



## GLOBAL GREEN USA CASE STUDY



On-Site Energy Generation · Energy Efficiency · Landscaping/Site Planning · Resource Conservation · Indoor Environmental Quality

# 20th St. APARTMENTS

1925 & 1933 20th Street, Santa Monica, California

**Santa Monica's 20th Street Apartments serve as a pioneering example of an energy-efficient rehabilitation of a low-income housing development. The City and the Community Corporation of Santa Monica expect that future housing rehabilitation projects will incorporate many of the energy efficiency features demonstrated in this project, and will probably include an even broader array of environmental features.**

## PROJECT INFORMATION

### Project Size:

30,000 SF, 2 buildings, 34 one- and two-bedroom units

### Construction cost:

\$635,000

### Completion date:

Spring 2001

### Owner/Developer:

Community Corp. of Santa Monica

### Architect:

Ralph Mechur Architects

### Energy Consultant:

Syska & Hennessey

### Contractor:

The Best Merit Co.

## GREEN FEATURES

The 20th Street Apartments, built in the late 1960s, is typical of apartment construction in Santa Monica during this period. The building included an inefficient radiant ceiling heating system, limited insulation, and single-glass glazing on windows and sliding doors.

The City saw the need to replace the radiant heating system as an opportunity to undertake a more extensive energy retrofit. The City hired Syska & Hennessey, engineering consultants, to conduct an energy audit and efficiency feasibility study. Using the TRACE computer energy modeling software for the assessment, they prepared an Energy Efficiency Alternatives Report, which recommended various energy efficiency options, based on criteria such as the financial payback period and funding potential. The energy efficiency upgrades that have been incorporated into the project are as follows:

- Solar-assisted hot water heating system repaired
- Refrigerators in some units replaced with Energy Star refrigerators
- R-30 attic insulation added
- Wall insulation added
- Windows and sliding glass doors replaced with dual-glazed glass
- Compact fluorescent lightbulbs provided for residents
- Thermostats with night setbacks provided
- Skylights (for natural lighting ) added to stairwells

The consultants estimate that the upgrades will reduce the building's electric energy usage by 39% and natural gas usage by 22%, resulting in savings of more than \$10,000 per year. The project also includes environmental features including:

- Recycled plastic Trex lumber for the patio fences
- Recycled rubber mat for the playground
- Low-flow showerheads
- Drought-tolerant plantings

## FINANCING

This project's energy efficiency upgrades added approximately \$106,000 to the project cost. The upgrades were funded by the City of Santa Monica and by the Regional Energy Efficiency Initiative. The REEI is a joint program of Southern California Edison, the California Energy Coalition, and the Cities of Irvine and Santa Monica. It provides funding for energy-efficiency demonstration projects in those two cities. The Energy Star refrigerators and the compact fluorescent lightbulbs were provided by Southern California Edison. Edison will be monitoring the energy savings afforded by the new refrigerators.

## CHALLENGES

**Limited Scope of Rehabilitation Projects:** It is generally easier to incorporate green approaches into a new building design than into a renovation project. Because the siting, form, and window location were all predetermined at 20th Street, the majority of the work focused on upgrading existing systems. Furthermore, because rehabilitation projects often involve selective rehab work (replacement of materials and finishes in only a few units), such projects do not lend themselves to high-volume economies of scale for procuring alternative materials.

**Standards for Green Building:** The Community Corporation of Santa Monica (CCSM) has not yet integrated the City of Santa Monica's Green Building Design and Construction Guidelines into the internal standards used by CCSM project managers and facilities managers. However, CCSM's Minimum Standards for Rehabilitation Projects currently do include several items related to green building. There are: installation of setback thermostats, upgrading to R-19 insulation throughout the building, installation of fluorescent fixtures in kitchens and bathrooms, prohibiting the use of particleboard for kitchen cabinets, and requiring contractors to obtain an alternate cost for recycled carpeting, and. These standards are included in all rehab bid packages and implemented at the discretion of the individual project managers. In the 20th Street project, plywood was used instead of particleboard for kitchen cabinets, which greatly reduces but does not eliminate the presence of formaldehyde. In the future, CCSM is looking into specifying a no-formaldehyde fiberboard such as Medite II or Allgreen in future projects. Recycled-content carpeting was not used in this project due to cost, but is also being explored for future projects. CCSM is also researching prices and suppliers of no-VOC paints and natural linoleum flooring. Community Corporation anticipates that more green features will be incorporated into the Standards for Rehabilitation Projects as more products and materials are tested in upcoming projects.

**Familiarity with Green Materials and Approaches:** Project managers involved with the project expressed the importance of all project team members being familiar with green techniques, technologies, and materials. One of the major reasons that many green materials were not incorporated into this project is that the contractors, specifiers, and project managers were unfamiliar with the materials, their performance installation and maintenance, where they could be purchased.

**Added Costs:** Green components have a wide variation in costs. Some are less expensive than or equal to conventional methods and materials. Others have higher up-front costs. Sometimes higher initial costs can be offset by long-term paybacks. In the 20th Street project, much of the energy efficiency upgrades were offset by REEI funds. More extensive upgrades could have been completed if additional funds were available. For example the energy consultants found that it was viable to spend approximately \$4,000 to refurbish the old solar water heating system. However, adding new photovoltaic panels was not deemed to be financially viable. Costs for green items should decrease over time, however, as green features become more standardized, the combination of market competition, increased availability, and opportunities for discounted bulk bring prices down.

## CONTACT

- **City of Santa Monica—Housing and Redevelopment Division**

Project Manager: Dora Rosiles Kochen, 310-458-2232, [dora-rosiles@santa-monica.org](mailto:dora-rosiles@santa-monica.org)

- **Community Corporation of Santa Monica**

Project Manager: Nicole Smith, 310-394-8487 x115, [nicole@communitycorp.org](mailto:nicole@communitycorp.org)

Facilities Manager: Miguel Ceballos, 310-394-8487 x127, [mceballos@community.org](mailto:mceballos@community.org)

GLOBAL GREEN USA  
**BUILDING BLOCKS**

