Discussion Points on

GREEN BUILDING WITH MODEL BUILDING CODES

Why Should We Use Green Building Techniques?

- Energy Efficiency is often considered the number one consideration in Green Building Programs and Standards.
- Buildings construction & use accounts for nearly 40% of annual energy use in the United States.
- Energy use, costs and emissions accumulate over the life of the structures; failure to incorporate energy efficiency in present building has an extended effect.
- Fossil fuel based energy systems contribute significant pollutants to the environment.

Other Social Objectives Are Achieved Through Building Green.

- Sustainable building ensures that pursuing quality of life now does not compromise future social needs and future quality of life.
- Building construction waste accounts for 20 to 30 percent of landfill deposits. Green building practices seek to conserve resources, reduce waste, and therefore landfill use as well.

Green Building Is *Not* Necessarily More Expensive.

- As Green Building implementation becomes more main stream, the initial costs of implementation becomes less and less expensive.
- As energy use and maintenance costs are less in Green and Sustainable Buildings, lifetime costs are significantly less than standard construction.
- Green and Sustainable buildings reduce infrastructure costs. (For example, the need for construction of more power plants and water treatment plants is reduced.)

How Do We Best Support And Promote Green Building?

- Traditionally, building codes and standards have addressed how the environment affects buildings (i.e., they address the effects of wind, snow, water, earthquakes, gravity, etc.)
- Now Green and Sustainable Building initiatives address society's growing concerns with the remaining half of the equation*: how buildings affect the environment.*
- Green building rating systems (LEED Program, Green Globes Program, etc.), though not building codes or standards, do provide effective means to voluntarily achieve high-performance results.
- Green building requirements, because they are not part of building codes, may not be subject to inspection for compliance by local building and fire code officials.

The Nation's First Green Building Standard Is Being Released This Summer.

- ICC/NAHB 700*, the Nation's first green building standard* c*ertified by the American National Standards Institute* is developed by the ICC and the National Association of Home Builders.
- To achieve widespread acceptance, application and benefit, green building practices must be integrated into comprehensive building codes and standards utilized by local governments.
- Many communities across the country are short of resources to execute complete programs in building and fire code compliance. The ICC is promoting legislation to create a federal grant program to assist those communities with resources necessary to ensure code compliance.
- Building officials become intimately familiar with buildings when they reviewing plans and inspect buildings for compliance with building codes. As such, they are best suited to cost effectively review and inspect those same building features for compliance with the requirements of green building programs and standards as well.

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The ICC/NAHB 700 National Green Building Standard (NGBS)

- In addition to regulating new residential green buildings, the standard rates green renovations and additions, as well as green residential subdivisions and sites.
- Existing structures make up 90% of housing - a huge market segment with great opportunities to address the environmental impact of the buildings. Yet existing buildings are *not* addressed any current national residential green building program. Renovations and additions to existing buildings, however, are specifically addressed and rated by the NGBS.
- Created by the National Association of Home Builders (NAHB) & the ICC.
- Is fully integrated and enforceable with comprehensive building code requirements.
- Rates residential buildings on their overall environmental impact.
- Contains incremental levels which promote high performance building practices.
- Will be the very first ANSI certified green building standard in the United States.
- Is applicable to all residential structures, from single-family dwelling to high rise multi-family structures, as well as the residential portions of mixed occupancy buildings.
- Encourages affordable, easily implemented and long-lasting green features.
- Both initial and long term costs are considered in the analysis.

The NGBS Contains Provisions Which Encourage:

- Erosion and sedimentation control and storm water management.
- Development of brownfield and greyfield sites.
- Building in close proximity to public and alternative transportation.
- Avoidance of environmentally sensitive areas (wetlands, etc.).
- Landscape design which limits long term water and energy use.
- The reduction of heat island effects by light colored roofs and pavements.
- The implementation of rainwater collection and gray water recycling systems.
- Limited use of irrigation systems and systems designed to reduce environmental impact.
- Use of waterless urinals and low-flow/consumption toilets, faucets and shower heads.
- Building smaller structures (reduced site impact, material resources and energy use)
- Building up instead of out (smaller footprint on the land, less foundation and roof area per square foot, ceiling and floor systems share common elements, more efficient to heat and cool).
- Utilization of durable, affordable, efficient and low maintenance materials.
- The utilization of materials which are recycleable, or are renewable.
- Construction and post construction waste recycling programs.
- High performance/energy efficient building envelopes.
- Net-zero capable energy systems (such as geothermal systems, active and passive solar systems, wind generators and hydroelectric generators).
- Energy efficient luminaries, appliances and heating and cooling systems.
- Duct sealing, building envelope sealing, weather stripping and added insulation.
- Whole house ventilation and ceiling fans.
- The use of low VOC emitting materials (adhesives, sealants, paints, coatings, carpeting)
- The installation of MERV air filters.

Where Energy Analysis Software Is Used To Show That Energy Efficiency Is Above The Minimum Requirements Of The 2006 IECC:

- 15% more efficient equals a **Bronze** Energy Classification
- 30% more efficient equals a **Silver** Energy Classification
- 50% more efficient equals a **Gold** Energy Classification
- 60% more efficient equals an **Emerald** Energy Classification