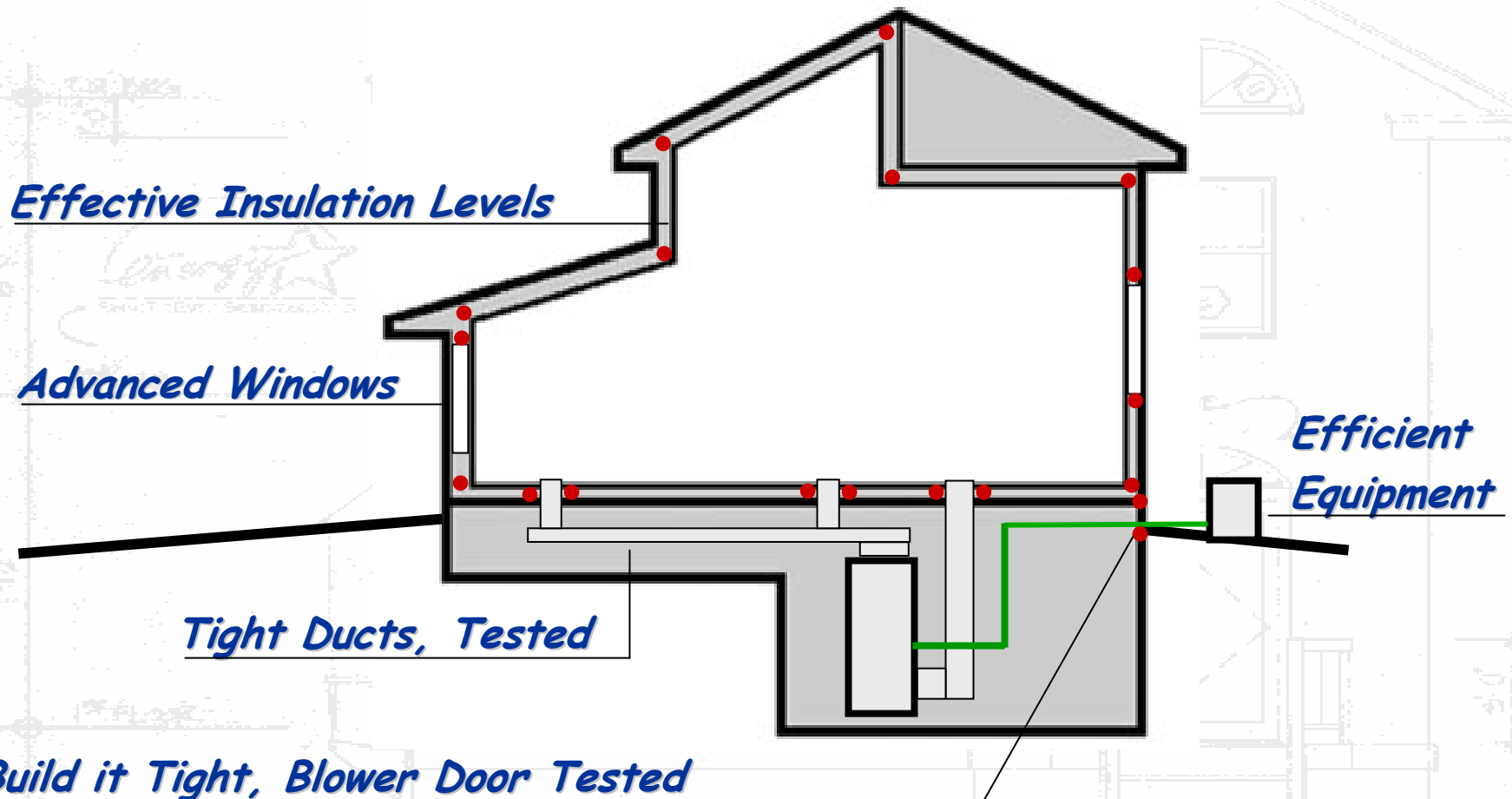




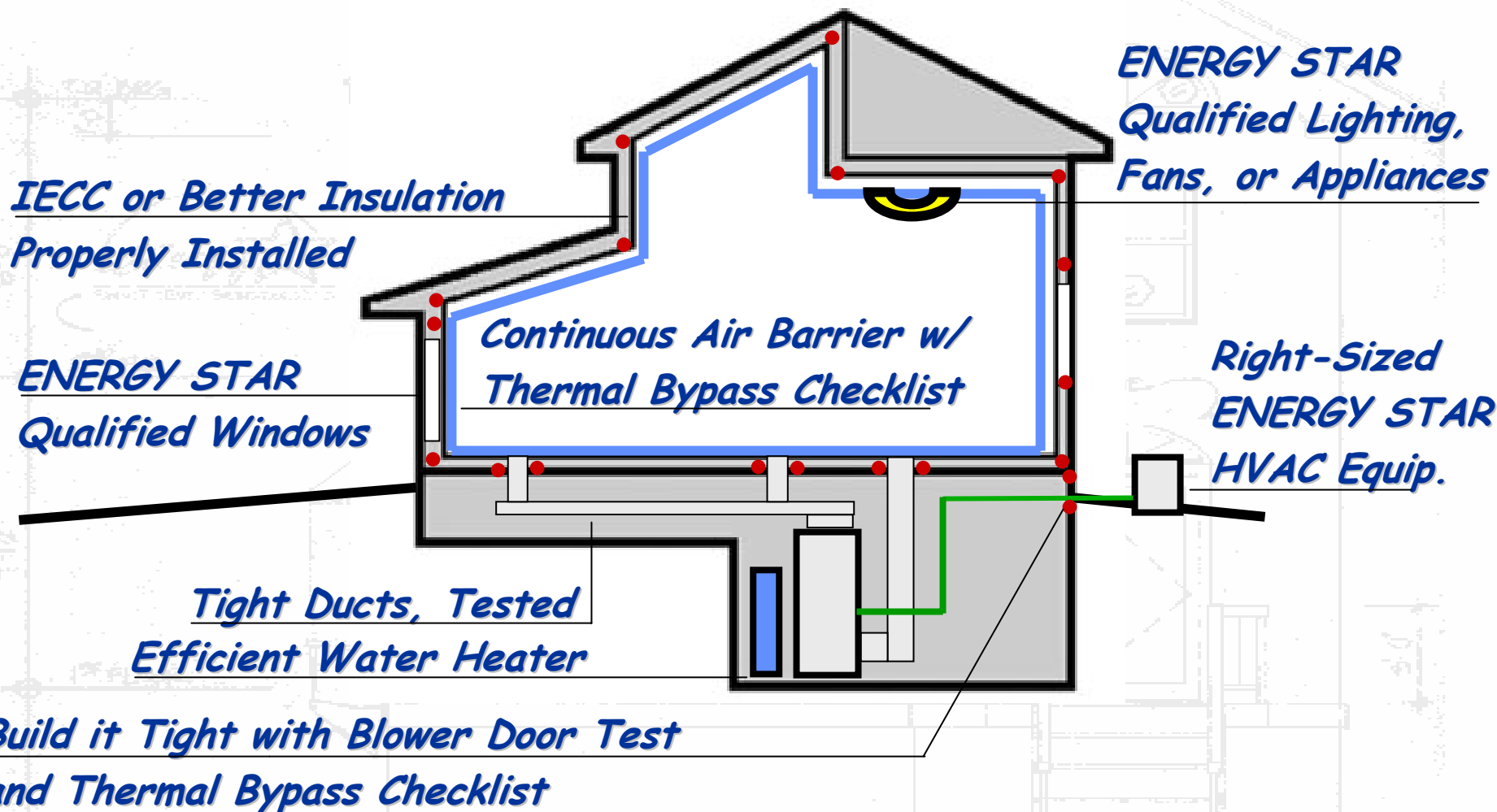
ENERGY STAR For Homes Update:
ENERGY STAR with Indoor Air Package
and
ENERGY STAR Advanced Lighting Package

ENERGY STAR WITH INDOOR AIR PACKAGE

TYPICAL ENERGY STAR MEASURES



ENERGY STAR WITH INDOOR AIR PACKAGE 2006 THRESHOLD CONSIDERATIONS



ENERGY STAR WITH INDOOR AIR PACKAGE

WHY ENERGY STAR W/IAQ



- ***Add Quality*** *to ENERGY STAR Homes*
- ***Continually Improve*** *Value Proposition*
- ***Inform Consumers*** *About IAQ*

ENERGY STAR WITH INDOOR AIR PACKAGE IAQ SPECIFICATION



• Moisture control

• Radon Control

• Pest Control

• HVAC Systems

• Combustion Safety

• Materials

Starting with
ENERGY STAR
Qualified Home...

ENERGY STAR Qualified
Lighting, Fans, or Appliances

IECC Insulation
Properly Installed

Drainage Plane

Radon Vent

Screens/Shield

Right-Sized
ES Equip.

Water Proofing

Drain Tile

Continuous Air Barrier

Pressure Balancing

Safe/Protected Mat.

ES Qualified Windows

Slope Grade

Direct/Power Vent

Tight Ducts

Water/Radon Barrier

Efficient Water Heater

Build it Tight, Ventilate Right, Filtration

Starting with
ENERGY STAR
Qualified Home...

Starting with
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Qualified Home...

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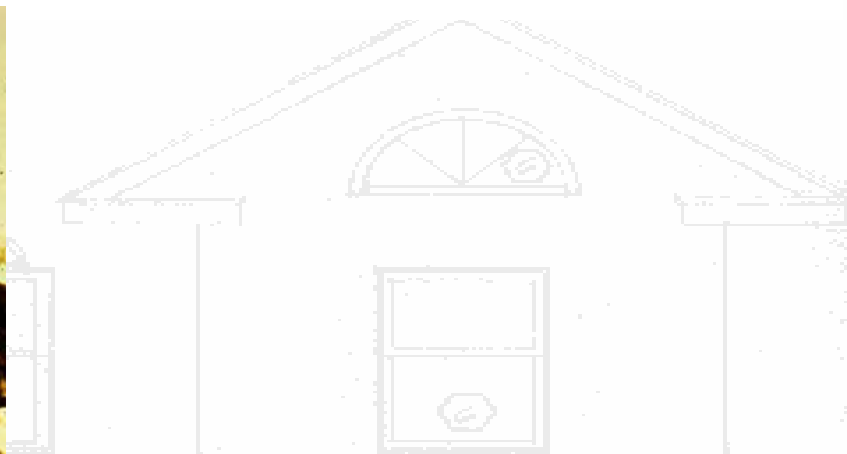
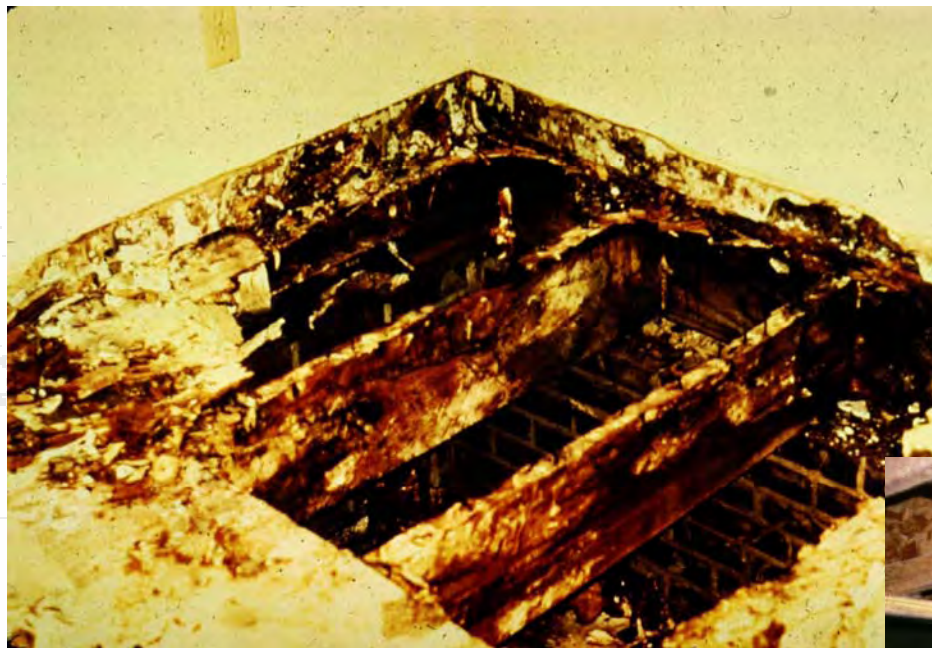
Starting with
ENERGY STAR
Qualified Home...

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Qualified Home...

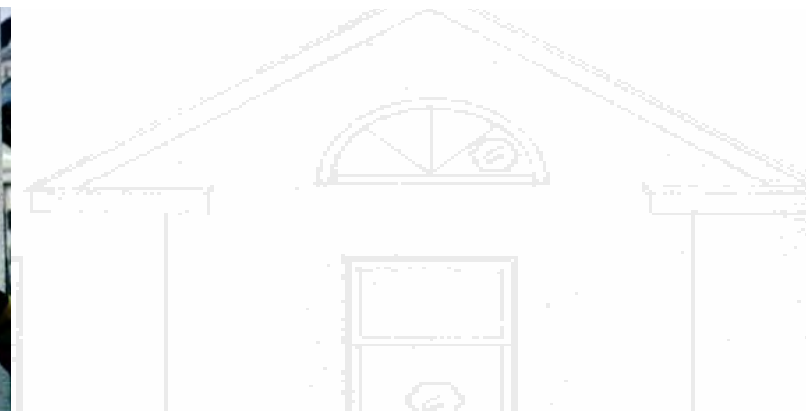
MOISTURE CONTROL: FOUNDATION VAPOR BARRIER



MOISTURE CONTROL: DOOR/WINDOW PAN FLASHING



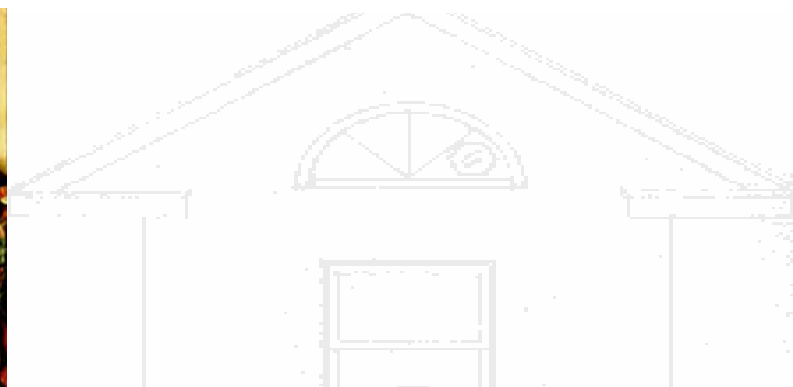
ENERGY STAR



MOISTURE CONTROL: DRAINAGE PLANE



ENERGY STAR

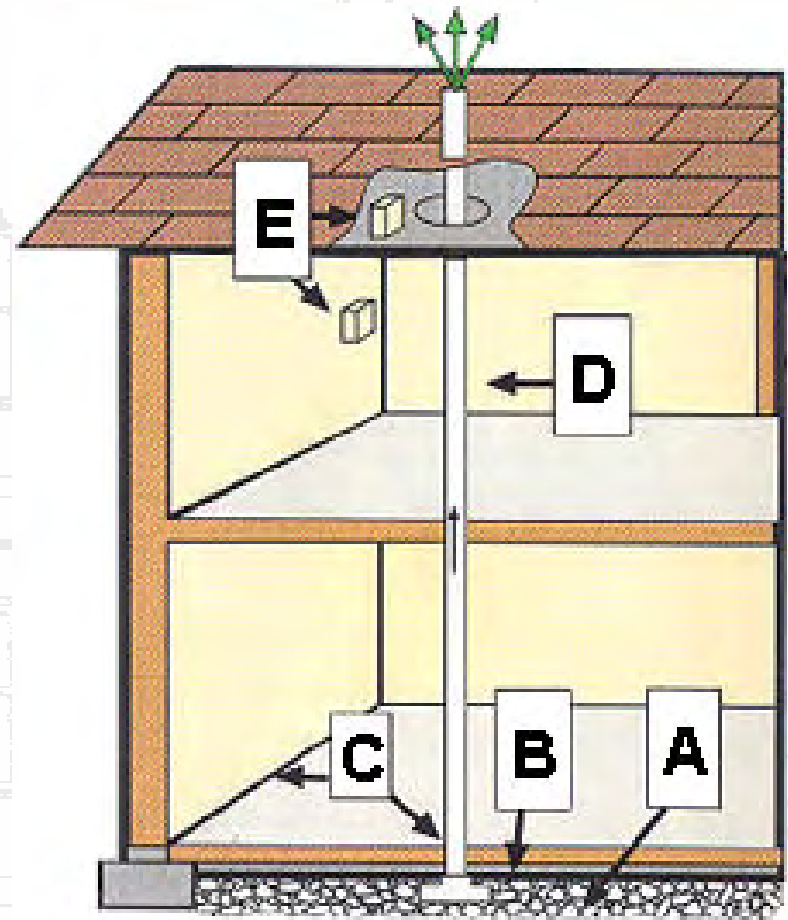


RADON CONTROL:

RADON RESISTANT CONSTRUCTION



- A. Gas Permeable Layer**
(4" clean gravel)
- B. Plastic Sheet**
(under slab or over crawl space floor)
- C. Sealing and Caulking**
(all openings in concrete floor)
- D. Vent Pipe**
(3 or 4 inch PVC pipe)
- E. Junction Box**
(installed in case venting fan is needed later)

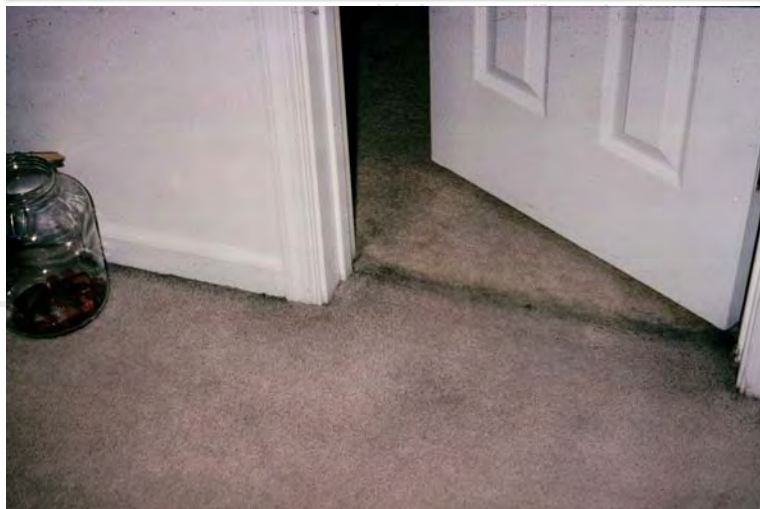
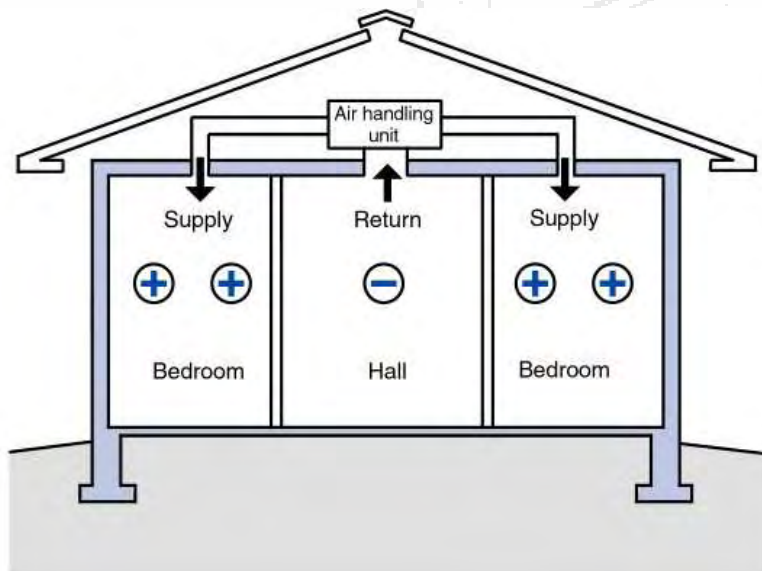


PEST CONTROL: TERMITE SHIELD

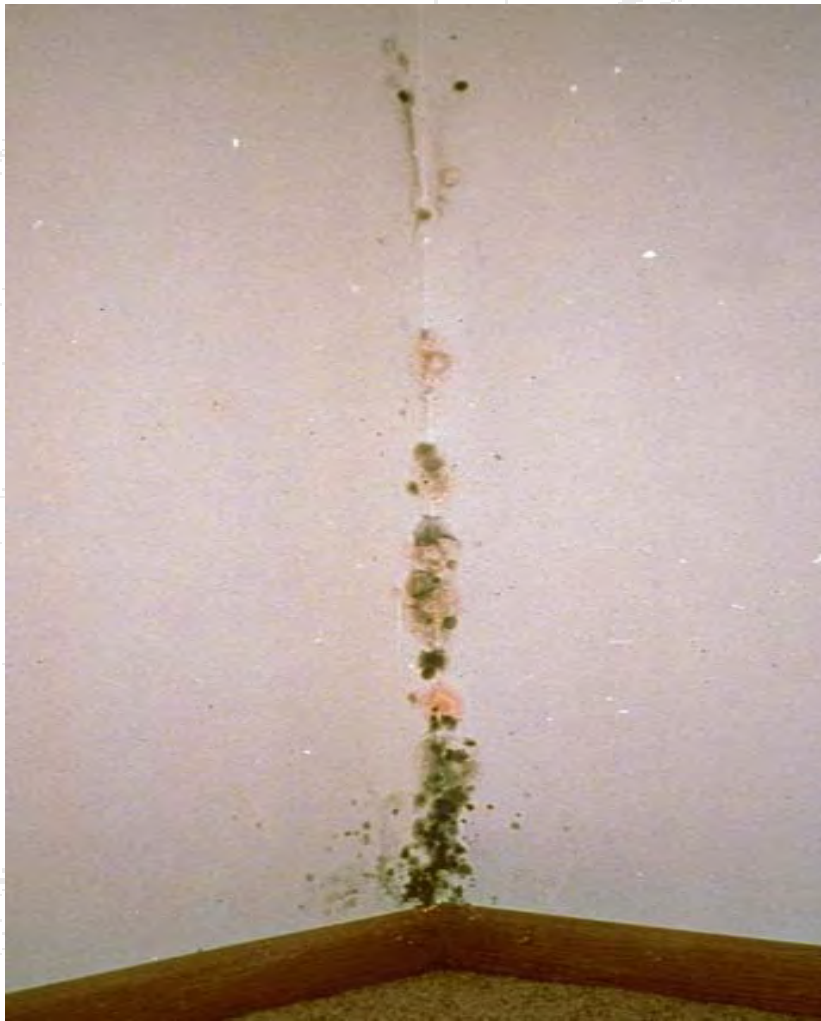


Courtesy of Building Science Corp.

HVAC SYSTEMS: PRESSURE BALANCING HOMES



HVAC SYSTEMS: MECHANICAL VENTILATION



HVAC SYSTEMS/MOISTURE CONTROL: WHY CONTROL HUMIDITY



Dust mites in the billions at 60% RH or higher



COMBUSTION SAFETY: COMBUSTION DIRECT VENTING



ENERGY STAR



BUILDING MATERIALS: PROTECTION



BUILDING MATERIALS: PROPER SELECTION



ENERGY STAR WITH INDOOR AIR PACKAGE

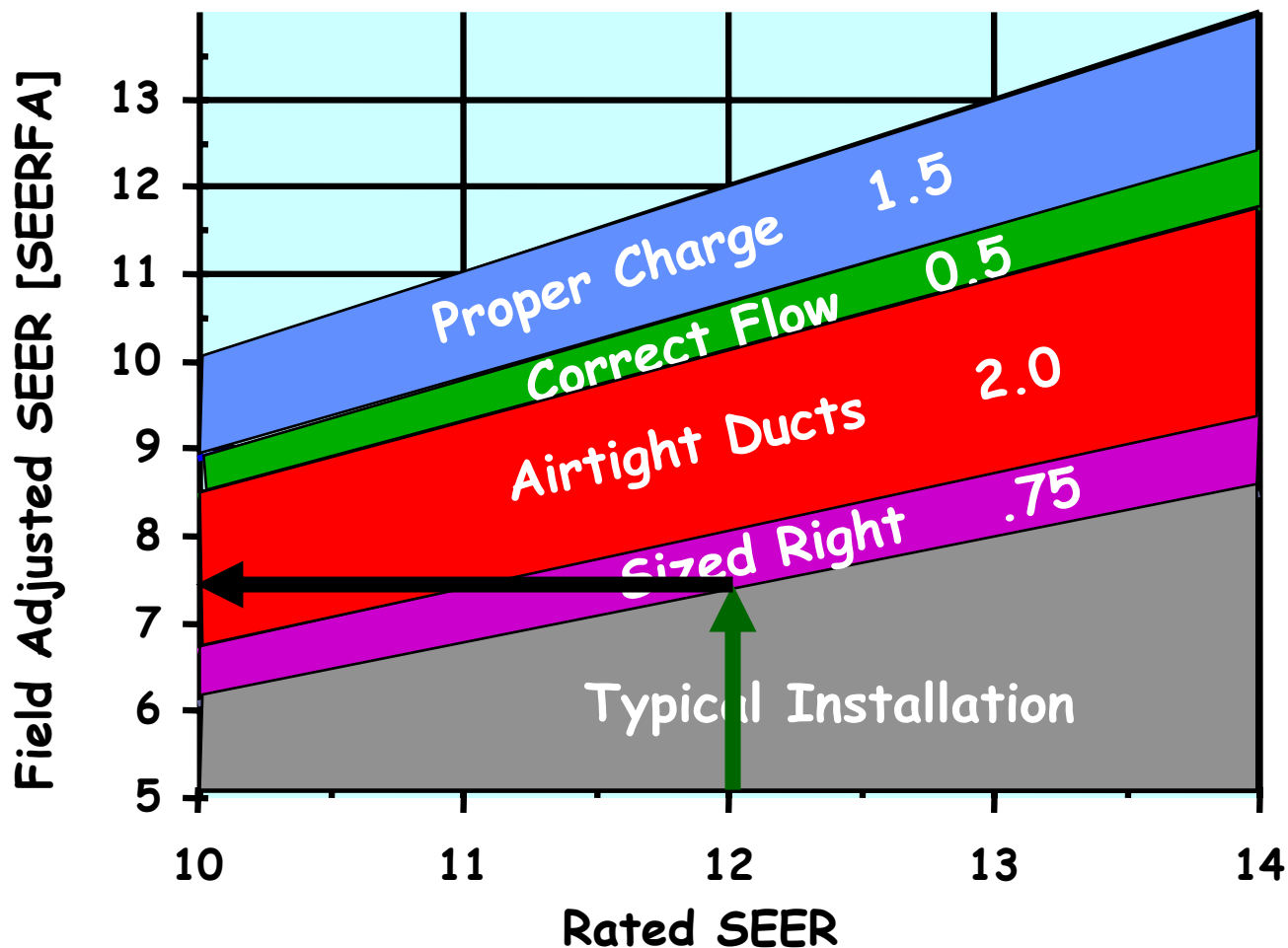
IAQ LABEL COST ANALYSIS



IAQ Cost Analysis

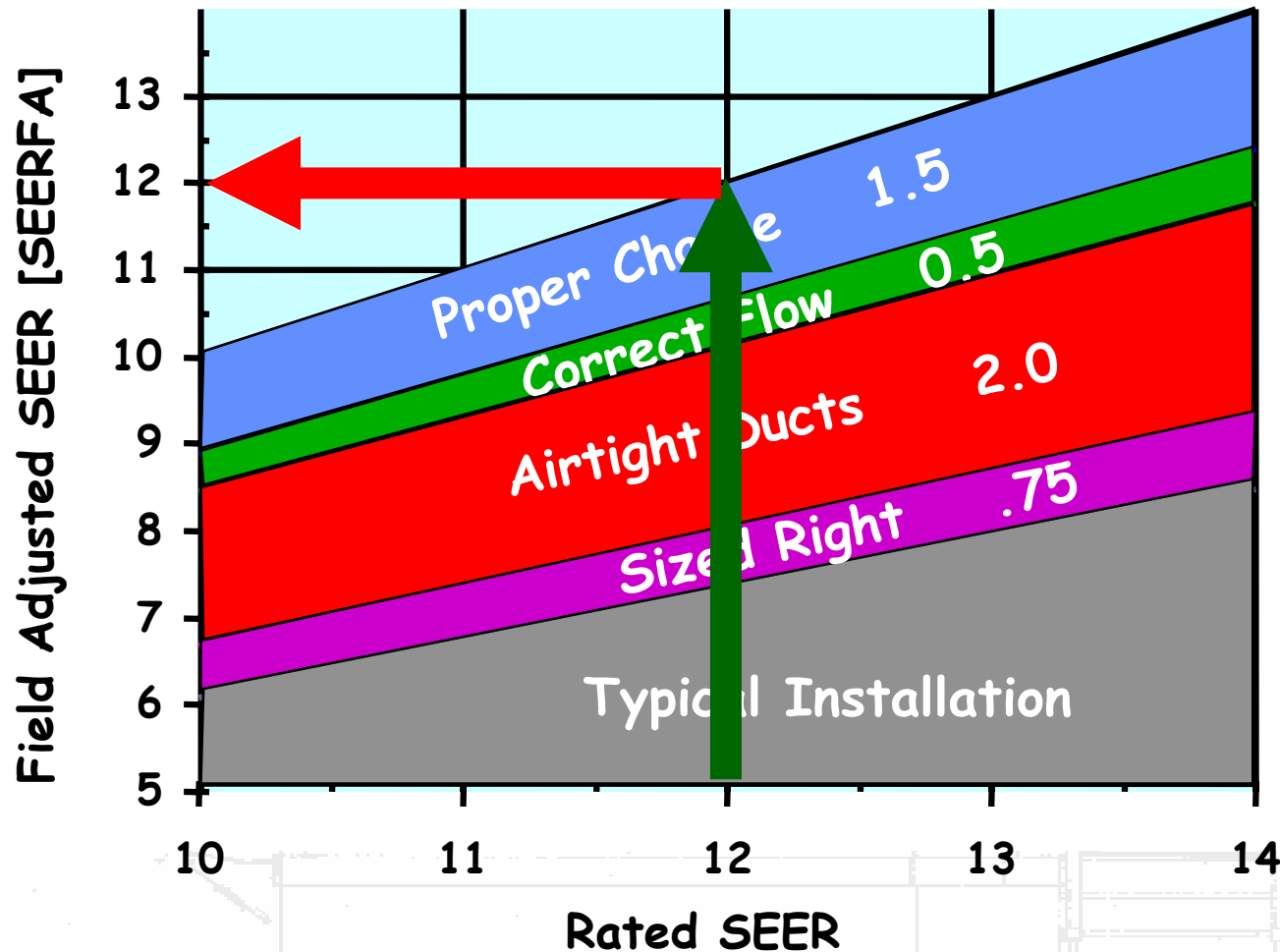
IAQ Measures	Cost by Builder Type		
	Advanced	Progressive	Basic
Moisture Control	\$100	\$950	\$4,240
Radon Control	\$250	\$250	\$250
Pest Control	\$280	\$280	\$370
HVAC Systems	\$360	\$850	\$1,370
Combustion Safety	\$0	\$670	\$670
Materials	\$200	\$300	\$300
Commissioning	\$250	\$250	\$225
Total	\$1,440	\$3,550	\$7,425

IMPACT OF INSTALLATION FACTORS ON HEAT PUMPS AND CENTRAL A/C



Courtesy of Advanced Energy Corp.

IMPACT OF INSTALLATION FACTORS ON HEAT PUMPS AND CENTRAL A/C



Courtesy of Advanced Energy Corp.

ENERGY STAR WITH INDOOR AIR PACKAGE

IAQ REASONABLE COST ANALYSIS



	Monthly Cost/Savings/Value	
	Advanced Bldr.	Progressive Bldr.
Incremental Cost	(\$11)	(\$21)
Added Energy Savings	\$13	\$13
Est. Insurance Savings	\$8	\$8
Positive Cash-Flow	~\$10	~\$0

ENERGY STAR WITH INDOOR AIR PACKAGE MAKING IAQ EASY:



- Moisture control
- Radon Control
- Pest Control
- HVAC Systems
- Combustion Safety
- Materials

SE
EN
Qu

IECC or better
Insulation Properly
Installed

Drainage Plane

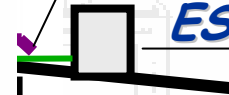
Radon Vent

Screens/Shield

Right-Sized
ES Equip.

Water Proofing

Drain Tile



Safe/Protected Mat.
ES Qualified Windows

Slope Grade

Direct/Power Vent

Tight D

Water/

Efficient Wa

Build it Tight Ventilation

ENERGY STAR WITH INDOOR AIR PACKAGE IAQ CONSUMER MESSAGE



< \$.75/day provides your family:

- *Over 100,000 cf of fresh, filtered outdoor air*
- ***Additional protection against:***
 - *mold and mildew problems*
 - *radon exposure*
 - *harmful pests and termites*
 - *harmful formaldehyde and VOCs*
 - *combustion safety*
 - *wet basements*

ENERGY STAR WITH INDOOR AIR PACKAGE IAQ BUILDER MESSAGE



- *Meet Growing Buyer Preference*
- *Increase Revenues*
- *Reduce Liability/Risk*



ENERGY STAR WITH INDOOR AIR PACKAGE HERS VERIFICATION FRAMEWORK



HERS Verification

Inspection 1:

Insulation R-value
Insulation installation

Inspection 2:

Duct Leakage
Windows
Thermal bypass checklist

Inspection 3:

Air-tight construction
HVAC equipment

IAQ Verification

Inspection 1:

Water-managed walls

Inspection 2:

Water manage roofs
Attic/ceiling interface
Pressure balancing
Mechanical ventilation
Exhaust fans/venting
Filtration

Inspection 3:

Combustion safety
HVAC commissioning
Owner manual/checklist

Builder Accountability

Foundation/Walls:

Water managed foundation
Water managed walls
Radon resistance (Zone 1)
Pest control features

Building Materials:

ICAT lighting fixtures
Protect materials
Vent after contaminants
Low formaldehyde wood
No carpet in wet rooms
No low-perm finishes

Commissioning:

Ventilate before move-in

ENERGY STAR WITH INDOOR AIR PACKAGE SCHEDULE



- ***Complete Final Spec***
12/04
- ***Coordinate with HERS Industry***
1/05
- ***Launch Pilot***
1/05 (e.g., 3 test markets)
- ***Negotiate Rates with Insurance Industry***
1/05 - 1/06
- ***Evaluate Pilot***
1/05 - 1/06
- ***Modify/Expand Program***
1/06

ENERGY STAR WITH INDOOR AIR PACKAGE

CONTEXT: GREEN HOMES



Green Home Staircase

Energy Efficiency

- Envelope
- Distribution
- Equipment
- Lighting
- Appliances

Indoor Environment

- Bulk Moisture
- Radon
- Pest Control
- HVAC
- Combust. Safety
- Materials
- Commissioning

Resource Efficiency

- Site Planning
- Water
- Materials
- Waste Man.
- Renewables

ENERGY STAR

?



ENERGY STAR

ENERGY STAR

Advanced Lighting Package



ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) TECHNICAL SPECIFICATION



<i>Category</i>	<i>% ENERGY STAR Fixtures</i>
<u>High-Use Rooms</u> Kitchen, Dining Room, Living Room, Family Room, Bathrooms, Halls, Stairways	50%
<u>Medium-Use Rooms</u> Bedrooms, Den, Office, Basement, Laundry Room, Garage, Closets, and all other rooms	25%
<u>Outdoor Lighting</u> Affixed to Home, Free-standing Poles excluding landscape and solar lighting	50%
<u>Ceiling Fans</u> [Where Provided]	100%

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) COMMITMENT SPECIFICATION

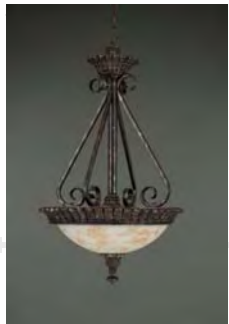


- ***Reasonable Mark-up***
- ***Sales Agent Commitment***
- ***Provide EPA Results***
- ***Don't Confuse Buyers***

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) WHY NOW?



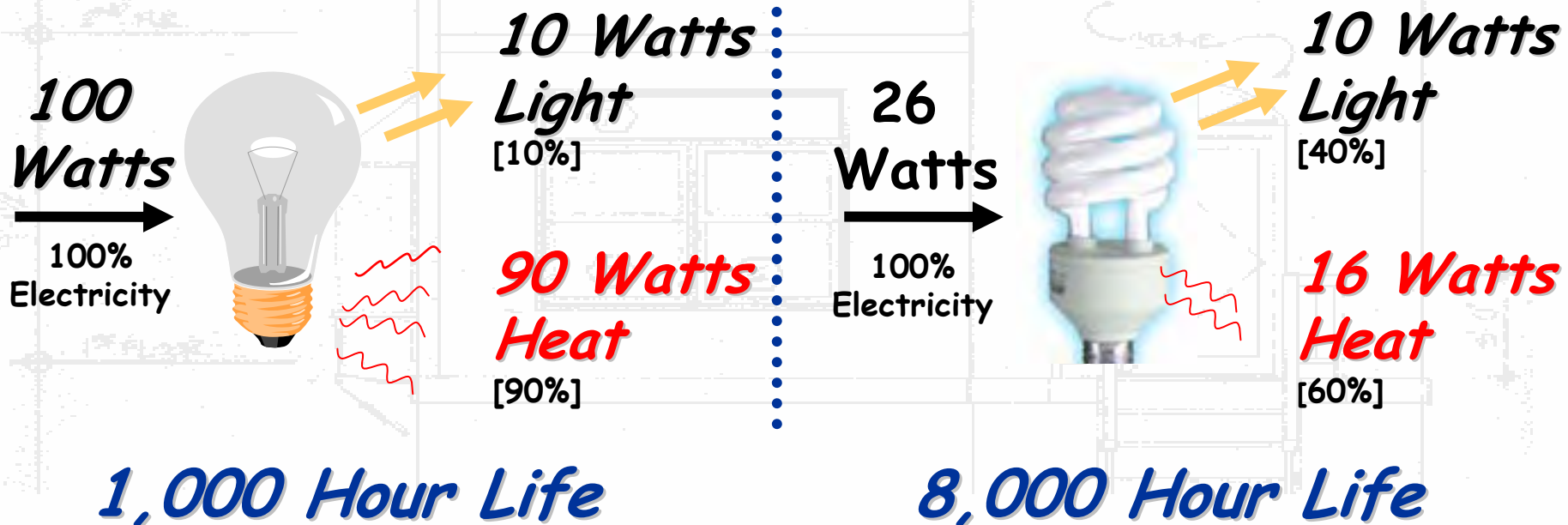
- *Builders asking for 'More'*
- *Cost Effectiveness*
- *Lighting Technology is Ready:*



ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)
KEY MARKETING MESSAGE #1:



Better Technology!
Same Light,
~80% less heat,
800% more durability



ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)
KEY MARKETING MESSAGE #2:



Why Throw Away Money?

*Each incandescent light fixture
is like throwing away*

\$50 - \$200



ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)

KEY MARKETING MESSAGE #2:



INCANDESCENT

ENERGY STAR

SAVINGS



Watts Per Fixture

240

78

162

Annual Cost

Electric

\$24

\$8

\$16

A/C

\$10

\$3

\$7

Lamps Replacement

\$ 2

\$0

\$ 2

Total Operating Savings

\$25

* Assumes 1000 Hours Per year / \$.10 KWH

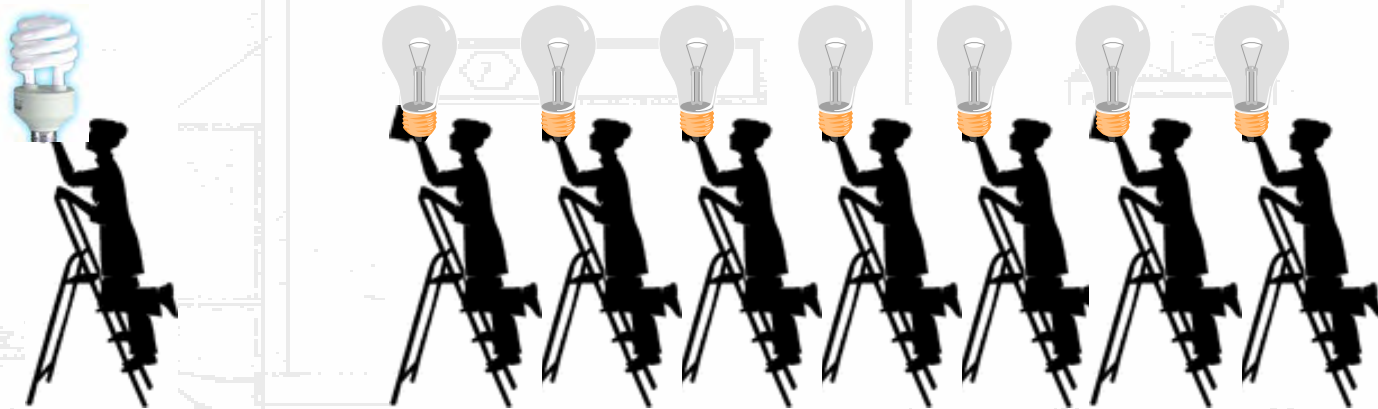
* 1200 Cooling Hours Per Year / \$.10 KWH

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)
KEY MARKETING MESSAGE #3:



Put Away the Ladder!

*Bulbs changed once every seven years
compared to annual ladder-climb*

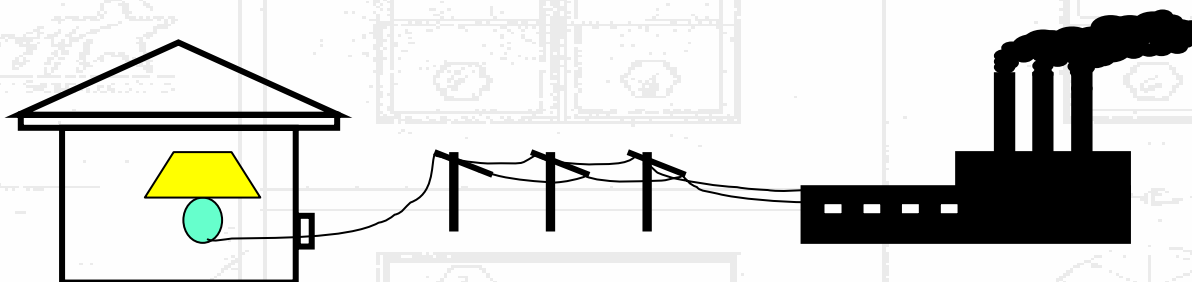


ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)
KEY MARKETING MESSAGE #4:



Change for the Better!

- *Avoid Burning Fossil Fuels*



- *One Room in Every U.S. Household
= 8 Million Cars Off the Road*

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)
KEY MARKETING MESSAGE SUMMARY:



*We can do a lot better than
100-year old technology:*

- *Cost*
- *Durability*
- *Convenience*
- *Comfort*
- *Environment*

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP)

WHY ALP?



- *Feature advanced technology*
- *Increase revenues, lower cost*
- *Improve models*
 - *Cooler*
 - *No burnt out bulbs*

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) WORKING WITH MANUFACTURERS



- *Marketing Materials*
- *Sales Training*
- *Manufacturer Equipped Models*
- *Manufacturer On-Site Displays*

O.A. GARR Co. Inc.
Central Oklahoma Premier Home Builder

O.A. Garr Company offers ENERGY STAR® qualified lighting that provides better light while using 2/3 less energy than standard incandescent lighting.

High quality products

- ENERGY STAR qualified lights give off the same amount of light as standard incandescent or halogen lighting, while producing a true and natural color without any flicker, hum, or buzz.
- Each ENERGY STAR qualified model is tested and meets strict specifications for energy efficiency and quality, and carries a 2-year warranty, double the industry standard.

More money to spend elsewhere

- ENERGY STAR qualified lighting helps lower energy costs on your electricity bill each month.
- By replacing only the few most frequently used lights (such as in your bathroom or kitchen), you can save a lot of money.

Less heat, more comfort

- ENERGY STAR qualified lighting produces less heat, which means they are cooler to the touch.
- Did you know incandescent bulbs turn 90% of the energy they use into heat? ENERGY STAR qualified lights turn 90% of the energy they use into light.

www.oagarr.com

Products that earn the ENERGY STAR prevent greenhouse gas emissions by meeting strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the Department of Energy.

www.energy.gov



ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) MARKETING TOOLS



- *Builder Brochure*
- *Consumer Brochure*
- *Cost Worksheets*



Some builders have a much brighter picture of the neighborhood they're creating



Photograph Courtesy of Lighting Research Center (LRC). Photographer: Michael Kalla.

This table illustrates the potential energy bill and bulb replacement savings that could be realized if a standard lighting package were replaced with fixtures that earned the ENERGY STAR®. Because electricity rates vary from state to state, five typical rates (cost per kilowatt-hour) are provided. On average, an ENERGY STAR Advanced Lighting Package will use 1/3 of the energy used by a standard lighting package while providing equal or more light.



The number of fixtures that will be replaced in this house: 22		ENERGY STAR® ADVANCED LIGHTING PACKAGE SAVINGS FLIP CHART									
Electricity price per kilowatt-hour (paid by the homeowner)		12.5¢		10.5¢		8.5¢		7.5¢		6.5¢	
		Standard	ENERGY STAR	Standard	ENERGY STAR	Standard	ENERGY STAR	Standard	ENERGY STAR	Standard	ENERGY STAR
Annual electricity cost comparison between standard and ENERGY STAR qualified fixtures		\$253	\$80	\$212	\$67	\$172	\$55	\$152	\$48	\$131	\$42
Total annual electricity and bulb replacement savings realized when using ENERGY STAR qualified fixtures		\$177		\$150		\$122		\$108		\$94	
Increase to price of home resulting from upgrade to ENERGY STAR qualified lighting		\$660		\$660		\$660		\$660		\$660	
Mortgage payment increase (over 12 months) resulting from upgrade to ENERGY STAR qualified fixtures		\$4		\$4		\$4		\$4		\$4	
Total annual savings after increase to mortgage is taken into account		\$130		\$102		\$75		\$61		\$47	
Total savings over 8 years		\$1,038		\$817		\$596		\$486		\$376	
Total savings over 30 Years		\$3,892		\$3,064		\$2,237		\$1,823		\$1,409	

Products that earn the ENERGY STAR prevent greenhouse gas emissions by meeting strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the U.S. Department of Energy. www.energystar.gov



COMFORT. SAVINGS.
A BRIGHTER ENVIRONMENT.

What more can you ask for?

ENERGY STAR ADVANCED LIGHTING PACKAGE (ALP) VERIFICATION



ENERGY STAR

Builder Accountability Checklist

ENERGY STAR Advanced Lighting Package (ALP) Builder Verification Form

Builder Name:		
Home Address:		
Date:	Collect the lighting fixtures at address above most Environmental Protection Agency guidelines for ALP:	
Builder Signature:	Name:	Signature:

Room Category	Specific Rooms Within Category	Number of Standard Fixtures	Number of ENERGY STAR Fixtures	% of ENERGY STAR Fixtures	Required % ENERGY STAR Fixtures
High-Use Rooms	Kitchen				
	Dining Room				
	Living Room				
	Family Room				
	Bathroom				
	Bathroom				
	Hall				
	Stairway				
	TOTAL				51%
Medium/Low-Use Rooms	Bedroom				
	Bedroom				
	Bedroom				
	Bedroom				
	Den				
	Office				
	Basement				
	Laundry				
	Closet				
	Closet				
	Garage				
	TOTAL				25%
Outdoor	Fixed to Home				
	Free-Standing				
	Flood Lighting				111%
	TOTAL				51%
Ceiling Fans	TOTAL				111%

HOW TO GET MORE INFORMATION



On the Web at:
<http://www.energystar.gov/homes>

