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Go Green for Better Buildings

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Kermit the Frog sang “It’s not that easy being green.” But when it comes to buildings, green is the way to go. Green in this case is not a color, but a better way of building.

Green building techniques make a home healthier, more comfortable, more durable and more affordable to maintain than a conventional home.



Center director Jennifer Senick with speakers (from left to right) Anthony Sblendorio, Sandy Wiggins and Clint Andrews at Strategies for Neighborhood Design & Development - Emerging Green Builders NJ Program presented by the Rutgers Center for Green Building & NJ Chapter of the USGB

This is accomplished by integrating design, engineering and construction practices that make the most effective use of materials, the local environment’s attributes, and sustainable building practices and innovations.

A green building’s advantages typically are grouped into several categories. These include water and energy efficiency, better site design, conservation of natural resources, durability and improved indoor air quality.

The economic costs and benefits of green building are important for society as well as for individual homeowners. In the United States today, buildings account for nearly 65 percent of electricity consumption, and 35 percent of total energy consumption.¹ Building construction accounts for 30 percent of raw materials use, and 28 percent of landfill material is made up of construction debris.²

Energy and Water Efficiency Energy efficiency is achieved through better solar orientation, tighter construction, efficient appliances and the generation of on-site electricity from renewable sources.

Green buildings are on average 25 to 30 percent more energy efficient than buildings built to current standards and have even lower peak electricity consumption.³

Solar panels on Highland Park Borough Hall provide for generation of on site electricity from a renewable source.

Green buildings also consume less water than conventional buildings by using stored rainwater and greywater (used wash water) for irrigation and other uses. Green buildings are more likely to store and infiltrate stormwater. This reduces the adverse effects of stormwater run-off, which otherwise may become heavily polluted.

Site Design Green buildings are designed to fit with the surrounding natural landscape. They minimize damage to habitat and preserve the native plants and animals. Landscaping is designed to be appropriate to the existing environment. Green building encourages adaptive re-use, remediation of brownfield sites, as well as location near mass transit.



Solar Panels on Highland Park Borough Hall provide for generation of onsite electricity from a renewal source.

Conservation of Natural Resources During the construction of a green building, efforts are made both to use recycled construction materials and to recycle the waste from the construction process. Green buildings also frequently use sustainably harvested timber. This timber is collected in such a way that minimum damage is done to the environment and new trees are planted to replace the harvested trees.

Durability Many of the materials and components used in green buildings are more durable than those used in conventional buildings, resulting in better windows, flooring materials, and mechanical systems. This ensures that the green building will need fewer repairs throughout its life than a conventional building and could be expected to last longer.

Indoor Air Quality Green buildings are constructed with non-toxic materials, wherever possible, and are better ventilated. This ensures that fresh air is constantly provided. In contrast, many conventional new buildings use materials that release toxic chemicals into the air. Carpet, adhesives, and paints are some of the worst, but there are others as well.

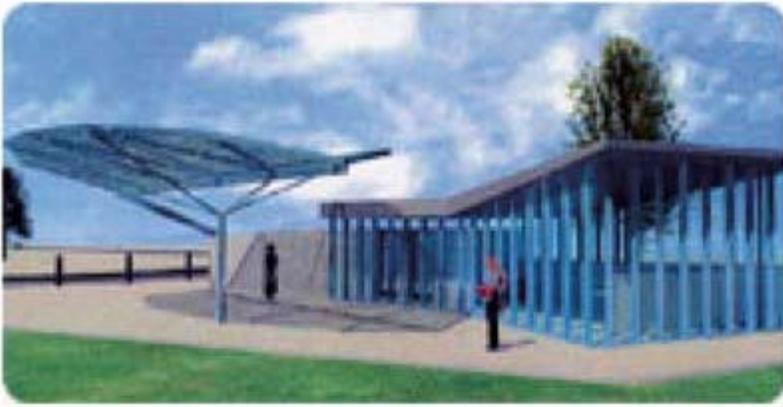
The EPA has found that indoor levels of pollutants are often 2 to 5 times, and occasionally more than 100 times, higher than outdoor levels.⁴

Sick Building Syndrome, which is the result of poor indoor air quality and energy efficient yet problematic airtight construction, may affect as many as 30 percent of new and renovated buildings.⁵ This constitutes a significant, if mostly invisible, health risk as the average American spends 90 percent of his or her time indoors.⁶

Notably, the most vulnerable populations, which include the very elderly, the young, and the physically impaired spend nearly all their time indoors.

State Support for Green Building New Jersey has begun programs to promote aspects of green building, including the Green Homes Office and the Office of Smart Growth, under the New Jersey Division for Community Affairs, the New Jersey Home Mortgage Finance Agency, the Clean Energy Program, New Jersey Board of Public Utilities (BPU), and the Bureau of Sustainable Communities and Innovative Technologies of the New Jersey Department of Environmental

Protection.



This concept sketch shows the Highland Park environmental Education Center, which is now under construction.

Many municipalities have taken advantage of these programs. For example, the Borough of Highland Park, used financial incentives from the BPU to installed solar panels on its Municipal Hall, which provide 25 percent of its annual energy needs from clean solar energy. The Borough's River Road Environmental Center will also be completed with a solar powered building and cross signals.

Highland Park, Cranford Township, Princeton Borough, Montclair, Lawrence

Township, Montgomery Township, West Windsor, Belmar, Wayne Township, Morristown and Trenton) have, in various ways, introduced green building practices into their redevelopment plans, land use ordinances and municipal practices.

For additional information please contact Jennifer Senick at 732-932-4101 x520, or by email, jsenick@rci.rutgers.edu.

1. -Environmental Building News, Volume 10, Number 5.
2. -EBN, op cit.
3. -Kats, Gregory, H. (2003). Green Building Costs and Financial Benefits. Massachusetts Technology Collaborative.
4. -EPA (2005). Indoor Air Quality (IAQ) Tools for Schools Kit. EPA.
5. -Yeang, The Green Skyscraper
6. -EBN, op cit.

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