

LEGALLY SPEAKING: Green Building Codes Around the Globe.

By Matthew J. DeVries

No doubt you have heard about LEED®, Green Globes and Energy Star green standards in the United States. There are also state and regional standards such as California's CALGreen Code and Green Built™ Texas. Recently, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), the U.S. Green Building Council (USGBC) and the Illuminating Engineering Society (IES) joined efforts to develop and release the International Green Construction Code (IGCC). The IGCC was developed to apply to traditional and high-performance buildings that are consistent and coordinated with the international family of codes and standards. The IGCC is applicable to the construction of buildings, structures and systems, including alterations and additions.

From a design and construction perspective, public and private owners rely heavily on cost estimates prepared by the design team. When you are dealing with a sustainable project, the applicable building code or standard becomes paramount to the underlying cost, baseline schedule and allocation of risk to the appropriate party. If you are working on an international project, you will need to research and apply the right standards. Although this list is not

exhaustive, below are some of the top green building codes and standards around the globe.

Australia and New Zealand

In both Australia and New Zealand, Green Star has rating tools for the following types of buildings: education, healthcare, industrial, multi-unit residential, office, office interiors, retail centre, office design, and office-as-built. Green Star has pilot rating tools for convention centre design, public buildings, and custom buildings (i.e., those that do not fall into any of the other categories). In addition, the National Australian Built Environment Rating System (NABERS) is a system that "measures an existing building's environmental performance during operation" in categories including water, waste, energy, and indoor environment. NABERS provides ratings for office buildings, office tenancy, hotels, shopping centres, and homes.

Canada

Canada's Green Building Council implements the LEED program, which provides rating systems for new construction, core and shell, commercial interiors, existing buildings, homes, and neighborhoods. Green Globes is derived from the Building Research Establishment's

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Environmental Assessment Method ("BREEAM") and, in Canada, is operated by the Building Owners and Managers Association of Canada (in the US, The Green Building Initiative operates Green Globes). Rating systems include new buildings & retrofits, office buildings, multi-residential, and light industrial.

China

There is no official website for the Three Star System, but the "China Green Buildings Blog" (<http://chinagreenbuildings.blogspot.com>) has a good overview of this voluntary rating system which applies to large commercial and residential buildings. Ratings are based on the following categories: land savings and outdoor environment, energy savings, water savings, material savings, indoor environmental quality, and operations management. One notable component: ratings are only awarded after one year of operation.

France

Haute Qualit  Environnementale (HQE) is a voluntary certification system for the following buildings: commercial centers, hotels, schools, houses, residential, offices, in use, healthcare, sports, and occupational. 14 operational targets are arranged in 4 "families": eco-construction, eco-management, comfort, and health. Pursuant to a recent memorandum of understanding, HQE's certifying organization (Certivea) will also provide the BREEAM program (used in the UK) as an optional complement to the HQE system.

Germany

The German Green Building Council provides a certification system for new office and administration buildings, new retail buildings, new industrial buildings, new educational buildings, modernized office and administration buildings, new residential buildings, new hotels, city districts, and existing office and administrative buildings. DGNB is also developing rating systems for several other types of buildings, including new hospitals, new laboratory buildings, and new parking structures. Rating system

criteria are ecological quality, economic quality, socio-cultural and functional quality, technical quality, process quality, and site quality.

Hong Kong

Beam Plus is a voluntary rating system that applies to both new and existing buildings. The relevant credit categories are site aspects, material aspects, energy use, water use, indoor environmental quality, and innovation and additions.

India

India Green Building Council (IGBC) provides several different rating systems. LEED India evaluates sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality for both new construction and core and shell. IGBC also provides a Green Homes rating system for individual homes, high rise residential apartments, gated communities, row houses, and retrofit of existing residential buildings; a Green Townships rating system for large developments and townships; and a Green Factory Building rating system. Green Townships and Green Factory Buildings appear to still be in the pilot stage.

Japan

CASBEE is a system that evaluates a project from pre-design through post-construction operation and life cycle. It consists of four general assessment tools: pre-design (which is still in development), new construction, existing building, and renovation. Separate tools evaluate Temporary Construction, such as expo pavilions, and Home (Detached Houses). Some Japanese cities, such as Nagoya and Osaka, have adopted their own CASBEE scoring guidelines.

Malaysia

Green Building Index (GBI) applies to both nonresidential and residential buildings. The GBI rating evaluates energy efficiency, indoor environmental quality, sustainable site planning & management, material and resources, water efficiency, and innovation.

Portugal

LiderA applies to buildings, outdoor areas, public spaces, blocks, and neighborhoods. Projects are evaluated on the following criteria: site and integration, resources, environmental loadings, environmental comfort, socioeconomic experience, and sustainable use. The six different ratings are called "classes" and are based on improvement on baseline performance (from 12.5% to 90% improvement).

United Arab Emirates

Etidama Pearl evaluates communities, buildings (specific requirements apply to offices, schools, retail, multi-residential and mixed use), and villas. An Executive Council order issued May 2010 requires all new development to meet at least level 1 of these standards (government-funded buildings must meet level 2). Evaluation categories include integrated development process, natural systems, livable communities/buildings/villas, precious water, resourceful energy, stewarding materials, and innovating practice.

United Kingdom

Code for Sustainable Homes applies to new homes in England, Northern Ireland, and Wales, but it is a voluntary program. It measures energy/carbon dioxide, water, materials, surfacewater runoff (flooding and flood prevention), waste, pollution, health & well-being, management, and ecology.

BREEAM measures the following types of buildings in the UK: courts, new housing (in accordance with the Code for Sustainable Homes), refurbished housing, healthcare, industrial, multi-residential, prisons, offices, retail, education, committees, and other buildings not included in the referenced categories. BREEAM also has international schemes for Europe and the Middle East.

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