



**GREEN  
BUILT**

ARKANSAS®

**MODEL HOME**

# MESSAGE from the HBA President



**WELCOME** to the GREEN BUILT® Model Home! Inside you'll find a completely finished home built to the Gold level of the National Green Building Standard (NGBS). This means that it has achieved one of the highest ratings available under the Standard. In other words, it is more energy efficient, more sustainable, more thoughtfully constructed, and healthier than many other conventional homes you'll find today.

Our goal is to share with you the philosophy, technology, material, systems, and building methods that we employed to make this home truly green. By doing so, we hope to increase your knowledge of sustainable construction in two ways. First, by utilizing a hands-on approach so you can view everything on our tour; second, by challenging some assumptions of what defines "green." Let's take bamboo for instance. Many consider it green because it grows far more rapidly than hardwood. However, did you know that it leaves a massive carbon footprint when it's shipped halfway around the globe then manufactured on a coast 2,000 miles away? That's why we opted for locally grown and manufactured hardwood flooring (from within 500 miles).

As you'll see, hear, and experience, green is a matter of choice and variety. We could have constructed this home in a hundred different ways and still achieved similar results. So please don't feel that this single project defines sustainable construction—it doesn't. *It simply reflects one way of doing it.*

When you leave today, please visit with our sponsors in the staging area to learn more about the products and services we used. We enjoy having you as our guest and thank you for your interest in GREEN BUILT® Arkansas.

Sincerely,

A stylized, handwritten signature in gold ink, appearing to read "Keith Wingfield". The signature is fluid and cursive, with a prominent initial "K".

Keith Wingfield, President  
Home Builders Association of Greater Little Rock  
Model Home Co-Project Coordinator

Thank you for choosing to tour our Model Home and to learn more about residential green building. Our members are proud of their achievement and look forward to sharing their green construction journey with you.

## Defining a “Green” Home

It is important to note that energy efficiency is the cornerstone of green building. By its very nature, a “green home” must be constructed with materials and methods that conserve energy, thereby promoting the longevity of natural resources and lowering utility costs for the consumer. In many ways, green is about building smarter: using low-E (emissivity) windows, better insulation, advanced framing techniques, and sealing ducts properly. Other components of green, such as sustainability, water conservation, and resource management, grow out of this.

## *History of the Project*

Members of the Home Builders Association formed the GREEN BUILT® Council in the summer of 2008. The group’s aim was to learn more about energy efficiency, sustainable construction and development, and create ways to share this information with other members and Central Arkansas’ community. The Council considered a number of ways to educate themselves and consumers, but one idea stood out from the rest: to build a hands-on project. That’s when the concept of designing and building a GREEN BUILT® Model Home was born.

## LOCATION

After an extensive search, the Council chose to locate its first green model home in Woodlands Edge. This West Little Rock development was named the National Association of Home Builder’s 2009 Green Development of the Year. It was also recognized as the nation’s first four-star Green Certified Neighborhood. Woodlands Edge earned these honors because it utilizes low impact development techniques, reduced street widths, riparian area preservation, alternative storm water abatement, wildlife habitat preservation and restoration, trails, and acres of protected greenspaces. In other words, we couldn’t imagine another place that reflected the spirit of what we were trying to achieve—greatness through greenness.



## GREENING THE AMERICAN DREAM

On October 22, 2009, the Association broke ground on its Model Home. Led by a group of Certified Green Professionals (CGPs)—highly skilled, educated, and environmentally-conscious contractors and suppliers—work began immediately. Landscape architects and CGPs inventoried trees on the lot, designed house plans to take advantage of the site’s natural topography, secured conservation areas, and mulched trees all before digging the foundation footings. Over the next nine months, CGPs hosted a series of seminars highlighting green aspects of the home, including window flashing, insulation installation, and home energy rating testing.

## VALUE OF GREEN

Green is quickly growing in market share across the United States. At this rate it’s sure to become the new standard of construction in the coming years, especially given that green homes are typically more durable, better constructed, more thoughtfully planned, and simply more efficient than conventional ones. In parts of the country where sustainable building has been around for years, data suggests that green homes are not only valued more on the open market, but they also sell in less time. That’s wonderful assurance to a homeowner.



*Closed cell foam insulation being applied.*

If you are considering building or renovating green, we encourage you to visit our website for a list of Certified Green Professionals, questions to ask your contractor, and other resources to make your decision easier: [www.hbaglr.com/green-built-arkansas](http://www.hbaglr.com/green-built-arkansas)

## National Green Building Standard (NGBS)

In 2007, the National Association of Home Builders (NAHB) and the International Code Council (ICC) partnered to establish a much-needed, nationally-recognizable standard definition of what is meant by “Green Building.”

A consensus committee was formed to develop this standard in compliance with the requirements of the American National Standards Institute (ANSI). The resulting Standard defines green building for single and multifamily homes, residential remodeling projects, and site development projects while still allowing for the flexibility required for regionally-appropriate green practices.

A builder, remodeler, or developer must incorporate a minimum number of features in the following areas: energy, water, and resource efficiency, lot and site development, indoor air quality, and homeowner education. The more points accrued, the higher the score: Bronze, Silver, Gold, and Emerald.

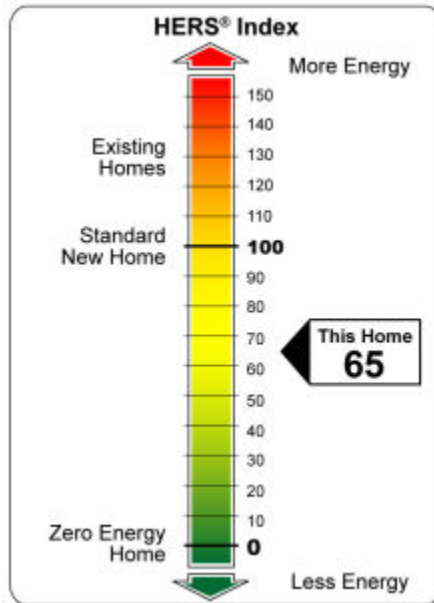
Rest assured that all GREEN BUILT® Arkansas homes conform to the National Green Building Standard, providing you with unparalleled performance and peace of mind. Please visit [www.nahbgreen.org](http://www.nahbgreen.org) for more information.

# HOME ENERGY RATING SYSTEM

In order to measure a home's efficiency, builders use the Home Energy Rating System (HERS) to determine whether the home can be classified as ENERGY STAR® efficient.

Before a home is completed, certified energy raters look at a home's construction plans and conduct onsite inspections and tests before determining the index rating. The HERS Index is a scoring system established by the Residential Energy Services Network (RESNET) in which a home built to the specifications of the HERS Reference Home (based on the 2006 International Energy Conservation Code) scores a HERS Index of 100, while a net zero energy home scores a HERS Index of 0. The lower a home's HERS Index, the more energy efficient it is in comparison to the HERS Reference Home.

The example below shows how each 1-point decrease in the HERS Index corresponds to a 1% reduction in energy consumption compared to the HERS Reference Home. Thus, a home with a HERS Index of 85 is 15% more energy efficient than the HERS Reference Home, and a home with a HERS Index of 80 is 20% more energy efficient.



*For Illustration Purposes Only*

After reviewing a home and determining its index, the HERS rater will then help the builder recognize areas where energy efficiency improvements are needed to lower the HERS Index and to ensure ENERGY STAR® qualification. The HERS Index is a well-known tool in the mortgage industry, and a lower HERS Index could mean the home will be an easier resale in the future.

# FREQUENTLY ASKED QUESTIONS AND ANSWERS FOR GREEN HOME BUYERS:

## WHAT IS THE FIRST STEP IN GREEN BUILDING?

A green home begins with consideration for the land and its existing resources. Instead of the conventional method of changing the land to fit the home, the home is designed around these natural features, thereby influencing design elements such as room and window placement. Your builder will then incorporate such elements as energy efficient products and practices, renewable materials, and concern for indoor air quality.

## WHAT DOES “GREEN CERTIFICATION” MEAN?

Certification allows consumers to easily locate homes that have been built to a nationally-recognized green building standard. Since many of the processes and technologies that go into a green home happen behind the scenes and behind the walls, green certification is an important identifier for buyers seeking more environmentally responsible homes. For example, a GREEN BUILT® bronze-level home in Little Rock is at least as energy efficient as a bronze home in Savannah, St. Louis, or Tulsa. It doesn't mean that they have the same features or that they even look the same. It does mean that they all meet a minimum, nationally-recognized level of performance.



## WHY SHOULD I BUY OR BUILD A GREEN BUILT® ARKANSAS CERTIFIED HOME?

Potential benefits include lower operating costs, reduced maintenance needs, and lifestyle and health improvements. The renewable, recycled, and efficient building products used in sustainable construction can help to reduce a home's impact on the environment and natural resources. GREEN BUILT® homes are independently inspected and certified by trained and accredited third-party experts.

## WHAT IS A CERTIFIED GREEN PROFESSIONAL, AND WHAT ARE THE BENEFITS OF WORKING WITH ONE?

A Certified Green Professional (CGP) is an individual in the home building industry who has been trained in the fundamentals and best practices of sustainable residential construction. They will help you understand different aspects of green, from material choices to building methods to affordability. You can find a current list of CGPs by visiting [www.hbaglr.com/green-built-arkansas](http://www.hbaglr.com/green-built-arkansas).



*Mulch created from site trees.*



*Home wrapped and flashed with DuPont Tyvek ThermoWrap.*

## DO GREEN HOMES COST MORE?

Some green features do cost more, but there are also many inexpensive ways to go green. Because some green components are less expensive to operate and may last longer, they can even pay for themselves within a few years. GREEN BUILT™ Arkansas allows home buyers and builders to choose among dozens of options to achieve thresholds in seven key areas. This flexibility allows green homes to be built at just about any price point.

## ARE THERE ANY FINANCIAL INCENTIVES OR REBATES TO GO GREEN?

In addition to the many benefits of living in a green home, there are often financial incentives that can help make green homeownership even more affordable, from ENERGY STAR® tax credits to more local incentives like the City of Little Rock's green building financial incentive program for builders.

Please visit [www.hbaglr.com/green-built-arkansas](http://www.hbaglr.com/green-built-arkansas) for more information.

## EXTERIOR LANDSCAPING & LOT

**Project managers:** Keith Wingfield, River Rock Builders; Richard Harp, Richard Harp Construction

**Home site:** Rocket Properties, LLC

**House plans:** Woodhaven Homes

**Site design and landscape architecture:** Tyne & Associates (Ron Tyne/Bradford Gaines)

**Tree inventory:** Tyne & Associates (Ron Tyne/Bradford Gaines)

**Lot clearing:** Mark Pruss, Inc.

**Tree mulching:** No Sponsor

**Native plant material and mulch:** River Valley Horticultural Products

**Pond:** River Valley Horticultural Products

**Trees:** Bemis Tree Farm

**Drip irrigation/low-flow system with rain sensor:** No Sponsor

**Excavation:** Bryce Taylor Contracting

**Concrete pumping:** Brundage-Bone Concrete Pumping

**Blocks, pavers and retaining wall:** Conway Block Company

## EXTERIOR OF HOME

**Fly ash concrete mix:** Southern Star Concrete

**ThermaWrap and window flashing:** DuPont Tyvek

**Manufactured stone veneer:** Stone Works

**Solar reflective shingles:** CertainTeed/Bradco Supply

**Sustainable brick masonry:** Acme Brick & Tile

**Fiber cement siding:** CertainTeed/Ridout Lumber

**Aluminum fascia and soffits:** Burton Building Products

**Fiber glass exterior doors:** Lumber One Home Center

**Foundation labor:** Granillo Masonry

**Footing material:** Whit Davis Lumber Plus

**Footings and framing labor:** Twin Brothers, Inc.

**Concrete slabs:** Smiley Construction

**Fascia and soffit installation:** Townsend Exteriors

**Roofing materials:** Bradco Supply

**Roofing labor:** Pinnacle Roofing & Restoration

**Mortar and angle iron:** Antique Brick

## CONSERVATION AREA

Help Us Protect Our Trees  
& Natural Resources.

Please Stay Out Of The Protected  
Conservation Area.

All Equipment, Contractors &  
Materials Must Stay Within  
Designated Work Zone.

Please Use Concrete Washout Pits  
& On-Site Trash Bins.

Thank You For Your Cooperation.

*Sign posted on site.*

## FRONT BEDROOM

**Low VOC paint:** Sherwin Williams

**Low VOC carpet and pad:** ProSource of Little Rock

**Paint application:** CertaPro Painters

## HALL BATHROOM

**Dual-flush toilet:** Kohler/Falk Plumbing Supply

**Water-restricting lavatory faucet and shower faucet:** Delta/Falk Plumbing Supply

## **HALL BATHROOM** Continued

**Vitreous white china undermount sink:** Kohler/Falk Plumbing Supply

**Sustainable cabinets:** Ronbow/Falk Plumbing Supply

**Floor tile with 25% recycled content:** ProSource of Little Rock

**Engineered stone shower walls and countertops:** ABK - Advanced Bath and Kitchen

**Plumbing installation:** ABC Plumbing

**Plumbing finish-out:** S&K Quality Plumbing

**Shower door:** ABK - Advanced Bath & Kitchen

## **GREAT ROOM**

**LED lighting:** Pro Builder Supply/Progress Lighting

**Natural gas sealed fireplace:** Royal Overhead Door

**Electrical installation:** All State Electric

**Interior designer:** A. Paige Design

**Phone/TV cabling:** Arnold Audio

**Indoor speakers:** Arnold Audio

**Home staging:** Dixieland Home Design

## **MIDDLE BEDROOM**

**Fluorescent lighting:** Pro Builder Supply/Progress Lighting

**Drywall installation:** A&R Painting & Construction

**Drywall material:** River City Materials

**Window coverings:** American Blinds and Shutters

## **MIDDLE BATHROOM**

**Dual-flush toilet:** Kohler/Falk Plumbing Supply

**Water-restricting lavatory and shower faucets:** Kohler/Falk Plumbing Supply

**Vitreous china undermount sink:** Kohler/Falk Plumbing Supply

**93% reclaimed cast-iron tub:** Kohler/Falk Plumbing Supply

**Marble shower surround:** Sherwood Marble Company

**Quartz countertops:** TGI - Third Generation Industries/Cambria

## **OUTDOOR DECK**

**Treated southern yellow pine lumber:** Lumber One Home Center

**Buffalo grass:** Todd Valley Farms

**Rainwater collection system:** No Sponsor

**Sealed crawl space:** The Bug Man

**Tankless water heater:** Rinnai/CenterPoint Energy

**Outdoor speakers:** Arnold Audio

**Deck framing labor:** Twin Brothers, Inc.

## **DINING ROOM**

**Sustainable hardwood flooring and low VOC adhesive:**

ProSource of Little Rock

**Low-E windows:** STOCK Building Supply

**Lighting fixtures:** Pro Builder Supply/Progress Lighting

## **KITCHEN**

**Waste disposal:** InSinkerator/Falk Plumbing Supply

**Water-restricting touch control faucets:** Delta/Falk Plumbing Supply



*HERS blower door testing.*

## **KITCHEN** Continued

**Recycled granite sink:** Falk Plumbing Supply/Blanco

**ENERGY STAR® qualified appliances:** Whirlpool Corporation

**Sustainable cabinets:** Arnold Cabinets

**Central vacuum system:** Royal Overhead Door

**Granite countertops:** No Sponsor

**Glass backsplash:** ProSource of Little Rock

**Countertop installation:** Natural State Construction

## **MASTER BEDROOM**

**Trim:** Woodchucks Custom Trim

**Interior doors:** Lumber One Home Center

**Door hardware:** Pro Builder Supply

## **MASTER BATHROOM**

**Dual-flush toilet:** Kohler/Falk Plumbing Supply

**Water-restricting lavatory and shower faucets:** Kohler/Falk Plumbing Supply

**Sustainable cabinets:** Arnold Cabinets

**Recycled glass countertops:** ProSource of Little Rock

**93% reclaimed cast-iron whirlpool tub:** Kohler/Falk Plumbing Supply

**Sinks:** Kohler/Falk Plumbing Supply

**Mirrors and master shower glass:** ACE Glass

**Countertop installation:** Natural State Construction

## **LAUNDRY ROOM AND SAFE ROOM**

**ENERGY STAR® qualified appliances:** Whirlpool Corporation

**Quartz countertops:** TGI - Third Generation Industries/Cambria

**Recycled granite sink:** Falk Plumbing Supply/Blanco

**Water-restricting faucet:** Delta/Falk Plumbing Supply

**Safe room:** Tornado Shelter Systems

## **GARAGE**

**Southern yellow pine lumber (framing):** Ridout Lumber

**Closed cell foam insulation:** G&S Insulating

**Cellulose insulation:** G&S Insulating

**Radiant barrier sheathing:** Ridout Lumber

**20 SEER air conditioning unit:** TRANE MidSouth

**95% condensing gas furnace:** Energy Master Home/TRANE MidSouth

**Indoor air filtration system:** Energy Master Home/TRANE MidSouth

**Tankless water heater:** Grandhall USA

**Central vacuum system:** Royal Overhead Door

**Home energy rating:** HERS, Inc.

**Alarm system:** Elite Security Solutions

**Garage doors:** Royal Overhead Door

## **ADDITIONAL SPONSORS**

**Title:** American Abstract & Title Company

**Portable toilets:** Arkansas Portable Toilets

**Portable toilets:** Metro Portable Toilets

**Media sponsor:** AY Magazine

**Financing:** BancorpSouth

**Media sponsor:** Building Arkansas Magazine

**Realtor:** Choice Real Estate Group

**Waste management:** Construction Waste Management

**Waste management:** Junk-IT

**Protective floor covering:** KleenWrap

**Insurance:** Regions Insurance

**Blue prints:** White-Daters & Associates

**Sustainable development:** Woodlands Edge

**Permits:** City of Little Rock

# GREEN TERM GLOSSARY AND DEFINITIONS

**Advanced Framing Techniques** – Techniques designed to use less lumber in framing a home. This reduces materials and costs, as well as allows for increased levels of insulation. These can cut both framing costs as much as \$1.20 per square foot, and the amount of wood used by 11 % to 19 %.

**ANSI** – *American National Standards Institute* oversees the creation, use and conformance of standards throughout the U.S. The International Residential Code (IRC) and National Green Building Standard (NGBS) are ANSI-certified programs.

**California Corners** – An advanced framing technique that saves on material and allows space for additional insulation.

**Carbon footprint** – The total set of greenhouse gas (GHG) emissions caused by an organization, event or product. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted.

**CGP** – *Certified Green Professional* is a nationally recognized designation. Industry professionals with this designation have undergone extensive green training and education.

**Critical Root Zone** – Portion of the root system that is the minimum necessary to maintain vitality or stability of the tree. Encroachment or damage to the critical root zone will put the tree at risk of failure, decline and death.

**Drip Irrigation** – Also known as trickle irrigation or microirrigation. A method which saves water and fertilizer by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone, through a network of valves, pipes, tubing, and emitters.

**ENERGY STAR®** – A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping consumers save money and protect the environment through energy efficient products and practices.

**GREEN BUILT® Arkansas** – The first HBA-sponsored comprehensive green building program in the state. It involves the construction of highly energy efficient homes with low environmental impact. All homes are built to the National Green Building Standard.

**HERS** – *Home Energy Rating Service* provides objective third-party energy efficiency testing on new homes.

**Hydrozoning** – Landscape practice that groups plants with similar water requirements together in an effort to conserve water.

**Insulated Headers** – An advanced framing technique that uses 2x10 material and the hollow between filled with insulation.

**Ladder Blocking at T Intersections** – An advanced framing technique that typically uses scrap lumber to provide nailers on the inside edge of the cavity where the interior partition walls meet an exterior wall. The rest of the cavity is then insulated.

**LED** – *Light-emitting-diodes* use, on average, one-tenth the electricity of incandescent bulbs.

**LEED** – *Leadership in Energy and Environmental Design* was developed by the non-profit organization USGBC (U.S. Green Building Council). LEED is a rating system designed for commercial buildings and, more recently, residential homes.

**Low Impact Development (LID)** – A sustainable approach that is used to preserve or restore natural watershed functions and to minimize disturbance from traditional development practices that alter the landscape such as vegetation removal, excavation, grading and filling.

**Low VOC** – *Volatile Organic Compounds* refers to the reduced amounts of VOCs in paint and finishes. These products contain – and release – fewer toxins that can be harmful to humans and the environment.

**Low-E glass** – The “E” stands for *emissivity*. Low-E glass works by reflecting heat back to its source. It does this by utilizing an ultra thin metallic coating on or in the glass. This helps reduce heat gain in the summer, to keep the home cool, and winter heat loss. Not all low-E glass is the same. The lower the Solar Heat Gain Coefficient (SHGC) and U-value published on the glass, the better it reflects heat.

**NGBS** – *National Green Building Standard* is the only nationally-recognized, ANSI-certified green building standard in the United States. It provides the framework for thorough green construction.

**OSB** – *Oriented Strand Board* is an engineered wood product formed by layering strands (flakes) of wood in specific orientations. It uses almost all the wood from harvested trees, including young and faster growing species.

**Radiant Barrier Sheathing** – Radiant barriers usually consist of a thin sheet or coating of a highly reflective material, usually aluminum, applied to one or both sides of the sheathing. This helps reduce heat transfer and keep the attic space cool.

**Site Analysis** – An inventory completed as a preparatory step to site planning, which involves research, analysis, and synthesis. Such data is then used to influence the design of homes and other uses of the land.

**Sustainable Site Design** – Recognizes the holistic character of a landscape. It conveys appreciation of and respect for the interrelationships of that area and ensures that a new home is designed to fit the site’s unique character. It seeks to allow a site’s natural systems to continue to function as they have historically or to restore them to their original function.

**Solar Reflectance Index (SRI)** – A measure of the roof’s ability to reject solar heat, as shown by a small temperature rise.

**Thermal Wrap** – Home wrap with a low-emissivity metalized surface designed to manage radiant heat flow through wall systems to help improve energy efficiency. It contains material that reflects heat in the summer and insulates in the winter.



**MODEL HOME**



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The Home Builders Association of Greater Little Rock was established in 1952 to promote the housing industry, and professionalism within the industry. Quality workmanship and products, reliable craftsmanship, and a desire to provide safe and secure homes for the Central Arkansas area have been the benchmark of the Association for nearly 60 years.