Green Buildings Program

Reducing Energy Use and Environmental Impact of Syracuse's Rosamond Gifford Zoo

The New York State Energy Research and Development Authority (NYSERDA), Camroden Associates, Inc., and Steven Winter Associates helped the Rosamond Gifford Zoo develop an environmentally responsible ("green") plan for renovating and expanding the zoo's main building in Syracuse. The team examined energy efficiency measures, construction materials, indoor air quality concerns, and on-site sewage treatment options.

NYSERDA's study found that in the renovated portion of the zoo, electricity costs for lighting could be reduced by 40-70%, peak electricity demand and carbon dioxide emissions resulting from electric generation could be cut by 34% and 10% respectively, and overall energy costs could be decreased by about 26%, as compared to a building that merely complies with energy code requirements. In addition, the study provided "green" specifications after reviewing issues such as manufacturing processes, recycled content, recyclability, local availability, performance, durability, and cost.

Project Objectives

The primary goal of the project was to minimize the environmental impact of this construction project. On the energy side, this was accomplished by performing daylighting analysis to maximize natural light, allow for passive solar heating in winter, and minimize solar heat gain and associated cooling loads in summer. On the materials side, NYSERDA's team conducted a sustainability analysis by carefully assessing construction materials, examining wastewater treatment alternatives, and thoroughly analyzing drawings and specifications to uncover potential indoor air quality problems.

Measures Taken

- Diffuse glazing and overhangs to reduce solar gain in summer and glare in winter.
- Daylighting controls to minimize the use of artificial lighting.
- Down-sized air conditioning equipment due to reduced cooling loads.
- Skylights to maximize daylighting.
- Low-flow fixtures to alleviate the zoo's impact on the municipal water treatment system.
- Recycled copper roofing (manufactured in New York State).
- Insulated concrete form walls (manufactured in New York State).
- Recycled/recyclable carpeting, counter tops, partitions, concrete, and steel.

About The Green Buildings Program

NYSERDA's Green Buildings program provides computer modeling and materials analysis to building design teams to help make new and rehabilitated commercial, industrial, and institutional buildings environmentally responsible, economically viable, and healthier places in which to work. For more information about these services, contact Craig Kneeland at: (518) 862-1090, ext. 3311; e-mail: cek@nyserda.org

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