

Market Perception and Valuation of ZNE/High Performance Homes

Presented by
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and
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9th Annual North American
Passive House conference 2014

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● One Sky Homes, image Treve Johnson

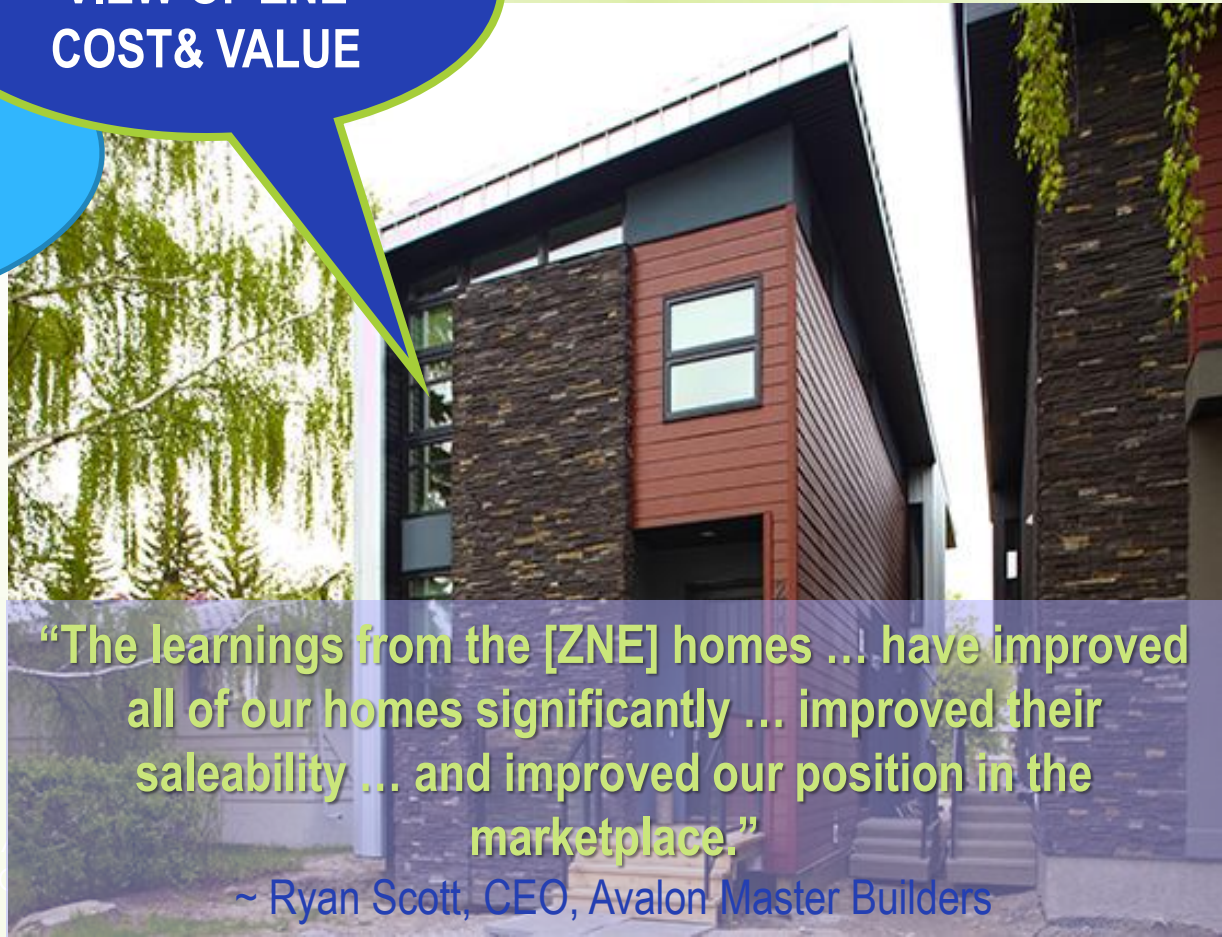
Market Perception & Valuation ... through the eyes of the beholder

**THE COMMON
MESSAGE ABOUT ZNE**
(presumes no fundamental
design changes)

**AN ALTERNATE
VIEW OF ZNE
COST & VALUE**

**There is a \$40k -
\$70k cost premium
for ZNE homes.**

~ Navigant PIER study, 2008




**“The learnings from the [ZNE] homes ... have improved
all of our homes significantly ... improved their
saleability ... and improved our position in the
marketplace.”**

~ Ryan Scott, CEO, Avalon Master Builders

Market Perception & Valuation ... through the eyes of the beholder

The ABC GREEN HOME ZNE DEMONSTRATION

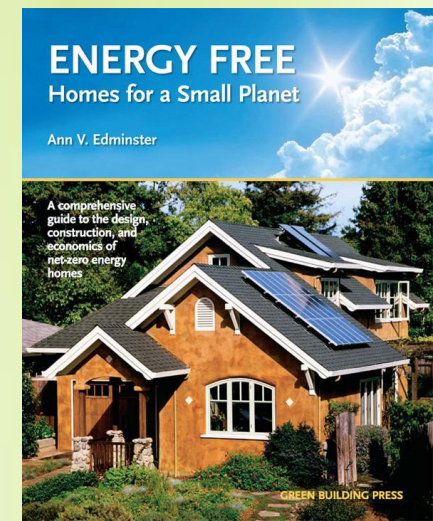


“The ABC Green Home uses the same means and methods that any of today’s home builders would ... The simple footprint and roof form keep it affordable, [and] with the simple architectural detailing the design can be quite aesthetically appealing to the broadest buyer market.”

~ Manny Gonzales, KTG Architecture & Planning

ZNE Gaining Traction in CA & Beyond

- **Cities:** ZNE ordinances & programs in Lancaster and Sebastopol, CA; Cambridge, MA; FortZED, CO; and more
- **States:** statewide ZNE initiatives in CA, CO, MA
- **Feds:** US DOE renamed Challenge Home program to “Zero Energy Ready” in April 2014
- **International:** ZNE projects and programs in Europe, China, South America
- **Books:** 1 ZNE title in 2009, now 6



ZNE Gaining Traction in CA & Beyond

Recent ZNE conferences – 7 in 10 months:

- Building Energy & Sustainability Symposium, Zero Net Energy, June 2013
- Zero Net Energy + Zero Net Water Forum, San Diego, September 2013
- NBI Getting to Zero Forum, September 2013
- Net Zero North American Leadership Summit, October 2013
- Net Positive | Living Future, January 2014
- Rinker Net Zero Built Environment conference, March 2014
- Building Carbon Zero California, Santa Cruz, March 2014

ZNE on the Horizon

Upcoming conferences:

- Net Positive | Living Future, January 2015, San Francisco
- NBI Getting to Zero Forum, February 2015, Washington, DC
- **Net Zero North American Leadership Summit, March 2015, Boston**



**JOIN
ACTIVATION
TEAMS NOW!**
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<http://netzeroenergycoalition.com/summit/>

CA ZNE Market Study in progress



Cottle House

Source: GBC Magazine



ABC Green Home 2.0

Source: GBC Magazine



De Young Zero Net Energy Home

Source: De Young properties

Residential Zero Net Energy New Construction Market Characterization

Study Goal & Objectives

Understand opportunities to overcome barriers to ZNE new home construction by:

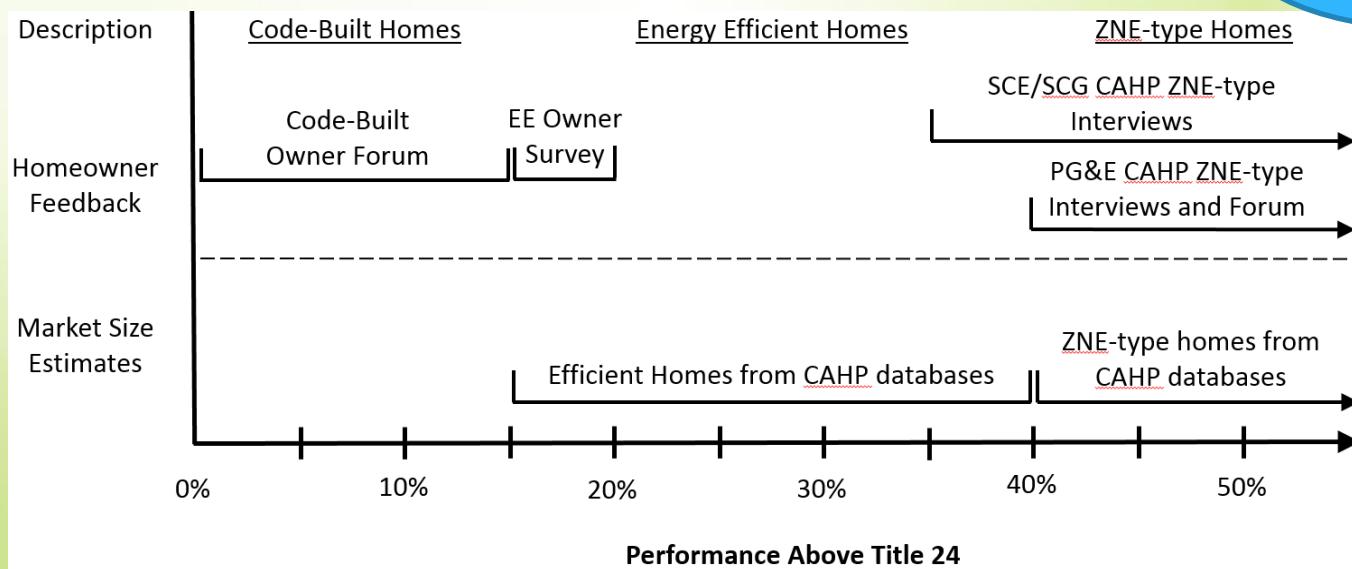
- Estimating ZNE market size
- Exploring trends
- Assessing residential rating systems for ZNE
- Investigating ZNE financing opportunities
- Identifying barriers, drivers, and opportunities for key ZNE market actors

ZNE-type Homes

Study Scope & Definitions

- **ZNE** – projected to produce as much energy as it consumes in 1 year
- **Near-ZNE** – very efficient, has renewables, but does not achieve ZNE
- **ZNE-ready** – very efficient, could reach ZNE if renewables were added
- **Energy-efficient** – 15-40% above CA Title 24

BASED ON
MODELING



Locations of ZNE-type Homes in CA



Data Collection Method

Existing information compiled from:

- Literature
- ZNE practitioners
- Utility program managers

Feedback from market actors:

- Builders
- Homeowners
 - ZNE-type homes
 - Energy-efficient homes
 - Code-built homes
- Lenders
- Appraisers
- Planners
- Building officials
- CEC & CPUC staff



Perceived Supply & Demand

Appraisers & Lenders say *low demand*

Home Owners say *low supply*

ZNE-type Home Owners are *willing to pay more*
for another ZNE than they expect to sell for

Premium
they expect
to earn
at sale

Premium willing to pay

Walnut Home

Energy Savings

57%

\$900/yr

DOM

5 days

SOLD!

8.7%



Missed Opportunity

Energy Savings

47%

\$600/yr

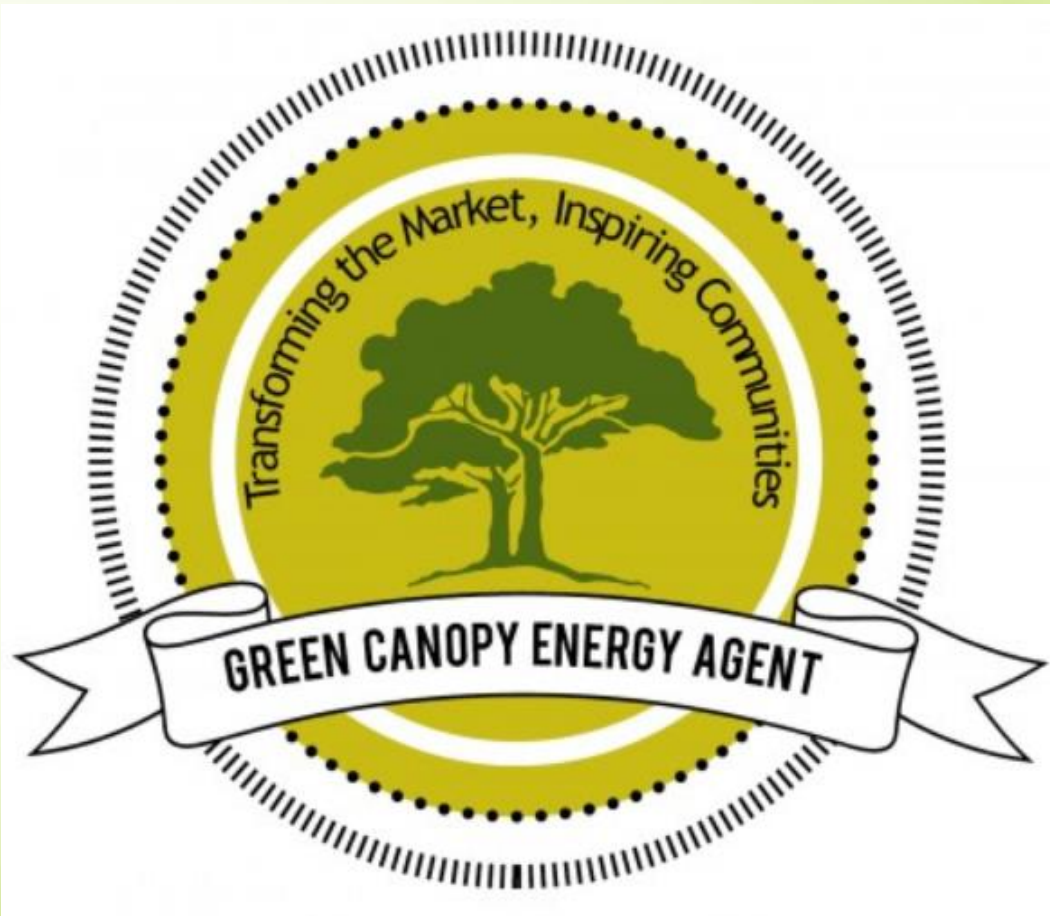
E upgrades
*not
marketed*

Sold:
NO
premium

8.5%

Appraised Premium





Price + \$8%

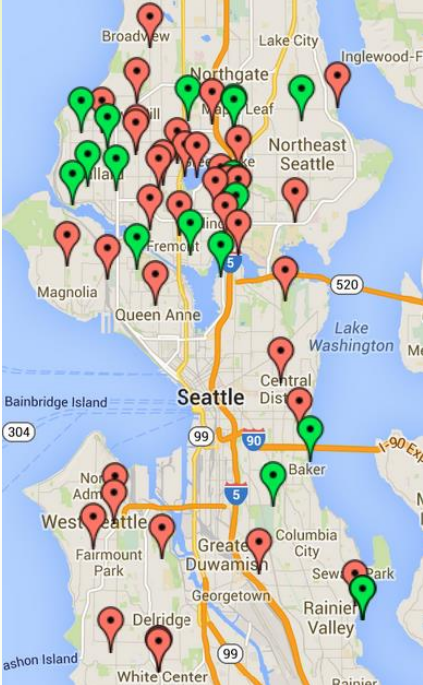
+5% per SF

70% faster

> 350 sales

Agents of change & transformation

Seattle



After

Before

If surveys say 89%

(EE is “very important” when buying next home)

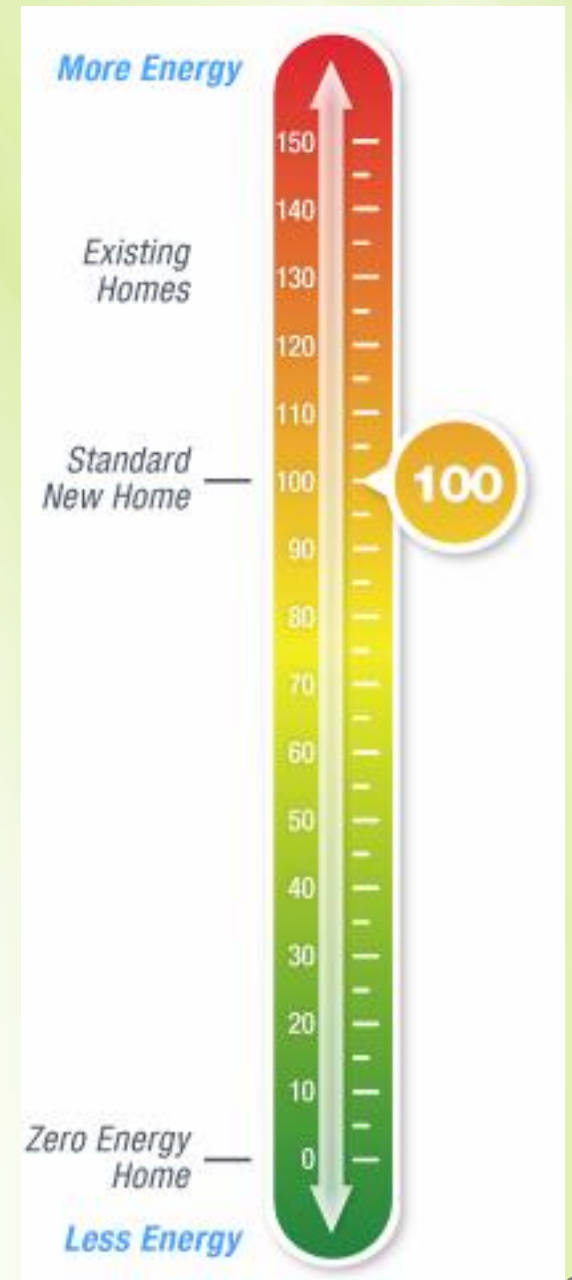
Why not selling
more?

HERS

Home
Energy
Rating
System

New Homes

Today **50+%**



Supply low: Existing High Performance Homes





RE Pros Need Green Training



Yikes!

Need Data

Sold Sales Data
Discoverable in MLS



A Team

More may exist but goes unreported

Happy Home Owners!



Don't often sell

NOT For Sale



Testimonies

Best proof of your value

1... 3... 5 years...

Referrals get
stronger over time!



Happy!!!





Reduced
asthmatic
symptoms



Indoor Air Quality
“Most Exciting Benefit!”

Polaris Drive Grass Valley

<http://youtu.be/BEtQtz3Bvbo>



Valuation & High Performance

Energy Efficiency

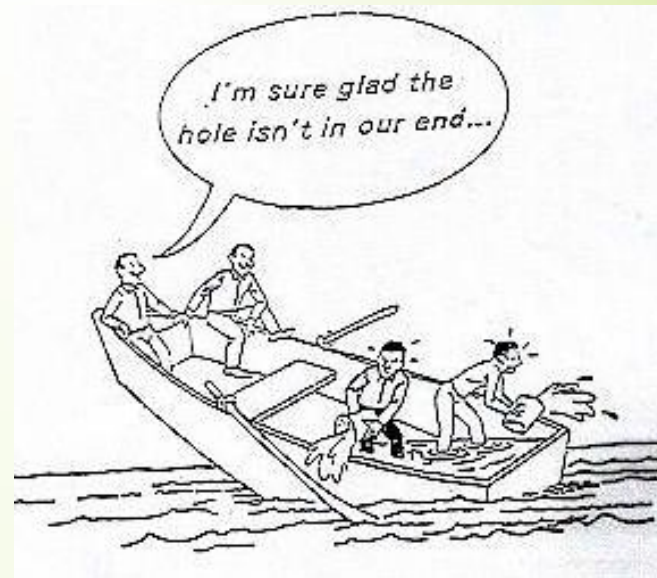
- Operating costs
Measurable, more easily monetized

Beyond Energy Benefits

- Indoor Air Quality
- Durability
- Comfort
- Aesthetics



Integrated Realization of Fair Market Value



Who's on the team?

Engage



HP
Pros

RE
Pros

3rd Party

Home Owners

Appraisers

Report the market



Appraisers

Competency

We can
be involved

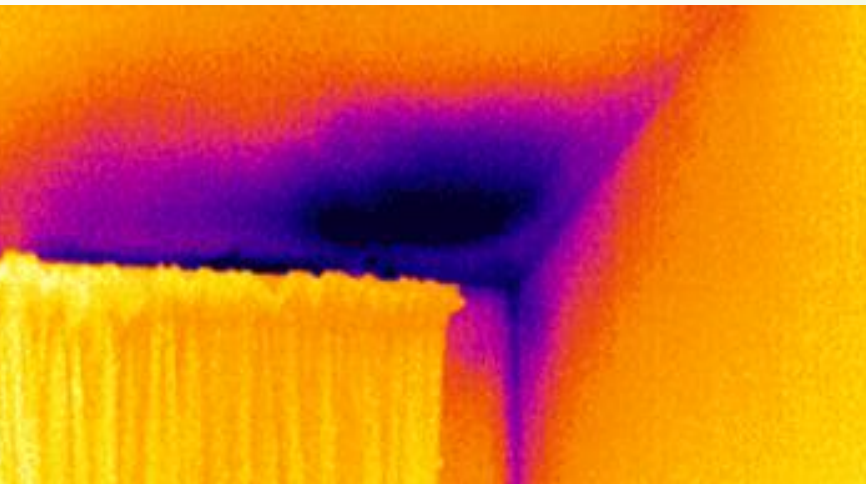


Most essential Q

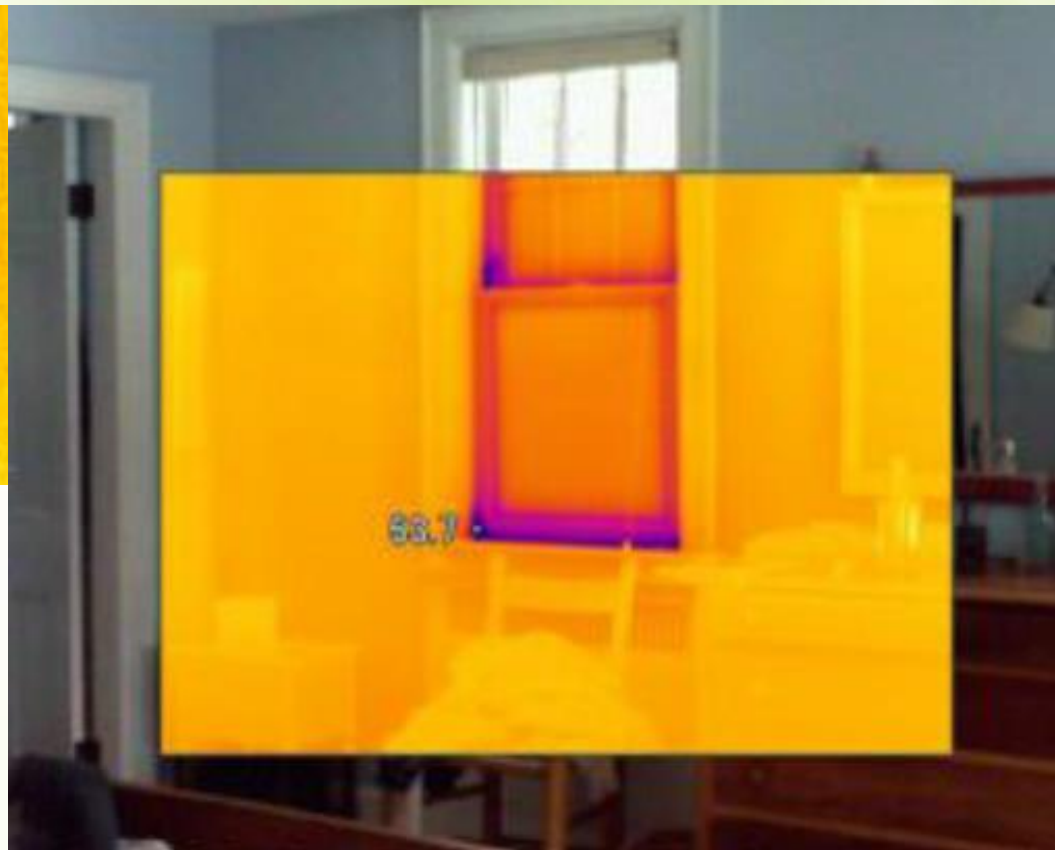


Compared to what?

Make Invisible Visible



Contrast
for Clarity



Market Value “...buyers and sellers be willing, able & *knowledgeable*...”



Disclosure: Key Driver

Utility Records

- AB1103 CRE Energy disclosure law
- Chicago requires utility costs in MLS

HERS

Work Scope Report

Make
intangible
tangible

ENERGY COSTS

All numbers are annual

	PRE	POST
Energy Cost Source		<input type="text"/>
Annual Energy Cost	\$ <input type="text"/>	\$ <input type="text"/>
Improvement		<input type="text"/> %
\$/SF Htg & Cool		\$ <input type="text"/>
Total Therms	<input type="text"/> therms	<input type="text"/> therms
Total kWh site	<input type="text"/> kWh	<input type="text"/> kWh
Total kWh source	<input type="text"/> kWh	<input type="text"/> kWh

Btus

Work Scope Report

Make
intangible
tangible

ENCLOSURE

Air Leakage

CFM50

Improvement

ACH50

Air Seal

Insulation

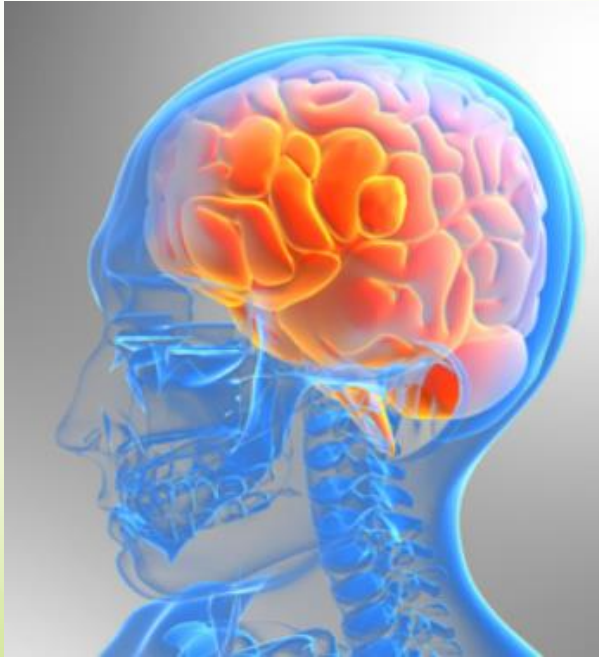
Attic Floor R

Attic Floor Type

Attic Vaulted R

- Attic
- Walls
- Floor

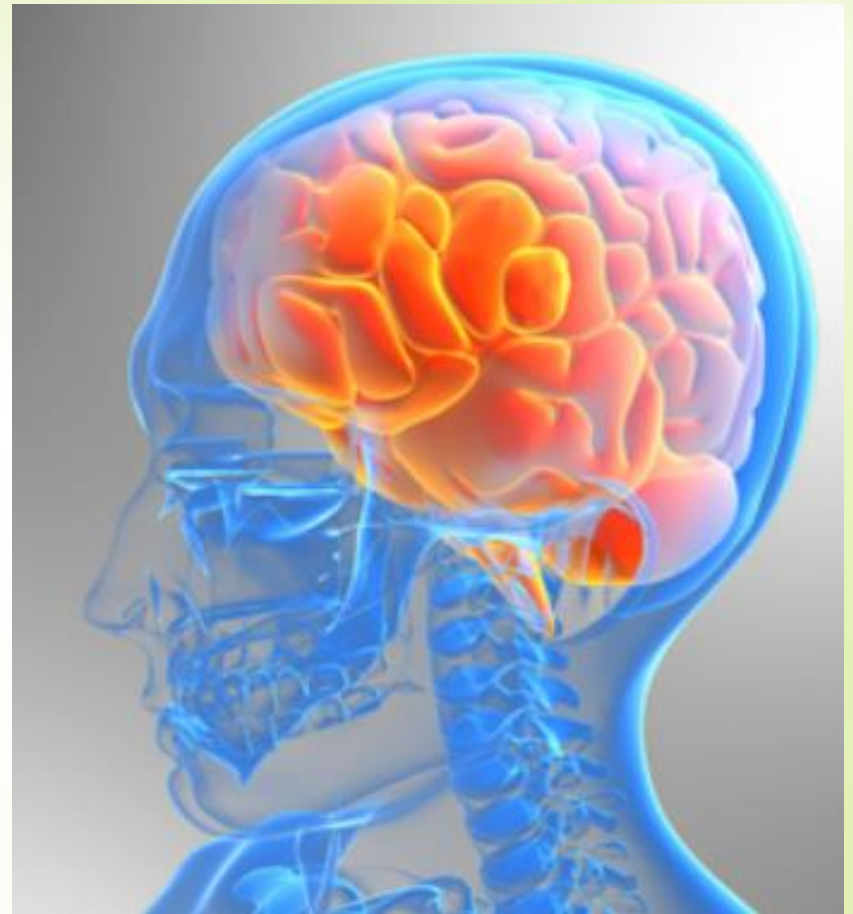
Consumers: Economically Rational?



3 Brains

Whole human

- Emotional
- Rational
- Visual



Thank you for attending!



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