City of Santa Monica Housing Division - Greening Affordable Housing Project

Cost Analysis Assumptions and Summary

Prepared By: Global Green USA

7/30/01

Background

This analysis identifies the potential for increased costs for affordable housing projects as a result of the City of Santa Monica Ordinance 1995 – Green Building Standards.

Santa Monica Ordinance Requirements

The Green Building Standards include three requirements that are applicable to affordable housing projects in the City:

- Energy Efficiency – section 8.108.030 of the Ordinance requires that multi-family projects reduce their energy usage by one of two methods. Multi-family projects that are three stories or less in height are able to utilize a four-point prescriptive approach. Projects that are four stories and above must utilize a performance-based approach as described in the State of California Energy Code, or Title 24.

- Use of Recycled Construction Materials – section 8.108.050 of the Ordinance requires that all projects incorporate a minimum of four major construction materials that meet the Environmental Protection Agency (EPA) guidelines for recycled-content as set forth in the Comprehensive Guideline for Procurement of Products Containing Recycled Materials. This list includes 13 different products that are applicable to affordable housing projects. Of these 13 items, 8 are standard items that are cost-neutral as compared with the materials currently used in affordable housing projects constructed in the City.

- Additional Mandatory Features – section 8.108.060 outlines three features that are mandatory for all buildings constructed in the City of Santa Monica. These are: a) solar hot water heaters for swimming pools, b) insulation on hot water heaters from the heater to the end-use fixture, and c) heat traps on the inlets and outlets of non-circulating hot water heaters.

Analysis Assumptions

The cost analysis is based on a 21,000 square foot, three-story, 20-unit project.

Energy Efficiency

The recently revised version of Title 24 was used as the energy baseline. Because the project is three-stories or less, the prescriptive approach to compliance with the City's Green Building standards in utilized. This approach requires the following:

- All windows and glass patio doors are equipped with double-glazed, low-emissivity glazing, with center of glass U-value not more than 0.32 Btu/(hr.sq.ft.deg.F.) and Solar Heat Gain Coefficient not more than 0.37
- Fixed lighting fixtures installed within the dwelling units have a combined average efficacy of not less than 40 lumens per watt
- Water heaters with a minimum energy factor of 0.60
- Space cooling appliances with a Seasonal Energy Efficiency Ration (SEER) of not less than 12

The energy analysis assumes that only the first three requirements are relevant, as space cooling (air conditioning) is not typically provided in affordable housing projects in Santa Monica. The analysis is based on the California Energy Commission 1996 Measure Cost Study and current average costs of compact florescent lighting fixtures.

Recycled Content Materials

The analysis assumes that there is no additional cost associated with complying with the recycled-content requirement of the City's Ordinance. Based on a review of the EPA Comprehensive Guideline for Procurement of Products Containing Recycled Materials, there are at least 8 commonly used construction materials that meet the ordinance requirements. These materials (insulation, drywall, carpet padding, etc.) do not result in a cost increase.

Additional Requirements

The analysis assumes that the requirement related to water heating for swimming pools are not applicable, as pools are not typically provided at affordable housing projects. The requirement related to hot water pipe is relevant but difficult to quantify because the length of piping, and thus the amount of insulation required, can vary a great deal among projects. Based on past experience, the energy consultants (Constructive Technologies Group) recommended an average cost of $100/dwelling unit. The required heat traps are an integral component of all new water heaters and therefore do not result in a cost increase.

Analysis Results

The results of the analysis show that the total estimated additional cost of compliance for the hypothetical 20-unit project is approximately $9,318, or a .33% increases in the total project cost. The estimated payback period for these measures is approximately six years.

7/30/01

INCREMENTAL COST ANALYSIS OF SANTA MONICA GREEN BUILDING REQUIREMENTS (ORDINANCE 1995 CCS) FOR AFFORDABLE HOUSING DEVELOPMENTS [1]

Energy Efficiency Requirements

Prescriptive Requirements for Multi-Family Projects (Section 8.108.030)

ID #	Santa Monica Prescriptive Requirement	Base Case (1998 T-24)	Proposed (SM Requirement)	Incremental Cost	Annual Energy Savings [2]	Simple Payback
1	Lighting fixtures installed within units have a combined average efficacy of not less than 40 lumens/watt	2 incandescent fixtures per unit $50	2 compact fluorescent fixtures per unit	$ 2,226	$ 633	3.5
2	All windows and glass patio doors are equipped with double-glazed low emissivity glazing U-value not more than 0.32 and Solar Heat Gain Coefficient not more than 0.37.	Double-Glazed Clear Glass	Double-Glazed Low E Glass. U-value 0.32 or lower; SHGC 0.37 or lower.	$ 2,600	$ 207	12.6
3	Water Heaters have a minimum energy factor of 0.60.	Energy Factor = 0.53	Energy Factor = 0.60	$ 2,392	$ 358	6.7
4	Space Cooling Units SEER at least 12.					
	Additional Mandatory Requirements for all Buidings (Section 8.108.060)					
5	Pipe Insulation [3]	Title 24 requirement	Required from source to end fixture	$ 2,100	$ 358	5.9
6	Heat Traps	Not required	Required for all non-circulating hot water heaters	$ -		
Subtotal				***$ 9,318***	*$ 1,556*	*6.0*

Recycled Content Materials (Section 8.108.050) [4]

ID#	***Standard Materials (no added cost)*** [5]	***Percent Recycled***	*Incremental Cost*
1	Carpet Pad		
	- Polyurethane (old carpet cushion)	15-50%	$0
	- Synthetic fiber (fabrication scrap)	100%	$0
	- Rubber (tire rubber)	60-90-%	$0
2	Drywall (postconsumer paper)	75% - 100%	
3	Fiberglass Insulation (glass cullet)	20-25%	$0
4	Playground Surface (rubber or plastic)	90-100%	$0
5	Playground Equipment		
	- Plastic	90-100%	$0
	- Steel	25-100%	$0
Subtotal			***$ 0***
ID#	***Added Cost Items***	***Percent Recycled***	
6	Concrete with Flyash	15-35%	
7	Cellulose Insulation (postconsumer paper)	75%	
8	Plastic Lumber		
	- HDPE	25-100%	
	- Mixed plastics/sawdust	50%	
9	Carpet	25-100%	
Total Cost of Required Measures			**$ 9,318**

Cost Summary for Compliance with Green Building Ordinance

	Sq. Ft.	*$/Sq. Ft.* [6]	*Cost*
Base Building Cost	21,000	$ 134.00	$ 2,814,000
Cost of Green Building Ordinance Compliant Building			$ 2,823,318
Percent Increase Over Base Building			***0.33%***

NOTES

[1] Base Case Building for New Construction: 21,000 SF, 3 floor, 21 units (1,000 SF per unit).
All 1998 Title 24 envelope characteristics are assumed. Glazing is 20% of wall area and is equal on each fa ade of the building.
50 Gallon Storage Type gas fired water heaters (EF=0.53), gas furnace (12,000 BTUH, 80% AFUE)
No cooling installed in each unit. Glazing is metal frame double-glazed sliders.

[2] Assume the following energy costs:
- Electricity = $0.0918/kWh (CARE program)
- Natural Gas = $0.60/therm

[3] Cost provided by CTG

[4] Ordinance requires 4 major building materials, consistent with EPA Comprehensive Procurement Guidelines

[5] Analysis assumes that no added cost items are selected

[6] Average cost provided by SM Housing Division

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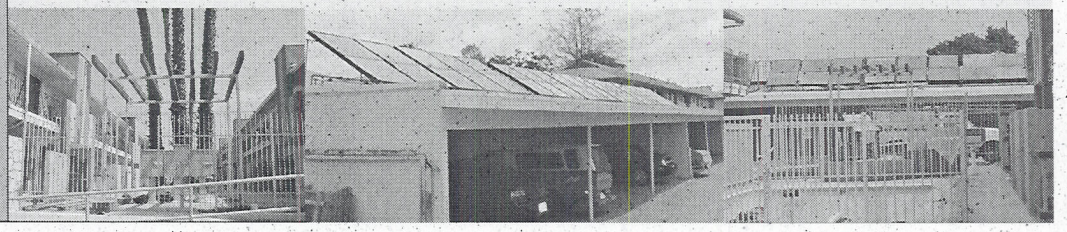
CASE STUDY

GREENING AFFORDABLE HOUSING INITIATIVE



On-Site Energy Generation · Energy Efficiency · Landscaping · Resource Conservation

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:
$643,000

Completion Date:
Summer 2001

Owner/Developer:
Community Corp. of Santa Monica

Architect:
Ralph Mechur Architects

Energy Consultant:
Syska & Hennessy

Contractor:
The Best Merit Co.

GREEN FEATURES

The 20th Street Apartments complex, built in the late 1960s, has characteristics that are typical of apartment construction in Santa Monica during this period. The apartments were built with an inefficient radiant ceiling heating system, single-glazed windows and sliding doors, and limited insulation. Consequently, the city decided that this development was a prime candidate for an extensive energy retrofit.

The City hired Syska & Hennessy, 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 upgrades, 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
- Windows and sliding glass doors replaced with dual-glazed vinyl windows
- Compact fluorescent bulbs and fixtures provided
- 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 other environmental features:

- Recycled rubber mat for the playground
- 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: Along with several ordinances requiring specific green building measures, the City of Santa Monica also has voluntary Green Building Design and Construction Guidelines. While the Community Corporation of Santa Monica (CCSM) has not integrated all of the City's voluntary green building guidelines into CCSM's Minimum Standards for Rehabilitation Projects, CCSM's standards do include several green items, such as: 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. These standards are included in all rehab bid packages and implemented at the discretion of 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. CCSM is considering specifying a formaldehyde-free 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. The Community Corporation anticipates that more green features will be incorporated into their Standards for Rehabilitation Projects as more materials are tested in upcoming projects.

Familiarity with Green Materials and Approaches: Project managers expressed how important it is that all project team members have some knowledge of 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' performance, installation, and maintenance, or where they can be purchased.

Added Costs: The costs of green components vary widely. Some are less expensive than or the same price as 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 covered by REEI funds. More extensive upgrades could have been undertaken if additional funds were available. For example, while the energy consultants found that it was viable to spend approximately $4,000 to refurbish the old solar water heating system, adding new photovoltaic panels was not deemed to be financially viable. However, costs for green items should decrease as the demand for green materials grows and market competition increases.

CONTACTS

- **City of Santa Monica—Housing and Redevelopment Division**
  - Project Manager: Dora Rosiles Kochen, 310-458-2232, dora-rosiles@santa-monica.org
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- **Community Corporation of Santa Monica**
  - Project Manager: Nicole Smith, 310-394-8487 x115, nicole@communitycorp.org
  - Facilities Manager: Miguel Ceballos, 310-394-8487 x127, miguel@communitycorp.org

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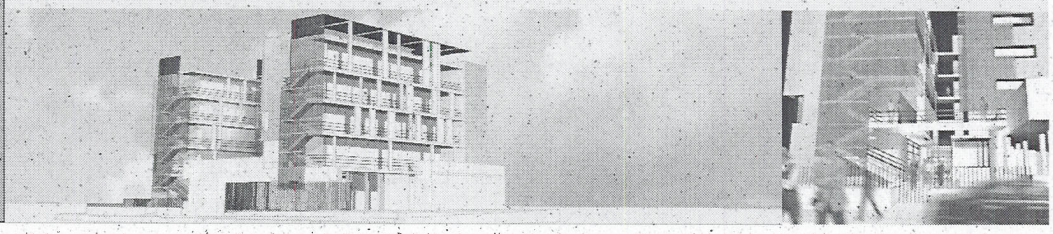
Prepared by Global Green USA in partnership with the City of Santa Monica Housing Division, with funding from the California Integrated Waste Management Board

GLOBAL GREEN USA BUILDING BLOCKS

GREENING AFFORDABLE HOUSING INITIATIVE

GLOBAL GREEN USA
CASE STUDY



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

Colorado Court

502 COLORADO AVENUE, SANTA MONICA, CALIFORNIA

The Colorado Court project sets an ambitious new standard for energy- and resource-efficient affordable housing. An urban infill development, Colorado Court is located in a prominent location at 5th and Colorado in downtown Santa Monica, close to shops, jobs, civic buildings, and public transit lines.

The impetus to make the project a showcase of green technologies and design came from the City's involvement with the Regional Energy Efficiency Initiative, a program that supports municipal energy-efficiency demonstration projects. The City of Santa Monica Environmental Programs Division worked in cooperation with the City Housing Division, the Community Corporation of Santa Monica, and the project architects to identify and implement the green features.

PROJECT INFORMATION

Project Size:
29,900 s.f., 5 floors, 44 studio units

Construction Cost:
$4.3 million

Completion Date:
Fall 2001

Owner/Developer:
Community Corp. of Santa Monica

Architect:
Pugh Scarpa Kodama

Energy Consultant:
Helios International, Inc.

Mechanical/Electrical Engineer:
Storms & Lowe

Structural Engineer:
Nabih Youssef & Associates

Contractor:
Ruiz Brothers Construction Co.

Construction Manager:
Guccione and Associates

Landscape Architect:
Dry Design, Inc.

GREEN FEATURES

Numerous environmental considerations were incorporated in the early planning and design stages of the project. The architects and energy consultant collaborated from the outset to minimize energy use and best utilize natural features such as the sun and prevailing winds.

The orientation and shape of the building and the placement of windows maximize natural daylighting and natural ventilation and provide shading where needed. Because of these passive design strategies, it was only necessary to provide air conditioning in one small area of office space.

The building's design and technologies allow it to achieve a level of energy efficiency that exceeds both the State of California Title 24 Energy Code and the local standards set by the City of Santa Monica's Green Building Design and Construction Guidelines.

The project's energy consultants expect that the building will exceed Title 24 efficiency standards by 50%, resulting in savings of almost $10,000/year (as of June 2001 energy rates). The consultants also estimate that almost 100% of the power needed by the building's occupants will be generated on the site by solar photovoltaic panels and an on-site gas turbine. Over the course of a year, the site will probably produce more electricity than it consumes.

During and after construction, the energy consultants are conducting tests to ensure that the building's systems and equipment were procured as specified and are working as intended—a process known as commissioning. The commissioning evaluation will continue throughout the first year of the building's operation.

(Continued on Next Page)

In addition to the energy-efficient measures, the project includes design features, materials, and systems that address the building's impact on the site, water use, resource use, and tenant health and well-being (see list of features, below).

The building was designed to meet many of the rigorous criteria of the LEED (Leadership in Energy and Environmental Design) rating system, developed by the U.S. Green Building Council. The project has been registered for LEED certification and its owner and designers hope that it will attain the Gold rating.

On-Site Energy Generation

- Photovoltaic (PV) panels are integrated into the building facade and are on the rooftop. The 25-30 kW system will produce more electricity during the daytime peak hours than needed by residents. If the building is deemed eligible for net metering (see final paragraph of the case study), the surplus electricity that is generated on site can be sent to the power grid; the building owner will then be credited for that by the utility. During non-daylight hours, when the PV system does not operate, electricity will be generated by the turbine/cogeneration system and taken from the grid. However, the electricity obtained from the grid should be offset by the surplus sent into the grid. Therefore, under a net metering system, the residents' electricity bills should be zero.
- A 28 kW natural-gas-powered turbine with cogeneration (waste heat recovery) system operates in the early morning and evening hours, to meet the remainder of the electricity demand. This system also provides 100% of the building's domestic hot water needs and a substantial portion of the winter space heating requirements. This low-emission system has a conversion efficiency of approximately 70% (while primary energy delivered via the utility grid is only about 30% efficient). Also interesting to note is that, in California, the price of natural gas is discounted for consumers who use cogeneration systems.

Energy Efficiency

- Shading for south-facing windows
- Minimal glazing on the west facade
- Double-pane, low-E, krypton-sealed, high-efficiency glazing
- Compact fluorescent, low-mercury bulbs
- Indoor and outdoor motion sensors for lighting
- R-21 insulation throughout the building (recycled blown-in cellulose in 2x6 framing)
- R-30 insulation in the roof
- Integration of the water heating, space heating, and cogeneration waste heat systems
- Compact, energy-efficient, non-CFC refrigerators
- Energy-efficient heat pump with ozone-friendly refrigerant

Site Planning/Landscaping

- Existing palm trees kept on site
- Permeable gravel alley and underground stormwater retention system will retain 95% of the site's stormwater runoff (and 100% of the entire block's alley runoff) to allow its gradual absorption into the groundwater
- Drought-tolerant plantings, including native plants and ground cover
- Drip irrigation system with seasonal adjustment
- Parking spaces located underneath building to reduce heat island effect

Resource Conservation

- Construction site waste recycling
- Recycling bin storage area

Indoor Environmental Quality

- Operable windows and transoms for natural cross-ventilation
- Natural daylighting through courtyard design and window placement
- Features under consideration (pending availability of contingency funds as the project nears completion): Low-VOC paint, formaldehyde-free MDF for cabinetry, recycled carpeting, natural linoleum instead of vinyl flooring

Alternative Transportation Provisions

- Bicycle racks and storage area
- Parking spaces for tenant vanpool vehicles
- Under consideration: Alternative fuel dispensing station for two vehicles

FINANCING

All of the project's special energy measures, combined, cost approximately $500,000. This added cost is being covered, roughly half and half, by the City of Santa Monica and 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 uses public goods surcharges from utility bills to fund energy-efficiency demonstration projects in those two cities.

Because REEI funds energy *efficiency* features only, the City covered the cost of the energy generation systems (the photovoltaic panels and gas turbine generator). The Community Corporation of Santa Monica expects to receive a buy-down of almost $65,000 from the California Energy Commission for the photovoltaic system, which cost approximately $220,000. And Southern California Gas company is providing a $15,000 rebate on the $57,000 natural-gas turbine and cogeneration system (cost includes contractor's prevailing wage for installation); the company will also be doing field testing on the unit to see how it performs. The system is expected to have a payback in fewer than ten years, and the project's efficiency measures should have a payback (and net monetary benefit) in fewer than five years.

The stormwater retention system was paid for by the City of Santa Monica's Public Works Department, as part of the department's program to capture stormwater at key sites within the city, in order to prevent urban pollutant runoff into the bay.

CHALLENGES

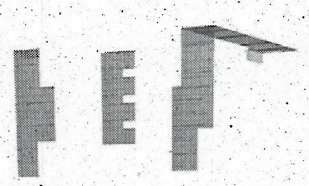
As Colorado Court is a demonstration project, it is not surprising that its designers and developers encountered some obstacles in the course of its development. One of the main lessons learned was that the project never could have been accomplished without commitment towards the project goals from all members of the team. The following are some of the challenges that they faced:

Construction Waste Recycling: A new City of Santa Monica construction waste recycling ordinance will take effect in the spring of 2001. Once services are in place to handle such recycling citywide and the practice becomes commonplace, it is expected that contractors and owners will actually save money by recycling construction waste and thereby diverting it from landfills. Colorado Court served as a demonstration project to prepare for this ordinance. Because construction waste recycling is not yet common, and because the site was too small to allow for easy on-site waste separation, the Community Corporation has had to pay a premium (an estimated $10,000) from its contingency funds to have the site's construction waste recycled.

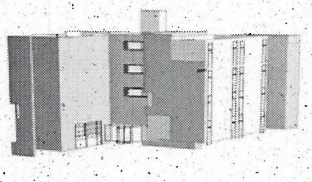
Flooring: The architects would have preferred to have polished concrete floors with throw rugs in the apartments, rather than carpeting, because hard-surface flooring does not create the health problems that carpeting can, and because it would have saved money. However, it is common practice to include carpeting in affordable housing units, due to perceptions of comfort and to the extra soundproofing that carpeting provides. The architects also suggested natural linoleum flooring in lieu of synthetic vinyl flooring in bathroom and kitchen areas. However, the higher cost of linoleum was considered prohibitive (even though linoleum is much more durable than vinyl flooring and therefore has a lower cost over its lifetime). Linoleum will only be chosen for the project if contingency funds are still available when the project nears completion.

Certified Wood: The original intent was to use wood from certified sustainably-harvested forests for framing. However, because the supply of certified wood was low during the course of the project, its price was prohibitively high.

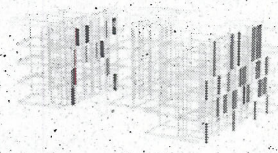
Concrete: Cement used in this project will only contain up to 10% flyash. Flyash is a waste product from coal-burning power plants and trapping it in cement is a good way to use the waste material while also strengthening the concrete. The architects would have preferred to use cement with a higher flyash content. However, the added curing time required for higher flyash-content cement would have delayed the project, which would have made it more costly.



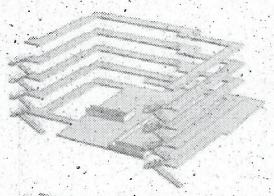
Equipment Downsizing: It took some time to convince the mechanical engineers to downsize the mechanical/electrical/plumbing equipment (hydronic radiators, piping, water pumps, and heat pump). But once the energy efficiency features were incorporated into the load analysis, downsizing and system integration were deemed feasible.

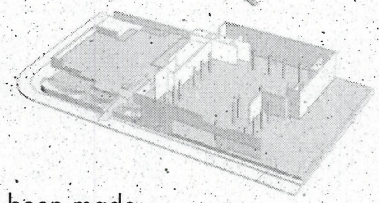


Tax Credits for Affordable Housing: The Colorado Court project was not selected for the highly competitive tax credits for low-income housing under the 2000 criteria. However, the new 2001 criteria issue points for energy efficiency. Had these criteria been in place last year, the project would have been more competitive.



Energy Generation Regulation: The architects, energy consultants, and CCSM have taken a creative and aggressive approach in incorporating the on-site, distributed power generation technologies into the project. Project team members have been involved in extensive coordination with state government officials. The most significant regulatory challenge they have faced concerns electrical net metering rules. Net metering means that when customers generate more electricity than they consume, the electricity can flow back into the grid and the customer's meter will run backward. At the end of a year, the customer is credited for up to 100% of their net generation of electricity. Until recently, the state only allowed for the net metering of systems rated at a maximum of 10 kW of renewable power; the Colorado Court PV system can generate up to 30 kW of electricity. The City encouraged the State Assembly to adopt new legislation to accommodate larger systems. Midway through the construction of Colorado Court, the legislation was passed, allowing for net metering of systems rated up to 1 MW (1,000 kW). However, this will not be applicable to Colorado Court if the Public Utilities Commission approves a rule proposed by Southern California Edison. The rule would preclude buildings that have more than one source of on-site power generation from net metering. The decision will determine whether this project will fully benefit from having both the photovoltaic panels and the gas turbine. As of July 2001, the decision had not yet been made.





CONTACTS

- **Pugh Scarpa Kodama**
  Architects, 310-828-2996, psk@pugh-scarpa.com
- **Helios International, Inc.**
  Energy Consultant: Dr. John Ingersoll, 818-884-8782
- **City of Santa Monica—Housing and Redevelopment Division**
  Project Manager: Jim Kemper, 310-434-2647
- **City of Santa Monica—Environmental Programs Division**
  Energy and Green Building Coordinator: Susan Munves, 310-458-8229
- **Community Corporation of Santa Monica**
  Project Manager: Robin Raida, 310-394-8487 x118

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Prepared by Global Green USA in partnership with the City of Santa Monica Housing Division, with funding from the California Integrated Waste Management Board

GLOBAL GREEN USA
BUILDING BLOCKS

Green Building Materials & Products
Santa Monica Area
Vendor List

June 26, 2001

Compact Florescent Lighting

Fisher Lumber
1601 14th St.
Santa Monica, CA 90404
(310) 395-0956

Home Depot
12975 West Jefferson Blvd
Los Angeles, CA 90066
(310) 822-3330

Resource Efficient Appliances

Sears
302 Colorado Ave
Santa Monica, CA 90401
(310) 576-2800

Barrett's Appliances
2723 Lincoln Boulevard
Santa Monica, CA 90405
(310) 392-4108

Bay Cities Kitchens, Bath & Appliances
1302 Santa Monica Boulevard
Santa Monica, CA 90404
(310) 393-3771

Combined Hydronic Heating

Hirsch Pipe & Supply
1717 19th Street
Santa Monica, CA 90404
(310) 829-0077

Howard Industries
8855 Washington Boulevard
Culver City, CA 90232
(310) 837-9100

This list is for informational purposes only. GG USA does not endorse any of the companies or products identified herein.

Ceramic Tile
Ceramic Tile Center
2001 Westwood Boulevard
Los Angeles, CA 90025
(310) 470-6629
carries recycled-content tile such as Florida Tile

Import Tile Center
1535 Lincoln Boulevard
Santa Monica, CA 90401
(310) 451-0644
carries recycled-content tile such as Florida Tile

Natural Linoleum Flooring
Regal Floors
11854 West Olympic Boulevard
Los Angeles, CA 90064
(310) 826-5581

A-1 Floor Covering Co.
5773 West Pico Boulevard
Los Angeles, CA 90015
(323) 938-3716

Linoleum City
5657 Santa Monica Boulevard
Hollywood, CA 90038
(323) 469-0063

Recycled Content Carpet
Carpet Showcase
1430 Lincoln Boulevard
Santa Monica, CA 90401
(310) 395-4575

LA Carpet Warehouse
13000 West Washington Boulevard
Los Angeles, CA 90066
(310) 827-3636

Recycled Content Insulation
Lowe's Home Improvement Warehouse
14873 Carmenita Road
Norwalk, CA
(562) 926-0826
(Greenstone Blown Cellulose)