

What does it mean to be “Green”?

The Gurney House Green Restoration Project

Marion, MA – October 2008



Green Building: The practice of increasing the efficiency with which buildings use resources – energy, water, and materials – while reducing building impacts on human health and the environment during the building’s lifecycle, through better siting, design, construction, operation, maintenance, and removal. – *From Wikipedia.com*

The following is a short list* of some of the key features that make this project green:

- The Gurney House has been in this exact same location since it was built in the late 1850s. When the larger “office campus” like project was conceived, it was decided that rather than tear this house down, it should be reconditioned and reused.
- Only 15% of the entire 1 acre office campus, of which the Gurney House is part, is covered by impervious surfaces.
- All stormwater is retained and managed on site. “Rain Gardens” strategically placed in the landscaping capture runoff and slowly return the water to the ground via natural plant filtration.
- Adaptive and native plantings fill over 50% of the total site.
- Planted trees will provide natural shade that will help reduce the heat island effect of the entire site, and also reduce the energy load required to cool the building during the hot summer months.
- Operating windows on all sides of the building allow for natural cross breezes for passive cooling.
- In the winter, sun penetrating the south and east facades provide passive solar heating.
- The high density spray foam insulation used is rated to have a standing R-Value** of 6.8 per inch, but because it is able to prevent all air and moisture penetration it has an effective R-Value of 20+ per inch. This allows a relative R-Value rating of R-33 in the walls and R-60 in the ceiling.
- The windows are double pane insulated glass, specially treated to be air tight and glazed with low E glass that helps suppress radiative heat flow.
- All appliances and fixtures including boilers, furnaces, AC condensers, refrigerator, dishwasher, and light fixtures are Energy Star rated.
- Interior lighting is provided mainly by the use of T-5 low energy fluorescent strip fixtures, and CFL lamped low energy recessed fixtures.
- The building’s exterior siding is composed of natural raw and recycled materials including wood pulp, sand, water, and cement and is very low in toxicity. It offers great durability (the company warrants the product for 50 years, and the factory paint finish for 15 years), and low maintenance.
- The interior paint used is environmentally friendly with Low-VOC***, low odor and also meets stringent environmental safety requirements.

- The carpet is manufactured from recycled carpeting without the use of toxic glues or other substances harmful to the environment. No glues or staples were used in the carpet installation itself; each carpet square is attached to its neighboring carpet square via an adhesive patch that is completely reusable.
- The resilient floors found in the restrooms and kitchen are high in recycled content and applied with non-toxic, low VOC emitting glues.
- Bamboo, a renewable natural material, was used in the lobby floor.
- Indoor Air Quality: The Gurney House was renovated using non-toxic, low VOC emitting materials. The windows are operable, allowing occupants access to fresh air as needed. Plants are also known to produce oxygen and absorb many potentially harmful air born substances.
- Controllability of Systems: The building occupants maintain a measure of control over the thermal properties and lighting levels of their personal workspace. Occupants have access to adjustable light level and HVAC controls.
- Natural Light and views: It is difficult to scientifically quantify the benefit of such amenities, but it is common sense that people who have lots of natural light and direct access to nature will be happier and that happiness will shine through in productivity and the quality of their work.

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** The **R value** or **R-value** is a measure of thermal resistance ^[1] used in the building and construction industry. The bigger the number, the better the building insulation's effectiveness. – *From Wikipedia.com*

*** **Volatile organic compounds (VOCs)** are gases or vapours emitted by various solids or liquids, many of which have short- and long-term adverse health effects. Household products that emit VOCs include paint, paint strippers, cleaning supplies, pesticides, glues and adhesives, building materials and furnishings. Consequently, concentrations of many VOCs are higher indoors (up to ten times higher) than outdoors.– *From Wikipedia.com*