

# DOE Zero Energy Ready Home

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



# Sales Training

**SAM RASHKIN**

Chief Architect

Building Technologies Office

- Context
- Concepts
- Skills
- Tools
- Practice

**Level 1:** Unconsciously Incompetent

**Level 2:** Consciously Incompetent

**Level 3:** Consciously Competent

**Level 4:** Unconsciously Competent

## **Context:** Hard Trends Pointing to Zero



# ZERH Sales Training Outline

## Context: Hard Trends Pointing to Zero

Concepts	Skills	Tools	Practice
<b>Knowledge Matters</b>	Product Expertise	Building America Solution Center	Customized Field Kits for Your Home/Models

# ZERH Sales Training Outline

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<b>Knowledge Matters</b>	Product Expertise	Building America Solution Center	Customized Field Kits for Your Home/Models
<b>Words Matter</b>	Translate Jargon into Value	Building Science Translator	Power Word Fact Sheets for Your Home/ Models

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<b>Questions Matter</b>	Uncover Needs	Value Questions	Role Play with Colleagues

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<b>Clarity Matters</b>	Create Contrast	Comparison Bars/ Experiences	Point-of-Sale Comparison Bars, Experiences

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<b>Clarity Matters</b>	Create Contrast	Comparison Bars/ Experiences	Point-of-Sale Comparison Bars, Experiences
<b>Process Matters</b>	Translate Relevant Value in $\leq 45$ Seconds	5-Step Process	Role-Play with Colleagues



# Context:

# Hard Trends Pointing to Zero



*“You can predict the future accurately.*

*All you have to do is leave out the parts  
you could be wrong about.”*

*“The key... is knowing how to distinguish a  
**soft trend** from a **hard trend**...*

***It’s knowing how to recognize certainty.”***

Daniel Burrus, *“Flash Foresight”*

# Three Hard Trends

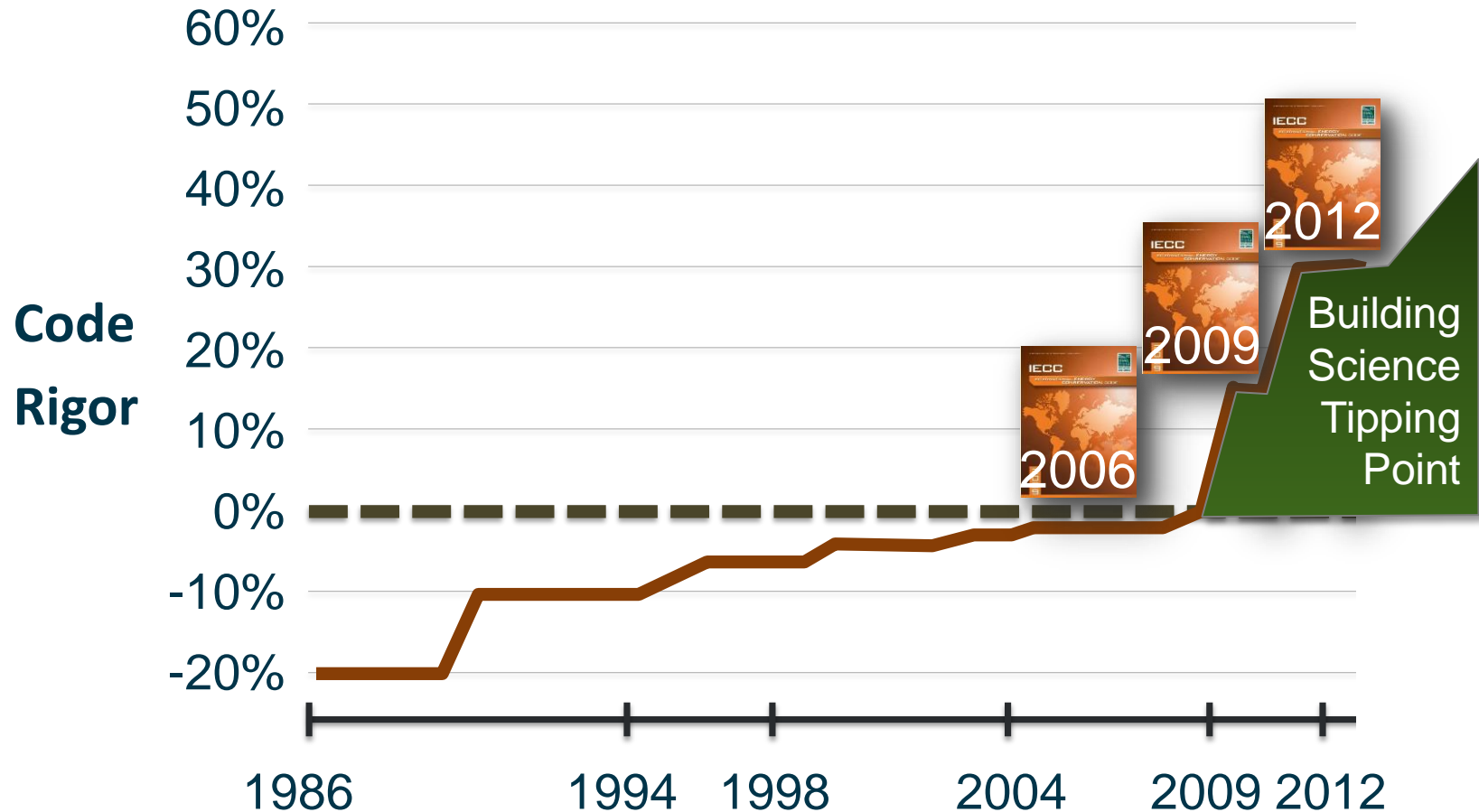


# Performance Risk Driver

Performance

Differentiation

Innovation



# Zero Energy Ready Home Product

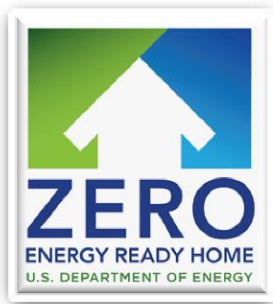


Energy Efficiency &  
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Risk

Differentiation

Innovation



Advanced Enclosure



Risk Management:

Optimized Comfort System  
Complete Water Protection  
Comprehensive IAQ System



Differentiation:

Optimized Enclosure  
Efficient Components  
Solar Ready Construction

# Zero Energy Ready Home Value

**Risk**

**Differentiation**

**Innovation**

**Lives  
Better**

Engineered  
Comfort

Healthier  
Living

**Exclusivity**

**Works  
Better**

Ultra-Low  
Utility Bills

Advanced  
Technology

**Visionary**

**Lasts  
Better**

Quality  
Construction

More  
Durability

**Smart**

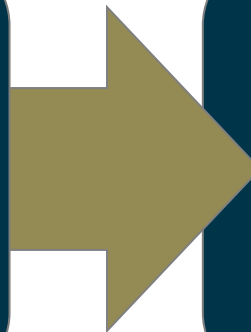
Risk

Differentiation

Innovation

Information  
Asymmetry:

**Caveat  
Emptor**



Information  
Parity:

**Caveat  
Venditor**





# DOE Marketing Zero

# Power of Zero Home Tour

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## POWER OF ZERO HOME TOUR



**New Town Builders**  
The ArtZEN Plan  
Denver, CO  
303-707-4400  
newtownbuilders.com

"NOW THAT WE'VE LIVED IN A DOE ZERO ENERGY READY HOME, WE COULDN'T IMAGINE LIVING ANYWHERE ELSE. IT'S SO QUIET AND COMFORTABLE. WE LOVE OUR NEW HOME!"  
- New Town homeowners

**ZERO**  
ENERGY READY HOME  
U.S. DEPARTMENT OF ENERGY  
KEY FEATURES

- High-performance insulation system for enhanced quiet and comfort
- Comprehensive draft protection
- Fresh air system for cleaner, healthier indoor air
- High-efficiency HVAC, appliances, and lighting to save energy and water

[Read more](#)

**2,115 ft<sup>2</sup>**  
3 Bedroom, 2 Bath  
7 Rooms  
Hard Circuits

**HERS -3**  
This home's score  
(100 = typical new code home, 120 = average existing home)

**-\$0**  
avg. monthly energy bill

**\$1,902**  
saved per year

**\$58,772**  
saved over 30-yr mortgage

**I want one!**

U.S. DEPARTMENT OF **ENERGY**

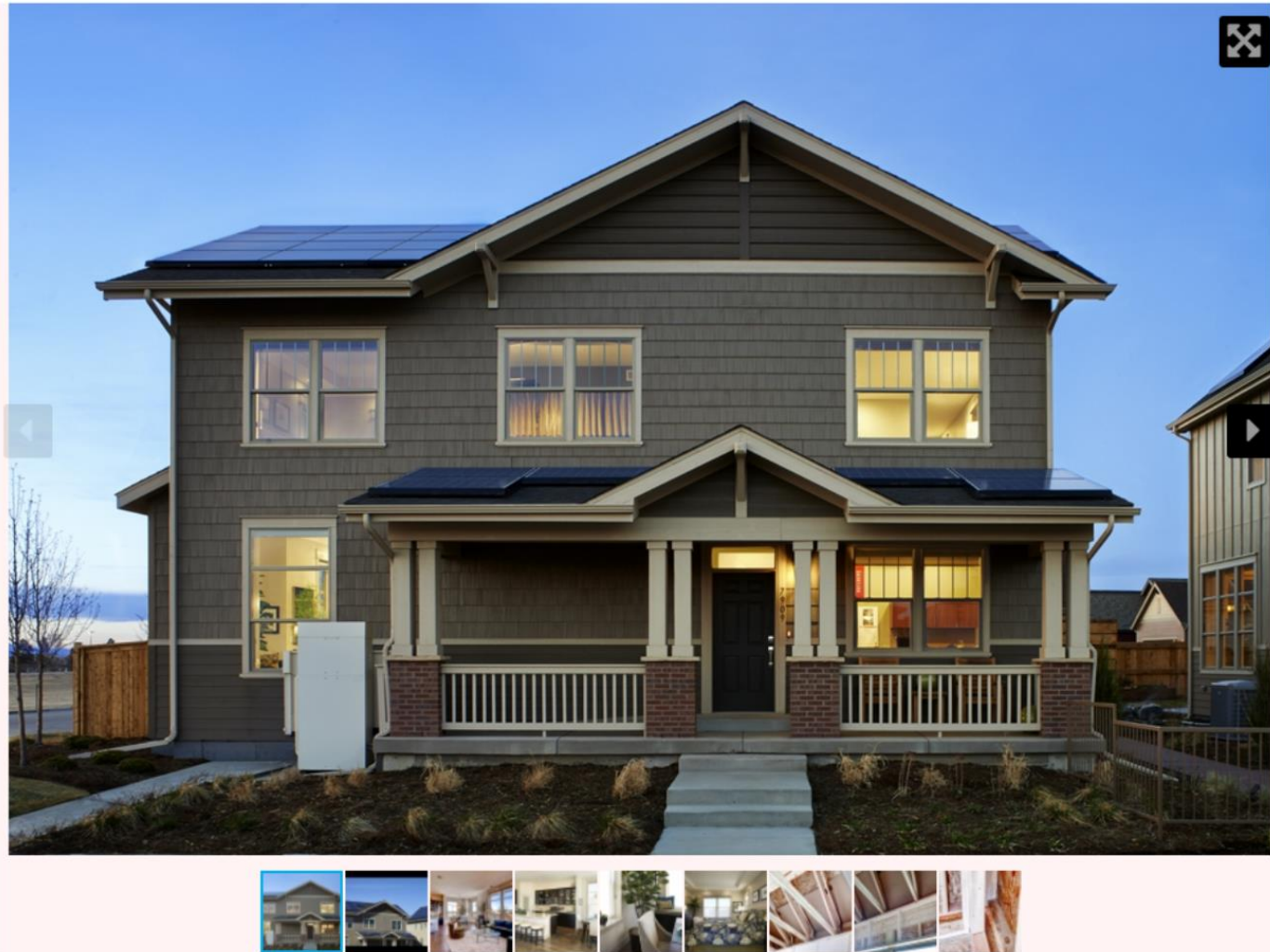
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## POWER OF ZERO HOME TOUR



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Energy Efficiency &  
Renewable Energy

## New Town Builders

The ArtiZEN Plan  
Denver, CO  
303-707-4400  
Newtownbuilders.com



### KEY FEATURES

- High-performance insulation system for enhanced quiet and comfort
- Comprehensive draft protection
- Fresh air system for cleaner, healthier indoor air
- High-efficiency HVAC, appliances, and lighting to save energy and water

[Read more.](#)

Click

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Renewable Energy

DOE ZERO ENERGY READY HOME™



## New Town Builders

The ArtiZEN Plan  
Denver, CO



### BUILDER PROFILE

New Town Builders, Denver, CO  
Bill Rectanus  
brectanus@newtownbuilders.com  
303-707-4400  
Newtownbuilders.com  
Rater: EnergyLogic, Inc., Peter Oberhammer,  
www.rnglogic.com

### FEATURED HOME/DEVELOPMENT:

#### Project Data:

- Name: The ArtiZEN Plan
- Location: Denver, CO
- Layout: 3 bedrooms, 2.5 baths, 2 floors
- Conditioned Space: 2,715 ft<sup>2</sup>
- Climate Zone: IECC SB, cold
- Completion: September 2013
- Category: Production

#### Modeled Performance Data:

- HERS Index: without PV 38, with PV -3
- Projected Annual Utility Costs: without PV \$1,414, with PV \$5
- Projected Annual Energy Cost Savings (compared to a home built to the 2009 IECC): without PV \$483, with PV \$1,902
- Builder's Added Cost Over 2009 IECC: without PV \$22,000, with PV 35,000
- Annual Energy Savings: without PV 48.5 MMBtu/yr, 2,588 kWh, 203 therms; with PV 8 MMBtu/yr, 14,476 kWh, 203 therms

New Town Builders has committed to a new way of building. The Denver area production builder hopes to convert all of its product lines to zero energy-ready construction by the end of next year.

"Our goal is to be 100% U.S. Department of Energy (DOE) Zero Energy Ready certified on all of our single-family homes," said Bill Rectanus, vice president of New Town Builders, which plans to build 150 single-family homes in the Denver metro area next year.

The builder constructed its first home to DOE's Zero Energy Ready Home program criteria in 2013 and has been gradually moving toward certification across the board since then. New Town was in the process of building 29 homes in its Solaris community when it learned about the DOE program. Most of the 29 homes in the first phase of Solaris are certified and all 34 homes in the next phase of Solaris will be certified. All of the homes come with at least a 2.75-kW photovoltaic system on the roof. In phase 2 the goal is to install 5-kW systems and homebuyers will have the option to add more PV to achieve a true net zero energy home, a home that produces as much power as it uses in a year.

In New Town's Z.E.N. (Zero Energy Now) community, which has 30 homes at or near completion and 33 more homes scheduled for a second phase, all of the homes are true zero energy. New Town is in the planning stages on two additional projects—Hyland Village, a development of 75 single-family detached homes, and Perrin's Row, a development of 26 attached homes. Both communities will be 100% DOE Zero Energy Ready.



The U.S. Department of Energy invites home builders across the country to meet the extraordinary levels of excellence and quality specified in DOE's Zero Energy Ready Home program (formerly known as Challenge Home). Every DOE Zero Energy Ready Home starts with ENERGY STAR Certified Homes Version 3.0 for an energy-efficient home built on a solid foundation of building science research. Advanced technologies are designed in to give you superior construction, durability, and comfort; healthy indoor air; high-performance HVAC, lighting, and appliances; and solar-ready components for low or no utility bills in a quality home that will last for generations to come.



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POWER OF ZERO HOME TOUR -- NEW TOWN BUILDERS FLOORPLANS

Upper Level

Optional Bedroom 4 in lieu of Loft

Bedroom 2 10'-0" x 11'-0"

Master Bath

Laundry

Loft

Bedroom 3 13'-0" x 11'-0"

Master Suite 14'-0" x 13'-0"

Living Level

2-Car Garage

Garden Shed

Family Foyer

Dining 12'-0" x 11'-0"

Great Room 13'-0" x 15'-0"

Kitchen 12'-0" x 13'-0"

Study 8'-0" x 10'-0"

Foyer

Covered Porch

Optional Finished Basement

Rec Room

Bath 3

Bedroom 5

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Living Level

More ...

2,115 ft<sup>2</sup>

3 bedroom, 2 bath

2 floors

cold climate

HERS

-3

This home's score

(100 = typical new code home  
130 = average existing home)

140

120

100

80

60

40

20

0

~\$0

avg. monthly energy bill

\$1,902

saved per year

\$58,772

saved over 30-yr mortgage

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DOE Zero Energy Ready Home: Partner Profile

New Town Builders

Partner ID:

619

Organization Type:

Builder

Main Contact:

Bill Rectanus

Address:

1553 PLATTE STREET  
DENVER, CO 80202

Primary Phone Number:

(303) 707-4400

Certified DOE Zero Energy Ready Homes (2012 - Present):

41

Certified Builders Challenge Homes (2008 - 2012):

0

Website:

[www.newtownbuilders.com](http://www.newtownbuilders.com)

All Places of Business

Commitments

DOE Zero Energy Ready Home Version 4.5.1

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Content Last Updated: 1-27-2014



**I want one!**

**Click**

2,115 ft<sup>2</sup>

3 bedroom, 2 bath  
2 floors  
cold climate

HERS

-3

This home's score

(100 = typical new code home  
130 = average existing home)

~\$0

avg. monthly energy bill

\$1,902

saved per year

\$58,772

saved over 30-yr mortgage



## Message (Call to Action):

***[Company Name] is proud to work  
with the U.S. DOE  
bringing innovation to American Homes.  
The Home of The Future is Here Today.  
Visit the DOE Power of Zero Home Tour:  
[www.energy.gov/tour-zero](http://www.energy.gov/tour-zero)***



## National Campaign Partners:

- Manufacturers
- Associations
- NGO's
- Financial Institutions



# Knowledge Matters

“When the consumer knows more than the sales person, things usually don’t go well.”

“Knowledge breeds enthusiasm  
and earns trust.”

“People buy on emotion,  
and justify with the facts.”

# World-Class Expert Guidance...

Building America Solution Center  
[BASC.energy.gov](http://BASC.energy.gov)



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- ❑ Fast, Free and Reliable Knowledge.
- ❑ Quick Access to Program Content:
  - Zero Energy Ready Home
  - ENERGY STAR Certified Homes
  - Indoor AirPLUS
  - Water Sense programs
- ❑ World-Class Expert Guidance:
  - Specify
  - Install
  - Precedence
  - Sales

## ☐ Guides – Heart of BASC

- Nine Critical Topics
- 150 Measures and Growing
- Guidance for Specifying, Installing, Precedence, Sales

## ☐ Browser

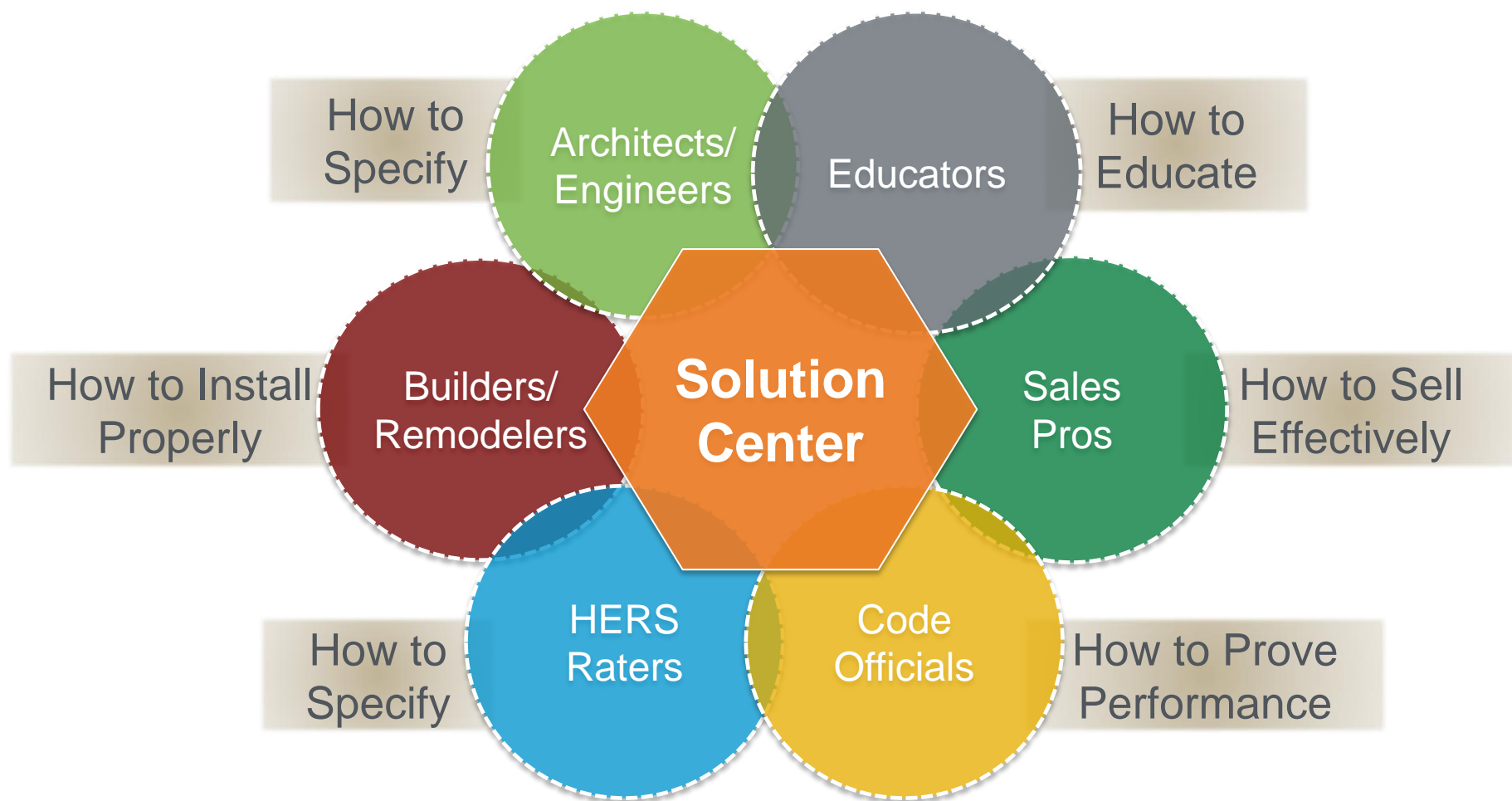
- Images
- CAD Files
- Case Studies

## ☐ Reference Material

- Building Science Principles (coming)
- Unabridged Research Reports
- 30% Solutions



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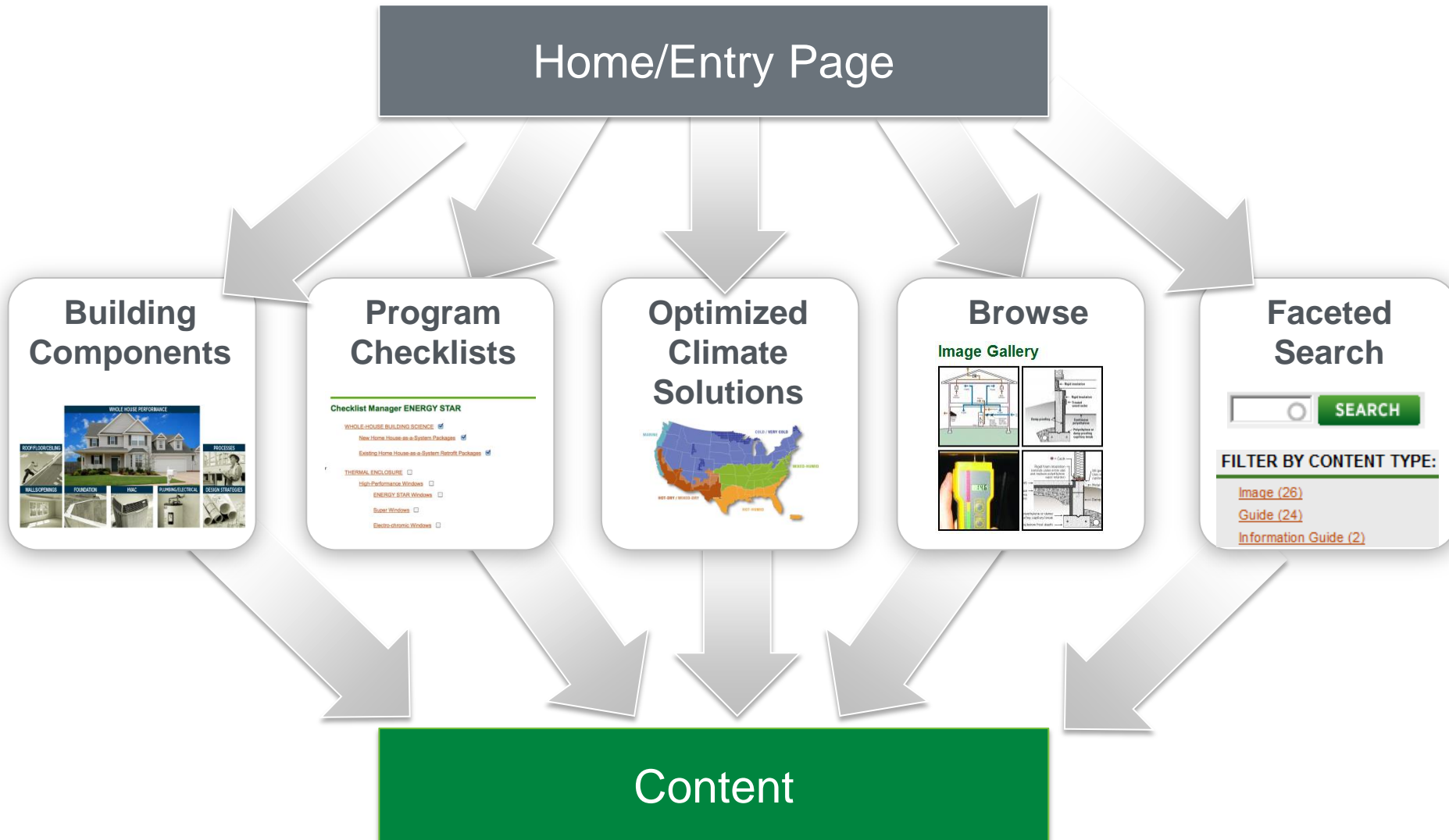


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  - ❑ 1,300+ Images
  - ❑ 115+ CAD drawings
  - ❑ 175+ Proven Performance Case Studies
  - ❑ 375+ Peer-Reviewed References and Resources
- And growing...

This presentation focuses on the Building America Solution Center features that will help you build Zero Energy Ready Homes. The Solution Center supports many programs:



# Variety of Tools to Access Content



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The Building America Solution Center provides access to expert information on hundreds of high-performance construction topics, including air sealing and insulation, HVAC components, windows, indoor air quality, and much more. Click on the links below to explore the Solution Center.



As a community driven tool, we welcome your [comments](#) on how to continuously improve the Solution Center. If you are interested in submitting content, please become a [registered user](#) and see the [criteria for submissions](#).

**THANK YOU!** Li Ling Young for providing substantive comments on window flashing leading to improvements to Solution Center content.

### RECENTLY ADDED/UPDATED GUIDES

[Ventilation Air Inlet Locations](#)

Last Updated: January 6, 2015

[Reduce Pest Intrusion](#)

Last Updated: January 5, 2015

[Air Sealing Attached Garage](#)

Last Updated: December 29, 2014

[More Guides](#) ▶

### RECENTLY ADDED CONTENT

[Right – Apply sealant around penetrations through foundation walls and along foundation wall seams](#)  
Image Posted: January, 2015

[Evaluation of Ventilation Strategies in New Construction Multifamily Buildings](#)  
Reference Posted: January, 2015

[Code Notes: Whole-House Mechanical Ventilation](#)  
Reference Posted: January, 2015



# Zero Energy Ready Homes Checklist

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## DOE Zero Energy Ready Home



The U.S. Department of Energy (DOE) Zero Energy Ready Home checklists provide links to technical guides for each measure included in the checklists for DOE's [Zero Energy Ready Home National Program Requirements](#). The numbers and titles included in the checklists follow the same order and have the same names as those in the DOE Zero Energy Ready National Program Requirements. To view programmatic footnotes, see the current program requirements.

the DOE Zero Energy Ready Home [program website](#)

The Building America Solution Center is an ever evolving resource that will be populated at this time. Checklist measures will include the latest guides, resources, and additional content.

▶ Exhibit 1: Mandatory Requirements for All Labeled Homes

▶ Exhibit 2: Target Home

▶ Exhibit 3: Benchmark Home Size

### ▼ Exhibit 1: Mandatory Requirements for All Labeled Homes

▶ 1.0 ENERGY STAR for Homes Baseline

▶ 2.0 Envelope

▼ 3.0 Duct System

[Ducts located within the home's thermal and air barrier boundary](#)

▶ 4.0 Water Efficiency

▶ 5.0 Lighting & Appliances

▶ 6.0 Indoor Air Quality

▶ 7.0 Renewable Ready

▶ Exhibit 2: Target Home

▶ Exhibit 3: Benchmark Home Size

Access full DOE Zero Energy Ready Home specifications



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### Ducts located within the home's thermal and air barrier boundary

There are several possible methods for locating the home's HVAC system within the home's thermal air barrier boundary. See the [DOE Zero Energy Ready Home National Program Requirements](#) for exceptions and alternative compliance paths.

The following Solution Center guides provide more information about these measures:

#### [Ducts Buried in Attic Insulation and Encapsulated](#)

This guide describes approaches to burying and encapsulating ducts in unconditioned attics to increase the overall R-value of duct insulation.

#### [Encapsulated Ducts](#)

Guide that illustrates how and when to encapsulate ductwork in unconditioned attics, increases the R-value of duct insulation, mitigating condensation issues and reducing air leakage.

#### [Ducts Buried in Attic Insulation](#)

This guides describes buried ducts in loose-fill attic insulation, a method that can only be used in dry climates.

#### [Unvented Attic Insulation](#)

Guide describing methods for insulating an unvented attic along the roof line.

#### [Unvented Crawlspace and Conditioned Basements](#)

Guide describing methods for insulating an unvented crawlspace or conditioned basement with rigid foam on the interior side of the walls to provide an insulated space for HVAC equipment.

#### [Application of Spray Foam Insulation Under Plywood and OSB Roof Sheathing](#)

Guide describing a method for insulating an unvented attic by spraying foam insulation along the underside of the roof deck.

Each checklist item will provide program information and direct access to guides containing specific technical information

## Ducts Buried in Attic Insulation


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[Scope](#) [Description](#) [Ensuring Success](#) [Climate](#) [Training](#) [CAD](#) [Compliance](#) [More Info.](#)

### More Info.

#### Case Studies

[Building America Top Innovations 2013 Profile: Buried and Encapsulated Ducts](#)   
**Author(s):** PNNL  
**Organization(s):** PNNL  
**Publication Date:** September, 2013  
*Case study providing information about buried and encapsulated ducts.*

[Technology Solutions Case Study: Buried and Encapsulated Ducts, Jacksonville, Florida](#)   
**Author(s):** CARB  
**Organization(s):** CARB  
**Publication Date:** November, 2013  
*Case study exploring how using buried and/or encapsulated ducts can reduce duct thermal losses in existing homes.*

#### References and Resources\*

[2008 Building Energy Efficiency Standards: Residential Compliance Manual](#)  
**Author(s):** California Energy Commission  
**Organization(s):** California Energy Commission  
**Publication Date:** January, 2008  
*Document intended to help owners, designers, builders, inspectors, examiners, and energy consultants comply with and enforce California's 2008 energy efficiency standards for low-rise residential buildings.*

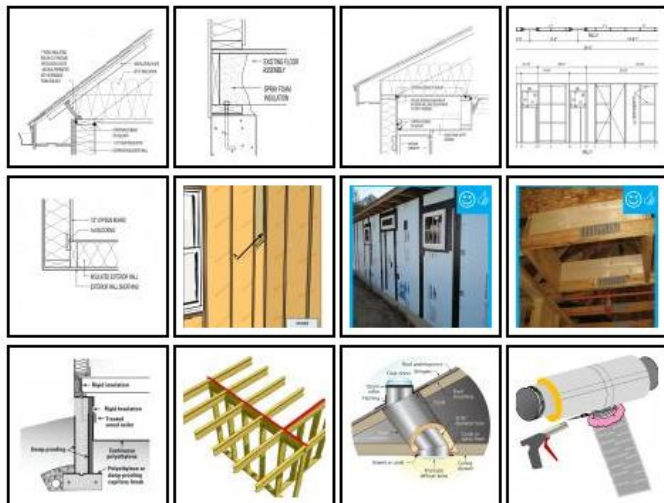
[2009 IECC—International Energy Conservation Code](#)  
**Author(s):** ICC  
**Organization(s):** ICC  
**Publication Date:** January, 2009  
*Code establishing a baseline for energy efficiency by setting performance standards for the building envelope (defined as the boundary that separates heated/cooled air from unconditioned, outside air).*

## Each Guide contains:

- Scope of work
- Description (how to install)
- Ensuring Success (safety, planning)
- Climate specific information
- Training (images, presentations, videos)
- CAD drawings
- Compliance information
- External resources and case studies



## Zero Energy Ready Home Project #1



### Guides



[Cantilevered Floor](#)



[Ceilings](#)



[Minimum Wall Studs](#)



[Heavy Membranes at Eaves in Cold Climates](#)



[Intermittent Supply/Exhaust Fan Ratings](#)



[70 Amp Dual-Pole Circuit Breaker for PV Systems](#)

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[New Construction Specs](#)

8 items

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4 items

[Indoor airPLUS](#)

2 items



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## Zero Energy Ready Home Project #1



### Guides



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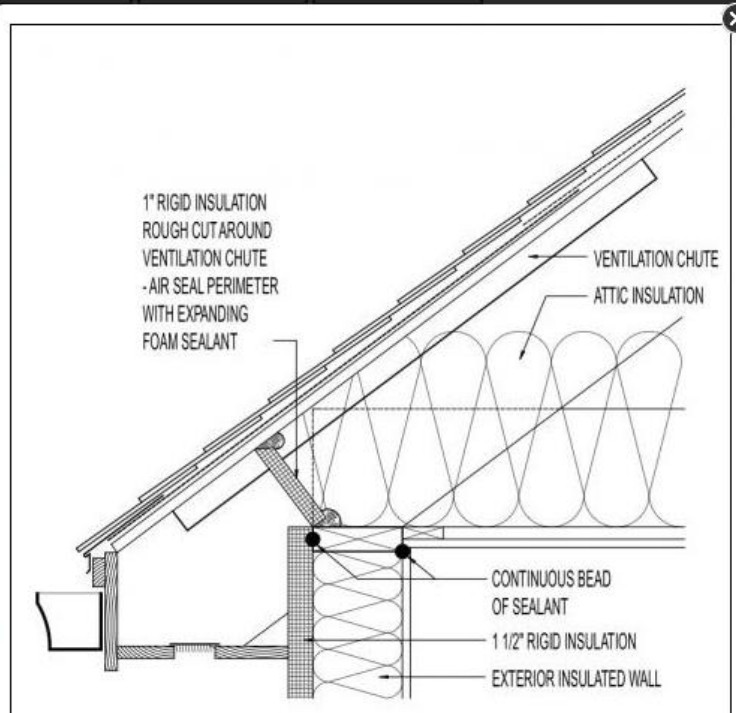
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[+ New Field Kit](#)



1 inch rigid insulation as attic eave baffle cut around manufactured vent

◀ 1 of 15 ▶

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### 70 Amp Dual-Pole Circuit Breaker for PV Systems

[Feedback](#)

 Belongs to 1 Field Kit

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21 items

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6 items

[Portland Oregon Renovation](#)

4 items

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-  New Construction Specs  
6 items
-  Portland Oregon Renovation  
4 items
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2 items

Scope Description Ensuring Success Climate Training CAD Compliance More Info.

#### Scope

Include a dedicated 70 amp dual-pole circuit breaker for a future solar photovoltaic (PV) system when building a Renewable Energy Ready Home (RERH). If possible, place the circuit breaker panel box near the future balance of system components for the PV. Space requirements and layout for solar photovoltaic system components should be taken into account early in the design process.

#### DOE Zero Energy Ready Home Notes

The U.S. Department of Energy (DOE) [Zero Energy Ready Home National Program Requirements](#) includes in Exhibit 1, Mandatory Requirements, Item 7 Renewable Ready, that all homes must meet the requirements in the Consolidated Renewable Energy Ready Home (RERH) Checklist.

The RERH Checklist requires builders to:

- Install a 70-amp dual pole circuit breaker in the electrical service panel for use by the PV system (label the service panel) (RERHPV Guide 3.4)

**Alternative:** Provide a labeled slot for a double-pole breaker in the electrical service.




Add content and access  
Field Kits anywhere  
throughout the Solution  
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Last Updated: 08/04/2014

# Optimized Climate Solutions

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**BUILDING TECHNOLOGIES OFFICE**



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for New Homes:**

**Hot- Dry Climate**

**CLIMATE ZONE MAPS**

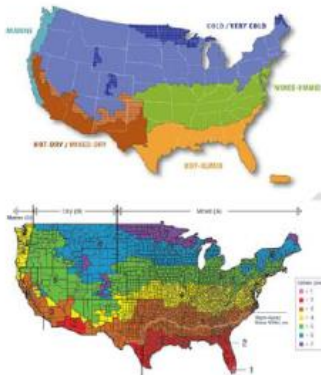


Figure 1. Map of Building America climate regions (top) for program reporting and IECC climate zones (bottom) as a reference for compliance information

**Building America**  
U.S. Department of Energy

The U.S. Department of Energy's (DOE) Building America program has been a source of innovations in residential building energy performance, durability, and affordability for nearly 20 years. This world-class research program partners with many of the top U.S. home builders, contractors, and manufacturers to bring cutting-edge solutions and resources to market.

The most recent goal of the Building America program has been to demonstrate how cost-effective strategies can reduce home energy use by more than 30% in new homes, in all climate regions, by 2015. As part of the strategy to prove that this level of performance is achievable in the market, DOE created a labeling program called the DOE Zero Energy Ready Home (ZERH) program.

Working together, Building America and the ZERH programs have created this series of optimized solutions to demonstrate how builders have achieved these high savings goals. These optimized solutions provide guidance to other builders for cost effectively meeting the 30% energy savings goal in their climate zones.

Building America's five major climate regions include: cold/very-cold, mixed-humid, hot-humid, hot-dry/mixed-dry and marine. These climate regions are outlined in Figure 1, along with a map of the IECC climate regions for comparison. This document outlines the Building America recommendations for achieving 30% in the hot-dry climate region.

The hot-dry climate performance package detailed in Table 1 uses common building practices to meet the performance criteria of 30% energy savings. Due to the tradeoff decisions that are made when building a home, there are hundreds of ways to meet the 30% performance criteria. The table lists common recommendations. To capture as many alternatives as possible, Table 1 includes an "Options" column on the far right, which provides ways to meet the various criteria listed.

- Building America and the Zero Energy Ready Home Program created recommended measure packages used by builders to meet or exceed the 2009 IECC by 30% in all climate zones.
- This content is now a standalone tool in the Solution Center.
- Each climate zone page includes direct access to proven performance case studies.
- PDF documents are also available.



## Building America Solution Center

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[ENERGY STAR Certified Homes](#)

[Zero Energy Ready Home](#)

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[Optimized Climate Solutions](#)

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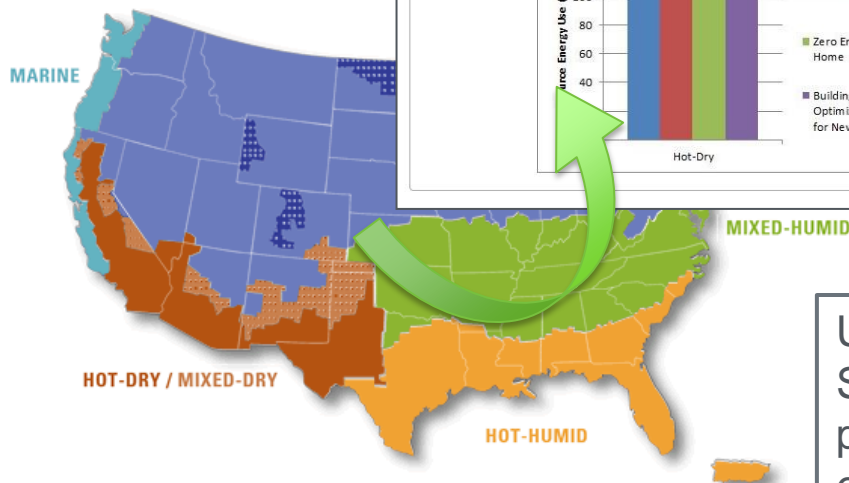
### Optimized Climate Solutions

The Building America Program, funded by the DOE, is working to achieve the next level of cost effective energy performance for new homes (approximately 30% energy savings above the 2009 International Energy Conservation Code). This package of measures meets and exceeds DOE's [Zero Energy Ready Home \(ZERH\)](#) program requirements and was selected for its performance in the following areas:

- Energy Savings
- Affordability
- Buildability
- Durability
- Healthy Indoor Environment

The high performance builders profiled in the [case studies found below](#) the interactive box show just a few examples of the hundreds of ways a builder can meet the premium levels of energy savings Building America strives for, while qualifying for the ZERH. Print the [Optimized Solution for the Hot-Dry/Mixed-Dry Climate](#).

Use the interactive map below to find climate-specific information on optimized solutions that meet or exceed the [B10 Benchmark](#). For more information about climate design, see [Regions by County](#).

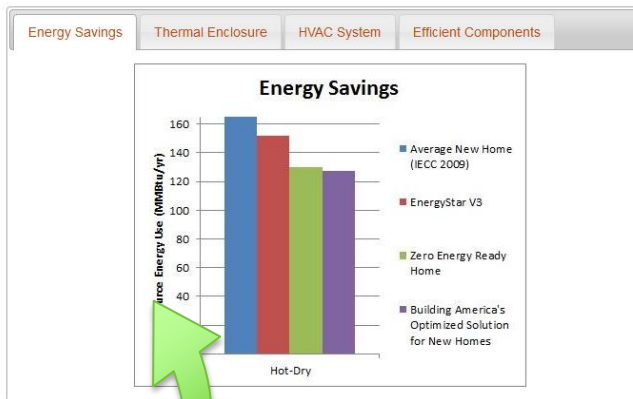


#### Hot-Dry/Mixed-Dry

This Building America Optimized Solution describes a set of building practices necessary to achieve the next step in energy performance for new homes (approximately 30% energy savings above the [B10 Benchmark](#) - roughly consistent with the 2009 International Energy Conservation Code). This package of measures meets and exceeds DOE's [Zero Energy Ready Home \(ZERH\)](#) program requirements and was selected for its performance in the following areas:

- Energy Savings
- Affordability
- Buildability
- Durability
- Healthy Indoor Environment

The high performance builders profiled in the [case studies found below](#) the interactive box show just a few examples of the hundreds of ways a builder can meet the premium levels of energy savings Building America strives for, while qualifying for the ZERH. Print the [Optimized Solution for the Hot-Dry/Mixed-Dry Climate](#).



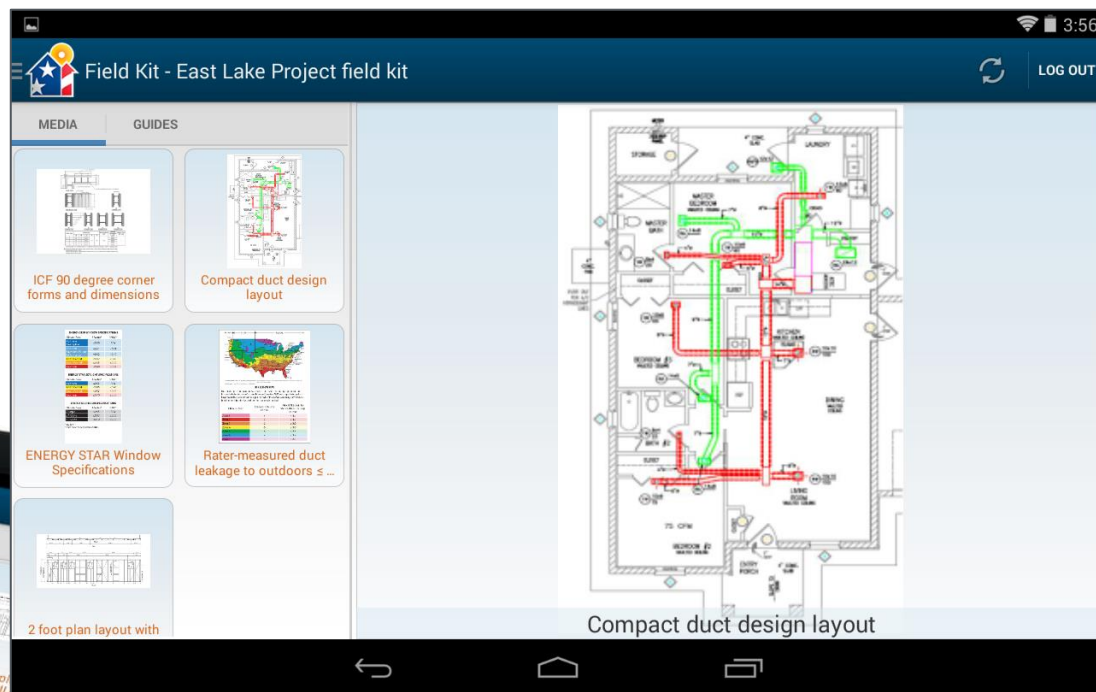
Use the new Optimized Climate Solutions tool to access building packages designed to achieve 30% energy savings by climate zone

# Solutions Mobile Application



Access your Building America Field Kits remotely using the new “Solutions” mobile application for Android and iOS. Access the iOS app through the Apple store, and use the link below for the Android app.

- Access media
- Access guides
- Access Field Kits for specific construction projects



<https://basc.energy.gov/solutions>

- ☐ Building Science Translator Sales Tool
  - New vocabulary replaces technical jargon with terms based on enhanced consumer experience [Later in 'Words Matter module]
  - Stronger consumer sales messaging
  - Customizable point-of-sale content
  - Sales content can be added to Field Kits
- ☐ Existing Home Upgrade Content
- ☐ Homepage Re-design



- Register to customize content
- Provide feedback on content
- Submit content

## User account

Create new account

Log in

Request new password

### User information

Username \*

Spaces are allowed; punctuation is not allowed except for periods, hyphens, apostrophes, and underscores.

E-mail Address \*

A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public.

### Work Experience

Profession \*

- Select a value -



Construction Type \*

New and Existing Homes  
New Homes  
Existing Homes



### Location

State \*

Alabama  
Alaska  
Arizona  
Arkansas



Climate Zone \*

All Climate Zones  
Zone 1  
Zone 2  
Zone 3



Access the Building America Solution Center at:

<http://basc.energy.gov>

Also accessible through the Building America Website at:

<http://www.buildingamerica.gov>

- Register as a BASC User.
- Compile a list of home performance measures for each specific home or model to be sold.
- Create a 'My Field Kit' for each home or model, and populate with 'BASC Guides' for each measure.
- Print Guides and compile in a binder or save them in a digital format.
- Study the package of measure Guides every week until you achieve Level 4 knowledge on your product.



# Words Matter

“Words Matter...  
they matter a lot”

**It's really difficult to sell...**

Patagonian **Toothfish**

It's much easier to sell an...

# Chilean Sea Bass



**It's difficult to rally public opinion against an...**

# Estate Tax

**It's much easier to rally public opinion against a...**

# Death Tax

**It's really difficult to sell an...**

Energy **Audit**

**It's much easier to sell an...**

Energy **Check-up**

It's really difficult to sell a...

# Transfer Grill



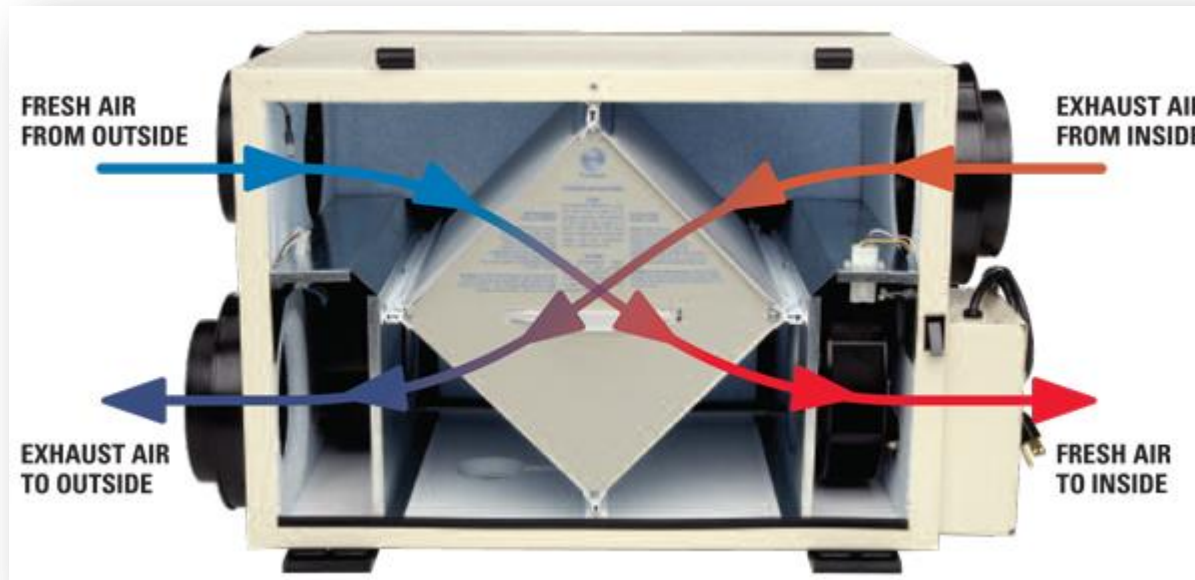
It's much easier to sell a...

# Comfort Vent



It's really difficult to sell a...

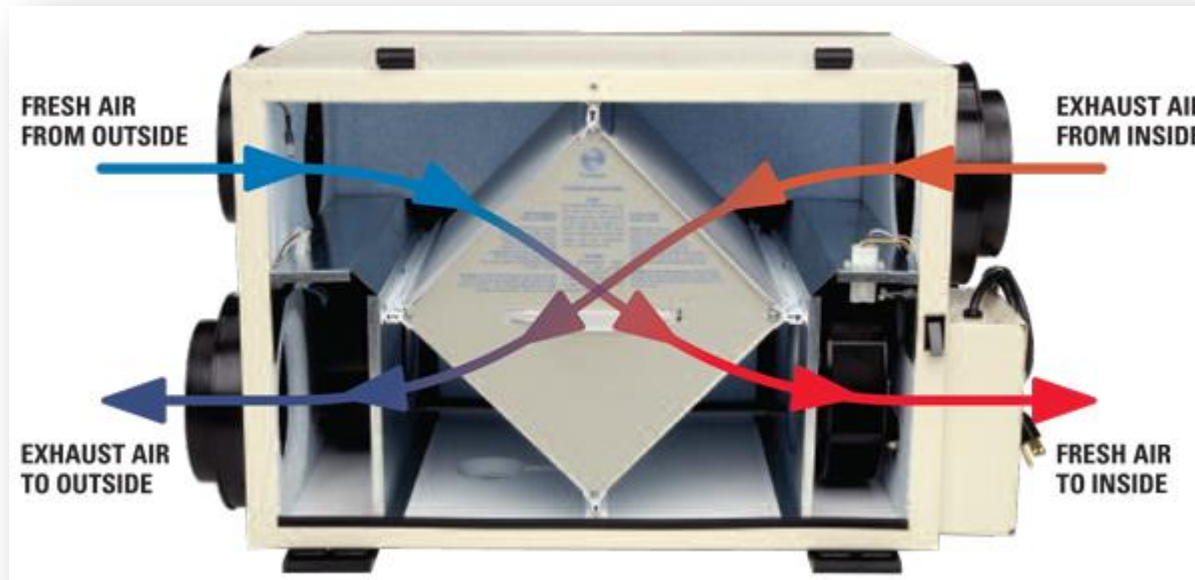
# Ventilation System





It's much easier to sell a...

# Fresh-Air System



# Power Words:

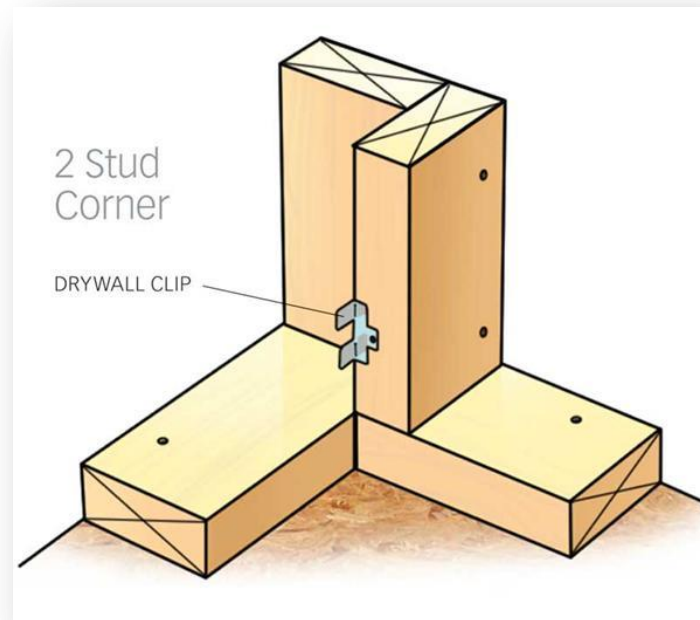
DOE CH Student  
Design Competition

Bldg. Sci. Education  
Task Force

Building Science  
Translator

**It's really difficult to sell a...**

2-Stud Corner with **Drywall Clip**



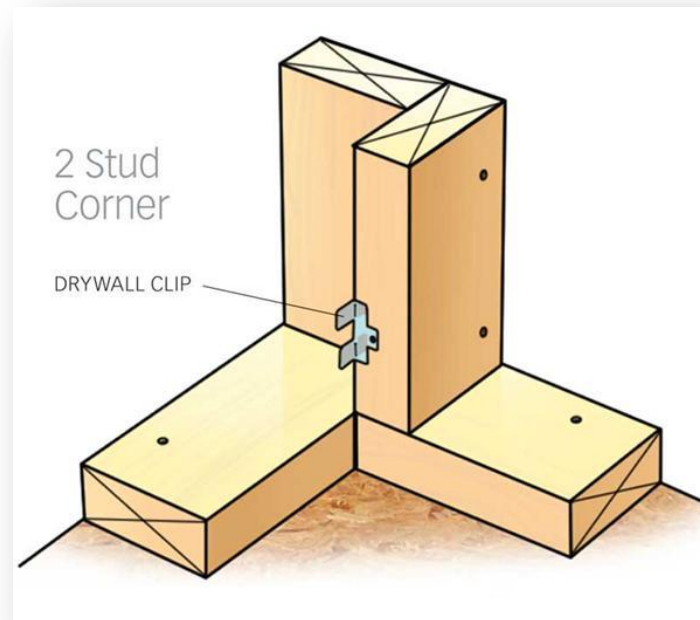
DOE CH Student  
Design Competition

Bldg. Sci. Education  
Task Force

**Building Science  
Translator**

It's much easier to sell a...

# Crack-Resistant Corner



It's hard to sell the...

# Technical Function

**It's much easier to set the...**

# Customer Experience

It's difference between...

# Technical Jargon

and a

# Language of 'Value'

## **HVAC System = Comfort System = Heating + Cooling + RH Control**

- HVAC System = Comfort System
- HVAC Equipment = Comfort Equipment
- HVAC Ducts = Comfort Delivery System
- HVAC Terminals = Comfort Outlets
- HVAC Pressure Balancing = Comfort Balancing
- HVAC Transfer Grill = Comfort Vent
- HVAC Thermostat = Comfort Control System

## **High-Performance = Enhanced Efficiency + Ensured Quality Installation**

- High-Performance Window
- High-Performance Insulation
- High-Performance Comfort System



## Enhanced Efficiency:

**High-Efficiency** =  $\sim 15\% >$  code/standard

**Ultra-Efficient** =  $\sim 50\% >$  code/standard

- High-Efficiency vs. Ultra-Efficient Insulation
- High-Efficiency vs. Ultra-Efficient Window
- High-Efficiency vs. Ultra-Efficient Refrigerator

**Ensured Quality Installation =**

**Professionally Installed =**

compliant with industry and manufacturer standards

- Professionally-Installed Insulation
- Professionally-Installed Window
- Professionally-Installed Comfort System
- Professionally-Installed Comfort Delivery System

## Alternate Terms:

Develop alternate terms for each measure that speak to multitude of consumer experiences to enhance ability to communicate value.

### Low-E Window Becomes:

- Efficiency: ***High- or Ultra-Efficient Window***
- Comfort: ***Enhanced Comfort Window***
- Healthful Environment: ***Quiet Window***
- Advanced: ***Advanced Window Technology***
- Durability: ***Sun Protection Window***

# Building Science Translator

‘Race to Zero’

Guidelines

Translator

Building America Building Science Translator – Page 1a

Building Science Measure	New Building Science Terminology	Alternate Terms					
		Lives Better		Works Better		Lasts Better	
		Engineered Comfort	Healthful Environment	Ultra-Efficient	Advanced Technology	Quality Built	Enhanced Durability
High-Performance Thermal Enclosure	High-Performance Thermal Enclosure	Enhanced Comfort Enclosure	Moisture Managed Enclosure	High-Efficiency Enclosure	Advanced Enclosure Technology	Professionally-Installed Thermal Enclosure	Low-Maintenance Enclosure
High-Performance Window System	High-Performance Window System	Enhanced Comfort Window System	Quiet Window System	High-Efficiency or Ultra-Efficient Window System	Advanced Window System Technology	Professionally-Installed Window System	Enhanced Durability Window System
High-R Window	High-Efficiency Window	Enhanced Comfort Window	Quiet Window	High-Efficiency or Ultra-Efficient Window	Advanced Window Technology		Sun Protection Window
Weather-Protected Window	Professionally-Installed Window	Draft-Free Window Installation	Moisture Managed Window Installation	Energy-Saving Window Installation	Advanced Window Installation	Professionally-Installed Window	Weather-Protected Window Installation
High-Performance Insulation System	High-Performance Insulation System	Enhanced Comfort Insulation System	Enhanced Quiet Insulation System	High-Efficiency or Ultra-Efficient Insulation System	Advanced Insulation System	Professionally-Installed Insulation System	Next-Gen Insulation System
High-R Insulation	High-Efficiency or Ultra-Efficient Insulation	Enhanced Comfort Insulation	Enhanced Quiet Insulation	High-Efficiency or Ultra-Efficient Insulation	Advanced Insulation Technology		
High-R Wall Insulation	High-Efficiency or Ultra-Efficient Wall Insulation	Enhanced Comfort Wall Insulation	Enhanced Quiet Wall Insulation	High-Efficiency or Ultra-Efficient Wall Insulation	Advanced Wall Insulation		
High-R Floor Insulation	High-Efficiency or Ultra-Efficient Floor Insulation	Enhanced Comfort Floor Insulation	Enhanced Quiet Floor Insulation	High-Efficiency or Ultra-Efficient Floor Insulation	Advanced Floor Insulation		
High-R Attic Insulation	High-Efficiency or Ultra-Efficient Attic Insulation	Enhanced Comfort Attic Insulation	Enhanced Quiet Ceiling Insulation	High-Efficiency or Ultra-Efficient Attic Insulation	Advanced Attic Insulation		
High-R Foundation Insulation	High-Efficiency or Ultra-Efficient Foundation Insulation	Enhanced Comfort Foundation Insulation	Enhanced Quiet Foundation Insulation	High-Efficiency or Ultra-Efficient Foundation Insulation	Advanced Foundation Insulation		
Insulation Quality Installation	Premium-Installed Insulation	Enhanced Comfort Insulation Installation	Enhanced Quiet Insulation Installation	Energy Saving Insulation Installation	Advanced Insulation Installation Practices	Professionally-Installed Insulation	Moisture Control Insulation Installation
Fully Aligned Air Barriers	Whole-House Draft Barrier	Whole-House Draft Barrier	Air Contaminant Barrier	Energy Saving Air Barrier	Advanced Air Barrier Technology	Professionally-Installed Draft Barrier	Moisture Control Air Barrier



**Garson Homes**  
Healthful Environment





**Fresh Air:**

- Supply Fresh Air System
- Odor and Moisture Control Fans
- High-Capture Filtration Technology

**Quiet:**

- Quiet Window Technology
- Quiet Wall Technology

**Moisture Control:**

- Dry-by-Design Construction
- Moisture Control System – Whole House
- Moisture Controlled Comfort System
- Moisture Controlled Windows
- Moisture Controlled Lower Level

**Pest Control:**

- Bug Control Barrier
- Pest Screened Home

**Outdoor Contaminant Control:**

- Contaminant Sealed Construction
- Contaminant Sealed Comfort Delivery
- Dust and Pollen Barrier
- Radon Controlled Home

**Chemical Control:**

- Formaldehyde Controlled Home
- VOC Controlled Home

**Fume Control:**

- Carbon Monoxide Controlled Equipment
- Carbon Monoxide Controlled Fireplace
- Fume Controlled Garage

# BASC Sales Tool Coming Soon

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## Transfer Grills

Power Word landing page with intro text and any other description desired. Power Word slide will display on the page, within the BASC interface. The PDF/Print option will be available , along with Field Kit functionality

[Feedback](#)

 [Belongs to 0 Field Kits](#)

 [Print this page](#)

 [PDF version](#)

### BUILDING SCIENCE-TO-SALES TRANSLATOR

## Transfer Grill = Comfort Vent



### TECHNICAL DESCRIPTION

Most new homes only have a central return. When doors are closed, conditioned bedroom air cannot flow adequately to the central return which can block air flow from the ducts. This can compromise comfort and pressurize the room so warm humid air is driven into wall assemblies for added risk of moisture damage. Transfer Grills are a through-wall vent sized to allow adequate flow of air to the hallway central return while also including baffles for sound and visual privacy.

### RELATED BUILDING SCIENCE MEASURES

- [Jump Duct](#)
- [Pressure Balancing](#)
- [HVAC Room-by-Room Return Ducts](#)

### COMFORT VENT SALES MESSAGE



Comfort vents at each bedroom ensure a continuous flow of heating and cooling even when the doors are closed. What this means to you is that you will no longer have to compromise comfort when you keep your bedroom doors closed. Wouldn't you agree bedroom doors shouldn't have to kept open to maintain comfort?

### MY FIELD KITS

[North Portland Residential](#)

12 items

[General Air Sealing Guidance](#)

4 items

[San Francisco Challenge Home Project #1](#)

12 items

 [New Field Kit](#)

# Building Science Translator Homepage

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## Building Science Translator



Housing industry leaders today are successfully building and selling high-performance new and existing homes. This includes DOE Challenge Home, ENERGY STAR for Homes, numerous green building programs, and performance-focused remodeling projects through Home Performance with ENERGY STAR contractors. However, many are frustrated that the transaction process fails to recognize the value associated with lower cost of ownership, greater comfort, improved health, ensured combustion safety, and more durability.



[Create Sales Tools](#)

▶ [Engineered Comfort](#)

▶ [Healthful Environment](#)

▶ [Ultra-Efficient](#)

▶ [Advanced Technology](#)

▶ [Quality Built](#)

▶ [Enhanced Durability](#)

### FILTER BY BUILDING SCIENCE MEASURE

[Thermal Enclosure](#)  
[High-Performance HVAC System](#)  
[Efficient Components](#)  
[Indoor Environment System](#)  
[Water Management](#)  
[Disaster Resistance](#)  
[Water Efficiency](#)  
[Passive Solar](#)  
[Solar Ready Home](#)  
[Whole-House Solutions](#)  
[Home Commissioning](#)



# Customizable Point-of-Sale Material

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Energy Efficiency &  
Renewable Energy



## Garson Homes Enhanced Durability



### Low-Maintenance Enclosure

- Enhanced Durability Window System
- Sun Protection Window Glazing
- Next-Gen Insulation System
- Moisture Control Air Barrier
- Moisture Control Insulation Blanket
- Moisture Sealed Construction

### Whole-House Water Protection

- Foundation Water Barrier System
- Anti-Clog Foundation Drain
- Wall Water Barrier System
- Window Water Barrier
- Roof Water Barrier System
- Interior Moisture Control Materials

### Low-Maintenance Comfort System

- Extended-Life Comfort System
- Moisture Control Duct Sealing
- Moisture Control Comfort Balancing

### Enhanced Durability Components

- Ultra-Low Maintenance Lighting
- Reduced Ware Clothes Washer

### Disaster Resistant Home

- Wind Resistant Home
- Hurricane Resistant Home
- Termite Detection System
- Termite Resistant Home



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Blanket  
Carrier

ion Water

Water Barrier  
Water Barrier

Delivery Ducts  
Diagnostics

Fans  
Hood

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- Get List of Measures for your Home/Model
- Find Building Science Translator Glossary on Zero Energy Ready Home web site
- Print out Glossary
- Highlight all measures from Home/Model in the Glossary
- Prepare Value Sheets Manually for Home/Model
- Study Glossary and learn 'Power Words'
- Practice replacing technical jargon with 'Power Words' every week until Level 4 skill.
- Take BASC Sales Tool training in June



# Questions Matter

“90/10 Sales Rule:

“You need to be listening 90% of the time  
and talking 10%.”

***Ask more Questions...***

***Ask: “Is it OK if I ask you a few questions so I can...”***

***Learn to Listen more...***

***Ask Follow-up Questions to Solve the Mystery...***

*Emotions of what they value most*  
*How they live in their home*

***Questions Need to be...***

- Easy to answer***
- Interesting to the customer***
- Encouraging to talk – about problems, desires***

- What do you like least living in your existing home or apartment?
- What do you like most living in your existing home or apartment?
- Why are you shopping for a new home?
- How do you envision living in your next new home?
- Do you have any concerns or special needs for any family members selecting a new home?
- Do you have any 'must-have' features?

- Practice developing questions that can uncover your homebuyers needs.
- Find a practice partner at your company who you don't know very well.
- Set up situation where partner is hypothetically looking for a new home and practice asking questions to uncover needs.
- Based on response to questions, identify up to three critical needs matched to ZERH value.
- Practice every week until Level 4 skill.



# Clarity Matters



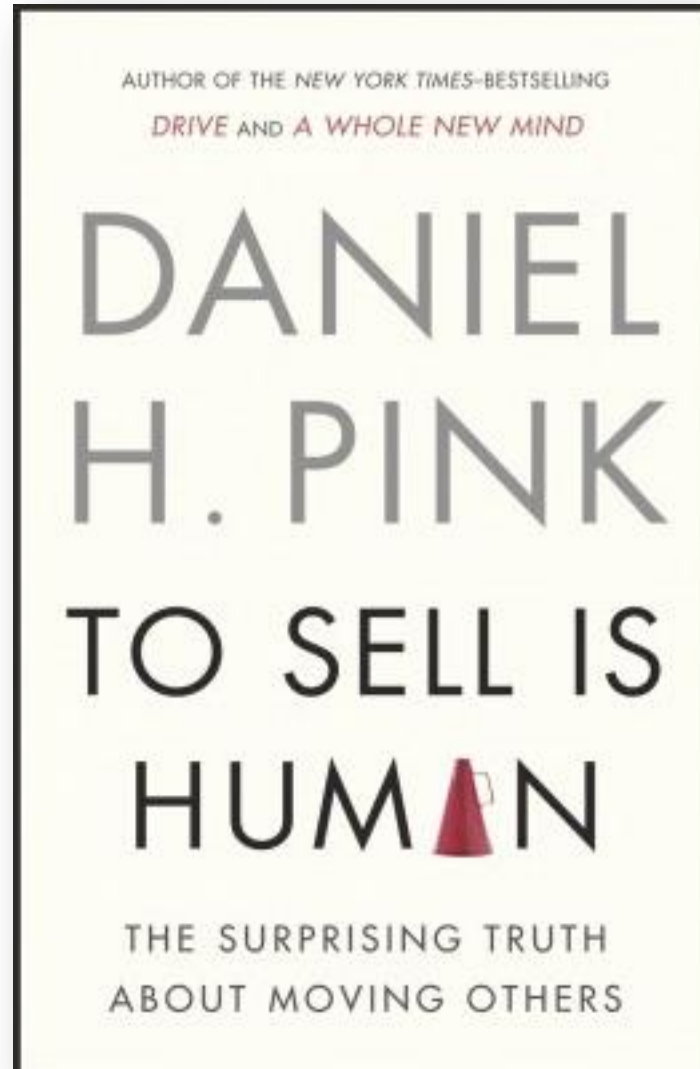
A Zero Energy Ready Home is a...  
**High-performance**  
home, so  
**energy efficient,**  
all or most  
annual energy  
consumption  
can be offset by  
renewable energy.



“A Confused Consumer Never Closes.”

“Clarity depends on contrast.”

We often understand something better  
when we see it in comparison  
with something else  
than when we see it in isolation.”



## Homes to the Power of **ZERO**



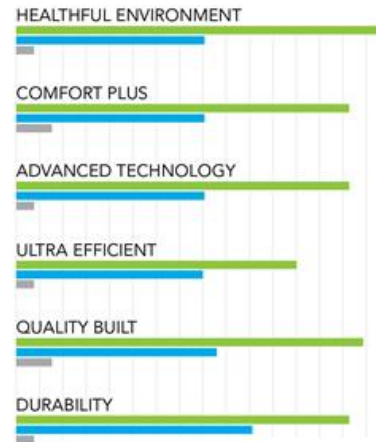
### What is the DOE Zero Energy Ready Home™ Label?

It is a Symbol of Excellence for energy savings, comfort, health, quality, and durability met by a select group of leading builders meeting U.S. Department of Energy Guidelines.

### What is a Zero Energy Ready Home?

It is a high-performance home so energy efficient, all or most annual energy consumption can be offset with renewable energy. In other words, it is the Home of the Future.

### A Symbol of Excellence



KEY

- DOE Zero Energy Ready Home
- ENERGY STAR® Certified Home
- Existing Home

This graphic comparison chart demonstrates relative performance of this DOE Zero Energy Ready Home to existing homes (built between 1990 and 2010) and ENERGY STAR Certified Homes. Actual performance may vary.

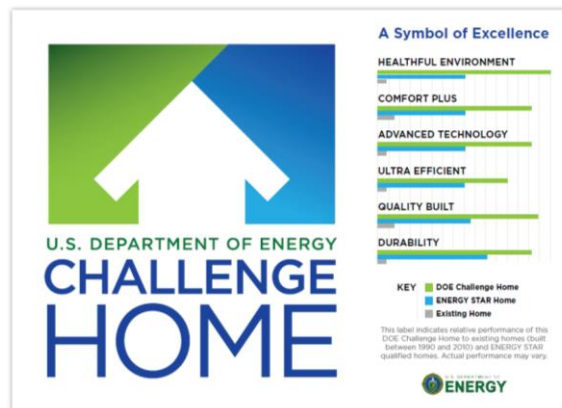


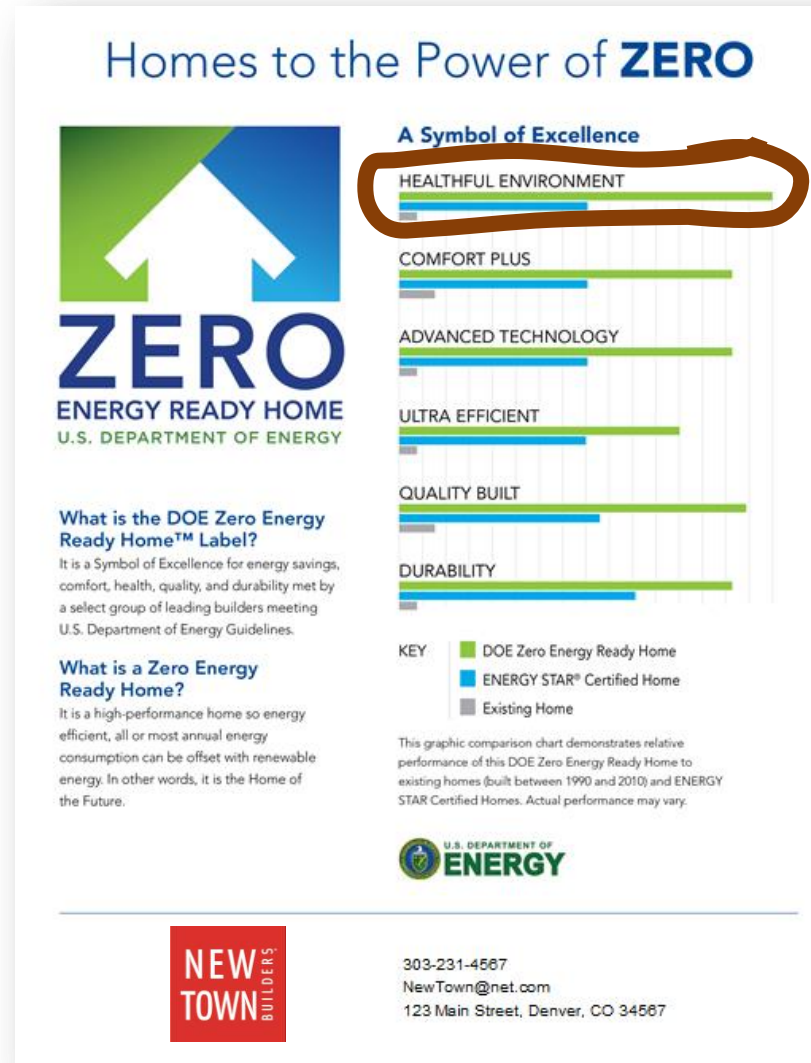
**NEW  
TOWN**  
BUILDERS

303-231-4567  
NewTown@net.com  
123 Main Street, Denver, CO 34567

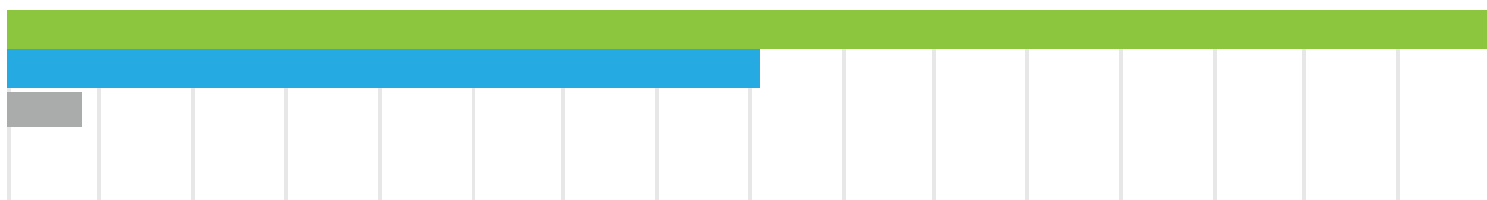
## DOE Challenge Home Label Methodology

October 2012





## HEALTHFUL ENVIRONMENT



- KEY**
- DOE Zero Energy Ready Home
  - ENERGY STAR Home
  - Existing Home

This label indicates relative performance of this DOE Zero Energy Ready Home to existing homes (built between 1990 and 2010) and ENERGY STAR qualified homes. Actual performance may vary.



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**ENERGY**

# Consistent Clarity: ZERH Brochure

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Energy Efficiency &  
Renewable Energy



Front Cover



Inside Spread



Flap

Back Cover

“People retain 10% of what they hear,  
And 90% of what they experience.”

Experiences Matter...

Experiences That Dramatize Contrast  
Matter More.



# Contrast: Price/Location vs. Zero

U.S. DEPARTMENT OF  
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Energy Efficiency &  
Renewable Energy



**My power bill is \$5.  
What's yours?**

- Heather Robbins, Garbett Homeowner

**garbettHOMES.com**  
Now you're living.

**ZERO**  
ENERGY READY HOME  
U.S. DEPARTMENT OF ENERGY

# Contrast: Your Bill vs. Zero

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

de young properties®

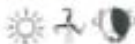


“My Cool Mom’s August Electric Bill Was **\$-57.97!**  
**What Was Yours?”**

- **Ali Domino**  
Resident of a De Young  
Net Zero **EnergySmart™** Home



PACIFIC GAS AND ELECTRIC COMPANY  
NET ENERGY MEETING ELECTRIC STATEMENT  
Service Dates July 14, 2013 to August 13, 2013  
\*Usage period from Jan. 2013 to Mar. 2013



Ali and her mother Leah are enjoying the savings and comfort of their De Young Net Zero **EnergySmart™** home. De Young homes,

# Contrast: Inhaler vs. No Inhaler

“Our daughter couldn’t breathe  
without discomfort for years.  
Within two months of moving  
into our new KB Home

**we threw  
away the  
inhaler.  
That was  
priceless!”**

Charley and Mary Jones,  
KB homeowner





# Contrast: \$0 Savings vs. \$90+K

U.S. DEPARTMENT OF  
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Energy Efficiency &  
Renewable Energy

The Power of  
**ZERO**  
Energy Expenses  
means **\$260**  
in your pocket  
every month

MAYBE  
SAVE FOR  
COLLEGE  
TUITION

Can a home really  
save you money?

Think you'll spend 20  
years in your next home?  
Think what you could do  
with the savings...

Are you concerned about  
the cost of maintaining  
multiple vehicles?

Means **\$93,600**  
saved over the  
life of your mortgage

Designed for TOMORROW,  
affordable NOW.

# Contrast: Air Flow vs. No Air Flow



# Contrast: New vs. Obsolescence





# Contrast: Excessive Noise vs. Quiet

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# Contrast: Indoor vs. Outdoor Comfort

U.S. DEPARTMENT OF  
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**Them**

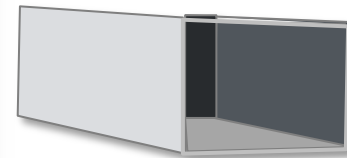
**vs.**



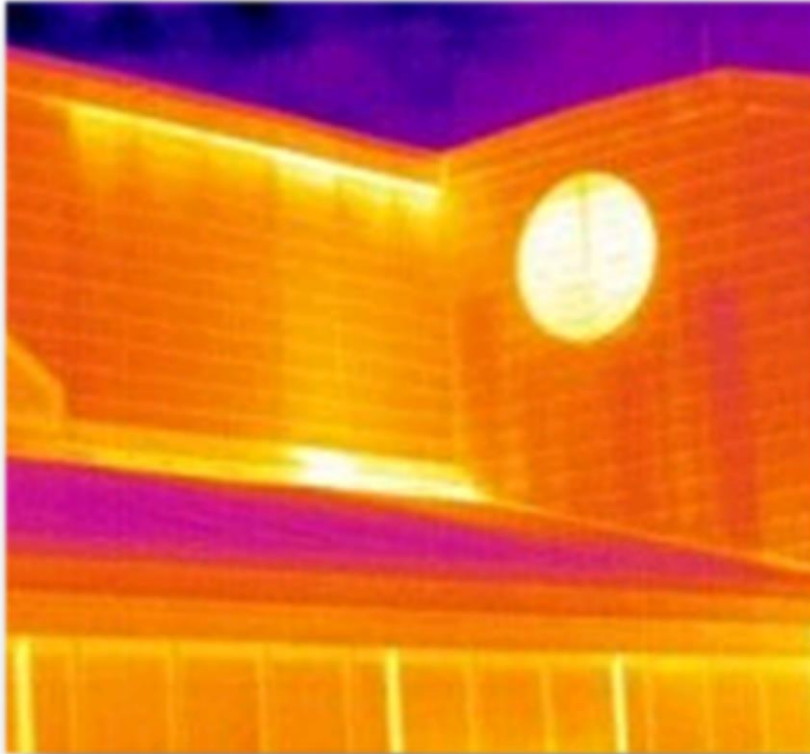
**Us**



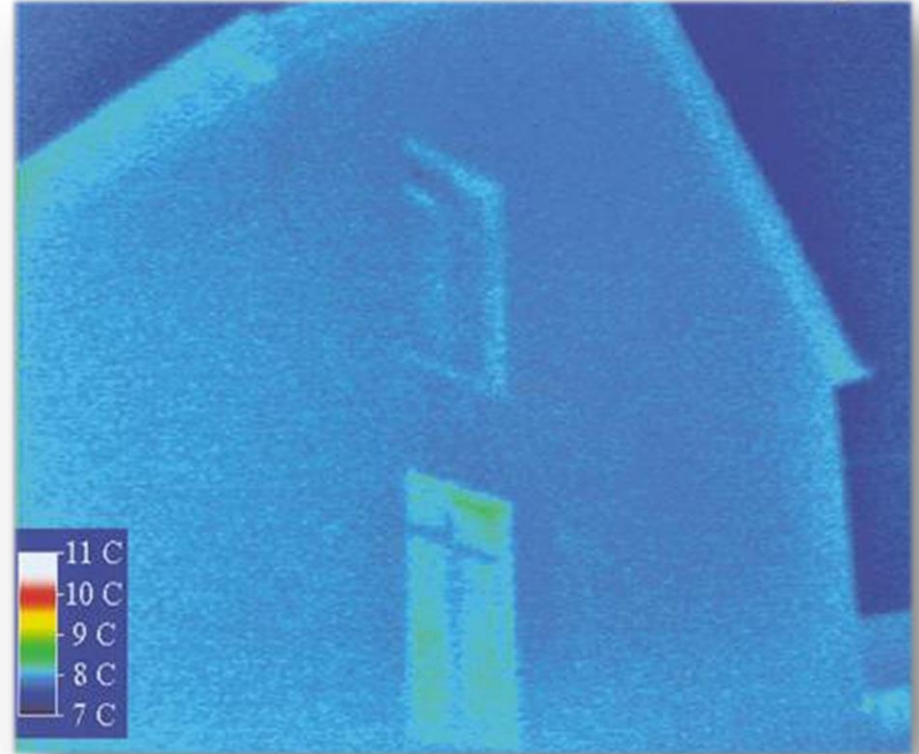
# Contrast: Cooling Duct in Oven



# Contrast: Excessive vs. No Defects



Used Homes



Our New Homes

# Contrast: Good vs. Bad Protection



Brand 'X'  
Water Protection



Advanced  
Water Protection



# Contrast: Dry vs. Wet Basement



# Contrast: Ours vs. Them



## Garson Homes Enhanced Durability



### Low-Maintenance Enclosure

- Enhanced Durability Window System
- Sun Protection Window Glazing
- Next-Gen Insulation System
- Moisture Control Air Barrier
- Moisture Control Insulation Blanket
- Moisture Sealed Construction

### Whole-House Water Protection

- Foundation Water Barrier System
- Anti-Clog Foundation Drain
- Wall Water Barrier System
- Window Water Barrier
- Roof Water Barrier System
- Interior Moisture Control Materials

### Low-Maintenance Comfort System

- Extended-Life Comfort System
- Moisture Control Duct Sealing
- Moisture Control Comfort Balancing

### Enhanced Durability Components

- Ultra-Low Maintenance Lighting
- Reduced Ware Clothes Washer

### Disaster Resistant Home

- Wind Resistant Home
- Hurricane Resistant Home
- Termite Detection System
- Termite Resistant Home



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Carrier

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Water Barrier  
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- Prepare ZERH point-of-sale fact sheet for your home or models.
- Practice presenting comparison bars clearly and succinctly with colleague, family or friends every week until Level 4 skill.
- Develop POS 'experiences' for key measures.
- Practice presenting experiences every week until Level 4 skill.



# Process Matters

“When there’s a performance problem,  
it’s typically not because people don’t fail...  
it’s because process fails.”



# 5-Step, 45 Second Sales Process

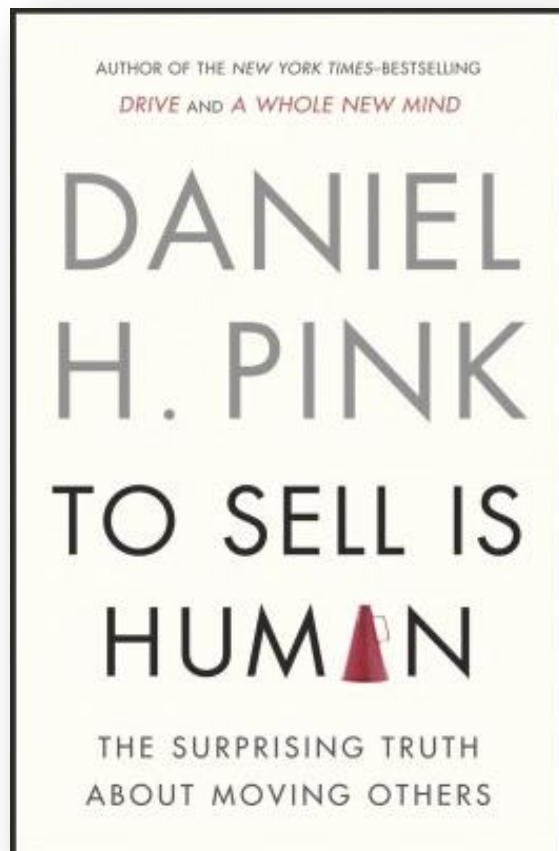


How many features/benefits can the typical buyer hear?

- Find a practice partner at your company.
- Set up practice where partner is hypothetically looking for a new home and practice asking questions to uncover needs.
- Based on response to questions, identify three to five critical needs matched to ZERH value.
- Deliver five-step, 45-second sales presentation using power words, knowledge and experiences.
- Make sure to finish with 'mini-close' question.
- Practice every week until Level 4 skill.



# The Future of Sales



Two questions at the core of genuine service:

1. If the person you're selling to agrees to buy, will his or her life improve?
2. When your interaction is over, will the world be a better place than when you began?

# Thank You



**For More Information:**

[www.buildings.energy.gov/zero/](http://www.buildings.energy.gov/zero/)

**e-mail Contact:**

[doechallengehome@newportpartnersllc.com](mailto:doechallengehome@newportpartnersllc.com)