WHAT MANUFACTURERS NEED TO KNOW: THE NATIONAL GREEN BUILDING STANDARD

December 3, 2013

Learning Objectives

After this session, you’ll be able to:

- Introduce the National Green Building Standard
- Describe unique aspects of the NGBS Green certification program
- Recognize the NGBS Green Certified mark
- Recognize new ways to connect with green builders

Equity Residential, New York, New York
Home Innovation Research Labs provides national certification
Certification based on ICC-700 National Green Building Standard
Our program philosophy is to remove all barriers to building green, high-performance certified homes
Our value proposition is that NGBS certification is affordable, flexible, easy-to-use, and rigorous
Our goal is to help our clients deliver a quality, high performance asset

We Help Find Innovation a Home

Our Services
We Build High-Performance. But Why Seek Certification?

- 80% consumers value a independent, third-party certification
- FTC compliant marketing without fear of greenwashing
- Marketing assistance
- Find Your Green Home
- Investor & appraisal recognition
- Risk mitigation for future value
Multifamily is Hot. Why Seek NGBS Certification?

- Market Differentiation
- Institutional Investors
- Energy Price Volatility
- Corporate Reputation
- Streamlined Entitlement Process, Development Review, Public Participation
- BONUS REASON: Employee Retention

Metro 808, Charlotte, North Carolina

ICC-700 National Green Building Standard

- Approved by American National Institute of Standards (ANSI)
- Provides rating system of a project's environmental impact
- Four certification levels for residential buildings
- Designed to be voluntary, above-code program
Comparing Green Building Rating Systems

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

Unique Program Philosophy

**Goal:** To eliminate barriers to green certified residential buildings

- Costs (real or perceived – direct and indirect)
- Difficulty / Inflexibility
- Processing hurdles

NGBS Certification Process

NGBS defines green home
100% project verification ensures compliance
National NGBS certification provides consistency
NGBS Certification Process

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

NGBS Categories of Green Practices

Lot Design
Operation & Maintenance
Indoor Air Quality
Energy Efficiency
Water Efficiency
Resource Efficiency

Benefits:
Healthy
Comfortable
Durable
Efficient

2012 NGBS Performance Levels

<table>
<thead>
<tr>
<th>Green Building Categories</th>
<th>Rating Level Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BRONZE</td>
</tr>
<tr>
<td>1. Chapter 5 Lot Design, Preparation, and Development</td>
<td>90</td>
</tr>
<tr>
<td>2. Chapter 6 Resource Efficiency</td>
<td>43</td>
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<tr>
<td>3. Chapter 7 Energy Efficiency</td>
<td>59</td>
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<tr>
<td>4. Chapter 8 Water Efficiency</td>
<td>25</td>
</tr>
<tr>
<td>5. Chapter 9 Indoor Environmental Quality</td>
<td>25</td>
</tr>
<tr>
<td>6. Chapter 10 Operation, Maintenance, and Building Owner Education Additional Points from Any Category</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>99</td>
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</tbody>
</table>

Total Points: 231 349 509 641
LEED H 2000 | NGDBS ICC-700 2012

Energy Performance by Designer's Choice

- 50% Emerald
- 40% Gold
- 30% Silver
- 15% Bronze

15% Energy Star 2.0

Required Energy Reduction

Score:
NGBS Green Spreadsheet

www.homeinnovation.com/GreenScoring
Verify:
100% Independent, Third-Party

- Qualify, Train, & Test
  - Experience in residential construction and green building
  - Standardize inspection process for projects
- Accredit
  - Must have sufficient insurance, auto and liability
  - Continuing education requirements
- Quality Assurance
  - 100% review of all inspection reports
  - Home Innovation Labs performs quality assurance audits

Independent, Third-Party Verification

- Nationwide network of 400 verifiers
  - Smaller group specializing in multifamily buildings
- Verification Costs
  - Market rate price
  - $50-200 / unit
- 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
Certification Costs

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
- 0.62% or $396/unit for Energy Star certification

2012 NGBS Highlights
- New Practices
- Higher Energy Baseline: Bronze roughly equivalent to 2012 IECC
- Rewards land development certification
- Improved alignment of water efficiency points with expected water usage
- Universal design practices added
- Revised chapter point thresholds
- New certification opportunities
Land Development Certification Requirements

- Green development Practices
  - Site Selection
  - Site Design
  - Site Development & Construction
- Two Approval Options:
  - Letter of Approval or
  - Certified when and development activities complete
- Streamlines entitlement & permitting, market green commitment early

Daybreak - Salt Lake City, Utah
Chapter 6: Resource Efficiency

Headlines

- Durability practices from IAQ Chapter moved here
- Life Cycle Analysis expanded
- Universal Design Elements added
- Points for certified sustainable products
Chapter 7: Energy Efficiency

Headlines
- Baseline is 2009 IECC
- Whole house improvement, not just heating, cooling, water heating
- Three compliance paths remain
  - Performance (req’d for Emerald)
  - Prescriptive
  - Alternative bronze (Energy Star or 2012 IECC / 2012 IRC Chapter 11)

Energy Efficiency
- New MANDATORY Requirements:
  - HVAC & Duct system sizing
  - Building thermal envelope
  - Insulation must be graded – Grade 3 not allowed
  - Option for testing or visual inspection
  - Window air infiltration less than 0.3 cfm/ft²
  - 50% of hardwired lighting must be high efficacy
  - Smart appliances and systems get points

Center at Fort Lee, New Jersey
Chapter 8: Water Efficiency

Headlines
- Hardest category to attain higher levels of certification under 2008
- Added more available points
- Improved alignment of points with water usage
- More points available for rainwater collection and distribution, particularly multifamily
- Advanced wastewater treatment system

Chapter 9: Indoor Environmental Quality

Headlines
- Durability practices moved, except those that impair IAQ
- Sealing per 701 now mandatory
- Whole house ventilation mandatory if after testing ACH50 < 5
- VOC levels set, allows independent, third-party testing (not exclusive GreenGuard)
- VOC table listed for ease of reference

Chapter 10: Operation and Maintenance

Headlines
- Few changes
- Information on stormwater practices as option
- More points for occupant training
Available Points

<table>
<thead>
<tr>
<th>Green Building Categories</th>
<th>Available Points</th>
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<tbody>
<tr>
<td></td>
<td>2008</td>
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<tr>
<td>Lot Design, Prep, &amp; Development</td>
<td>216</td>
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<tr>
<td>Resource Efficiency</td>
<td>231</td>
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<tr>
<td>Energy Efficiency (Performance Path without PV)</td>
<td>280</td>
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<tr>
<td>Water Efficiency</td>
<td>111</td>
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<tr>
<td>IEQ</td>
<td>215</td>
</tr>
<tr>
<td>Operation, Maintenance, &amp; Owner Education</td>
<td>16</td>
</tr>
</tbody>
</table>

NGBS Remodel Path: Streamlined, Performance-based

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
New Chapter 12: Small Projects

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

New Chapter 12: Small Projects

- To be certified all of the mandatory practices must be met:
  - Reduce & optimize material usage
  - Control moisture for newly installed materials
  - Measures to reduce site-applied finishing materials, or use recycled content, or bio-based products
  - Proper HVAC and duct system sizing
  - Air barrier and insulation inspections
  - Selecting materials with low VOCs
Small Project Verification Requirements

- Complete small project checklist
- Provide checklist to Verifier
- Verifier will complete inspection – one visit expected
- Submit report to Home Innovation Labs for review and approval
- Certificate issued

International Green Construction Code (IgCC)

- Developed by AIA, USGBC, ICC, ASHRAE
- Finalized March 2012
- NGBS 2008 is alternative compliance path buildings 4+ stories
- Must achieve Silver level for energy efficiency
- In jurisdictions that adopt IgCC for SF and low-rise residential, ICC 700 governs
- Opportunity for independent, third-party certification to demonstrate compliance
State/Local Government Incentives

- Recognized by numerous jurisdictions, mix of mandates and incentive programs
- Local government recognition will likely increase as more jurisdictions adopt IgCC
- Over 15 states recognize NGBS certification in their Low-Income Housing Tax Credit Qualified Allocation Plans
- NGBS is well-suited for low-income housing programs, due to its cost-effective nature

Green Certified Products: Pre-approved for NGBS Points

What is the Green Certified Product program?
Home Innovation Research Lab and 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 their homes.

To be eligible for the NGBS Green Certified Products program, manufacturers must provide appropriate and publicly available written documentation stating that the products meet the criteria for recognition at any time; see NGBS Green Certification.
Don’t Run Afoul of the Federal Trade Commission

- FTC brings enforcement actions against false or misleading claims
- Increasingly concerned about greenwashing
- FTC defines greenwashing as:
  - Overstatement of environmental attributes
  - Emphasis on single environmental attribute with others ignored
  - Irrelevant claims

Federal Trade Commission Guidance on Green Claims

- Good green claims
  - Specific
  - Qualified
  - Substantiated
- Bad green claims
  - Inflated or unsubstantiated claims: specific health claims
  - Vague claims: all natural, environmentally-friendly
  - False eco-labels: self-certification
  - Irrelevance: No lead paint
Certification Marks

- FTC specifically concerned with certification marks
- 80% respondents found certification by independent, third-party organizations provides extra credibility and assurance
- And they influence purchasing decisions significantly
- State basis for certification
  - First Party
  - Second Party
  - Independent, Third-Party

Process & Cost Structure

- Process
  - Interested manufacturers apply to be pre-approved for specific practices of the NGBS.
  - Third-party documentation is necessary to validation point claims.
  - Currently accepting applications for both 2008 and 2012 practices.

- Pricing
  - Cost is accessed based on the number of products and practices approved.
  - Multiple discount options exist.
  - Pricing starts at $1,250 for 1 product and approved practice.

Utilizing the NGBS Mark—Advertising
Organize product information and NGBS practices to help architects, designers, and green builders specify your company’s products for their projects:

- Distinguish your company as a green building leader/expert
- Info is all in one place, marked by your company logo
- Way to encourage existing clients to explore a whole suite of “green” products
Special Visibility at 2014 IBS Show!

Strategic Collaboration
For Green Certified Products

- Generic Bronze Cookbook
- Bronze manufacturer-specific (CertainTeed, OC, etc.) Cookbook
- Reaching other levels with company’s products
- Add spec link for each listed product
- Presentations and materials, AIA-approved for architects
- Co-branded Silent Salesperson Signs
- Sales staff coordination with local or multifamily verifiers
- Find Your Green Home
- Certification numbers by state and type

Lunch-and-Learn Presentations

NGBS partners are welcome to present NGBS Overview presentation and grant CEUs to attendees.

Home Innovation staff will share presentation, script, and meeting materials.
In Summary: NGBS Green Certified Products

NGBS Green Certified products help builders and verifiers connect with the manufacturers whose products help achieve practices of the standard.

- FTC-compliant, third-party certification mark
- Marketing benefits
- Position your company as a green building leader/expert
- Strategic collaboration

Marketing Green Off-the-Shelf Materials

- Lessons Learned
  - All builders needed off-the-shelf materials
  - Few builders marketed green well or understood market opportunities
  - NAHB as identifier did not help company, program, or builders
- Solutions
  - Believe it or not, rename 50-year old company
  - Rebrand entire certification program
  - Redesign entire web site along with strategic SEO component
  - Develop turn-key marketing collateral

Marketing Guidance to Builders

- What Matters to Consumers
  - Independent, third-party certification
  - Survey Says…
  - Busting the green myths
- What Matters to the FTC
  - Independent, third-party certifications (SFI complaint filed)
  - Be Specific
  - Qualify Claims
  - Substantiate Statements
CLOTHES WASHERS

ENERGY STAR® clothes washers use 40 to 50 percent less energy and about 35 percent less water than standard washers.

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.

SEEKING NGBS CERTIFICATION

Home Innovation
NGBS GREEN REGISTERED
How Do Consumers Search for a Green Home?

How do you find the right home for you? Here are some tips on how to get started.

1. **Certification**: Look for homes that have earned certification from a recognized green building program. This ensures that the home meets high standards of sustainability and energy efficiency.

2. **Green Home Finder**: Use online tools like the Home Innovation Home Innovation Green Home Finder to find certified homes in your area.

3. **Local Builders**: Contact local builders who specialize in green homes. They can provide personalized advice and assistance.

4. **Open Houses**: Attend open houses in neighborhoods where you are interested in living. This is a great opportunity to ask questions and learn more about green homes.

5. **Mortgage Lenders**: Talk to mortgage lenders who offer green mortgages. These loans can help you finance the purchase of a green home.

6. **Government Grants**: Check if there are any government grants available in your area to help with the cost of a green home.

7. **Energy Audit**: Consider hiring an energy auditor to assess your current home and help you make improvements that will lower your energy costs.

Remember, investing in a green home is not only good for the environment but also good for your wallet in the long run.
NGBS Green Gallery

www.homeinnovation.com/NGBSGreenGallery

NGBS Green Team

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Home Innovation Research Labs
(follow our NGBS Green Certified Products Board!)

Linkedin

ICC 700 National Green Building Certification Group