

Valuing, Financing & Marketing High-Performance Homes

Marketing, Economic Benefits, Opportunities, Part 1



Green Economics Webinar Series, January 19, 2023

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GEM Deliverables

Problems We Solve:

- Education – providing high-performance lending solutions for a qualified workforce-appraisers, lenders, Realtors
- Green appraisal valuations, premium values translate to improved interest rates
- Incentivized financing, placing high-performance buyers-owners with qualified lenders

Green Appraisals

National Appraisal Panel, Quantified Green Premium Value

Green Lending

Access to national mortgage lending for high-performance home loans

Marketing as Education

Training for builder sales and lending teams

Quality Assurance, Risk Performance

ESG, Data Analysis-Reporting

Federal Housing Finance Agency

*FHFA New Loan Limits: 2023

Conventional –
Fannie Mae, Freddie Mac

3% Down Payments

Loan Limit - \$726,200

Jumbos- Non-Agency –
Banks, Credit Unions, Private
Charter Lending

Loan amounts over
\$726,200 up to \$3m



FHA – \$472,030 – \$1,089,300*

3.5% down payments

**increases for high-cost areas*



VA - \$1,000,000 - 100% Financing

- VA Funding Fee 2.5% - Added to loan amt.
- VA exemptions for disabled vets



USDA - \$336,500 - \$776,600 –
100% Financing

Inflation Reduction Act – Builder, **Owner Incentives**

IRA 45L - Builder Tax Credit

\$2000 Energy Star

\$5000 DOE NZ Ready

IRA 203C - Individual Rebates, Tax Credits

Rebates, Building Envelope

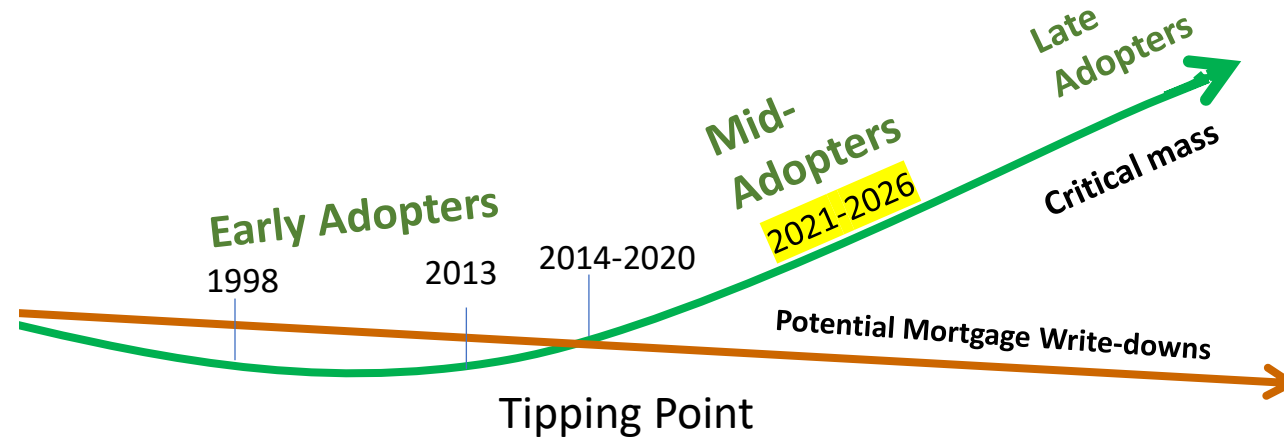
20% Below Regional Median Income Limit up to \$14k

- Median Income up to \$7k

Above Median Income Limit - \$2000

30% Solar and EV Tax Credit

Brown Discount & Green Premium Appraisal Valuations



Green Premium —

- Demand for green
- Sufficient supply of green bldgs.
- High-Quality Asset
- Premium Value Assignment
- Building Code Mandates

Brown Discount —

- High DM, (HDM) energy operating costs*
- Low- Quality Asset, inferior
- Declining regional markets
- Life Cycle - Obsolescence

*Brown Discount deferred Maintenance (DM)
C3-C6

**Brown Premiums –
reflected in condition and
age of the property
3%-8% Adjustments**

*Green Premium FNMAE allows up to
15% Energy Efficient Line Item
Adjustment

Green Premium Value
5%-11%
8% Average

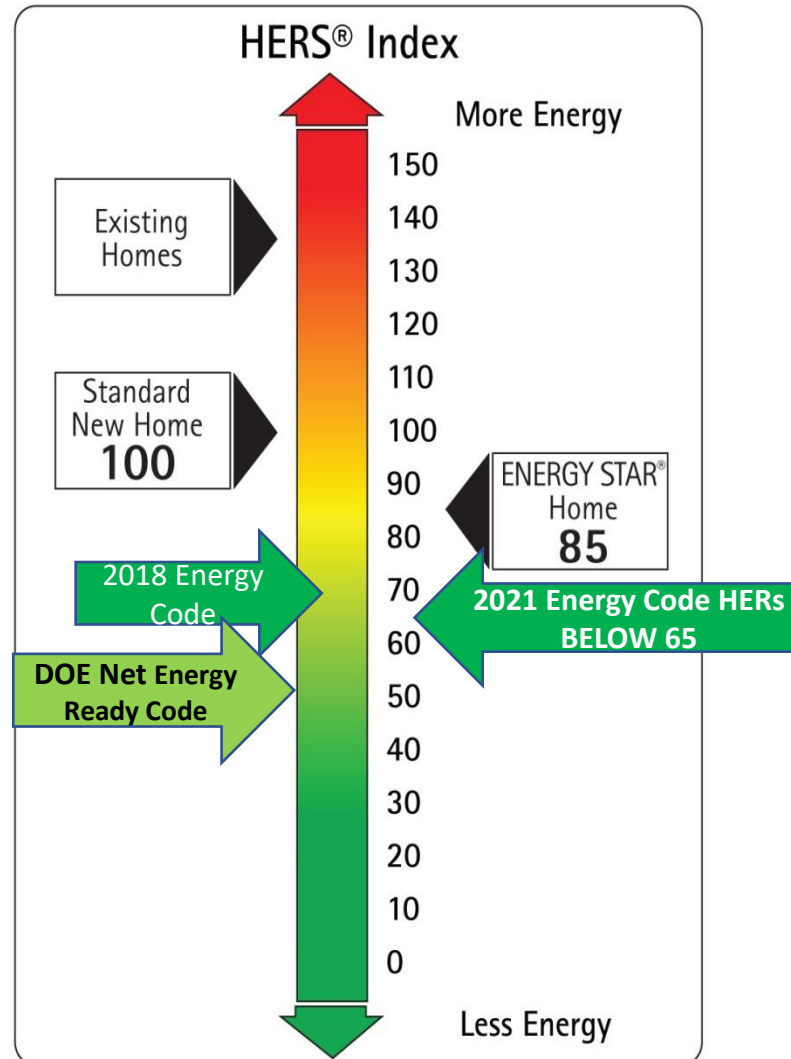
Source: http://www.costar.com/uploadedFiles/JOSRE/JournalPdfs/11.221_248.pdf

HERS ENERGY SCORE INDEX – MPG

HERS-Home Energy Rating System

Based on Energy
Consumption Levels

Quantified, thorough
inspection- verifies level
of building performance
(3rd Party certification)



Index/Rating similar
to “miles per gallon”
for homes

HERS Index,
***nationally recognized
standard*** – Fannie
Mae, HUD, NAHB –
over 48
municipalities/states

Quality Assurance



Builder High- Performance; *AIR Policy, Competency Ruling*

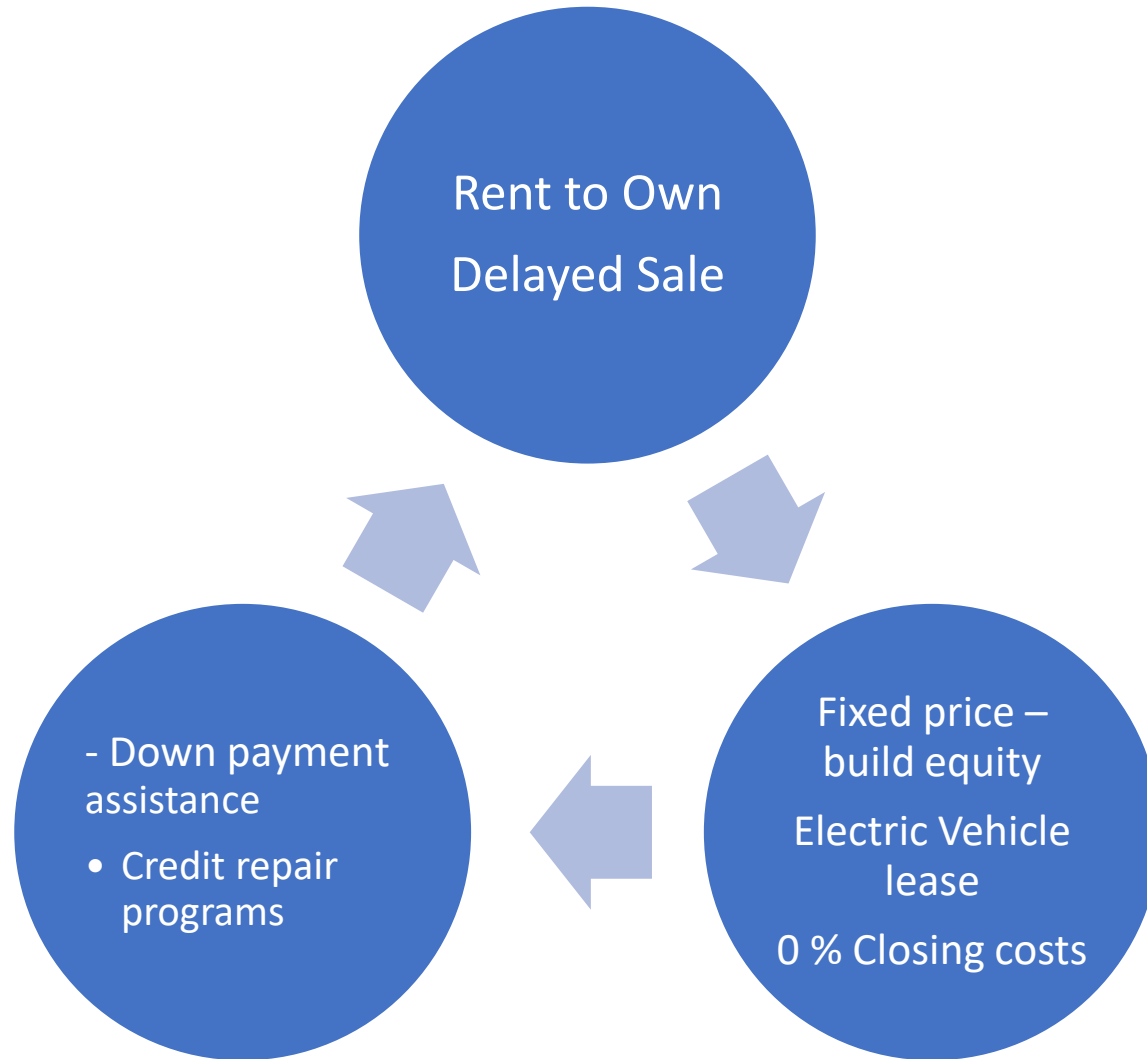
Appraisal Independent Requirement

(AIR) Policy, USPAP competency ruling:

- 1) USPAP COMPETENCY RULE, “an appraiser must determine, *prior to agreeing to perform an assignment*, they can perform the assignment competently.”
- 2) The appraiser must perform competently when completing the assignment." USPAP's Competency Rule requires appraisers to:
 - *identify the problem to be addressed and*
 - *have knowledge and experience to complete the assignment competently*

Source: USPAP 2 2 A Ruling; FNMA UAD 2011 Guidelines

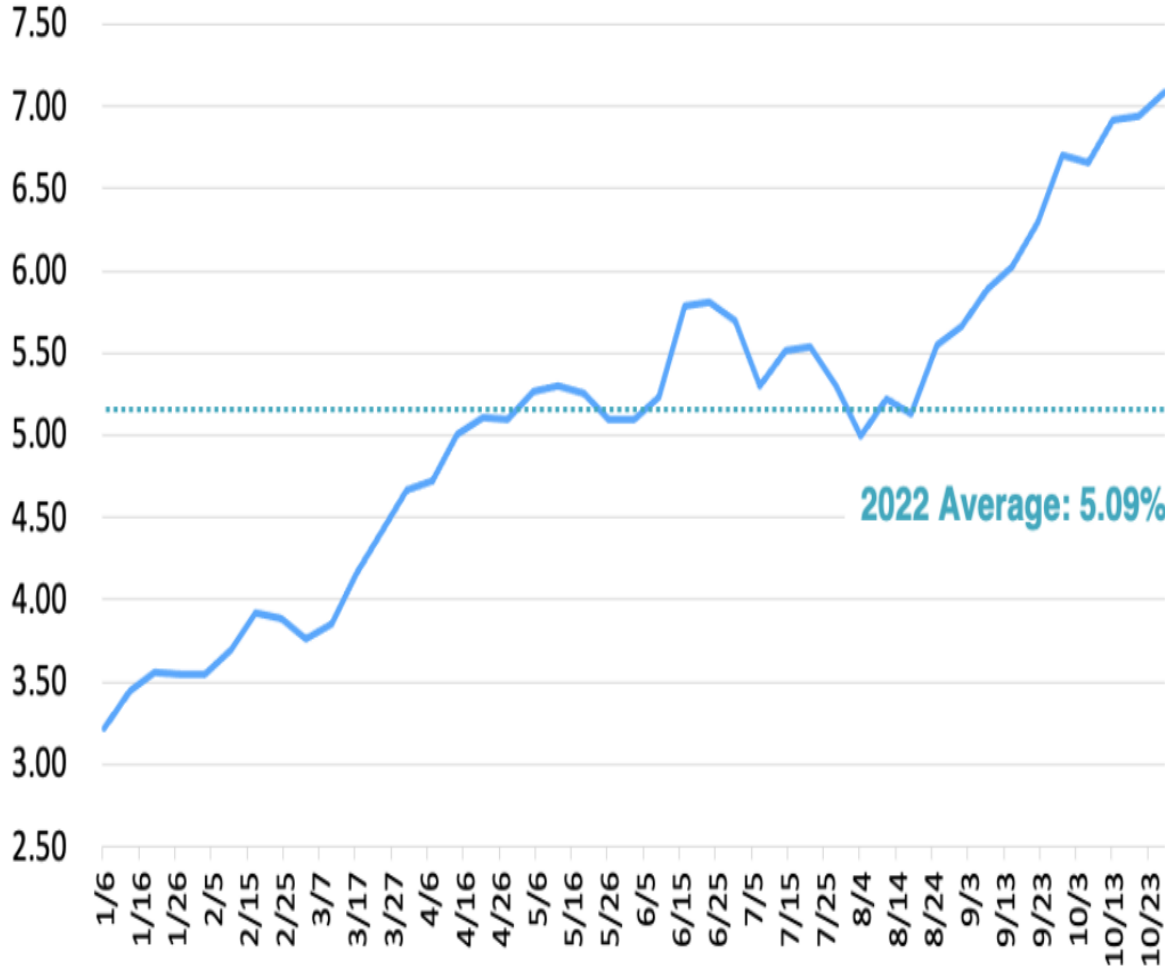
Market Incentives



2022 Average Mortgage Interest Rate 5.09%

50 Year Mortgage Interest Rate Average 7.76%

Current 30-Year Mortgage Rates:
2022



Historical 30-Year Mortgage Rates:
1971-2022



Historical Data: Freddie Mac PMMS. (c) TheMortgageReports.com

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Chart represents weekly averages for a 30-year fixed-rate mortgage. Source: Freddie Mac

Green Property Principal, Interest, Energy Cost (PIE) Comparison

Energy Star Efficient

Conventional IECC -Built-to-Code Property



\$300,000 Loan Amount

6.25% 30 Year- 7/1 ARM (6.47% APR)

\$1838 (Principal & Interest)

\$ 110 Energy Costs

\$1948 (PIE)

\$33,334 - 10% Down Payment

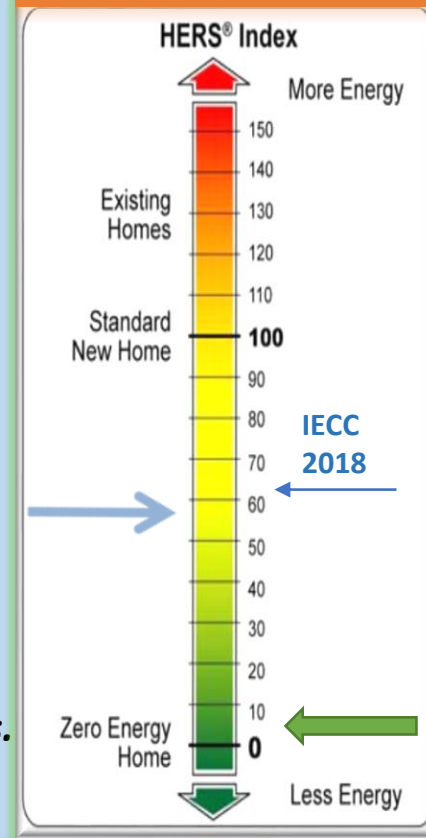
\$333,334 Purchase Price

2.3% Green Premium Value

\$11,900 Future Value Energy Savings- 10 yrs.

**Compared to IECC 2018 or older homes*

What's your PIE?



High -Performance Property

Near-net-Zero



\$324,600 Loan Amount

6.25% - 30 Year – 7/1 ARM (6.47% APR)

\$1998.26 (Principal & Interest)

\$ 25 Energy Costs

\$2013 (PIE)

\$30,667 - 10% Down Payment

\$360,667 Purchase Price

8% Green Premium Value

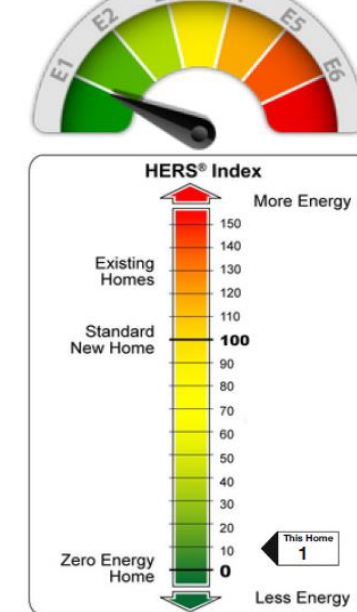
\$42,457 Future Value Energy Savings- 10 yrs.

**Compared to IECC 2018 or older homes*



High-Performance Home Economic Analysis

- Quantification of Energy Features
- Green Premium Value Appraisal –Underwriting
- Green Premium 5%-8%
- Marketing –as-Education



Property - Energy Overview	Financial - Energy Savings	Additional Details
Purchase Price	\$311,900 - \$345,000	
Home Energy Rating Score	1 - 7	HERS- National Standard—Performance Modeling for Buildings. Miles per gallon building average
Green Premium Value (EST.)	\$17,940- \$20,223	Increased Value—Present Value of Energy Savings
Annual Energy Savings	\$1469 - \$1544	HERS Energy Audit; Subject to occupancy behavior-climate conditions
Energy Savings = Future Value	\$44,896 - \$52,884	This dollar amount for Future Value Savings is an example based on 20 year energy savings constant building performance with estimated interest rate of 4%. Inflation, future energy prices or operations and maintenance costs are not factored in this formula.

This is only an example of energy costs and savings for high-performance building comparisons. All economic estimated valuations, interest rates, guidelines and policies fluctuate and are subject to change without notice. This is not a commitment to make a loan.



Builder Contract Addendum

For Green Appraisal Contingency

Green Builder Contract Addendum – Example

- This home is being built to nationally recognized standards **above prevailing code**, and in accordance with International Energy Conservation Codes (IECC) 2021.
- The Buyer shall choose a "preferred" lender following the AIR (Appraisal Independent Requirement) Policy as recognized by Fannie Mae and USPAP competency guidelines.
- The appraiser should be skilled in the art of appraising a unique, high-performance home assignment.
- *This requirement is not negotiable. And if not followed, would allow seller to waive all appraisal value contingencies should energy efficiency features not be recognized in the value, per energy efficient line item in UAD appraisal report.*

Date, Builder and Owner Names
Property Address

.

Verbiage Example: for educational purposes

Energy Efficient Items
Garage/Carport
Porch/Patio/Deck
Fireplace
Outbuildings
Other
Net Adjustment (Total)
Adjusted Sale Price of Comparables



*Financing Solutions to Power a
Sustainable Future*

Economic Contributing Factors

High-performance
operating costs save
as much as 50%
more than
conventional homes

Energy cost
comparisons, i.e.,
Principle, Interest
and Energy Costs
PIE = lower overall
payments

Building tech
products are more
resilient; low
deferred
maintenance costs;
sell for higher green
premium value.

High-performance
building's energy
reduction
contributes to
future innovative
carbon-based
economy

Case Studies: Recently Closed High-Performance Homes

Central -Florida
HERs 6
VA Loan – 0
Down payment
SIP, Solar, Purch.
\$50 Yr. Utility
1st Veteran NZ
Green Premium
1%



North Minnesota
HERs 42
Fannie Mae
ICF-Custom
DOE-NZ Ready
\$108 Yr. Utility
Green Premium
7%



Austin, Texas
HERs 7- **Jumbo**
Solar, Wood
Frame-Metal Roof
\$220 Yr. Utility
+ Rainwater Only
Green Premium
9%



Central PA
HERs -2
Super Jumbo
ICF-Custom
NZ
\$62 Yr. Utility
Green Premium
7.5%



Central Florida SI-Panel®, Solar Hi-Performance Single-Family Residence

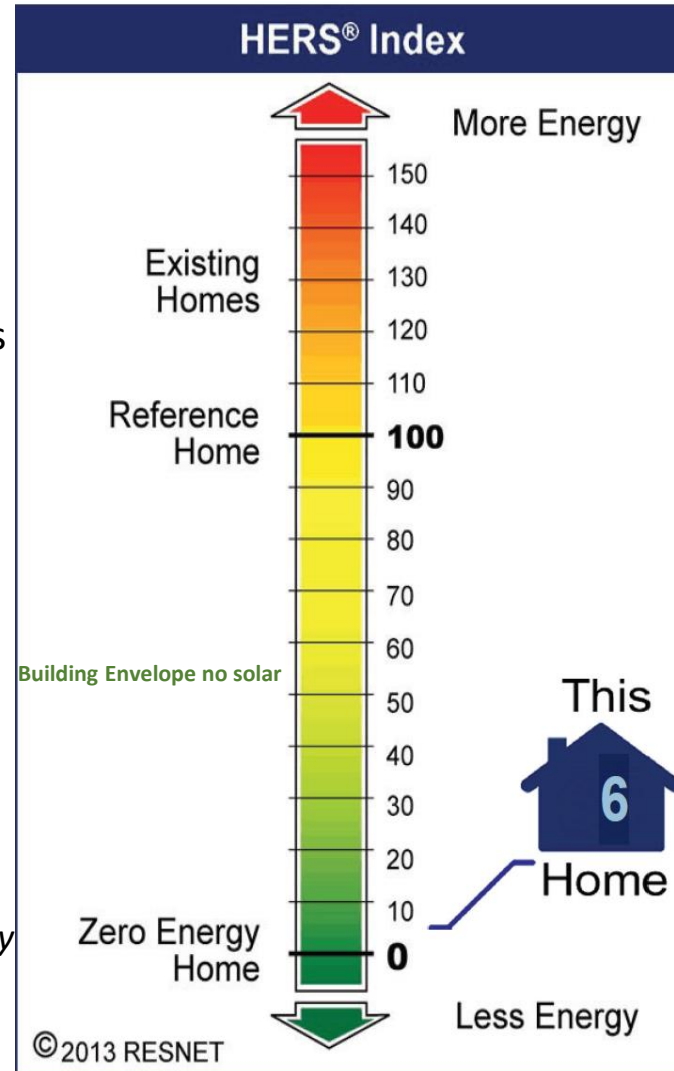
Built by:



Economic, Value Features:

- HERS MPG 6
- Est. Yearly Estimated Energy Savings \$1300*
- Est. Yearly Energy Costs \$101
- Green Premium Value \$17,086*
- 6.375% 30 Year Fixed Rate
- VA Loan closed October 2022, First United Bank

**Compared to Energy Star Home – all energy savings and costs are based subject to occupancy and other factors.*



Home Performance & Resiliency Features:

- 1408 Sq. Ft., SIPs (Structured Insulated Panels), Solar 5kw
- 50-gallon water heater, hybrid heat pump
- Vaulted ceilings, healthy indoor outdoor air quality, upgraded ventilation system
- Certified up to 200 mile per-hour winds, fire-resistant, self extinguishing and non-toxic; resistant to mold, corrosion and termites

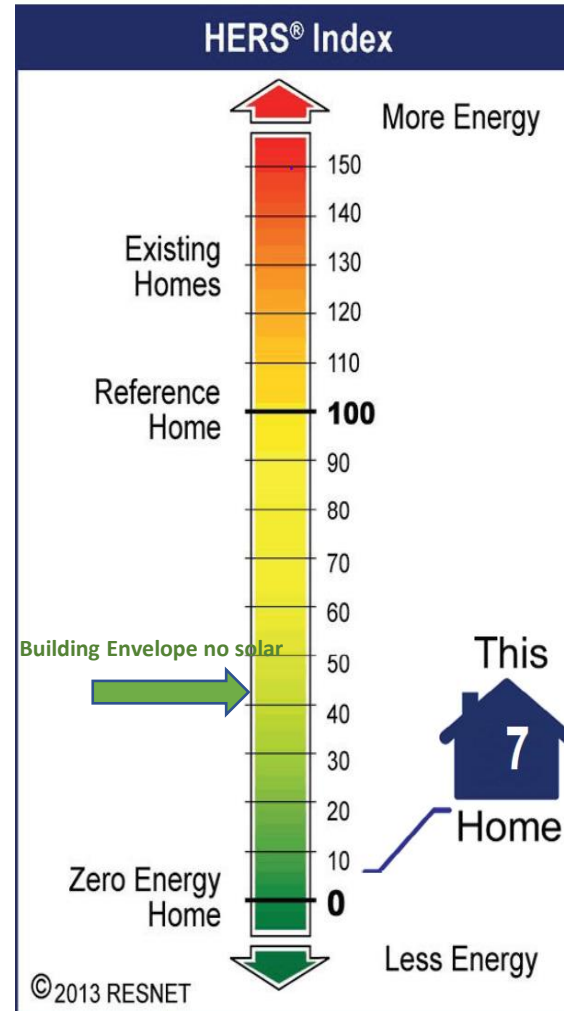
Austin TX – Hill Country, Terra Scena Dev. High-Performance Residence

Built by:
**build
NATIVE**

Economic, Value Features:

- HERS MPG 7
- Yearly Estimated Energy Savings \$3083*
- Green Premium Value \$40,000*
- 5.375% 30 Year Fixed Rate
- First United Bank Loan Closing November 2022; Loan Amount \$1,083,000
- 3050 Conditioned Sq. Ft.

*Compared to Energy Star Home



Home Performance & Resiliency Features:

- 9.2Kw Solar System
- Two - 2.5 Ton, 18-20 SEER HVAC Systems
- 30,000 Gallon Rainwater Harvesting – **Sole Source**
- 24 Gauge Galvalume METAL ROOF
- Zip System – Insulated R-Sheathing; TX Harvested Limestone Stone Exterior
- Continual Energy Monitoring System

San Antonio, TX, Renovation, Construction High-Performance Project

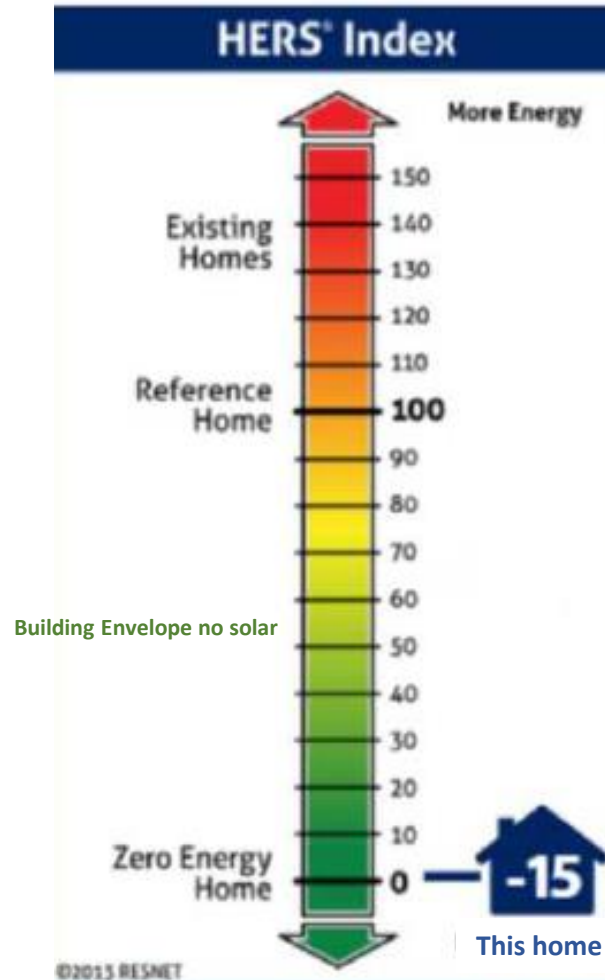
Built by:



Economic, Value Features:

- HERS MPG - **15**
- Yearly Estimated Energy Savings
* \$5385
- Yearly Energy Costs \$126
- Green Premium Value \$75,000
- Conditioned Sq. Ft 8660
- **Saved by reusing building materials**
- **High-performance building envelope, resilient and durable**
- **Still under construction**

*Compared to Energy Star Home



Home Performance & Resiliency Features:

- ICF Roof, Walls R21, Roof R20
- Solar 9 kWh
- Increased square footage by over 5000 sq. ft
- New plumbing, electrical systems, heat pump
- HVAC 16 SEER, Energy Star appliances

Eastern, Pennsylvania, ICF Hi-Performance Single-Family Residence

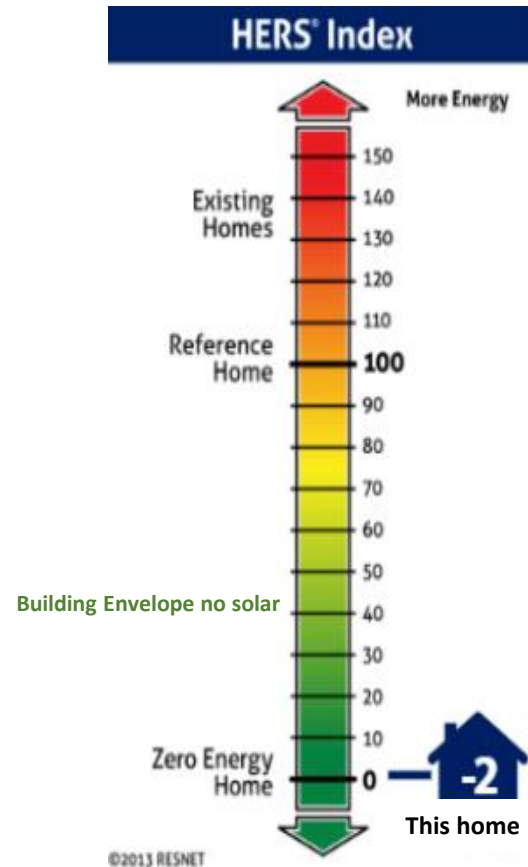
design/
buildic

AN ARCHITECTURE AND CONSTRUCTION COMPANY

Economic, Value Features:

- HERS MPG -2
- Est. Yearly Estimated Energy Savings \$11,932*
- Est. Yearly Energy Costs \$60
- Green Premium Value \$160,000*
- 3.875% - 30 Year Fixed
- One-Time Close Construction
Loan closed May 2022

**Compared to Energy Star Home – all energy savings and costs are based subject to occupancy and other factors.*



Home Performance & Resiliency Features:

- 8278 Sq. Ft. conditioned space
- Insulated Concrete Form structure, Retaining Walls
- Solar 25kW; Ground Source Heat Pump
- Above Grade Walls R-27
- 50-gallon rainwater irrigation system
- Vaulted roof R-63



Retrofit Market: Emerging Opportunity

- Over 131.2 Million existing homes in the US as of 2021
- Over 50% are over 30 years old
- Over 10% was built before 2009 and have significant deferred maintenance costs
- Typical upgrade timeline is every 10 years;
- Average upgrade for energy efficient upgrades = \$50k
- Costs for maintenance 1-4% of home value; deferred maintenance 30X
- Resources: [Residential Retrofit](#) Life Cycle Info

Thank you!

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The New Carbon Market Brick Road
That ultimately creates.....

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Green Addendum for Builder – Buyer, Owners

Green Builder Contract Addendum – Example

- This home is being built to nationally recognized standards **above prevailing code**. It is designed and constructed with unique features, building science proven high-performance measures, materials, and equipment; and in accordance with national building standards and local building, International Energy Conservation Codes (IECC).
- The Buyer shall choose a “preferred” lender who will require an appraiser educated and knowledgeable in this type of home construction. The appraisal management company, or lender’s preferred appraiser panel, must follow the AIR (Appraisal Independent Requirement) Policy as recognized by Fannie Mae and USPAP competency guidelines.
- The appraiser should be skilled in the art of appraising a unique, high-performance home assignment. *This sales/builder contract requirement is not negotiable. And if not followed, would allow seller to waive all appraisal value contingencies should energy efficiency features not be recognized in the value, resulting in a lower valuation compared to non-or less-efficient, high-performance comparable homes. The buyer would be required to pay the difference at closing.*