

Green Buildings and Codes

by Terrence Cobb, Director, Department of Codes & Building Safety

What are Nashville's Green Codes?

First, what are “codes”? Codes are the “minimum requirements” to safeguard the public health, safety and general welfare through structural strength, means of egress facilities (emergency exits), stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

So what are “green codes”? Really, there is no such thing. There are building codes, fire codes, energy codes, mechanical (HVAC) codes, gas codes, electrical codes, accessibility codes, plumbing codes – but no “green codes”.

To address the question “What are Nashville's Green Codes?”, I would say that we have adopted the latest published edition (2006) of the International Energy Conservation Code (IECC), and the latest published editions of the International Mechanical Code, etc.

Further, we propose to stay current with the latest edition of the energy conservation code and choose to exercise as much flexibility as is possible with respect to approving alternative materials and methods for green/sustainable materials, methods and practices. We are also watchful that nothing in our adopted codes would unnecessarily restrict or prevent the use of green building practices.

Green building strives to design and construct high performance buildings which perform well above the minimum, or “baseline”, codes and standards. The first challenge is to make sure that people can develop high performance buildings and nothing in the adopted minimum standards restricts this ability.

Additionally, we are seeking to learn the basics of green building design and construction, to become familiar with the various green building programs and stay current.

We will continue to expand “green” services and processes, moving even further in the direction of electronic permits, electronic plan review and wireless data entry and communications – to demonstrate our own concern for the environment and lead by example. The Department of Codes & Building Safety now offers a “Green Building Permit” and “Green Certificate of Occupancy” programs.

What are the Code Department's future plans for Green Building codes?

To stay current with the latest energy conservation codes. The 2009 edition of the IECC will be available in February or March of 2009. When available, the 2009 IECC will, according to the Department of Energy, represent at least a 15% improvement in the energy efficiency requirements, and maybe as much as 18-20% over the 2006 edition.

We will promote the use of Metro's "Green Building Permit" program.

We will continue to expand our Electronic (e)Permit Process?

If encountered, we will be vigilant in modifying or removing code provisions which appear to restrict or prevent the use of green building practices.

We will seek opportunities to step up the energy requirements. We recognize that this process is well underway in the ICC's Code development and maintenance processes. We believe (just as the EPA and DOE believe) that we can achieve the 30% targeted goal within the IECC process within just a few short years (by 2012). The unprecedented increase realized with the 2009 edition of the IECC takes us at least half-way there.

How do our existing building codes compare to Portland, Austin & Chicago?

First of all, it is important to realize that Nashville is located in a different climatic zone than Portland, Austin or Chicago. Also important is the fact that Nashville has chosen to utilize the latest available International Energy Conservation Code. The energy conservation codes adopted in Austin, Portland and Chicago are based upon older (less efficient) versions of the same code.

Nashville uses the 2006 IECC as its base energy code. The 2006 edition is a "simplified" edition of the IECC which also ratchets up the energy code requirements above all prior published editions of the IECC.

Until December of 2001, Austin, TX used the 1993 Model Energy Code as its base document. In December 2001 Austin adopted the 2000 edition of the IECC and has been building and adding a series of local amendments to enhance its base code. The Austin Energy Code is a 10 page document. Although no in-depth analysis has been performed, it has been noted that the minimum R-factors for insulation values appear to be adopted straight out of the base code.

Portland, OR has adopted and uses the Oregon (State) Energy standards which were based upon the IECC and somewhat higher than the IECC requirements when written. The 2006 edition of the IECC incorporates some of the Oregon

rationale. In November 2007, Portland adopted an initiative program that provides incentives for buildings built to exceed the standards. Portland also adopted an initiative to reach “carbon neutral” by 2030. According to one source, the first 18 months to 2 years is largely educational and informational before the incentives kick in.

In 2003, Chicago, IL adopted the Chicago Energy Conservation Code which appears based upon the CABO Model Energy Code (“MEC”, the predecessor of the IECC). Code compliance is checked by MECcheck (for residential) and COMcheck (for commercial). Both of these computer programs were developed by the US Dept of Energy for use with the Model Energy Code (MEC).

While no detailed analysis has been completed, it is believed that Nashville’s adopted energy conservation code will compare quite favorably with the energy conservation codes which are used in Austin, Portland and Chicago. Any comparison of these codes must adjust for the differences in the applicable climate zones.

Recommendations for the Energy and Building Subcommittee (categorized as quick wins, mid-term, and long range.)

Quick wins. Continue to promote and ramp-up Metro’s voluntary “Green Building Permit” program.

Continue to encourage and support participation in green building programs such as: USGBC LEED certification, Earthcraft Homes certification, the NAHB/ICC National Green Building Standard (ANSI accreditation pending), EnergyStar, and other programs.

Continue to use department newsletters, brochures, website, etc. to promote green/sustainable building.

Mid-term. Adopt the 2009 Edition of the International Energy Conservation Code (IECC) and Chapter 11, Energy Efficiency from the 2009 Edition of the International Residential Code (IRC). According to DOE, the 2009 editions of these codes will result in at least a 15% improvement over the prior edition (2006) and possibly as much as 18 – 20%. DOE is successfully working within the framework of the International Code Council code development process and the ASHRAE standards development process and has adopted a goal (Residential Energy Initiative) of 30% greater energy efficiency over the 2006 edition by the 2012 edition.

DOE estimates that the “Blower Door Testing” requirement in the 2009 IECC, alone, will accomplish an 8 – 10% improvement. The process for requiring the blower door testing and independent certification of the blower door test by third-party “Special Inspection” will be challenging, but possible.

Continue to monitor the adopted codes to modify or remove code requirements which appear to restrict or prevent emerging green building practices (materials or methods).

Long range. Following adoption of the 2009 IECC, consider a series of local amendments to continue to “step up” the energy conservation requirements along the lines of DOE’s Residential Energy Initiative to achieve 30% improvement by 2012 – and in similar fashion to Austin, Texas’ model of providing incentives for voluntary, green building participation followed by stepping up the code requirement and re-establishing the baseline.

