



Home Innovation
NGBS GREEN CERTIFIED

HERS Scores – A Stepping Stone Toward Green Certification

2016

Agenda



Home Innovation
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- Consumer Insights
- ICC-700 National Green Building Standard
- Build Your Success on Ours
- Requirements for Certification
- Scope & Process
- Certification Costs
- NGBS Green Verifier accreditation
- Marketing verifier accreditation
- What It Takes to be a successful verifier
- Q & A/Wrap-Up

Green Sales Fibs

Don't Listen to the Myths



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Green Home Fibs

- Green doesn't matter
- *Green is too expensive*
- Only energy efficiency matters
- No one asks for green



Top Consumer Values

- 1. Health**
- 2. Comfort**
- 3. Durability**



Green Home Facts

- Buyers want (benefits of) green homes, but may not know how to ask for it
- Buyers mostly motivated by personal interest, BUT green homes provide the benefits that buyers care about
- Significant generational geographic, and gender differences
- Different markets respond to different messages



Builders Waking Up to Green Marketing Mistake:

- Unable to rely on energy efficiency as the silver bullet
 - 50% people think their homes are already energy efficient
 - 71% think they are using same energy now as 5 years ago (Shelton Group)
 - Lower operating costs doesn't resonate as much with luxury home buyers

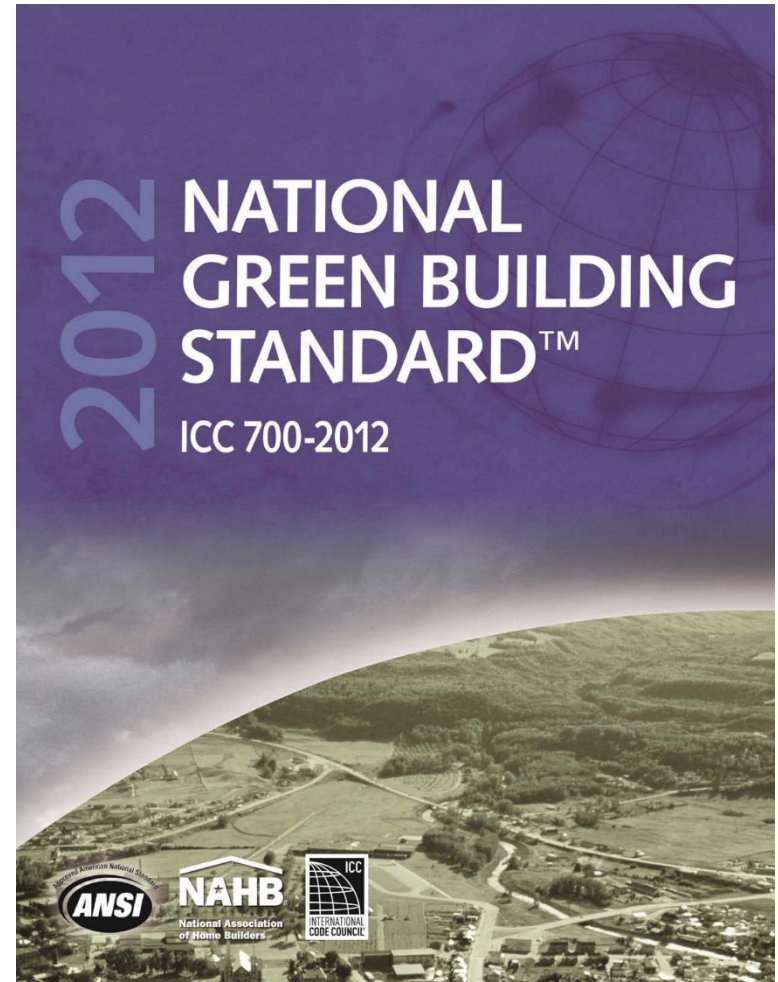


National Green Building Standard ICC-700



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- First and solely residential green code within the suite of I-Codes
- Approved by American National Institute of Standards (ANSI)
- Designed to be voluntary, above-code program
- Provides rating system of project's environmental impact
- Four certification levels
- Regular updating on 3-year cycle: 2008, 2012, and 2015 (coming soon!) NGBS versions



National Green Building Standard

- Comprehensive set of green practices for design, construction, verification, and operation
 - Written in code language
 - Sets energy efficiency baseline as % above code
 - Few mandatory provisions
 - Stringent requirements for required points in every green category
 - Increasing requirements in every green category for higher certification levels
 - Expansive, flexible point-based system to recognize diversity of residential buildings, climate zones, and construction types
 - Equal focus on design and construction
 - Backed-up by most rigorous verification protocol of any program



Home Innovation Research Labs

- Originated as a small product testing laboratory
- Improving the quality, durability, affordability, and environmental performance of homes since 1964
- Full-service consulting, product testing, & accredited third-party certification agency
- Dedicated solely to issues related to the home building industry
- Serves as Adopting Entity for ICC-700 National Green Building Standard



Build Your Success On Ours



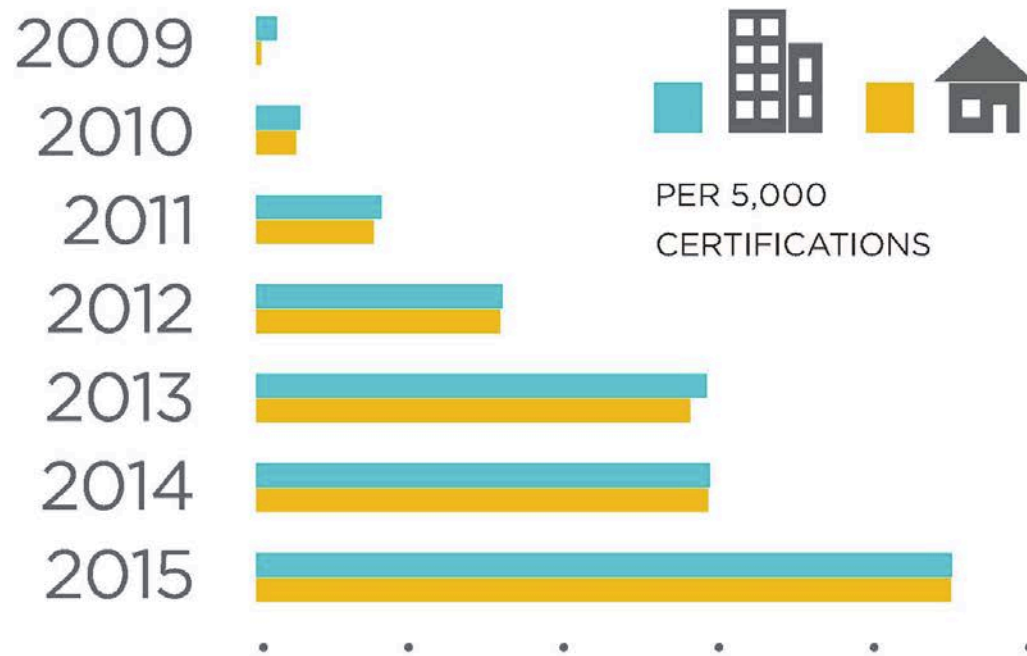
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71,896 NGBS Green Certified homes
As of February 27, 2016

NGBS Project Type	Certified	In Process
Single-Family Homes (new & remodeled) *	10,263	1,526
Multifamily Buildings (new & remodeled)	1,835	1,158
Units within NGBS Multifamily Buildings *	61,633	59,206
Land Developments	23	12
Lots within NGBS Land Developments	1,541	23,635

www.homeinnovation.com/NgbsGreenStats

NGBS GREEN CERTIFICATION ACTIVITY BY YEAR



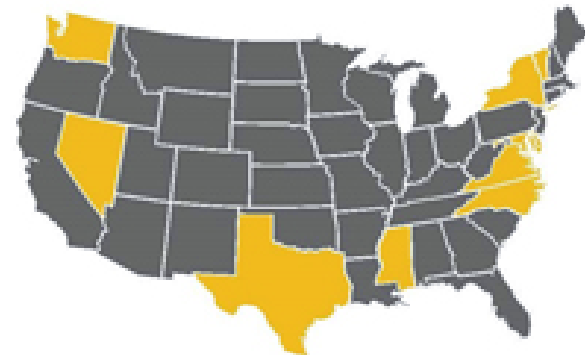
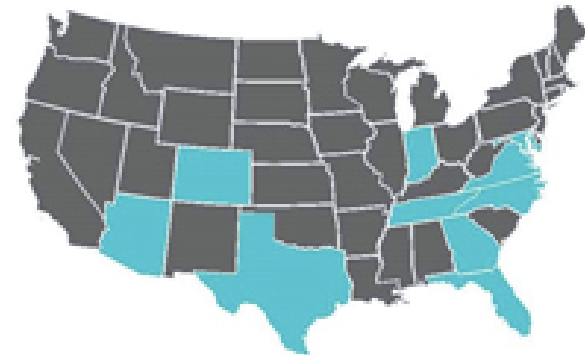
TOP 10 STATES FOR NGBS GREEN CERTIFICATION ACTIVITY IN 2015



1. TEXAS
2. FLORIDA
3. NORTH CAROLINA
4. GEORGIA
5. MARYLAND
6. ARIZONA
7. TENNESSEE
8. VIRGINIA
9. COLORADO
10. INDIANA



1. NORTH CAROLINA
2. DELAWARE
3. VIRGINIA
4. MARYLAND
5. MISSISSIPPI
6. NEVADA
7. WASHINGTON
8. TEXAS
9. VERMONT
10. NEW YORK

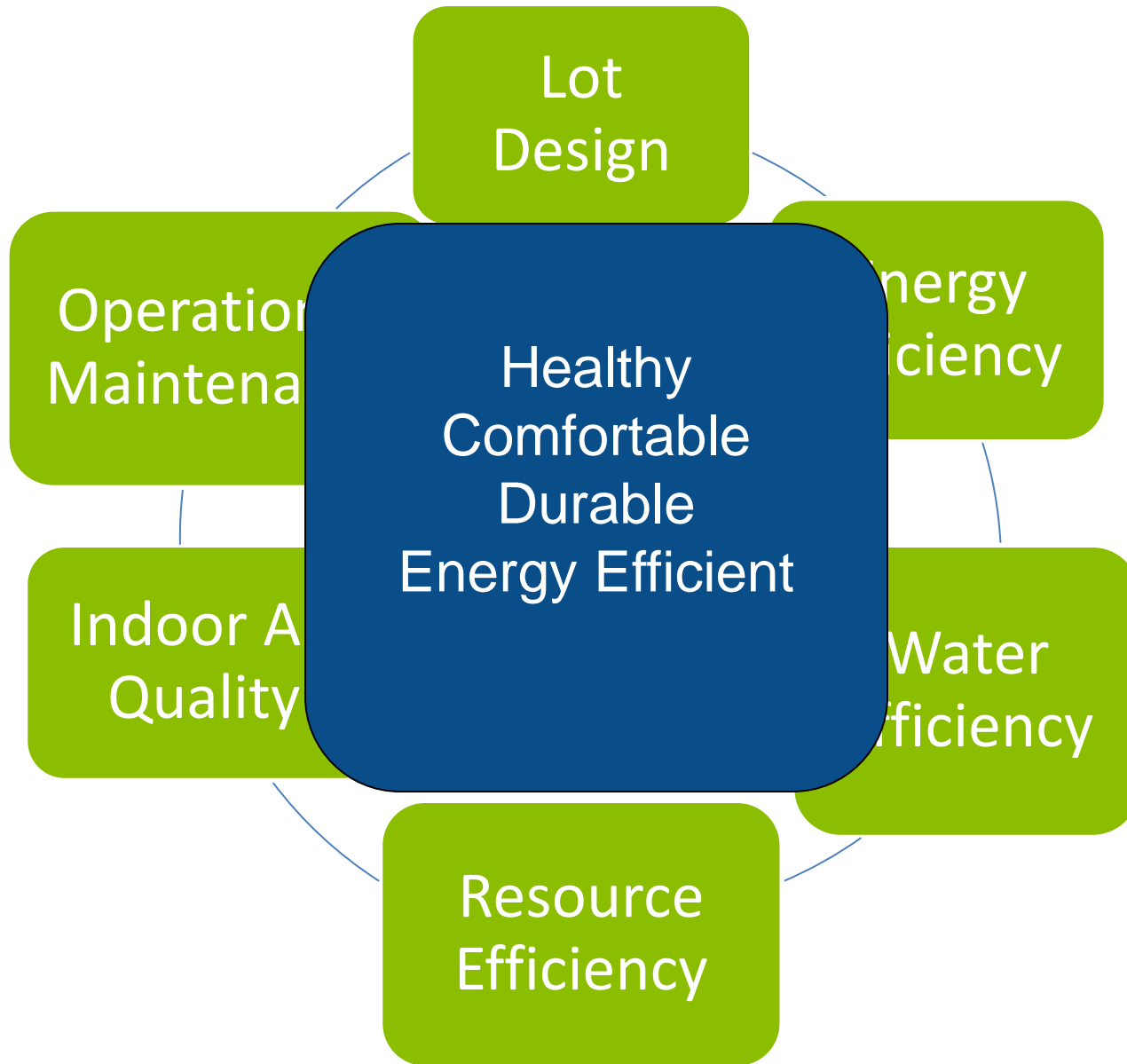


Comparing Green Building Rating Systems



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- ANSI-approved consensus standard
- Written in code language
- Few mandatory provisions
- Expansive, flexible point-based system
- Multiple paths for energy compliance
- All residential

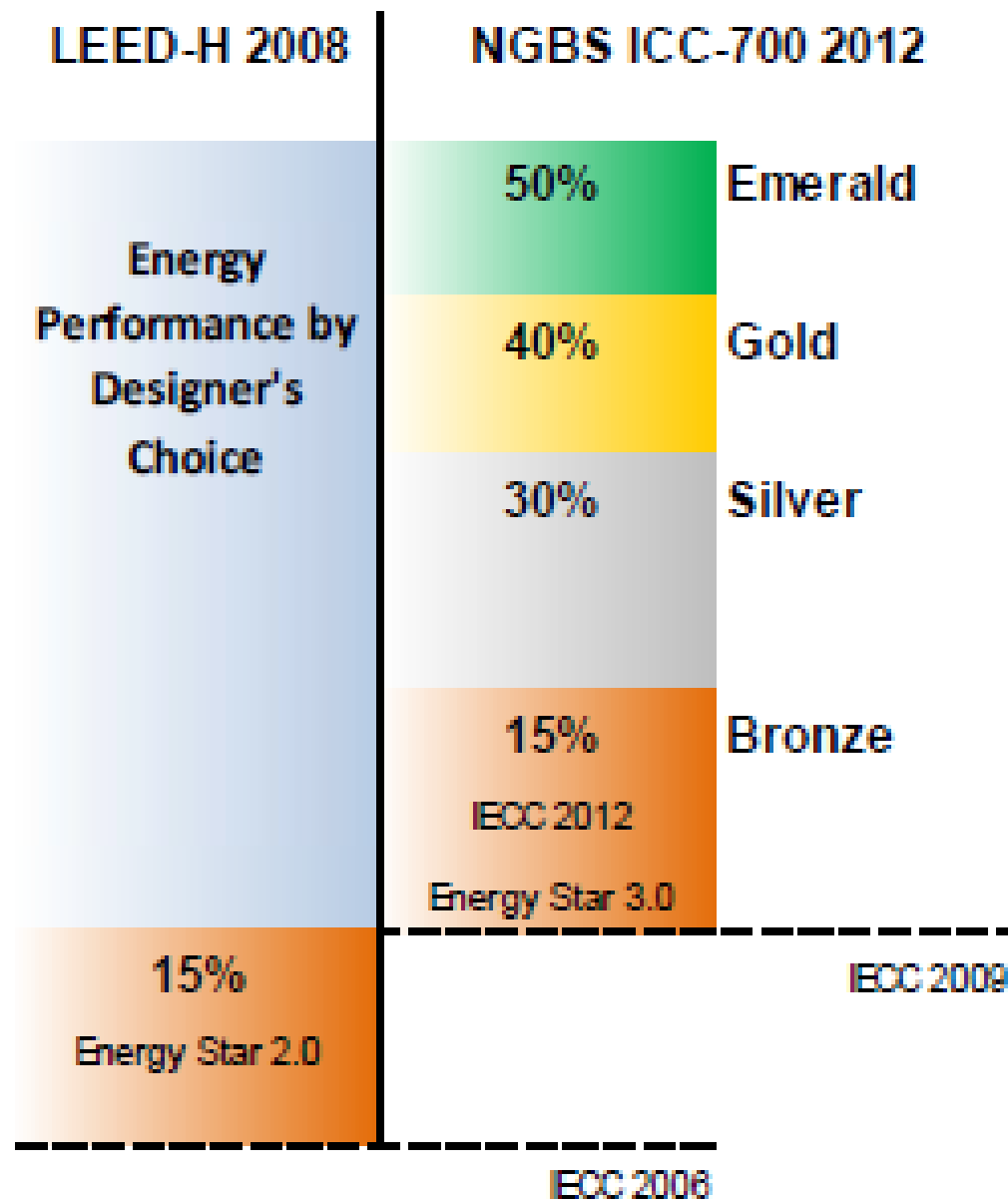


NGBS Performance Levels



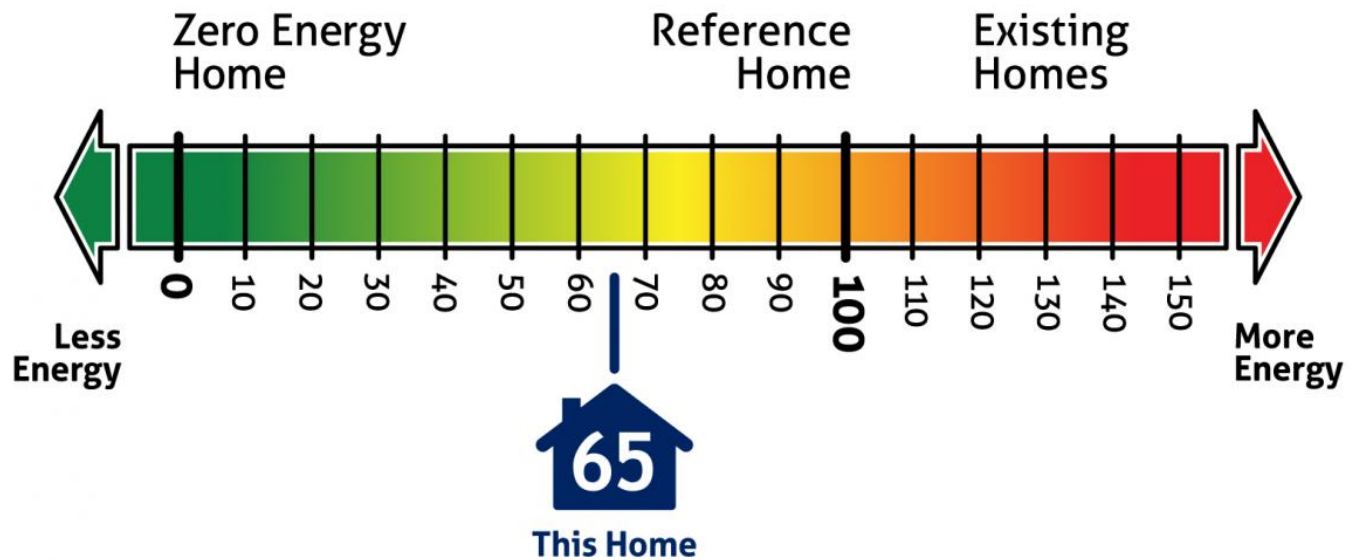
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Green Building Categories			Rating Level Points ⁽¹⁾ ⁽²⁾			
			BRONZE	SILVER	GOLD	EMERALD
1.	Chapter 5	Lot Design, Preparation, and Development	50	64	93	121
2.	Chapter 6	Resource Efficiency	43	59	89	119
3.	Chapter 7	Energy Efficiency	30	60	80	100
4.	Chapter 8	Water Efficiency	25	39	67	92
5.	Chapter 9	Indoor Environmental Quality	25	42	69	97
6.	Chapter 10	Operation, Maintenance, and Building Owner Education	8	10	11	12
7.		Additional Points from Any Category	50	75	100	100
Total Points:			231	349	509	641



Performance Path—Required Energy Reduction

HERS® Index



Single Family Homes



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Multifamily Buildings



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Land Development



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CEDAR VALLEY
RIDGE
Traverse City, Michigan

Green Remodel Path



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New Chapter 11: Remodeling & Renovation

- Available for single family homes or multifamily buildings
- Separate stand-alone chapter
- Similar to, but more comprehensive than, 2008 NGBS Green Remodel Path
- Applicable mandatory practices
- Energy & water reductions
- Additional points required from lot design, resource efficiency, IEQ, and Operation, but no minimum thresholds in each category



SF and MF Renovation: Efficiency Improvements



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Table 305.3.5
Energy Rating Level Thresholds

	Rating Level			
	BRONZE	SILVER	GOLD	EMERALD
Reduction in energy consumption	15%	25%	35%	45%

Table 305.3.6
Water Rating Level Thresholds

	Rating Level			
	BRONZE	SILVER	GOLD	EMERALD
Reduction in water consumption	20%	30%	40%	50%

Table 305.3.7
Prescriptive Threshold Point Ratings

	Rating Level			
	BRONZE	SILVER	GOLD	EMERALD
Chapter 11 prescriptive thresholds	88	125	181	225

New Chapter 12: Small Projects

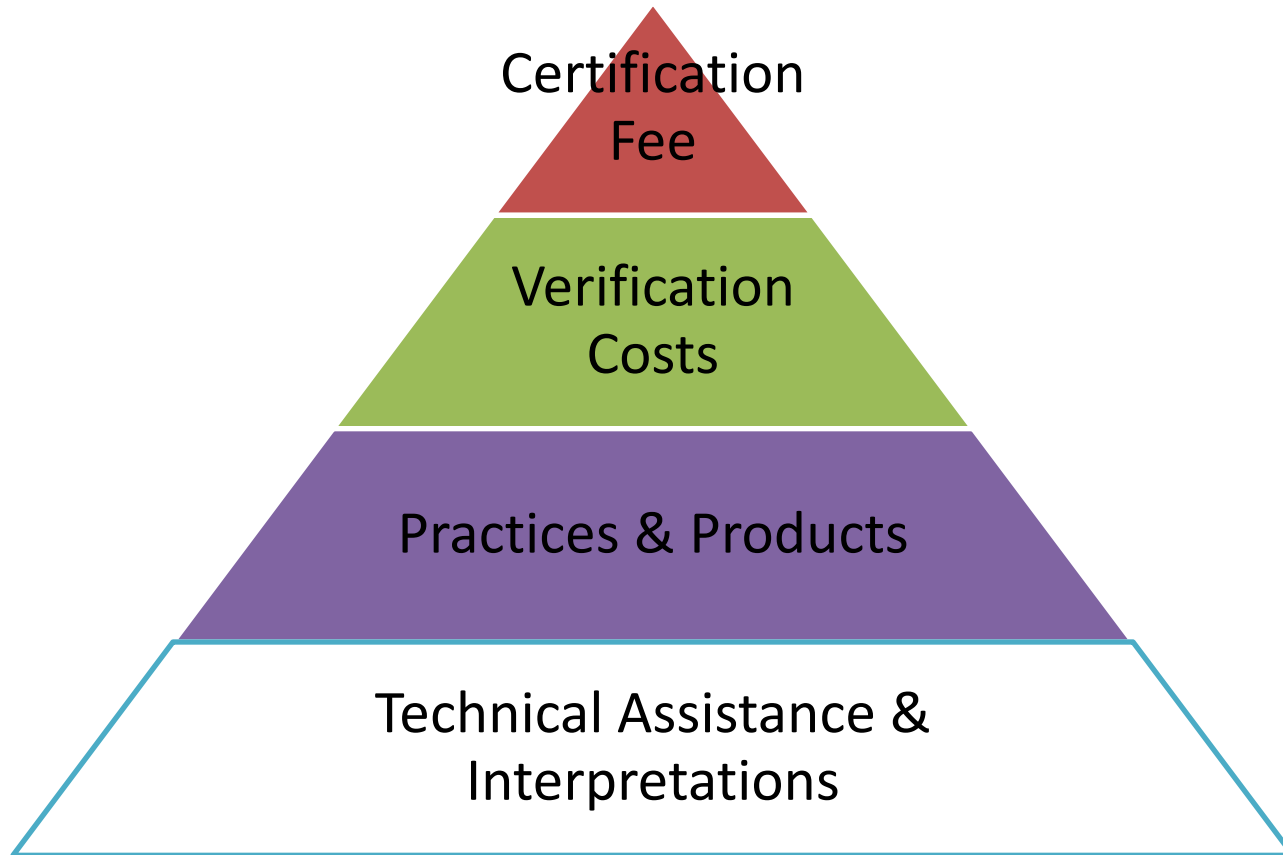
- One certification level
- Functional Areas
 - Kitchens
 - Full bathrooms
 - Complete basements
 - Additions < 400 ft²
- All applicable practices are mandatory



Compliance Costs



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Cost Comparison: Single Family Homes



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- NGBS is more cost-effective than LEED 2008 and LEED v4 at the lower certification levels.
- Cost difference grows at higher (Emerald/Platinum) due to the stringency of the NGBS.

Total Bronze/Certified Compliance Costs		
NGBS	LEED-H	LEED v4
\$2,601	\$5,165	\$7,778



- Verde Vista, Asheville, North Carolina**
- 252 units; 280,000 total SF
 - 0.124% Increased cost (as a % of total) or \$79/unit for NGBS Silver

**“If you don’t know where you’re going,
any road will take you there.”**

– George Harrison

also The Cheshire Cat



Site

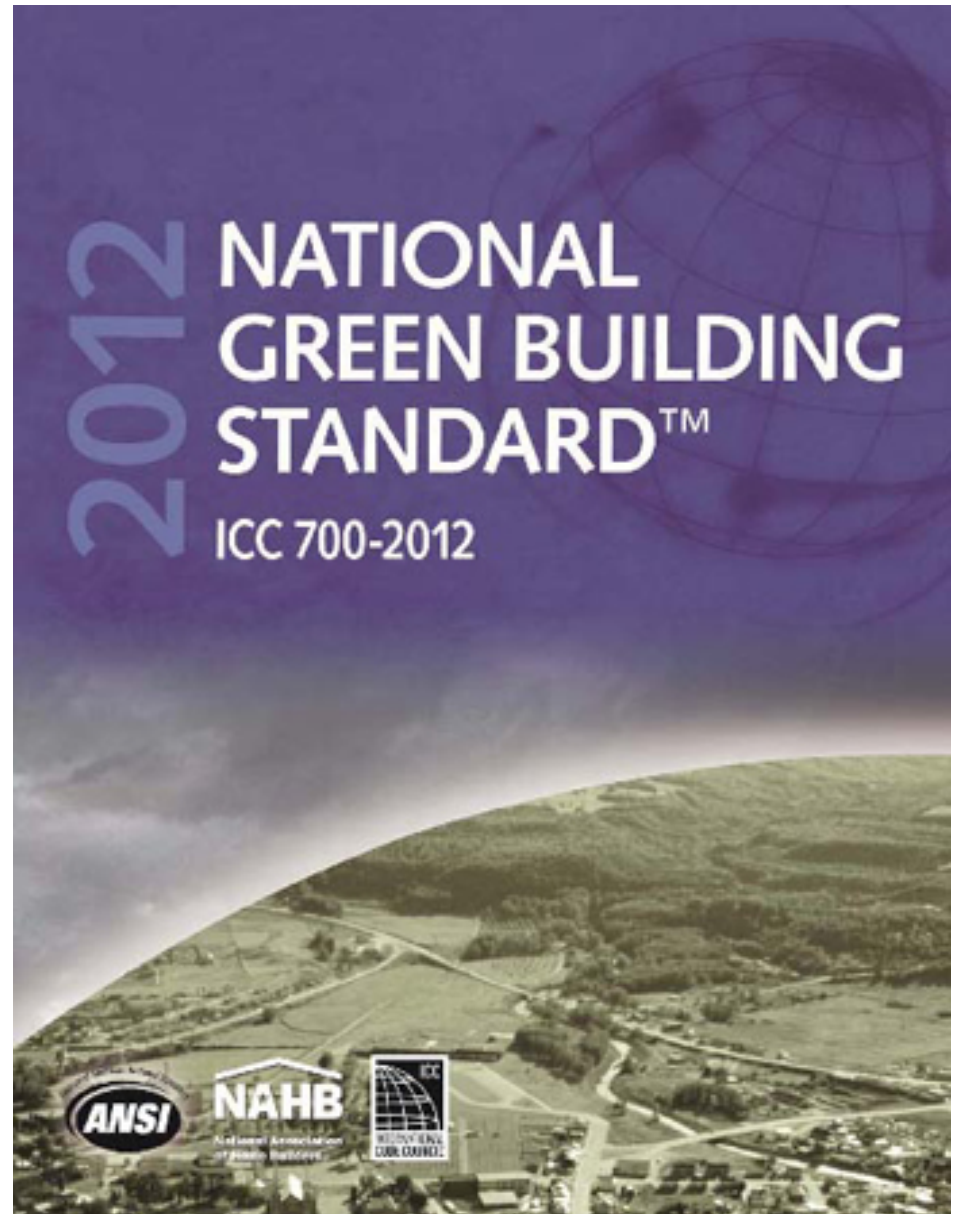
Water

Energy

Indoor Environment

Materials and Resources

Home Owner Education



3 Main Tips for Getting Started

Benchmark your product

Low Hanging Fruit!


Know Your Resources

Products Pre-approved for Green Points Online!

Find a Verifier

We've already read it, so you don't have to

NGBS Green Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	 Home Innovation RESEARCH LABS NGBS Scoring for New Construction ICC 700-2008 National Green Building Standard™												Current Status		Performance Level Minimums				
2													Score	Mandatory	Bronze	Silver	Gold	Emerald	
3																			
4													This Project	0	Not Met	222	406	558	697
5	Revised March 22, 2013																		
6																			
7	Version																		
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10	Last revision: March 22, 2013 See the Errata worksheet for a list of versions & corrections.																		
11																			
12	Introduction																		
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14																			
15	General Project Description																		
16	Please fill in the information below. All fields are required unless marked otherwise. This information may be used to pre-populate fields and aid in scoring decisions in this tool. It may also be used for statistical reasons. Your privacy is important to us, and your information will not be shared or sold outside of the NAHB Research Center or National Association of Home Builders.																		
17	Builder Name: <input type="text"/> Builder Phone Number: <input type="text"/> Physical Address of Home: <input type="text"/> City: <input type="text"/> State: <input type="text"/> Zip: <input type="text"/> Community/Lot #: <input type="text"/> The project I am scoring is: <input type="text"/> If Multi-Unit, enter # of units: <input type="text"/>																		
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			
26	Project's Climate Zone: <input type="text"/> See Climate Zone Map.																		
27																			
28	Square Footage: <input type="text"/> sq ft For a multi-unit building, use a weighted average of the individual unit sizes.																		
29	Start Here! Chapter 5 Chapter 6 Chapter 7 Chapter 8 Chapter 9 Chapter 10 Designer's Report Scoring Analysis Ch. 7 Appendices Figures																		

NGBS Performance Levels



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Site

Flat Lot? Good!

Sloped Lot – stabilize it

Landscaping – reduce turf, regional plants,
feed the birds,

Do Erosion control

Shade the driveway / light colored concrete

Energy

2009 Energy Code mandatory

Grade 1 Insulation

92% AFUE furnace, 14 SEER AC

Windows max of .30 U value

Radiant Barrier roof sheathing

Tight building envelope (max 4 ACH)

Tight ducts

3rd party inspections

OR



Water

Watersense lavatory faucets
and toilets

Energy Star dishwasher

Centralize your Water Heater

Irrigation? Moisture sensor,
smart controller

Water

Know about this chart

Table 801.1(1): Maximum Pipe Length (ft.)				
Nominal Pipe Size (inch)	Liquid Ounces per Foot of Length	Main, Branch and Fixture Supply Systems		
		128 ounces (1 gallon)	64 ounces (0.5 gallon)	32 ounces (0.25 gallon)
1/4 ^b	0.33	50	50	
5/16 ^b	0.5	50	50	
3/8 ^b	0.75	50	50	
1/2	1.5	50	43	
5/8	2	50	32	
3/4	3	43	21	
7/8	4	32	16	
1	5	26	13	
1 1/4	8	16	8	
1 1/2	11	12	6	
2	18	7	4	

IAQ

No vent free fireplaces

Low VOC paint

IAQ certified carpet

Greenguard Insulation

Fresh air ventilation for house

Kitchen exhaust outside

Clean the ducts before occupancy



Materials

Are ALL your homes over 2500 sq ft?

Roof Trusses, I Joists, Advanced Framing

Stacked stories?

No moldy wood, no wet insulation

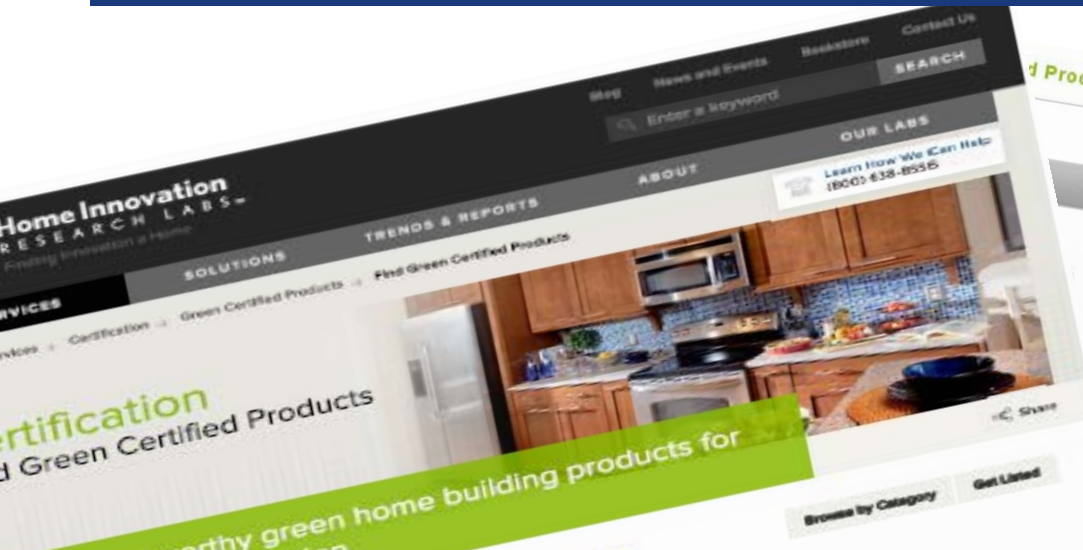
Gutters?

Recycle Construction Waste?

Do any of these look familiar?



www.homeinnovation.com/greenproducts



1 Products

Featured Products



CertainTeed CedarBoards Insulated...



Weyerhaeuser Lumber-Framer Series® Green...



GE Silicone I Window & Door, GE Silicone I...



Find by Practice

Horbord Pinn Premium Sub-F...



Orgia-Pacific d-Platinum®



Owens Corning EnergyComplete™



Eastman Perennial Wood Decking and...



JELD-WEN FSC and SFCertified EIERG...



S&P Energy Recovery Ventilators-Model...



Pactiv GreenGuard® Extruded Polystyrene...




Sustaining Spaces Homellay™ Online...

Green Certified Products: Pre-approved for NGBS Points



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Home → Services → Certification → Green Certified Products

 [Learn How We Can Help](#)
(800) 638-8556

Certification

Green Certified Products



NGBS point-worthy green home building products for
NGBS Green Certification.

 Share

Market Research

Building Science

Product Testing

→ **Certification**

Green Homes

Multifamily

Single-Family

Remodeling

What is the Green Certified Product program?

Home Innovation Research Labs NGBS Green Certified Product program bridges the gap between manufacturers who produce NGBS-certified products and the builders/designers who want to use them in homes.

To be eligible for the NGBS Green Certified Products program, manufacturers must provide appropriate third-party evidence to Home Innovation Labs that their products meet the criteria for recognition in buildings seeking NGBS Green Home Certification.



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Featured Products

Browse

Categories

- Appliances
- Building Materials
- Cabinets/Countertops
- Flooring
- Foundations
- HVAC
- Insulation
- Landscaping
- Lighting/fans
- Other
- Paints/Adhesives/Sealants
- Siding
- Windows/Doors

Brands A - Z



Featured Products

Find by Practice

Get Listed



CertainTeed
CedarBoards
Insulated...



Weyerhaeuser
Lumber-Framer
Series®, Green...



GE Silicone I Window
& Door. GE Silicone I...



Horbord Pinnacle
Premium Sub-Flooring



Georgia-Pacific
Plywood-Platinum®...



Owens Corning
EnergyComplete™...



Eastman Perennial
Wood Decking and...



JELD-WEN FSC and
SFI Certified ENERGY...



ICYIEME MD-C-200™



S&P Energy Recovery
Ventilators-Model...



Pactiv GreenGuard®
Extruded Polystyrene...



Sustaining Spaces
HomeNav™ Online...

Certification

Green Certified Product Detail



 Share

CertainTeed CedarBoards Insulated Siding

[Browse by Category](#)

[Find by Practice](#)

[Get Listed](#)



Product Information

CedarBoards™ Insulated Siding provides the added strength and thermal benefit of rigid foam insulation with easy maintenance. Dressing your home in CedarBoards is like wrapping your family in a cozy blanket.

[Manufacturer's Website >](#)

Certifications



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NGBS 2008

Practice #	Practice	Points Available	Additional Conditions of Use to Earn Points
601.7	Building materials/assemblies do not require additional site applied material for finishing. 12 points max. awarded.	2 or 5	For 5 points: 90% or more of the installed wall coverings must be this product. For 2 points: 50 - 90% of the installed wall coverings must be this product.

Certification

Green Certified Products

Helping you select products that contribute to and support your NGBS certification goals.

 Print  Share

Maritech - Vinyl Windows

Series 310, 311, 312, 450, 451, 452, 570, 571, 572, 574, 575, PD3, PD12, CA55 Casement, CA55 Casement PW

[Browse by Category](#)

[Find by Practice](#)

[Get Listed](#)



Production Information

Our windows are designed for performance. They meet and exceed many of the required structural and energy ratings. We offer many different options to increase strength, performance, and security. There are several glass options to choose from.

 [Manufacturer's Website](#) |  [Product Specifications](#)

Certifications



Practice #	Practice	Points Available	Additional Conditions of Use to Earn Points
7014.4.1	NFRC-certified windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are ENERGY STAR, or Table 7014.4.1.	Mandatory	To meet this mandatory requirement, the NFRC label on the windows must show that the appropriate window is used for the climate zone. Detail U-Factor & SHGC info based on product family and glazing type is available at www.maritechwindows.com/products.php . Click on the product series and then click on Testing Information.
Manufacturer's Comments Our windows are designed for performance. They meet and exceed many of the required structural and energy ratings. We offer many different options to increase strength, performance, and security. There are several glass options to choose from.			

Home Owner Manual


Do it once, use it again and again

Reduce callbacks





Extra
points
for
awesome



NGBS defines
green home

100% project
verification
ensures
compliance

National NGBS
certification
provides
consistency



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NGBS Certification Process



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Score

- Architect, Verifier, or Builder can score building
- Scoring provided to Verifier for inspections

Register

- Accredited Verifiers register building
- Projects appear on website as in-progress

Construction

- Inspect pre-drywall and final
- For MF all units must be visually inspected

NGBS Certification

- On completion of final inspection
- Issued within one-business day

Registration Process Mandatory




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- Establish what version of the Standard [2008 or 2012] the building will use for compliance
- Get homes into the system quicker, to market them earlier
- Streamline the process for verifiers
- Verifiers only can register project
- Free

Score: NGBS Green Spreadsheet



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19	Builder Name: <input type="text"/>																	
20	Builder Phone Number: <input type="text"/>																	
21	Physical Address of Home: <input type="text"/>																	
22	Community/Lot #: <input type="text"/>																	
23	City: <input type="text"/>																	
24	State: <input type="text"/>																	
25	Zip: <input type="text"/>																	
26	The project I am scoring is: <input type="text"/> If Multi-Unit, enter # of units: <input type="text"/>																	
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www.homeinnovation.com/GreenScoring

Independent, Third-Party Verification

- Nationwide network of 350 verifiers
 - Smaller group specializing in multifamily buildings
- Rigor
 - Every home or apartment must be inspected before drywall installation (rough) and when complete (final)
 - Rough and final inspection reports submitted for review
- www.homeinnovation.com/FindNGBSVerifier



Verification Services

- Market Rate Pricing
- Inspections typically 1-2 hours on SF homes
- Multifamily Projects may require additional visits, all units must be inspected
- Many verifiers provide other services
 - HERS raters, energy modeling
 - Design services
 - Consulting



Accredited Verifiers: Prerequisites



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- Qualifying candidates have existing experience in both residential construction AND green building

Residential Construction

- Building superintendent
- Licensed or qualified home inspector
- Residential land development management
- Construction consultant, training, or inspection services
- Etc.

Green Building

- 12 hours of formal green training
- LEED AP
- NAHB CGP
- RESNET rater
- NARI
- Etc.

Accredited Verifiers: Training



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- \$150 training & accreditation fee
- Training delivered 24/7
- Online exam
- Covers NGBS practices and verification requirements
- Does not cover green building concepts

Accredited Verifiers: Support & QA



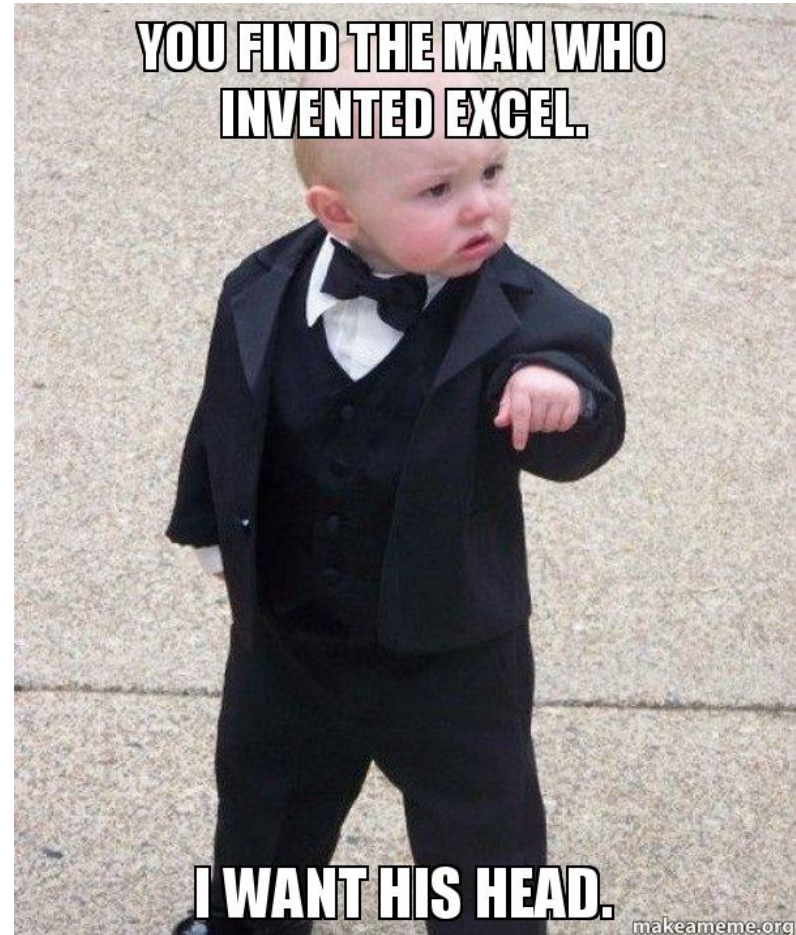
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- Other Accreditation Requirements:
 - Insurance (auto and liability)
 - Signed agreement
- Support
 - Free technical assistance
 - Responses within 24-hour period
 - Monthly program emails and webinar programs
- Quality Assurance
 - 100% review of all inspection reports
 - Desktop audits
 - Routine site audits

The Real Deal

Tips for Success

1. Be very comfortable with Excel (in and off the field)



The Real Deal

Tips for Success

2. Know your Resources



The Real Deal

Tips for Success

3. Time is Money



Marketing & Business Development Resources

- “NGBS Green Verifier” marks
 - Link to “Find a Verifier” listing
 - Signage, brochures
 - Use NGBS Bronze Cookbook during plan review sessions with prospective clients
 - Host AIA Lunch-and-Learns
 - NGBS Trainings, co-presenting opportunities
 - Invite to Annual Verifier Retreat







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NGBS GREEN PARTNER™



Home Innovation
NGBS GREEN REGISTERED™



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RESOURCE EFFICIENCY

Live Greener. Live Better.


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Now You Can Go Green With Confidence

Living green is about embracing better ways to live. It's about building homes. It's about increasing energy and water efficiency. It's about helping improve the communities in which we live. Green certification by Home Innovation Research Labs recognizes residences that meet the highest environmental performance standards.

An independent, third-party inspection agency Home Innovation Research Labs is recognized as the nation's premier residential building product testing laboratory. We understand every aspect of home building and use green certification to award only to those residences that are in compliance with the rigorous National Green Building Standard™ (NGBS). Living in a Home Innovation NGBS Green Certified home is truly being green.

OUR GREEN CERTIFIED RESIDENCES PROVIDE:

IMPROVED ENVIRONMENTALITY

- compliance to strict residence envelopes that allow heat and cold to be locked outside, resulting in affordable energy savings
- roofs with smart weather protection and made for protection that is better tomorrow

WELL-DESIGNED HOMES

- national and high performance residential and multifamily building systems for water and air quality
- roofs with double protection and techniques to reduce water damage
- compliance to the most comprehensive and strictest standards

REDUCED COST OF OWNERSHIP

- reduced energy and water bills
- construction provided to include energy-efficient and include environmental benefits for the long-term sustainability
- construction to include energy-efficient and include environmental benefits for the long-term sustainability
- construction to include energy-efficient and include environmental benefits for the long-term sustainability

To learn more, visit HomeInnovation.com/GoGreenLiving.



Home Innovation Research Labs, 600 Green Campus Boulevard, Upper Merion, Maryland 20890
P: 800-246-6000 | F: 800-600-0000 | info@HomeInnovation.com | HomeInnovation.com

Building Innovation a Home

Home Innovation Research Labs is an independent provider of the national green building certification and is not affiliated with any other organization.

FIND A BETTER PLACE TO CALL HOME

A SMARTER INVESTMENT. A HEALTHIER HOME. A HAPPIER YOU.

BUY

RENT

REMODEL





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ENERGY STAR® APPLIANCES

ENERGY STAR qualified appliances incorporate advanced technologies and use 10 to 50 percent less energy than standard appliances.



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OPTIMUM VALUE ENGINEERING

Advanced house framing uses less lumber so it saves trees, saves on labor costs, and reduces construction waste. Less really can be more – less lumber means more room for insulation and greater comfort.



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CLOTHES WASHERS

ENERGY STAR® clothes washers use 40 to 50 percent less energy and about 55 percent less water than standard washers.



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LOW-VOC PAINT

Volatile organic compounds (VOCs) are considered indoor pollutants and can cause negative impacts to people who are exposed to them. The use of low-VOC emitting paints can help to improve indoor air quality.



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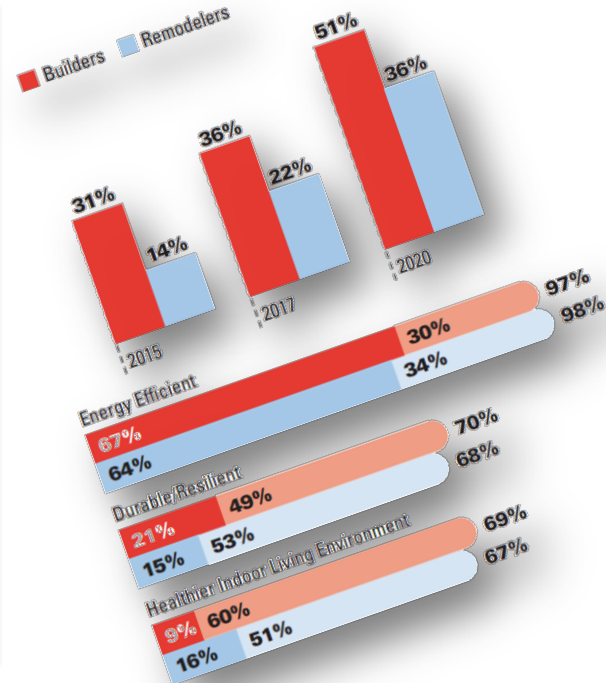
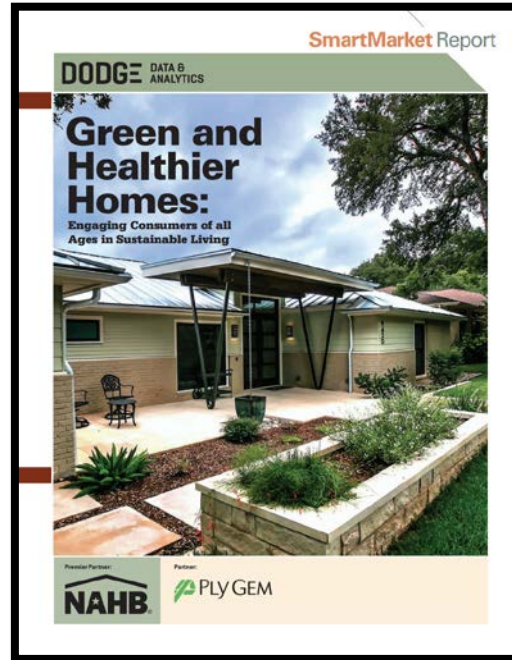
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NGBS Green Team



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