WinterGREEN

A BIMONTHLY UPDATE ON STEVEN WINTER ASSOCIATES, INC.'S WORK IN THE REALM OF ENERGY EFFICIENCY AND SUSTAINABLE BUILDINGS

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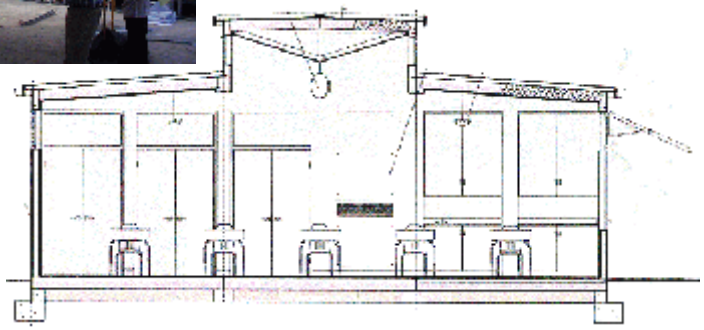
Construction Underway on Green School



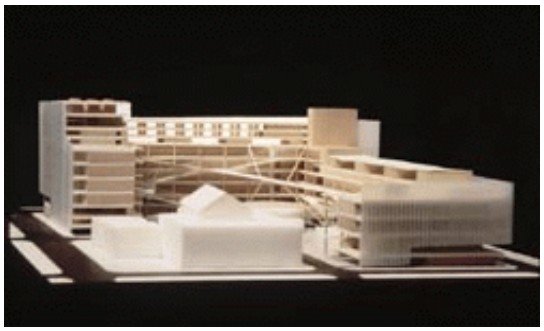
A prototype portable classroom building designed to maximize natural daylighting, reduce energy use, and improve indoor air quality is now under construction in Riverside, California. The latest phase in **Southern California Edison's (SCE)** "Rethinking the Portable Classroom" initiative, the building culminates a year-long study of strategies to improve the design and performance of portable classroom buildings, which are ubiquitous in southern California schools. Beginning with a day-long charrette, organized and led by **SCE** and **Steven Winter Associates (SWA)**, a team of school administrators, teachers, modular building manufacturers, architects, energy specialists, and lighting designers collaborated on the prototype design. Particular attention was given to daylighting strategies, energy reduction measures, low-emission materials, siting issues, and the long-term durability of the classroom buildings. The resulting design ideas were further developed by SCE and SWA, which also performed a detailed energy analysis using the DOE-2 energy modeling program. A full report on the project will appear in a future issue of WinterGREEN.

DOE Launches "CHiPB" Project

The **U.S. Department of Energy** is providing funding for a new project, the **Consortium for High Performance Buildings**, or "**CHiPB**." **SWA** is heading up the project for **DOE**. The new effort is part of DOE's Commercial Whole-Building Roadmapping initiative to encourage the design, construction, and operation of high performance buildings. The purpose of CHiPB is to demonstrate and publicize innovative concepts using comprehensive systems engineering approaches that increase the quality and efficiency of commercial buildings while reducing their costs and impacts on the environment. CHiPB activities will focus on raising awareness among professionals and the public of noteworthy commercial buildings that save energy and are environmentally sustainable. CHiPB projects will be featured in the news media (including a monthly newsletter), presentations at professional conferences, and on the Internet on a CHiPB website. Future activities will see the program contributing technical and management expertise directly to site assessment, programming, design, construction, commissioning, and post-occupancy evaluation of new buildings commercial around the country.

Cutting Energy in the Bronx

SWA just completed an energy analysis of the 750,000-square-foot Bronx Criminal Courthouse Complex (BCCC) in New York City, designed by **Rafael Vinoly Architects**, with **Flack & Kurtz** for MEP and **Ann Kale & Associates** for lighting design. The energy study was commissioned by the **New York City Department of Design & Construction** to analyze energy efficiency strategies, with support from the **New York State Energy and Research Development Authority**. SWA simulated the building using a 366-zone model on an extended version of DOE-2.1E running on UNIX computers. The unusually high number of zones was required because of the building's complexity and size. SWA also used Algor, a finite-difference model, to calculate the heat flow through different curtain wall configurations. The building was modeled with a range of energy-saving features that would cut costs by 28%, compared to the BCCC's performance if it merely met the state's energy code. One strategy was high-performance glass for the distinctive "sawtooth" curtain wall, which underwent parametric analyses to determine the performance of the different triangular shapes. The glazing was selected after dozens of simulations with different glass types, shading devices, and opaque areas. Shelves bounce light from tall corridors into courtrooms to maximize daylighting. The highly efficient HVAC system was selected after detailed energy analyses and life-cycle cost projections. It includes a gas-fired, engine-driven chiller and two variable-speed electric chillers.

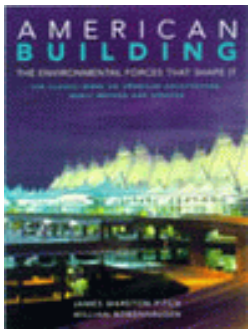


New Nature Center for Audubon

The Audubon Society's George Robert White Nature Center in Boston is being designed as a showcase of green materials, systems, and technologies. The 8,000-square-foot building is being designed by the Boston architecture firm of **Primary Group, Inc.** and **SWA**. Mechanical/electrical/plumbing is by **SAR Engineering, Inc.**. The center will feature such sustainable technologies as geothermal heat pumps; composting toilets; recycled gray water for garden irrigation; solar hot water; green building materials; recycled heavy timber construction; and photovoltaic cells on the roof to supplement the building's energy needs. The building is now in schematic design, with construction scheduled for the summer of 2000.

Green Work in Print

A number of articles and a new book reflect some of the sustainable work that **SWA** has been involved in. SWA's Will Zachmann wrote an article on the importance of sustainability in HUD's Partnership for Advancing Technology in Housing (PATH) program that appeared in the November/December issue of *Urban Land*. SWA's Catherine Coombs coauthored an article (with Asher Derman) on indoor air quality that appeared in a recent issue of *Construction Specifier*. William Bobenhausen and Devashish Lahiri of SWA wrote an article that appeared in *HPAC* magazine on "HVAC Design for Green Buildings." And the December 5 *New York Times* Book Review section profiled *American Building: The Environmental Forces That Shape It*, authored by James Marston Fitch with William Bobenhausen.



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