THE GREEN ENERGY COUNCIL

SHADES OF GREEN INITIAIVE

There are 81 million buildings across America. Many more millions across the globe.

The **GEC SHADES OF GREEN INITIATIVE** was formulated to support our mission statement that every person on this planet should be able to afford to be a better steward of the environment.

While the GEC believes that every new building in America and the World should be built with smart sustainable design practices, the GEC does not believe that there should be only one certification process by which all new development, redevelopment and revitalization projects should follow.

The Green Energy Council has made no secret of the fact that, when it comes to encouraging people to embrace sustainable building and design, we prefer voluntary, market-based approaches. However, we also recognize that governments are under tremendous pressure to tackle climate change and other environmental issues, and that sustainable building is an important part of the solution.

THE SHADES OF GREEN

ENERGY STAR (US)

Energy Star serves as an inexpensive form of commissioning, attempting to guarantee that buildings save the energy they're supposed to. One year after a building starts operating, owners can go to the Energy Star web site, plug in their utility bills, and see how the building is performing.

Energy Star Environmental Protection Agency, www.energystar.gov

Established: 1992

Industry: Electronics, appliances, HVAC, building systems

About: EPA's Energy Star was established to standardize energy efficiency for a range of products and buildings.

Relevance: Energy Star continues to be updated and is one of the most successful federal government programs. The EPA launched the Watersense program in 2007 to address water- saving products.

ecomagination
a GE commitment

GE has created a whole-home solution that benefits the environment and your wallet. Designed to lower overall household energy consumption, emissions and indoor water consumption, the ecomagination Homebuilder Program combines building science with high performance products to create new homes inspired by ecomagination.

GE has created a whole-home solution that benefits the environment and your wallet. Designed to lower overall household energy consumption, resulting emissions and indoor water consumption, the ecomagination Homebuilder Program combines building science technologies with high-performance products to create new homes inspired by ecomagination.
The program benefits include:
» Advanced building science designed to protect comfort and indoor air quality
» Innovative, efficient products designed to achieve at least 20 percent savings on energy consumption, indoor water usage and household emissions (CO2, SO2 and NOx), while providing features homebuyers want including an energy monitoring platform, an advanced lighting package, ENERGY STAR®-qualified appliances and an optional solar power system
» Significant savings on annual utility bills versus an industry-standard average new home due to energy and water conservation
A home built to ecomagination Homebuilder Program specification is designed to provide improved indoor air quality to its occupants as a result of high-performance air filtration, consistent fresh-air ventilation and a reduction in the infiltration of airborne compounds into the home. This program also incorporates special framing techniques, such as a continuous air barrier to reduce internal drafts, along with features such as return air ducts, transfer grilles or jumper ducts to balance pressure so air circulates easily.

United States Green Building Council (International)

The **U.S. Green Building Council** (**USGBC**) is a non-profit organization devoted to shifting the building industry towards sustainability, targeting how buildings are designed, built and operated. The USGBC is best known for the development of the Leadership in Energy and Environmental Design (LEED) rating system .

It works to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.

The USGBC Leadership in Energy and Environmental Design (LEED) program provides multiple levels of certification, the simplest being one that requires at least 26 points distributed across six categories. The six categories are: sustainable sites (14 pts possible); water efficiency (5 pts); energy and atmosphere (17 pts); materials and resources (13 pts); indoor air quality (15 pts); and innovation and design process (5 pts).

Not all of these points are usually possible at all locations, as some refer to things such as remodeling a previous building, which may not be feasible for a given project.

Others require that a certain percentage of the materials of construction be obtained from manufacturers located within a limited radius of the site, and that may also not be possible for construction in remote locations.

For larger buildings, Clients should pursue LEED.

In LEED’s 10 years of existence, only 622 buildings have been certified.

At this rate, it will take another 55,000 years to certify all of our commercial buildings.

GREEN GLOBES (US , EU & Canada)

The system has been around since 1991- it was introduced in Europe, then came to Canada, and is now administered here in the U.S. by the Green Building Initiative. It awards 1,000 points across seven credit categories- project management (50), site (115), energy (380), water (85), resources (100), emissions (70), and indoor environment (200). Projects that earn 35% of the 1,000 points receive one globe, 55%, 70%, and 85% receive two, three, and four globes, respectively

Green Globes doesn't require a construction team to generate any additional paperwork outside of that which is already produced on the project.

Out-of-pocket costs with pursuing Green Globes certification cap at a maximum of $10,000 per project as compared with LEED's minimum of $35,000.

For smaller buildings, 10,000 to 30,000 square feet, Green Globes tends to be a better option

There is abundant evidence to support the fact that Green Globes and LEED cover the same ground and provide roughly equivalent ratings.

PASSIV HAUS (Passive House) (EU)

Quite simply, a passive house is a super energy-efficient building that reduces heating and cooling loads by a factor of ten

With its saving potential of 80% for new buildings and up to 95% for renewing old ones, the passive house is the most sustainable and economically feasible total concept of future-oriented construction standards. The Passivhaus standard requires that the building is within the following limits.

Passive Houses require superior design and components with respect to:

Insulation: in a Passive Home the whole building envelope has an excellent thermal.

Design without thermal bridges

Air tigtness: The external envelope of a building should be as airtight as possible

Ventilation: Stale air is exchanged with fresh outdoor air at regular intervals

Windows: To build Passive Houses, highly efficient windows have to be used.

These standards are much higher than houses built to most normal building codes.

NAHB GREEN BUILDING STANDARDS

NAHB's voluntary Model Green Home Building Guidelines are designed to be a tool kit for the individual builder looking to engage in green building practices.

The Guidelines contain six primary sections:

Lot Preparation and Design - Even before the foundation is poured, careful planning can reduce the home's impact on natural features such as vegetation and soil; and enhance the home's long-term performance.

Resource Efficiency – Advanced framing techniques and home designs can effectively optimize the use of building materials. Builders and developers need to demonstrate equally important construction waste management concepts.

Energy Efficiency –This area stresses that a builder create a better building envelope and incorporate more energy efficient mechanical systems, appliances, and lighting into a home, yielding long-term utility bill savings and increased comfort for the homeowner.

Water Efficiency/Conservation

Occupancy Comfort and Indoor Environmental Quality – Effective management of moisture, ventilation, and other issues can create a more comfortable and healthier indoor living environment.

Operation, Maintenance and Education – Builders give the home owner guidance on how to optimally operate their new green home.

Architecture 2030

Architecture 2030 is a U.S. based, non-traditional and flexible environmental advocacy group focused on protecting our global environment by using innovation and common sense to develop, and quickly implement, bold solutions to global warming.

Architecture 2030 has been responsible for reshaping the debate surrounding climate change and global greenhouse gas (GHG) emissions by identifying the 'Building Sector'.

Architecture 2030 has issued 'The 2030 °Challenge' asking the global architecture and building community to adopt the following targets:

- All new buildings, developments and major renovations be designed to meet a fossil fuel, greenhouse gas (GHG) emitting, energy consumption performance standard of 50% of the regional (or country) average for that building type.

- At a minimum, an amount of existing building area equal to that of new construction be renovated annually to meet a fossil fuel, greenhouse gas (GHG) emitting, energy consumption performance standard of 50% of the regional (or country) average for that building type.

- The fossil fuel reduction standard for all new buildings be increased to:

60% in 2010
70% in 2015
80% in 2020
90% in 2025
Carbon-neutral by 2030 (zero fossil-fuel, GHG emitting energy to operate).

This may be accomplished through innovative design strategies, application of renewable technologies and/or the purchase (maximum 20%) of renewable energy.

Green Dragon Environmental Standard

Green Dragon is a five-stage environmental management system relevant to the specific needs of a business. Participating organizations gain recognition for effective environmental management without necessarily adopting a formal management system.

Green Dragon is all about making a commitment to environmental management.

Large and small organizations, in any industry or business sector, gain recognition for effective environmental management at a pace to suit your organization.

There are 974 organizations of all shapes and sizes that have already made the commitment.

The standard is made up of **five steps** each incorporating the key elements of Planning, Taking Action, Checking Progress and Reviewing Achievements to realize continual environmental improvement.

The Green Building Initiative

The mission of the Green Building Initiative is to accelerate the adoption of building practices that result in energy-efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction.

The GBI has benefited from the early support of a core group of industries that are committed to advancing the green building movement by creating a variety of credible options for their mainstream builder customers.