



# Overview

Home Builders Association of Kentucky

## GREEN BUILD KENTUCKY Program

Based on

NAHB Model GREEN Home Building Guidelines





# HBAK GREEN BUILD KENTUCKY Program Components

To qualify as a green built home, environmental considerations must be incorporated into every phase of the home building process.

- 1. Lot Design, Preparation and Development**
- 2. Resource Efficiency**
- 3. Energy Efficiency**
- 4. Water Efficiency**
- 5. Indoor Environmental Quality**
- 6. Operation, Maintenance and Homeowner Education**
- 7. Global Impact**





# Lot Design, Preparation and Development

Site design and development practices help reduce the environmental impacts and improve the energy performance of a new home.

- Preserving trees
- Storm water retention
- Storm water infiltration
- Orientation of house (solar)
- Landscape plans (minimize watering)
- Erosion control plan



# Resource Efficiency

Successful green homes start with consideration of the environment at the design phase, the time at which material selection occurs.

- Reduce job-site waste (10,000 lbs)
- Product life-cycle analysis
- Enhance durability
- Reduce maintenance
- Engineered wood
- Renewable material
- Recycled material



# Energy Efficiency

Energy efficiency is weighted heavily in a green building program because emissions are released year after year to generate energy.

- Energy Star
- Properly sized equipment
- Properly sized ducts
- Lighting
- Appliances
- Renewable energy
- Third-party verification



# Water Efficiency

The importance of water resources is becoming increasingly recognized

- Efficient delivery system inside
- Drought-resistant plants
- Native plants
- Appliances
- Showerheads
- Faucets
- Rainwater



# Indoor Environmental Quality

Increased reports of respiratory ailments heightened awareness of the air we breathe inside our home.

- Sealed-combustion equipment
- Isolate mechanical equipment
- Sealed fireplace / No fireplace
- Isolate garage
- Low formaldehyde emissions
- Green label products
- Ventilation systems



# Operation, Maintenance and Homeowner Education

Assure that the home will operate in an environmentally responsible manner.

## **Homeowner's Manual**

- Photo record
- Maintenance check list
- Recycling opportunities
- List of public transportation options
- List of green products used in home
- Information about low-water landscape
- Warranty, operation and maintenance instructions
- Habits and actions to optimize water and energy use



# Global Impact

By-products of home construction

## **Volatile organic compounds (VOCs)**

- Paint
- Caulks
- Sealants
- Contact adhesives
- Construction adhesives



# HBAK GREEN BUILD KENTUCKY Program

## Points Required

Section 1: Lot Design, Preparation, and Development	<b>8</b>
Section 2: Resource Efficiency	<b>44</b>
Section 3: Energy Efficiency	<b>37</b>
Section 4: Water Efficiency	<b>6</b>
Section 5: Indoor Environmental Quality	<b>32</b>
Section 6: Operation, Maintenance, and Homeowner Education	<b>7</b>
Section 7: Global Impact	<b>3</b>
Additional Points from Sections of Your Choice	<b>100</b>

**Point Totals = NHBA Bronze Certification**





# HBAK GREEN BUILD KENTUCKY Program

## Required Components

- ENERGY STAR® Certified
- Homeowner's Manual





# ENERGY STAR® Certified

## ENERGY STAR® Certification

- Required HERS Index = 85 or lower
- Point Calculation
  - 37 Points for a qualifying HERS index, 85 plus
  - 2 Points per 1 Point Reduction in HERS Index below 85





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# Home Owners Manual

## Two Functions

- Used for Program Points Verification
- Satisfy Requirement for Points in Section 6.1
  - 9 Points in *Section 6*



# Section 6.1

## 6.1 PROVIDE MANUAL TO OWNERS/OCCUPANTS ON THE USE AND CARE OF THE HOME

- A. Narrative detailing the importance of maintenance and operation to keep a green-built home green.
- B. Local Green Building Program's certificate.
- C. Warranty, operation, and maintenance instructions for equipment and appliances.
- D. Household recycling opportunities.
- E. Information on how to enroll in a program for purchasing energy from a renewable energy provider.
- F. Explanation of the benefits of using compact fluorescent light bulbs in high usage areas.
- G. List of habits/actions to optimize water and energy use.
- H. Local transportation options.
- I. Clear labeling of safety valves and controls for major house systems.



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# Certification Process

1. Select a Certified Third Party to verify points earned:
  - a) HERS rater (ENERGY STAR) that is certified by the HBAK or
  - b) a NAHB Accredited Verifier





# Certification Process

2. Provide the third party with a checklist of items to be verified
3. The third party does the verification
  1. Calculates the points earned for qualification using the HBAK procedure
  2. Submits the verified checklist and points earned to the local HBA
4. Local HBA issues the Green Build Certification





# General Verification Procedures

Two inspections are required:

- Rough - before drywall but after complete framing, rough plumbing, electrical, HVAC, and insulation installation, (HERS Thermal Bypass Checklist) and
- Final - after installation of all flooring, appliances, HVAC equipment, plumbing & electrical fixtures, and landscaping but before closing (HERS Blower Door and Duct Blaster).



# Verification Process

Items Selected for Point Verification must be:

a) Visible

- i. On two standard HERS rating visits or
- ii. By agreement between HERS rater and builder or
- iii. By agreement between the verifier and builder

b) Documented in Home Owners Manual

- i. Documented by Reliable Source
- ii. Photos may be allowed



# HABK – NBHA Comparison

	HBAK GREEN BUILD KY PROGRAM	NBHA GREEN BUILD CERTIFICATION
Guidelines	NAHB Model Program	NAHB Model Program
Certificate Issued By	Local Association	NAHB Research Center
Fees	Determined by Local Association	NAHB Research Center (\$200/Home)
3 <sup>rd</sup> Party Verification	Yes	Yes
Verification Standard	NAHB Research Center	NAHB Research Center
Verifier Testing	???	NAHB Research Center
Verifier Registration	HBAK or NAHB Research Center	NAHB Research Center
Verifier Registration Fee	Determined by HBAK	NAHB Research Center (\$195/yr)
Energy Efficiency	Performance (ENERGY STAR Required)	Prescriptive or Performance
Energy Verification	HERS Rater (ENERGY STAR)	3 <sup>rd</sup> Party
Credit for Improved Energy Efficiency	2 additional points for every percentage point saving beyond 15%	No additional points between 15 and 30% savings
Points for: 3.3.6.1 - 3 <sup>rd</sup> Party Inspection	Not Allowed Required for ENERGY STAR	Optional
6.1 - Home Manual	Required	Optional
Additional Certifications Required	ENERGY STAR	None





# Planning Process

1. Review Current Practices for Points
2. Determine Where Additional Points are Needed
3. Select Additional Practices to Obtain Needed Points in Each Section
  - a) Consider Documentation Requirements
  - b) Determine additional Costs



# Questions

