

NATIONAL RESIDENTIAL GREEN BUILDING STANDARD

High energy costs, regional water shortages, consumer demand and federal and state tax incentives are just a few of the factors driving the green building movement. As building green moves from experimental to mainstream, a growing number of local jurisdictions are mandating that buildings meet “green building standards.” Unfortunately, these mandates usually require apartments to comply with standards designed for high-rise commercial properties because there were no multifamily-specific standards.

That will change with the upcoming publication later this spring of the new National Green Building Standard (NGBS), the first and only consensus-based standard for residential green building. The NGBS, which will be available through the International Code Council (ICC), will serve the dual purpose of providing firms with uniform guidance on green building practices that is appropriate for low-, mid- and high-rise apartment construction and offering local jurisdictions an alternative to non-standardized green rating systems (like the U.S. Green Building Council’s LEED criteria). This newsletter examines how the NGBS differs from existing standards and how apartment firms can use it to their advantage.

- *Multifamily Focus:* The NGBS was originally intended to cover only one- and two-family dwellings. After a request by NAA/NMHC, the standard was expanded to include multifamily properties and the multifamily portions of mixed-use properties. NAA/NMHC were invited to participate on the development committee. As a result, the NGBS is the only green building standard based on input from the multifamily industry.
- *Development Process:* The NGBS is also the only green building standard developed under the American National Standards Institute (ANSI) consensus process. This is important because it means the development process was open to the public and that the committee developing the standard included users (builders, developers, designers and owners), general interest (consumers) and producers/manufacturers. The NGBS committee also includes building officials and representatives from government agencies, and the environmental community. This not only improves the quality of the final product, it also enhances the credibility of the standard for local jurisdictions considering green building incentives or mandates.
- *Certification:* In many cases, the developer is allowed to self-certify compliance based on the construction drawings, site plans, specifications and certification that the building has been built to plan. While some provisions require third-party certification, these are limited, and the third-party can be the local building department, an enforcement group set up at the local level or someone not directly related to the project.
- *Code-Based Standard:* In contrast to existing green guidelines, the NGBS is written in code language, making it compatible with the ICC family of codes that have been adopted across the country by the various states and local jurisdictions. This not only makes it easier for builders to follow, it also makes it easier and less expensive to implement since it can be enforced as part of the local code approval and enforcement process or it can be enforced by a separate local entity specifically created to address the local green building issue.

To make enforcement even easier, the ICC is developing a green building technologies certification program for building inspectors. Communities and code officials will be able to use these ICC Certified Inspectors of Green Buildings Technologies to ensure compliance where localities adopt the NGBS.

The NGBS can also be used in locations that have not yet adopted a basic energy code, since the NGSB has several mandatory energy efficiency requirements. These mandatory requirements, which include many items apartment firms are already doing, sets a base level energy conservation standard that is meaningful and workable for the entire residential construction industry.

NGBS Overview: The NGBS will apply to both new construction and renovation; however, the renovation provisions will not be fully applicable to multifamily projects in the first version because of time limitations. Future versions of the standard are expected to address existing and renovated multifamily buildings as the industry gains more experience with green building.

The NGBS has four levels of compliance—Bronze, Silver, Gold and Emerald—based on a combination of mandatory elements and a point system. Points are allotted for green building practices in six different areas including: site sustainability; water conservation; material resource efficiency; energy conservation; indoor air quality; and education regarding green building maintenance and operation. To comply with the standard, builders/developers will be required to earn points in all categories.

Importantly, the NGBS recognizes (and will help promote) the inherently sustainable characteristics of multifamily buildings (i.e., their dense development practices, efficiencies in energy and water use, and effective use of infrastructure and building materials). In fact, many of the products used in building apartments claim to be green: wood, because it is renewable and can be used in efficient structural systems; concrete, because it has a large raw material supply and lasts a long time; steel, because it uses recycled materials; and brick and vinyl siding, because they do not require maintenance. As a result, the standard rewards many practices already incorporated in typical multifamily design and development, including points for:

- Small unit size (multifamily based on weighted average – typical average about 1000 sq. ft./unit)
- Building up instead of out (multiple story buildings)
- Building near public transportation (subway stations and bus stops)
- Efficient use of land (more units per acre)
- Material efficient structural systems (wood truss, engineered wood products/floor I-beams)
- Durable maintenance-free materials (brick, vinyl siding, etc.)
- Use of infill sites
- Development of brownfield sites (possibly contaminated)
- Development of greyfield sites (previously developed)

Points are also given for:

- Erosion and sedimentation control and storm water management
- Avoidance of environmentally sensitive areas (wetlands)
- Landscape design that limits water and energy use and preserves the natural environment
- Reduction of heat island effects through green or light colored roofs and shading
- Reduction of paved areas and underground parking
- Rainwater collection and gray water recycling systems
- Limited use of irrigation by proper use of plants native to the location
- Low water use irrigation systems
- Water efficient plumbing fixtures
- Recycling and use of materials that are easily returned to the earth in their original forms
- Construction and post-construction waste recycling programs
- High-performance/energy efficient building envelopes
- On-site energy generation (active and passive solar)

- Energy efficient heating and cooling equipment, and geothermal systems when appropriate
- Energy efficient luminaries, appliances
- Building envelope sealing, weather stripping and sealing of penetrations in the building envelope
- Duct sealing or design of air distribution systems with ducts entirely within the building envelope
- Use of low volatile organic compound (VOC)-emitting materials

The energy thresholds set in the NGBS are based on the 2006 International Energy Conservation Code. Properties must exceed those by 15 percent for Bronze, 30 percent for Silver, 50 percent for Gold and 60 percent for Emerald. Compliance with the energy section can be demonstrated by performance or prescriptive methods. In the performance method, energy analysis software can be utilized to verify that the structure is more efficient than the minimum baseline requirements. The performance method must be used to achieve an Emerald level. Prescriptive compliance can be achieved by complying with specific requirements, many of which are listed above.

Although initially more complicated, compliance by use of the performance approach may be the easiest way to demonstrate compliance with the energy provisions. NAA/NMHC are working with consultants and are conducting in-house full building energy analysis simulations of apartment buildings to develop guidance for members on how to accomplish the energy efficiency increases required to achieve the different levels of certification.

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