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## Valuing High Performance Houses

by Sandra K. Adomatis, SRA

Appraisers are breaking new ground in the area of valuing green or high performance houses. Green construction has been around for a long time. However, today more emphasis is placed on the term *energy efficient* as part of the green concept and Energy Star program. These terms need defining before the related valuation issues can be discussed.

### Defining and Rating Green

A *high performance house* is one that takes advantage of energy efficiency, and sustainable and environmentally friendly products. A search of many articles and Web sites does not result in one standard definition of *high performance house*, but all seem to emphasize energy efficiency, sustainability, and environmentally friendly products.

The fifth edition of *The Dictionary of Real Estate Appraisal* defines *sustainability*, in green design and construction, as “the practice of developing new structures and renovating existing structures using equipment, materials, and techniques that help achieve long-term balance between extraction and renewal and between environmental inputs and outputs, causing no overall net environmental burden or deficit.”<sup>1</sup>

According to the National Home Builders Association (NAHB), *green construction* pays attention to energy efficiency, water and resource conservation, the use of sustainable or recyclable products, and measures to protect indoor air quality.<sup>2</sup>

The green trend does not appear to be a fad, but will be the market for tomorrow. The government is strongly encouraging the use of environmentally friendly construction, and there may be green-construction mandates in the future. Efforts and techniques to document and analyze green construction will come to be expected by the users of appraisal reports.<sup>3</sup>

There are numerous green rating programs available in communities for appraisers to research and to learn about each program’s incentives. Three examples of these programs include Energy Star certification, LEED certification, and NAHB green certification.

*Energy Star* is a joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy. It was created to help save money and protect the environment through energy-efficient products and practices. To earn the Energy Star label, a home must meet energy-efficiency guidelines set by the EPA.<sup>4</sup> An independent home energy rater conducts onsite testing and inspection to verify that a home’s performance meets Energy Star requirements. A HERS Index is used to rate the energy efficiency of a home.<sup>5</sup>

Another green certification that building owners can pursue is the Leadership in Energy and Environmental Design (LEED) certification. LEED is a voluntary green building certification program developed by the U.S. Green Building Council, which provides third-party verification of green building and performance measures.<sup>6</sup> LEED-rated homes are

1. *The Dictionary of Real Estate Appraisal*, 5th ed. (Chicago: Appraisal Institute, 2010), 192.

2. NAHB National Green Building Program, <http://www.nahbgreen.org/>.

3. The brochure and the NAHB Model Green Home Building Guidelines are available at <http://www.nahbgreen.org/Guidelines/nahbguidelines.aspx>.

4. Requirements include effective insulation systems; high-performance windows; tight construction and ducts; efficient heating and cooling equipment; and high-efficiency lighting and appliances.

5. The HERS Index is like a golf game, the lower the score the more energy efficient the house. A HERS Index of 100 is representative of the standard code-built house; an Energy Star house must be at least 15% more energy efficient than the standard home, meaning the maximum score for a qualifying home is 85. According to the EPA, there are over one million Energy Star houses. For more information, see <http://www.energystar.gov>.

6. LEED-certified buildings are designed to lower operating costs, reduce landfill waste, conserve energy and water, and have improved indoor environmental quality. For more information, see <http://www.usgbc.org>.

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considered to have the premier green rating, but LEED ratings are the most expensive ratings to obtain.

The NAHB Green Building Coalition also has a green certification program and rating for houses. A NAHB green-certified house has higher energy savings than an Energy Star house. Green certification is based on the NAHB Model Green Home Building Guidelines and the National Green Building Standard.<sup>7</sup>

Because there is not one definition for green and more than a hundred green programs, learning about the relevant green products can be a challenge for the appraiser. It requires research by the appraiser and documentation from the client. But despite the difficulty, it is important for the appraiser to be thorough and to document his or her file. Green building products, techniques, and ratings are constantly changing, so appraisers will need to stay abreast by seeking out educational opportunities. It is helpful to spend time with a builder of green houses to learn more about the products used in green construction. Also, the Appraisal Institute offers two seminars on green construction, *An Introduction to Valuing Green Commercial Buildings* and *Valuation of Residential Green Residential Properties*. More educational offerings on the subject are expected soon.

The NAHB has a local green council in most areas that offer short seminars or roundtables on the topic and would welcome appraisers. State and local green organizations also provide information. For example, for appraisers in Florida, the Web site of the Florida Green Building Coalition is helpful, <http://www.floridagreenbuilding.org/db/>. Other useful Web sites where appraisers can research a product, material, or term include the following:

[http://www.energystar.gov/index.cfm?c=new\\_homes.hm\\_index](http://www.energystar.gov/index.cfm?c=new_homes.hm_index)

[http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.nh\\_HERS](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_HERS)

<http://www.natresnet.org/>

<http://www.usgbc.org/Default.aspx>

<http://www.nahbgreen.org/>

<http://www.appraisalinstitute.org>

<http://www.earthadvantage.com>

## The Valuation Process Documentation

It is important to convey to the appraisal management company, lender, realtor, homeowner, or builder the necessary documentation used to complete an accurate report of a high performance house. This may take some tenacity on the part of the appraiser.

If a green or energy-efficient property has a third-party rating, there will be a paper trail. This paper trail is the documentation needed to support the analysis of the high performance home. The appraiser should ask the client for the following:

1. Any documentation of a third-party rating, score sheets, Home Energy Rating System (HERS) rating, and Fannie Mae Energy Report
2. Documentation of any incentives available to the buyer or owner, such as a
  - a. lower interest rate mortgage/higher loan-to-value ratio<sup>8</sup>
  - b. utility rebate
  - c. IRS tax credit
  - d. real estate tax discount
  - e. expedited building permit

The incentives available to the owner or buyer are good talking points to include in the analysis. However, as mentioned before, sometimes it is very difficult to obtain the related documents. Appraisers should be patient but persistent in getting the documentation necessary to support the facts in their reports.

A third-party rating provides monthly utility savings that can be converted into a contributory value. This figure is printed on a form called the Fannie Mae Energy Report and signed by the third-party rater.

The contributory value estimate found on the Fannie Mae Energy Report form from the third-party rater can be calculated by the Calcs Plus Software using the present value of the annual energy savings, the prevailing mortgage interest rate, and the anticipated life of the measure or savings. For example, using an HP 12C to calculate the contributory value of a monthly energy savings of \$59.58, or annually \$714.96 ( $\$59.58 \times 12 = \$714.96$ ), with an annual interest rate of 6% for a 15-year period, results in the

7. The NAHB green rating is like a bowling game, the higher the green score the better. The NAHB Research Center accredits third-party verifiers and acts as the certifying body for the National Green Building Program. For more information, see <http://www.nahbgreen.org>.

8. Energy efficient mortgages (EEMs) are sponsored by FHA, VA, Fannie Mae, and Freddie Mac as well as conventional lenders. An EEM credits a home's energy efficiency in the mortgage itself, and gives borrowers the opportunity to finance cost-effective, energy-saving measures as part of a mortgage and stretch debt-to-income qualifying ratios on loans, thereby allowing borrowers to qualify for a larger loan amount on an energy-efficient home. For more information, see [http://www.energystar.gov/index.cfm?c=bldrs\\_lenders\\_raters.energy\\_efficient\\_mortgage](http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.energy_efficient_mortgage).

following key strokes: N = 15, I = 6, PMT = \$714.96, and the PV should result in \$6,943.87.

The appraiser's question is how reliable is the estimate of monthly savings and the estimated life of the savings? Is this estimated contributory value reasonable and worthy of belief? Does this contributory value represent a number that mirrors market reaction? Each appraiser must answer these questions in relationship to the particular market and the product he or she is appraising. This approach to valuing the energy savings is only one way to approach value and should be supported with another piece of secondary support.

Having some basis for value or lack of contributory value is the main point addressed by Uniform Standards of Professional Appraisal Practice (USPAP) and by Fannie Mae in its mortgages. For example, comparing the HERS Index ratings of the comparables is a measurement of comparability. It would be ideal to have the HERS Index on all comparables; however, that is typically not available in the real world unless the subject is in a development of green construction with ample sales data.

### Describing Improvements

Describing an Energy Star or green home should begin with page one of Fannie Mae Form 1004, the Uniform Residential Appraisal Report (URAR), even if the conclusion is no contributory value is appropriate. An accurate description of the subject property is a requirement set forth in the USPAP Standard 2.

The description of a green property begins with the site description. Green properties take advantage of trees for shading in specific locations and minimize yard watering by using deciduous plants. The improvement description should properly describe the energy and green features, which may include solar panels, low-volatile organic compound (VOC) paint, an NAHB green score or HERS Index rating, recycled glass counter tops, structural insulated panel (SIP) exterior walls, energy-efficient central air, linoleum, wool carpet, etc. Figure 1 shows an example of a description of green improvements on page one of a URAR form.

**Figure 1 Improvements Section of the URAR**

General Description		Foundation		Exterior Description materials/condition		Interior materials/condition	
Units <input checked="" type="checkbox"/> One <input type="checkbox"/> One with Accessory Unit	<input checked="" type="checkbox"/> Concrete Slab <input type="checkbox"/> Crawl Space	Foundation Walls	Concrete New	Floors	Wool carpet/Linoleum/New		
# of Stories One	<input type="checkbox"/> Full Basement <input type="checkbox"/> Partial Basement	Exterior Walls	SIP (Structural Insulated Panel)	Walls	Drywall/New		
Type <input checked="" type="checkbox"/> Det. <input type="checkbox"/> Att. <input type="checkbox"/> S-Det/End Unit	Basement Area sq. ft.	Roof Surface	Metal New	Trim/Finish	Wood/new		
<input type="checkbox"/> Existing <input checked="" type="checkbox"/> Proposed <input type="checkbox"/> Under Const.	Basement Finish %	Gutters & Downspouts	Yes/New	Bath Floor	Linoleum/New		
Design (Style) Key West	<input type="checkbox"/> Outside Entry/Exit <input type="checkbox"/> Sump Pump	Window Type	Low-E, High Impact/New	Bath Wainscot	Tile/New		
Year Built Proposed - 2009	Evidence of <input type="checkbox"/> Infestation	Storm Sash/Insulated	Yes/new	Car Storage	<input type="checkbox"/> None		
Effective Age (Yrs) New	<input type="checkbox"/> Dampness <input type="checkbox"/> Settlement	Screens	Yes/new	<input checked="" type="checkbox"/> Driveway	# of Cars		
Attic <input type="checkbox"/> None	Heating <input checked="" type="checkbox"/> FWA <input type="checkbox"/> HWBB <input type="checkbox"/> Radiant	Amenities	<input type="checkbox"/> Woodstove(s) #	Driveway Surface			
<input checked="" type="checkbox"/> Drop Stair <input type="checkbox"/> Stairs	<input type="checkbox"/> Other Fuel Heat Pump	Fireplace(s) #	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Garage	# of Cars		
<input type="checkbox"/> Floor <input type="checkbox"/> Scuttle	Cooling <input checked="" type="checkbox"/> Central Air Conditioning	Patio/Deck	<input checked="" type="checkbox"/> Porch	<input type="checkbox"/> Carport	# of Cars		
<input type="checkbox"/> Finished <input type="checkbox"/> Heated	<input type="checkbox"/> Individual <input checked="" type="checkbox"/> Other 16 Seer	Pool	<input type="checkbox"/> Other	<input type="checkbox"/> Att. <input type="checkbox"/> Det. <input type="checkbox"/> Built-in			
IMPROVEMENTS Appliances <input type="checkbox"/> Refrigerator <input checked="" type="checkbox"/> Range/Oven <input checked="" type="checkbox"/> Dishwasher <input checked="" type="checkbox"/> Disposal <input type="checkbox"/> Microwave <input type="checkbox"/> Washer/Dryer <input checked="" type="checkbox"/> Other (describe) Energy Star Appliances							
Finished area above grade contains: 6 Rooms 3 Bedrooms 2.0 Bath(s) 1,650 Square Feet of Gross Living Area Above Grade							
Additional features (special energy efficient items, etc.) Energy Star House with third party rating; green features include low-E windows, non toxic pest control graywater reuse system, solar water heater, spray soybean based insulation, low VOC paint, recycled glass counter tops							
Describe the condition of the property (including needed repairs, deterioration, renovations, remodeling, etc.). The proposed construction has a functional floor plan, acceptable in this market area.							
Are there any physical deficiencies or adverse conditions that affect the livability, soundness, or structural integrity of the property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe							
Does the property generally conform to the neighborhood (functional utility, style, condition, use, construction, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, describe The proposed construction exceeds the existing house quality when the energy and green features are considered. This house will have less maintenance cost and lower utility expenses.							

### Selecting Comparables

The selection of comparables is difficult in areas where there are few green or Energy Star homes. Obtaining comparables with similar-quality features, including the energy-efficient or green features, is the goal, but these comparables are not always available. If the local multiple listing service (MLS) does not have a search field for green and Energy Star homes with a rating, ask them to insert one. This will make comparable selection easier.

Remember, don't be fooled. Just because a house is called green or energy efficient does not mean it is certified, truly green, or energy efficient. Upon questioning agents on these statements, it is common to find the only energy-efficient features are the appliances. That is a far stretch from a certified Energy Star or certified green home.

Also, keep in mind that building codes have changed in the last five years. The typical green or Energy Star house is built above the standard building code. This makes it extremely important to use new construction as comparables when appraising new

green or Energy Star houses. The use of ten-year-old houses compared to a new green-rated house without consideration of quality is inappropriate.

Finally, great care must be placed in using new construction as an arm's-length sale. Some builders offer package deals on speculative houses and lots. The properties are marketed by the builders' sales staff or through the MLS. This type sale would be similar to a typical arm's-length transfer. But, where the property owner hired a builder to build a green house on a lot, it would not result in an arm's-length transfer. The appraiser must use good judgment in qualifying the comparable sales.

### Elements of Comparison

On the second page of the URAR, the sales comparison approach section has three line items that may require adjustments in the valuation of the high performance home: Quality of Construction, Heating/Cooling, and Energy-Efficient Items (Figure 2). If adjustments are not applied, a comment should be made as to why an adjustment has not been made.

**Figure 2 Sales Comparison Approach Section of the URAR**

Sale Price		\$		\$ 235,000		\$ 232,000		\$ 255,000										
Sale Price/Gross Liv. Area		\$	sq. ft.	\$ 136.23	sq. ft.	\$ 148.91	sq. ft.	\$ 135.28	sq. ft.									
Data Source(s)		MLS Tax Record			MLS Tax Record			MLS Tax Record										
Verification Source(s)		Agent			Agent			Agent										
VALUE ADJUSTMENTS	DESCRIPTION	DESCRIPTION		+(-) \$ Adjustment	DESCRIPTION		+(-) \$ Adjustment	DESCRIPTION	+(-) \$ Adjustment									
Sale or Financing Concessions		Conventional			Conventional			Conventional										
		None			None			None										
Date of Sale/Time		P:4/01/XX C: 5/9/XX			P:5/05/XX C: 6/1/XX			P:3/04/XX C: 4/21/XX										
Location		Urban			Urban			Urban										
Leasehold/Fee Simple		Fee Simple			Fee Simple			Fee Simple										
Site		10,000 SqFt			10,000 SqFt			10,000 SqFt										
View		Residential			Residential			Residential										
Design (Style)		Key West			Key West			Ranch										
Quality of Construction		Good/Green 230 Rating			Good/CBS/As Sh			Good/CBS/Metal										
Actual Age		Proposed			New			New										
Condition		New			New			New										
Above Grade	Total	Bdms.	Baths	Total	Bdms.	Baths	Total	Bdms.	Baths									
Room Count	6	3	2.0	6	3	2.0	6	3	2.0									
Gross Living Area	1,650 sq. ft.			1,725 sq. ft.			1,558 sq. ft.			6,900								
Basement & Finished Rooms Below Grade	n/a	n/a		n/a	n/a		n/a	n/a										
Functional Utility	Average			Average			Average											
Heating/Cooling	FWA/Central/Hi Eff			FWA/Central			FWA/Central											
Energy Efficient Items	86.4 HEERS Score			Average			8,930											
Garage/Carport	Two-Garage			Two-Garage			Two-Garage											
Porch/Patio/Deck	Covered Entry/Lanal			Covered Entry/Lanal			Covered Entry/Lanal											
<b>Net Adjustment (Total)</b>	<input checked="" type="checkbox"/> + <input type="checkbox"/> -			\$ 8,930.00			<input checked="" type="checkbox"/> + <input type="checkbox"/> -			\$ 15,716.00			<input type="checkbox"/> + <input checked="" type="checkbox"/> -			\$ -7,935.00		
Adjusted Sale Price of Comparables	Net Adj. %			Gross Adj. %			Net Adj. %			Gross Adj. %			Net Adj. %			Gross Adj. %		
				\$ 243,930						\$ 247,716						\$ 247,065		

The appraiser should carefully consider the quality and energy features of each comparable home. Do the comparable sales have the same incentives as green or Energy Star homes? Do the incentives have value and offset some of the additional costs for the features? Items that are not quantifiable may be addressed qualitatively. A discussion of the incentives, monthly energy savings, and lower maintenance items are good talking points in the analysis.

Again, appraisers should not be afraid to ask questions and require additional documentation. Not all green or energy-efficient houses have third-party ratings. That does not mean they are not green or not energy efficient. It is important for the appraiser conducting the analysis to know how to analyze a green product's value, as USPAP requires the appraiser to be competent in appraising the property type.

### Measuring Contributory Value

There are a number of techniques to measure contributory value of green features, including the following:

- HERS Index rating converted into value
- Monthly energy savings  $\times$  gross rent multiplier (GRM)
- Cost new or depreciated cost new
- Paired sales analysis

Notice the emphasis is on energy efficiency and not on quality. The quality issue is beyond the scope of this article. Quality issues must be carefully measured in the same manner appraisers currently measure quality differences. Qualitative analysis should include a discussion of incentives, energy savings and sustainability of green features, and compare the local building code to the green house.

Underwriters may indicate that Fannie Mae does not allow adjustments for energy-efficient features, but that is not the case. It is important, however, to have support for the energy adjustment. This is commonly done by capitalizing the energy savings (energy savings  $\times$  GRM). Fannie Mae has acknowledged the role of energy-efficient items for years in its underwriting guidelines. For example, the Fannie Mae *Selling Guide* includes the following section:

### Insulation and Energy Efficiency of the Improvements

An energy-efficient property is one that uses cost-effective design, materials, equipment, and site orientation to conserve nonrenewable fuels.

Special energy-saving items must be recognized in the appraisal process. The nature of these items and their contribution to value will vary throughout the country because of climatic conditions and differences in utility costs.

Appraisers must compare energy-efficient features of the subject property to those of comparable properties in the "sales comparison analysis" grid to ensure that the overall contribution of these items is reflected in the market value of the subject property.<sup>9</sup>

### Cost Approach

When the cost approach is used, it should address the green features with support from a national cost service or local builder costs. Marshall & Swift's *Residential Cost Handbook* has an energy-efficient package adjustment that can be applied to the energy features. Marshall & Swift also has a new publication for green construction, the *Green Building Costs* supplement.

Green construction does not always mean higher cost to construct. Some builders report no additional cost as buyers often forego some quality features and replace them with green materials. Experienced builders often find the method used for green features result in less building time and less construction debris.

### Case Study: Converting Green Built to Green Contributory Value

The following short case study uses procedures taught in the *Basic Appraisal Principles* and *Basic Appraisal Procedures* classes to support adjustments for green or energy-efficient items.

For this case study, assume Jane Cross, a builder, built an Energy Star home with a HERS Index of 64. The home also has a Green Score of 294; the Green Score is from the Florida Green Building Council (FGBC) third-party rater.<sup>10</sup> The anticipated monthly energy savings is \$59.58 with an energy savings contributory value estimated at \$8,633.60.

The house was built for the builder's own residence and a mortgage was obtained. Within three months of making mortgage payments, the owner/builder realized she was paying private mortgage insurance (PMI). Jane phoned the mortgage company to question the

9. *Selling Guide: Fannie Mae Single Family* (Fannie Mae, December 30, 2009), 513–514, available at <http://www.efanniemae.com/sf/guides/ssg/>.

10. The FGBC rating is based on a standard checklist of building features and components. The checklist includes the following categories: envelope, mechanicals, energy, water, lot choice, site, health, materials, disaster mitigation, and general items. At the time the case study house was built, the FGBC green ratings were 200 to 400, with the higher number indicating a house with more green features.

PMI payments. The mortgage company revealed the appraised value was not high enough to justify an 80% loan-to-value ratio. Jane was puzzled since she did not include a builder's profit and did much of the labor herself. Her estimate of market value was much higher than the appraised value.

Upon review of the appraisal, she found the energy-efficient and green features were not noted. The comparables were not similar in quality, had no energy-efficient or green features, and one was a fifteen-year-old structure. The appraiser was questioned. The response was the energy-efficient adjustment could not be supported and would not be accepted by underwriters or Fannie Mae. Therefore, these features were ignored.

Can the energy-efficient features be supported and if so, how? Yes, the energy-efficient features can be supported in the appraisal report. Several methods can be used, including gross rent multiplier analysis, paired sales analysis, and surveys.

### Gross Rent Multiplier Analysis

The monthly energy savings of \$59.58 can be converted into a contributory value or adjustment by using the gross rent multiplier analysis. The GRM is a relationship between monthly rent and market value. Isn't it reasonable to consider a monthly savings income attributed to the construction of the home? The property owner is anticipating a monthly savings or additional income in her pocket. Since the GRM is a good measure of income to value, why not use this method to value the energy savings? Again, this method is one tool from the appraiser toolbox and should be carefully measured with market reactions and other methods discussed in this article.

The following sales are in the same neighborhood as the subject and are similar in quality, but do not have energy-efficient or green features. The houses are one to two years old and similar in size to the subject property.

	Gross Rent Multipliers	
	604 Brown St.	1294 Killen St
Neighborhood	Same	Same
Price	\$244,000	\$233,000
Monthly rent	\$1,600	\$1,500
GRM	152.5	155.3

These two sales support a close range of GRMs, indicating a GRM of 154, which is the mid-range of the two. So, the value indication by GRM analysis

is \$59.58 monthly savings × 154 GRM, or \$9,175. This indication is similar to the value contribution estimate of \$8,633.60 provided on the Fannie Mae Energy Report.

Appraisers often argue the GRM is not applicable unless the properties are also green or Energy Star houses. If that is true, does it mean you cannot use a comparable unless it is green or Energy Star rated?

One of the generally accepted appraisal techniques to support adjustments is the use of the GRM. If a GRM is not available in the immediate area, search the competing neighborhood to obtain a GRM of similar quality. The use of the proxy method is also available. The proxy method uses a sale that was not rented at the time of sale and applies a rent appropriate for the sale. If you have a green property sale, estimate a rent based on rents in the market area to arrive at a GRM of a green property.

### Paired Sales Analysis

Using a paired sales analysis approach, pairs of sales that are similar except for the energy-efficient or green features can be analyzed as follows.

Paired Sales Analysis		
Description	1274 Killen St.	908 Silver St.
Sale date	07/XX	06/XX
Sale price	\$274,000	\$265,000
Living area	2,200	2,122
Garage	2-car attached	2-car attached
Energy-efficient or green features	HERS Index 64	None—code built only
Difference attributed to energy features (\$274,000 – \$265,000)	\$9,000	

In some markets, this may not be possible if the product is new and sales are not readily available.

### Survey of Builders

Five local builders are surveyed to obtain the amount they received from actual sales of new construction for energy-efficient features with third-party rater verification. The results are as follows.

Builder Survey	
Best Build, Inc.	\$9,500
Quality Builders of Old	\$8,200
Southern Builders	\$9,200
Bob and Sons, Inc.	\$7,500
ABC Builders	\$7,800

# *Leadership in Energy and Environmental Design (LEED)* CERTIFICATION FOR HOMES



## WHAT IS LEED FOR HOMES?

LEED for Homes is a voluntary third-party certification system that promotes the design and construction of high-performance green homes.

LEED certification is something that consumers can look for to identify homes that have been third-party inspected, performance-tested and certified as green homes that will perform better than conventional homes.

## CONSUMER BENEFITS:

Green homes save money compared to a conventional home by:

- Using less energy – between 30% and 60% less in homes case studies
- Using less water – in case studies, as high as 50% less
- Using non-toxic building materials that lower exposure to mold and mildew, reducing healthcare costs
- Making owners eligible for advantageous home financing
- Lowering home insurance premiums by 5%
- Increasing home values up to 9.1% (see website for details)

## HOW MUCH DOES IT COST?

When using AES as the LEED for Homes Provider, there are four required fees for a **typical** single-family home:

1. AES single-family home fee: \$650
2. USGBC Registration fee: \$150 / \$225 (*depending on USGBC membership*)
3. Green Rater fee: Varies based on scope of work, typically \$1600, +/- \$300
4. USGBC Certification fee upon completion: \$225 / \$300 (*depending on USGBC membership*)

Total typical fees for LEED certification are around \$2,700. For an exact proposal, call AES at 888-533-3274 or request a free quote at our web site.

## WHAT PROJECTS ARE ELIGIBLE?

LEED for Homes includes affordable housing, mass-production homes, custom designs, stand-alone single-family homes, duplexes and townhouses, suburban low-rise apartments, urban high-rise apartments and condos, and lofts in historic areas. LEED for Homes is also applicable to major home renovations (gut rehabs).

***For more information, contact AES at (888-533-3274)***

**[www.AllianceES.org](http://www.AllianceES.org)**

## BUILDERS -

How many of your competitors are building green homes?

Are their green homes the same as yours?

How are you differentiating your homes?

**LEED Certification sets you apart from the rest**

## BUILDER BENEFITS

- Reduced costs (fewer callbacks, higher customer satisfaction and referrals)
- Increased revenue (higher closing rate, market premium, more sales)
- LEED Homes can easily be ENERGY STAR Certified  
(Using the HERS Report required for LEED for Homes)



**[www.allianceES.org](http://www.allianceES.org)**

The Alliance for Environmental Sustainability (AES) provides LEED for Homes support services to builders of LEED projects.

The survey results show a close range of value indications, with greatest weight at \$8,200. However, if the market does not recognize the energy-efficient items, the cost of the items in the contracts to build may not be indications of the value. This is another tool from the appraiser toolbox, but must be measured against the market reactions and other tools mentioned in this article.

**Case Study Conclusions**

New construction customers may be willing to pay for the cost of the energy-efficient items and green construction, but the resale value may not reflect contributory value for these features. The appraiser must take the necessary steps to research the market and use all the tools available to arrive at a conclusion worthy of belief and that is well supported. In the case study example, the report would include the appraiser’s findings from the analyses.

Study Conclusions	
Summary of Value Indications for Energy Features	
Fannie Mae Energy Report	\$8,633.60
GRM analysis	\$9,175.00
Paired sales analysis	\$9,000.00
Survey of builders	\$8,200.00
Incentives for Green and Energy-Efficient Features	
IRS tax credit	\$ 500
Utility rebate	1,500
Insurance discount (3%)	300
EEM closing cost reimbursement	1,000
Total	\$3,300

The data provides four value indications for the energy-efficient items. The paired sales analysis is the most reliable approach with secondary support from the GRM and the Fannie Mae Energy Report. Strong support at \$9,000 is 3.8% of the overall value of the subject property (\$9,000 value for energy features/\$235,000 overall value). This figure includes the high-efficiency central air, insulation,

low-emittance (low-E) windows, and tankless water heater.

The incentives for the green and energy-efficient features results in \$3,300 credited to the owner, not including the monthly energy savings of \$59.58. The house will provide a healthier environment, a longer physical life, and lower maintenance costs due to the green construction. These incentives and monthly savings offset the additional costs of the energy features. It is logical to assume a knowledgeable buyer would consider the incentives in his or her decision making when buying a house. (However, some incentives are only for new construction or first year of ownership.)

For the subject house, the adjustment applied to the comparable sales is 3.8% on the energy-efficient features line of the URAR.

**Conclusion**

Appraisers are encouraged to take the time to learn the products and techniques in green construction, ensuring a new niche for their appraisal services. Taking classes on the topic and networking with green construction professionals will help increase knowledge and professionalism in these assignments and is well worth the effort.

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