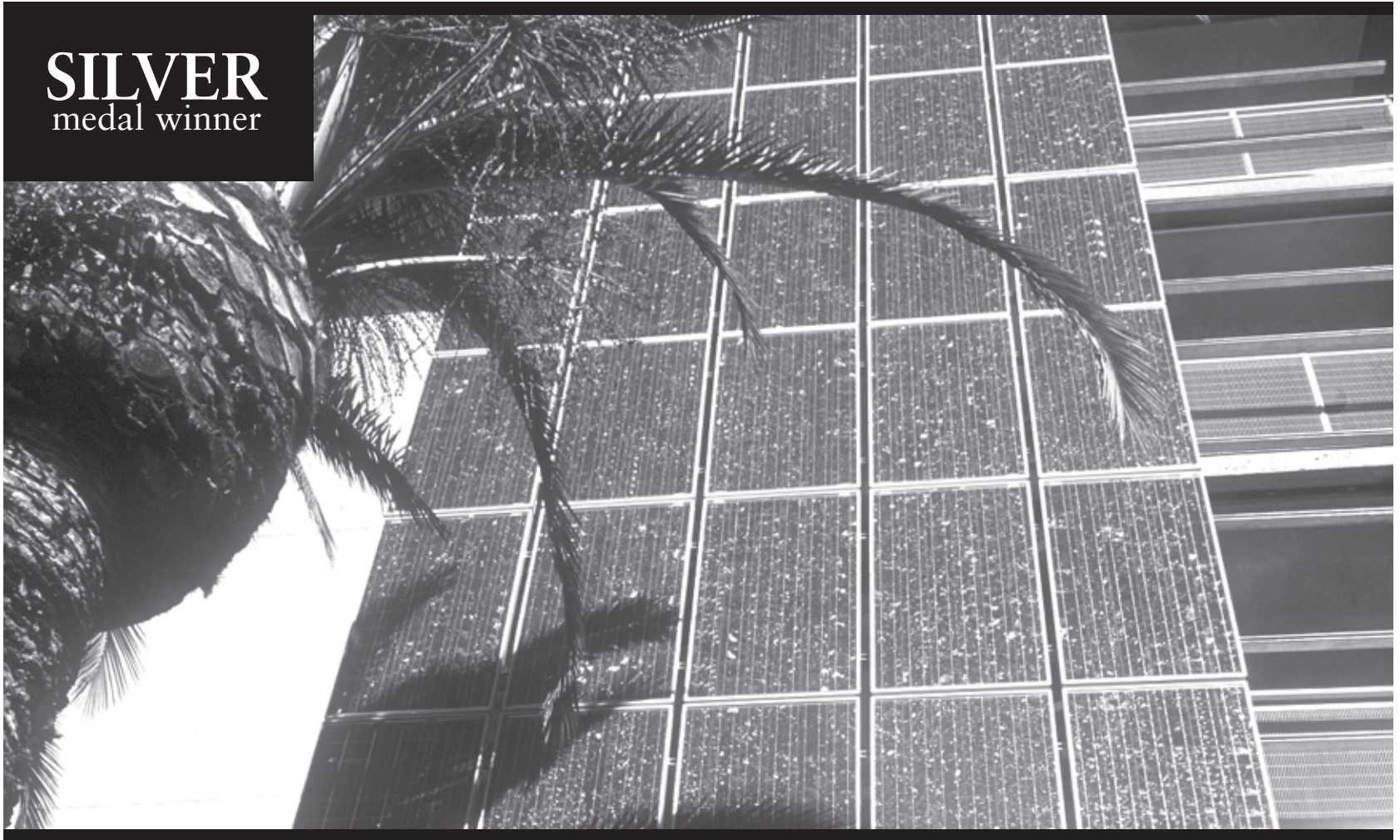


COLORADO COURT SANTA MONICA, CALIFORNIA

SILVER
medal winner



2003 Rudy Bruner Award for Urban Excellence

This is an excerpt from:

Creative Community Building: 2003 Rudy Bruner Award for Urban Excellence

Bruner Foundation, Inc.

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with

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COLORADO COURT AT-A-GLANCE

WHAT IS COLORADO COURT?

- 44 units of affordable, single-room occupancy (SRO) housing, located in downtown Santa Monica adjacent to transit and services;
- An innovative project that demonstrates the effectiveness of sustainable energy systems in combination with excellent design and housing affordability.

PROJECT GOALS

- To provide high quality, downtown housing to those who are most in need;
- To exceed current sustainability standards for this type of housing;
- To effectively utilize land by providing dense housing on an urban infill site;
- To showcase the integration of quality design and sustainable development;
- To achieve an exemplary level of collaboration between architect, city, and developer.

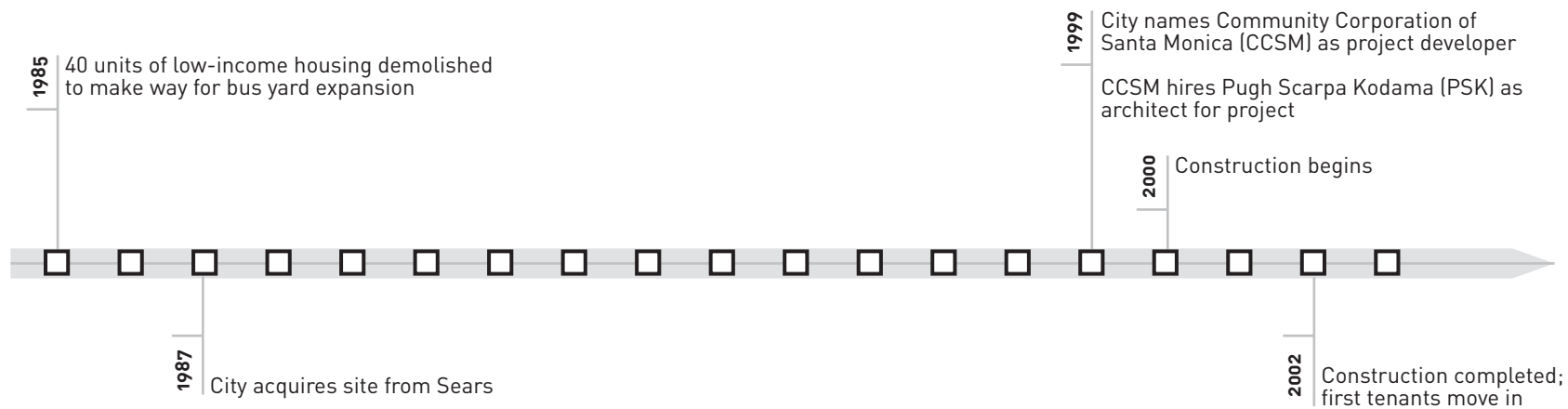
PROJECT CHRONOLOGY

- 1985
40 units of low-income housing demolished to make way for bus yard expansion.
- 1987
City acquires site from Sears.
- 1999
City names Community Corporation of Santa Monica (CCSM) as project developer.
- 1999
CCSM hires Pugh Scarpa Kodama (PSK) as architect for project.
- 2000
Construction begins.
- 2002
Construction completed; first tenants move in.

KEY PARTICIPANTS

(Those interviewed indicated with an asterisk)

Lawrence Scarpa*, Architect
 Joan Ling*, Community Corporation of Santa Monica (CCSM)
 Jim Kemper*, Santa Monica Redevelopment Authority
 Bob Moncrief*,
 Santa Monica Housing and Redevelopment Manager
 Craig Perkins*,
 Santa Monica Department of Environment and Public Works
 Michael Feinstein*, Santa Monica City Council (and former mayor)
 Angie Brooks*, Pugh Scarpa Kodama
 Walker Wells*, Global Green
 John Ingersoll*, energy consultant, Helios International, Inc.
 Pamela O'Connor*, Santa Monica City Council
 Tenants from Colorado Court*
 Jim Mount, AIA, Santa Monica



PROJECT DESCRIPTION

URBAN CONTEXT

Santa Monica, by most standards, is one of the most desirable living environments in the United States. Situated directly west of downtown Los Angeles on the Pacific Ocean, the city has a moderate climate and miles of wide sand beaches. Until recently Santa Monica has also maintained a relatively low density of development. It is, however, becoming increasingly attractive to moderate and upper income individuals who work in town or in neighboring Los Angeles. While the average income for a family of four in Los Angeles County is about \$55,000, in Santa Monica it is \$75,000. Similarly, the median income in Santa Monica is \$49,000, as compared to \$40,000 in California, and \$39,000 in the United States. In recent years Santa Monica has become one of the more densely populated coastal cities in Southern California and, at the same time, less and less affordable to low and moderate income households.

From 1999 (when the state mandated changes to the rent control laws to allow vacancy de-control), to 2003, the average rent for a two bedroom apartment increased from \$818 to \$1,528, and the median home value rose over \$500,000. Despite gentrification of the residential market, Santa Monica is rich in entry level service jobs, with a 20% increase in those jobs over the past five years. Many of those jobs are in the hospitality and food service industries

related to Santa Monica's popularity as a tourist attraction. Community Corporation of Santa Monica (CCSM) estimates that there are approximately 75,000 such jobs (with as many as 20% more in the "underground economy") in a town whose overall residential population is only 85,000. The result is that service workers and other low income individuals can no longer afford to live in Santa Monica.

Income levels notwithstanding, Santa Monica has long been known as a progressive city. Its seven member city council boasts four Democrats, and three Green Party members, one of whom was recently mayor. Despite its traditionally progressive philosophy, however, the escalating costs of housing in Santa Monica have made it difficult to maintain any socio-economic diversity. Santa Monica is only 4% African American and 13% Latino, compared to 46% Latino in Los Angeles County. There are fewer families living in Santa Monica than in the past, with about half the number of children per household as the rest of Los Angeles. Twenty percent of the school population is bused from other districts. There is also a perception that, as a higher income population moves into Santa Monica, there is a decreasing level of concern for social justice and the plight of the poor, and an increasing concern about quality of life for higher income residents.

With the loss of rent control, the inventory of affordable units has been eroded by luxury condominiums and by large houses built on relatively small lots. CCSM, a major developer of affordable

housing in the city, estimates that 5,000 affordable units have been lost in the past several years due to the continuing movement of the very affluent into Santa Monica. There are currently 3,000 units of affordable housing remaining, of which CCSM owns 1,200 (or about 40%). While the city has continued to build affordable housing, both through city agencies and through arrangements with non-profit organizations, the shortage remains acute. CCSM receives 3,000 applications for affordable housing each year, competing for 100 to 150 vacancies.

The City Council views affordable housing as a priority and has addressed the shortage in a number of ways. Proposition R, approved in 1990, requires that 30% of all new housing units built be affordable, amounting to about 230 units per year. Also, in 1998, CCSM joined other housing advocates statewide in a campaign to overturn Article 34 of the state constitution which had required a referendum on all housing projects that were 100% affordable units. The new regulation only requires voter approval if the project exceeds 0.5% of the total housing stock. Even with this more favorable regulatory climate, there is a shortage of affordable units coming on line. In fulfilling their obligations, developers are allowed to choose between building the required affordable units or “buying their way out” of the requirement by paying into a city housing fund at a rate of \$6.00/square foot for apartments, and \$11/square foot for condominiums. Although these are relatively low rates, state courts have not supported higher fees.

Santa Monica has also had a long-standing commitment to sustainable development, articulated in its *Green Building Design and Construction Guidelines*, adopted in 2001, and the recently updated *Sustainable City Program*. Together, these policies and guidelines require and provide incentives for the inclusion of energy-efficient systems in new construction. Santa Monica is proud of the fact that they are the only city whose requirements exceed those of the State of California. Even so, some of those interviewed maintained that even more could be done to provide better incentives and more rigorous requirements.



Big Blue bus yard

PROJECT HISTORY

In 1987, the city-owned bus yard, at the corner of Colorado and 5TH Street expanded, resulting in the removal of 40 units of low income housing, most of which were in trailers. An outcry about



Colorado Court corridor

the loss of these units resulted in the city being required by the Rent Control Board to replace them as soon as possible. In 1989, under pressure to meet its commitment, the city acquired the Colorado Court site from Sears (whose store is still across the street) for \$1 million, (considered by those involved to be a bargain price), and shortly thereafter entered into an agreement with CCSM to develop and operate 44 low-income units at that site.

CCSM is currently the largest landlord in Santa Monica, owning and operating approximately 1,200 units of affordable housing, in 80 properties, with an average of 15 units each. They also oversee 1,000 Section 8 certificates. CCSM's mission is to serve residents who are in need, including those displaced by the development of luxury condominiums as well as those adversely affected by the loss of rent control.

As one might expect, CCSM often encounters resistance to building affordable housing in this area. Joan Ling of CCSM noted that they could deal relatively easily with arguments about parking or design, but that the hardest barrier to break down is prejudice against the poor. In response to NIMBY attitudes, CCSM holds community workshops and provides a high level of design quality in order to make the project more acceptable to affluent communities; design has essentially become a political strategy. In addition, many of their projects are in mixed-use or commercial neighborhoods in order to avoid the organized resistance of affluent neighborhoods. Similarly, introducing "green building" strategies helps gain support of an environmentally-minded community.



Colorado Court south elevation

CCSM originally hired another architect to develop a scheme for Colorado Court, but the relationship with that architect did not work, and in 1999 they brought on Pugh Scarpa Kodama (PSK). PSK, for their part, had long been interested both in affordable housing and in sustainable building systems and saw Colorado Court as an opportunity to “push the green agenda,” as well as to showcase the effective combination of green energy systems with affordable housing and good architectural design.

DESIGN

POLITICAL CLIMATE

When PSK first came on board, they inherited a design that did not maximize sustainable systems, but had already achieved at least one of two critical approvals at the city. In early consultations with CCSM and the city, however, Larry Scarpa found that Craig Perkins, Director of Environment and Public Works Management, had a deep commitment to sustainable design and was eager to assist with expediting the energy measures Scarpa wished to explore. The City Planning Department, another key reviewing agency, also had a mandate to encourage green building. Scarpa was thus able to convince CCSM that re-design would help win city approval and would result in a better and more efficient building.

According to city representatives, hiring Scarpa gave Santa Monica an opportunity to take sustainable design to a new level. In their view, if Colorado Court could become a model project, it would give the city leadership a basis for pushing the agenda forward in future projects.

SITE

Colorado Court is located on the southeast corner of the intersection of Colorado and 5TH Streets, two major commercial thoroughfares in downtown Santa Monica. The site is within easy walking distance to a wide mix of uses — including a shopping mall, the Third Street Promenade (a pedestrian shopping street with a number of theater

complexes), Palisades Park (overlooking the ocean), the Santa Monica Pier, and the beach. To the south is the bus yard with the Santa Monica freeway immediately adjacent. Colorado Court is thus visually prominent as one enters and exits the freeway, standing out as a prominent landmark.



Colorado Court entry

Fifth Street is the entry point for Colorado Court, and has the most highly designed elevation. The community room and terrace, surrounded by a low wall and planting, are located along Colorado Avenue. Because of its prime location, Colorado Court presented an opportunity for PSK to create a building with a strong, recognizable design identity; one that could become a showcase for sustainable building systems.

ARCHITECTURE

Scarpa developed a simple, cost-effective scheme. His first decision was to re-orient the building to face mostly south and take advantage of sun for solar power and prevailing winds for ventilation. By stacking units vertically in three five-story towers, he was able to maximize the efficiency of plumbing and heating systems. Each tower has exterior single-loaded corridors or decks that provide access to light and air for the units.

The project utilizes wood framing over a concrete base structure, with a stucco exterior. The architect was careful to stay within the established height limit, thus avoiding the need for variances, since they were sensitive to the potential for NIMBY reactions.

The 5th Street elevation, on the southwest face of the building, is the most highly articulated. The separate residential towers result in varying setbacks from the sidewalk, creating an interplay of light and shadow that is further emphasized by the planted entry and mature palm trees. The staggered tower elevations also allow maximum sun exposure for south-facing entries, and dramatize the polycrystalline solar panels on the west elevations. The panels,



Detail of south elevation

which extend in a vertical formation from the top to the bottom of the building, absorb light through their deep purple multi-faceted crystalline surface.

The deep purple color, contrasted against a grey-green neutral stucco, forms an interesting and attractive element in the design. Somewhat unusually, the majority of panels are mounted vertically rather than at a more energy efficient angle, adding to their visual impact (see discussion below on energy systems). A low concrete

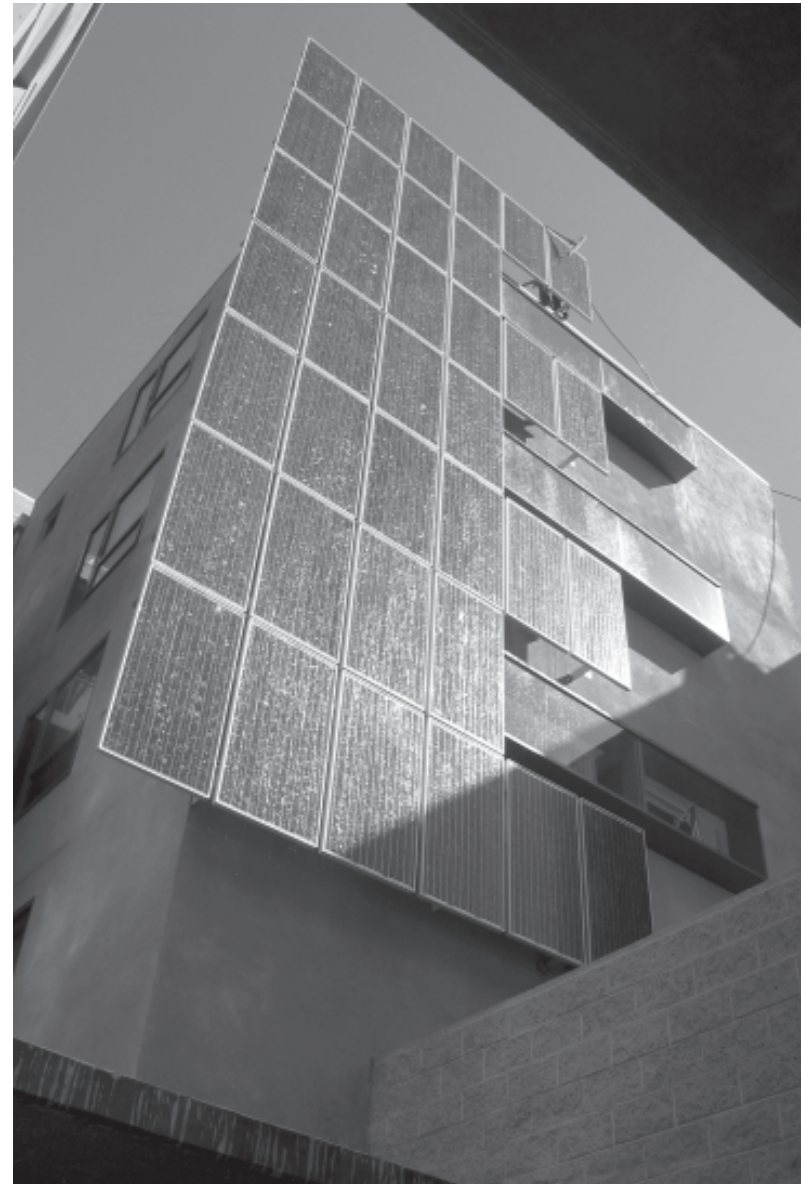


Fifth Street elevations

wall surrounds the entrance and low planting further defines the entrance. On the southeast side of the building, the side most visible from the freeway, an irregular galvanized sheet metal lattice adds a playful, reflective element to the design and again, gives the building a strong and recognizable design identity. The northwest elevation is punctuated by a highly structured pattern of small windows which is not as bold architecturally but which fits well within the overall design vocabulary, and captures the prevailing breezes for interior ventilation.



North elevation



Solar panels

The community space, a managers unit, and laundry are located on the first floor around a planted courtyard. Major exterior steel stairs provide vertical access at two corners of the project, together with an elevator located at its center. Funding for the project prohibited any mix of uses (such as retail), so the community space, which is raised above street level and is framed by a courtyard along Colorado Street, is intended to be used by tenants and as meeting space for other community groups. It has single-glazed windows on the Colorado Street side, a polished concrete floor, and a small serving kitchen. Since the time of the site visit the space has been fully furnished, and now offers computer/printer stations for use by tenants and other community groups.



Community room kitchen

All 44 units are single-room occupancy (SRO) or “efficiency” units, ranging from 300 to 375 square feet, with varied configurations between corner and interior units. All units include a living space (combination living room and bedroom) with adjacent galley kitchen, and separate bathroom. While small, there is room in the living space for a single bed as well as a small dining table, and seating area. The living space is carpeted, and all units have multiple windows to maximize light and natural ventilation.

The central entry features a tall wrought-iron gate and is well planted with indigenous plant materials. Two large palms, preserved during construction, provide shade and visual accents to the architecture. Twenty parking spaces are located below grade. Construction cost was \$156 per square foot.

ENERGY SYSTEMS

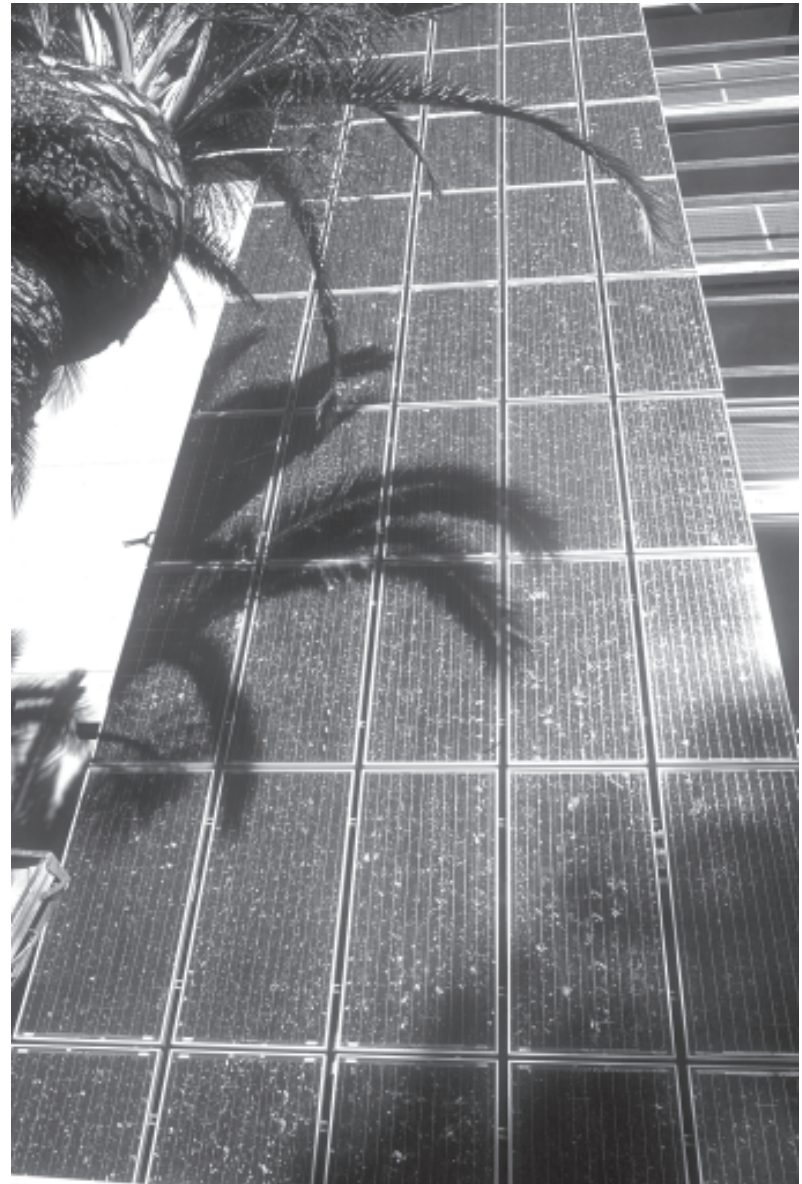
As project architects, PSK made every effort to “push the envelope” for green building systems. The 196 solar voltaic panels are the most visible of the green elements. Each panel measures 2’ by 6’ and most are aligned in vertical arrays on the 5TH Street elevation (a 10% less efficient arrangement than the relatively few panels in horizontal arrays above the roof and presumably still less efficient than if the panels were tilted toward the low winter sun). The polycrystalline panels have a higher theoretical energy output than “amorphous” panels; they are more sensitive, however, to shade and an entire array of 12 panels is sometimes taken off-line by the shade of the nearby palm trees. These particular polycrystalline

panels were specified by the architect partly for their efficiency and partly because they provide a recognizable design element, creating a signature identity for the building.

Energy Concept

The panels were designed to supply about 30% of the electrical needs of the building. The intent was that solar energy would be generated during daytime hours, when the sun is out, and excess energy beyond what is required during the daylight hours would be fed back into the power grid (with the meter running in reverse). The remainder of the required electricity, and all hot water and space heating, was to be supplied by a 28 kilowatt micro-turbine engine located on the roof of the building. A power meter was originally intended to automatically modulate the output of the turbine, based on the energy output of the solar panels. The turbine was designed to run during the two peak periods in the morning and evening for a total of 6 to 7 hours a day. A zero net draw of electricity from the grid was projected.

The turbine is fitted with a heat recovery system so that the waste heat can be captured for space heating and domestic hot water. Heat is stored as hot water at 175°F in an insulated 500 gallon storage tank. The heating system circulates through a heat exchanger while the hot water is circulated directly via a mixing valve (reducing the temperature to 115°F). A conventional boiler provides back-up hot water heating. Attractive, flat panel Runtal brand radiators are provided in each unit.



Solar panel detail

Installed Energy Systems

Although the interrelationships of energy systems are working generally as planned, the actual output of solar panels is less than expected. Because of the shading of one of the solar arrays by the palm trees, efficiency of the solar panel output has not reached the 30% mark, and is actually closer to 15% at the time of this writing. The project's energy consultant, John Ingersoll, states that this is also attributable to the fact that the solar system was downsized somewhat in the design phase, and that energy consumption has been slightly higher than what was anticipated. Maximum output as installed is about 15 kw.

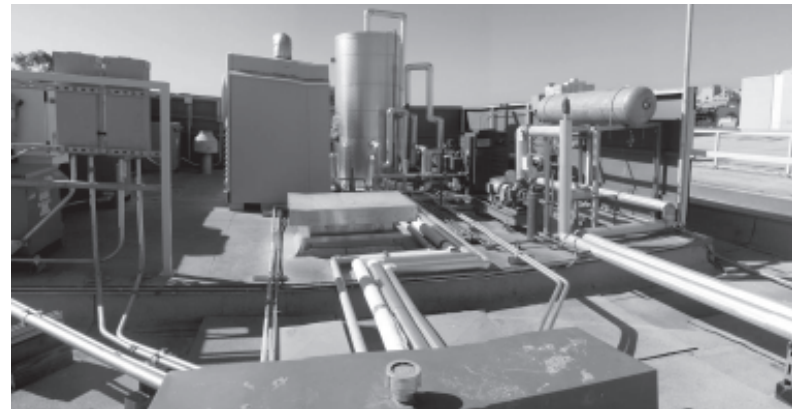
In addition, the complete control system for the micro-turbine was not installed as designed, so that the back-up boiler is heating the building during the day. This is being remedied by additional temperature controls. The Runtal radiators have built-in valves, but the tenants tend either to close them or open them all the way. This results in overheating and windows are often left open to compensate. Individual thermostats were traded off in the design stage for superior cellulose insulation in lieu of fiberglass. In his upcoming energy audit, Ingersoll will recommend training tenants in the operation of the units to avoid the overheating problem and the attendant waste of energy.

Other Green Measures

In addition to the solar panels, PSK used a variety of other energy-efficient systems in the building. For cost reasons they were not able

to use certified renewable resource wood for the framing, but the concrete slabs are fortified with fly ash, a post-industrial by-product of steel manufacturing which is effectively re-cycled through this use. Cabinets in the units are made of formaldehyde-free particle board, and non-CFC refrigerators were selected. Lighting is supplied by compact fluorescent, low-mercury bulbs. These bulbs use only 25% of the electricity of a standard bulb and do not contain hazardous chemicals. They can, therefore, be disposed of in a conventional landfill and are not considered toxic waste as is a conventional fluorescent lamp. Exterior lighting, including the garage and stairways, is controlled by photo cells and motion sensors so that energy is not wasted when no movement is detected. Ingersoll estimates that the exterior lights are on only about half the hours they would be with conventional controls.

Flooring is linoleum, and the insulation is recycled cellulose (newspaper), blown into the walls at R-21, and roof at R-30 (now



Energy equipment on roof

the required R-value for roofs as per the California Energy Commission; R-13 is the California requirement for walls.) The cellulose insulation is mixed with an adhesive to ensure that all corners and areas around pipes are filled and that the material does not settle over time, creating unprotected gaps common with fiberglass insulation. In addition, all penetrations by pipes and the like were caulked to reduce heat loss.

The windows in the project are the result of consultation between Ingersoll and the manufacturer. Double-paned aluminum windows were specified by the architect. Aluminum frames conduct cold and are thus not typically very energy efficient. A local manufacturer was the preferred supplier and Ingersoll worked to modify their conventional window to a more energy-efficient design. The spacers

between the glass panels were changed from aluminum to stainless steel, and krypton instead of argon gas was used between the panes (it is heavier and less convective). The result is an aluminum window with a U-value of 0.4 (a very good number by California standards, but a good-practice standard in the Northeast) as opposed to the supplier's standard of 0.57. The planting around the building is consistent with "xeriscape" design, utilizing native plant materials that require very little water. Permanent irrigation systems are installed for the plantings. Most building materials were purchased from local manufacturers, another PSK commitment.

Because of the insulation, window specifications, and other passive solar features of the building, interior hot water heating units were able to be downsized from the original design. Although the project



Typical unit



Xeriscape design

has not achieved the goal of zero space heating demand, the demand has remained relatively low, particularly for south facing units, and interior units that have only two exterior walls.

As a pilot project, the city supported design of an adjacent alley to capture storm water runoff from the project and from a portion of the adjacent bus yard. It uses a permeable paving material that “captures” water from the site and roof runoff and collects it in on-site retention tanks. From there it percolates back into the ground, minimizing flows off-site into the storm drains and Santa Monica Bay. The system does not have any special filtering for grease or other vehicle residues, as contamination amounts are deemed to be relatively small. Instead, the soil and the microbes are intended to serve as a natural filter for any hydrocarbon contaminants.

At the time of writing, an application was pending for a LEED (Leadership in Energy & Environmental Design) gold rating for Colorado Court.

Other Energy Issues

In planning the energy systems, PSK met early on with Southern California Edison about the possibility of “net metering”; i.e., selling back excess energy (generated by the solar panels during the daytime) to the public grid at retail price while charging the project only for units beyond what was credited. The intent was to create a “zero cost” electrical system. According to PSK, Edison was initially

agreeable and aware from the beginning that the micro-turbine was part of the design. However, Edison subsequently refused to admit Colorado Court to this program because of its total size and its co-generation system (the micro-turbine). The issue was resolved, however, with new legislation that allows projects up to 100kw to be “net metered.” At the time of this writing, Colorado Court was still paying retail prices for power used, while receiving lower wholesale rates for power returned to the grid. This situation has been a bone of contention between Edison and the city, CCSM, and the architect. All are continuing to pursue a remedy with the California Public Utilities Commission.

Bringing all of the development partners along in the “green” process was not easy. CCSM was skeptical at first about many of the PSK-proposed systems but, over the length of the project, came to support them and is now using PSK to design other projects. All the parties had to invest extra time and money in the project because it was being done differently. For many of the energy systems, however, special funding was available, minimizing additional costs (see Finances). By the time construction began, most were firmly committed to the project’s green direction.

Construction of Energy Systems

Project participants experienced a learning curve on Colorado Court. Building trades and the Santa Monica Building Department, who had not been involved in the design process, had little experience with these new materials and systems. Construction of

Colorado Court involved three major challenges: with Southern California Edison, which was discussed above; with the Building Department which was unwilling to accept certain proposed practices; and with the solar panel manufacturer which was sold to another company during the course of construction. The manufacturer discontinued the unit the architect had specified but in the end agreed to a custom run to fill the order for Colorado Court. The panels received on the job were sized differently than they had been originally, thus requiring redesign of the framing system which resulted in a \$14,000 cost increase.

A more systemic problem was the interface with the Building Department. For example, the Department required a “modification” in order to allow the solar panels to be attached to the exterior stair, even though a permit had been issued with that design feature. They also requested initially that the steel stairs have one-hour fire protection because of the proximity of the solar panels. However, because this was not a code requirement, or on the permitted plans, this request was ultimately withdrawn.

There were several additional changes required by the Building Department that also cost the project time and money. In one instance, the building department disallowed threaded pipe connections for the gas supply to the micro-turbine after they had approved it and it had been installed. This decision required the project to remove finished stucco walls and replace threaded connections with welded joints. The building department reasoned

that the gas pressure in that system was higher than elsewhere and required the extra precaution, despite the fact that PSK had tested far higher pressures with no problem. In another instance, mesh panels behind every solar panel were required because the panels were reachable from the stair and they were concerned that if someone attacked a panel on the upper levels with a metal blade they would be subject to electrical shock (a questionable notion since the voltage is low). Although the costs associated with these changes only totaled about \$20,000, the most serious consequence was a six month delay in occupancy.

Operation of Energy Systems

The energy systems appear to be working well following some initial bumps. In the first couple of weeks there were difficulties regulating hot water temperatures due to a malfunctioning heat exchanger on the turbine engine. Temperature regulation has since been achieved, although it is controlled for the system overall rather than by individual units (which the developer would have preferred but which was too expensive). One tenant we met with, who occupied a south-facing unit, had never turned on her heat and said the breezes that circulated through her apartment also provided adequate cooling.

An audit of the energy systems was being conducted at the time of writing. Panel performance is being closely monitored by John Ingersoll who has been contracted by the city for a year-long assessment. There is already an indication that some adjustments

will need to be made. One of the large palm trees shades several of the panels. If one panel is not functioning properly it knocks out a 12-panel array, much like a string of Christmas tree lights. There is talk of removing some of the palm fronds to reduce shading. The non-galvanized steel stairs and the screens that back the solar panels are showing signs of rust from the salt air environment. The metal will eventually have to be treated.

TENANTS

Colorado Court is CCSM's lowest income project. CCSM's average rent for family housing is \$500 per month, while Colorado Court



Typical unit kitchen

units, which are considerably smaller, rent for between \$300 and \$380 per month. CCSM selects tenants from their database of questionnaires that have been filled out by those seeking affordable housing. These people are identified through a wide variety of outreach methods employed by CCSM including social service agencies, churches, and word of mouth.

Many of the Colorado Court tenants are formerly homeless and/or in need of special services. 37% are low-income workers with jobs such as playground staff, retail clerk, nanny, carpenter, security guard, and food service workers; 63% are on fixed incomes and have special needs. The ethnicity of the tenant group is mixed. 65% is white, 19% black, and 7% Latino, quite different from the Los Angeles region in general, whose population is predominantly Latino. Putting these populations together is not the norm, but was advocated by some of the social service agencies working with CCSM. They felt such an ethnic mix lessens the isolation of homeless populations and assists in their re-integration into society.

CCSM acts as landlord and maintains a close relationship with their tenants. They have a tenant manager and can refer to a wide network of social service agencies (services are not provided on site). CCSM has a long track record in this area and has learned how to reduce "behavioral problems" through quick intervention. At Colorado Court, where one-third of the tenants are coming out of shelters, there is a learning curve concerning how to live in homes of their own and in close proximity to neighbors. CCSM is also learning; their usual tenants are families rather than SRO

occupants, and in managing the tenant population at Colorado Court they are encountering situations that are new to them as well.

The first tenants moved in during June 2002 and at the time of the site visit some units had been occupied for several months and others for only a few weeks. In meeting with a group of tenants, who were mainly women, they seemed to be quite pleased with the project. They reported that they felt secure and appreciated being able to walk into town, to the beach, or to services. They also liked the “entertainment” offered by street activity, especially the nearby Third Street Promenade. Others commented on the fact that tenants were friendly and that they were getting to know each other.



Tenant entry

FINANCES

The financing of Colorado Court was straightforward. The land was purchased by the city and leased for 87 years to the developer; the city retains ownership of the land and CCSM owns the improvements. The city provided \$4 million to the developer which covered the bulk of development costs. Other sources of credits and funds were identified by the architect and developer who obtained a number of rebates and cost savings totaling close to \$400,000. For example, \$250,000 was provided by the Regional Energy Efficiency Initiative, a state funding source whose income derives from utility bills.

The sustainable energy systems together cost about \$500,000, and the overall construction cost was \$4,674,000, or \$156/square foot. Additional soft costs of \$1,176,000 bring the total development cost to \$5.8 million. The tables detail the sources and uses of funding for Colorado Court.

The costs of operating Colorado Court are not yet fully understood. As mentioned above, the city has commissioned a detailed energy audit, but the results will not be available until the year-long study is completed. Early indications are that the systems are functioning efficiently and will show operational cost savings. It should be noted that Colorado Court has the advantage of extremely low debt service because of the degree of funding by the city, and because of the city's interest in the green energy measures.

Financial Summary for Green Measures Source: Community Corp. of Santa Monica

Energy Efficient Measures

Passive Energy Efficient Strategies	\$20,000
Upgrade building Wall Insulation System	\$30,000
Upgrade Building Roof System	\$5,000
Upgrade Windows	\$40,000
Utilization of EE Lighting Devices	\$22,000
Distributed Power Gen. and Co-Gen System	\$66,000
Solar PV Power Generation Panels	\$164,000
Solar PV Power Generation Inverters	\$30,000
Solar PV Power Gen-Unistrut and Electrical Hardware and Installation	\$110,000

Total EE and Distributed Power Gen. \$487,000

Consulting on EE Systems \$49,500

Storm water Collection System \$30,000

Construction Waste Recycling \$11,515

Green Materials Upgrade

Linoleum and Recycled Carpeting Upgrade	\$6,000
Credit for OSB instead of Plywood	\$(2,000)
MDF cabinets	\$11,000

Total Green Materials \$15,000

Total \$597,515

Income and Operating Expenses Source: Community Corp. of Santa Monica

Income

Tenant Payments	\$190,872
Other Income (Laundry)	\$1,200

Total Gross Income \$192,072

Less Vacancy Rate \$(9,604)

Effective gross Income \$182,468

Expenses

Administration	\$14,200
Management Fee	\$21,680
Utilities	\$24,816
Payroll/Payroll Taxes	\$16,320
Insurance	\$8,800
Maintenance	\$39,764
Water/Sewer	\$18,480

Subtotal Operating Expenses \$144,060

Property Tax \$9,320

Replacement Reserve \$18,000

Total Operating Expenses \$171,380

Net Operating Income \$11,088

Less Debt Service/MHP \$6,841

Available Cash Flow \$4,247

Funding Sources
Source: Pugh Scarpa Kodama

Sources	
City of Santa Monica	\$4,009,000
Multi-Family Housing Program (California State Dept. of Housing and Comm. Dev.)	\$1,629,000
Affordable Housing Program (Federal Home Loan Bank - administered by Bank of America)	\$207,000
Bank of America (grant)	\$5,000
Total	\$5,850,000
Rebates	
California Energy Coalition - Regional Energy Efficiency Initiative (REEI)	\$(258,000)
Southern California Gas Company - Co-generation Rebate	\$(18,000)
California Energy Commission Emerging Renewables Buydown Program	\$(123,000)
Total	\$(399,000)
Costs	
Total Construction Costs - \$156/square foot	\$4,674,000
Total Soft Costs	\$1,176,000
Total Construction Costs	\$5,850,000

IMPACTS

Councilwoman Pamela O’Connor stressed the degree of concern at the City Council about sustainable energy systems. In her view, Colorado Court is important because it combines two major city goals: developing sustainable projects and adding to the inventory of affordable housing. She feels the southwest façade with the solar panels has become recognizable around town and has increased interest in energy efficient design because it is seen by so many people.

Walker Wells, who works with the international organization Global Green, is a strong advocate of Colorado Court. Global Green is concerned with sustainable design and feels that building sustainable projects in urban areas is the key to long term protection of the natural environment. Global Green did a study for Santa Monica’s housing department using Colorado Court as a model for how to expand lending criteria to include sustainability measures. They also developed a case study on Colorado Court (posted on their web site) and use it as an example of one of only about 10 such projects in the country. Wells regularly features Colorado Court in speaking about sustainability around the world as part of their campaign to encourage combining advanced energy systems with excellence in architectural design.

Craig Perkins of the Santa Monica Environment and Public Works Management Department was an advocate for the project. In his view, Colorado Court was intended as a demonstration project to showcase the feasibility of sustainable design for all new projects, but particularly for affordable housing. He feels that the finishes

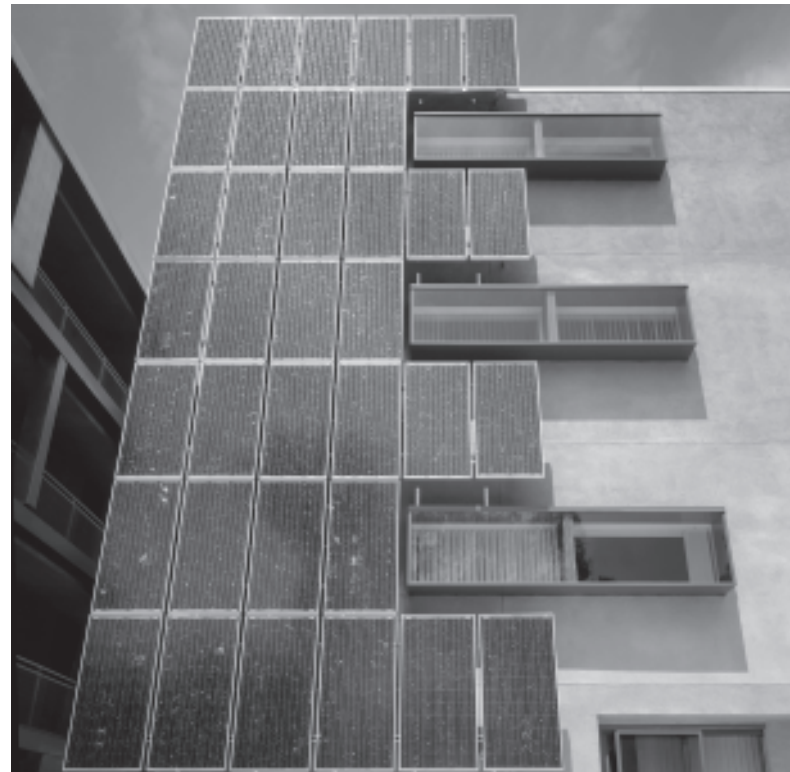
and systems used at Colorado Court positively impact the health of the occupants and of the community. Perkins feels that, as a result of Colorado Court, affordable housing developers in Santa Monica as well as the broader region have begun to design their new projects with energy efficiency and sustainability as core principles.

Colorado Court has attracted considerable attention from the development and design communities. According to the applicant, in the last 12 months Colorado Court has been visited by over 3,000 people and has been the subject of numerous workshops and case studies. The application itself included at least eight articles and publications on the project from local, state and national publications. It is featured on the city's, CCSM's and Global Green's websites.

The project has been the recipient of many awards in addition to the Rudy Bruner Award. It received the 2003 national American Institute of Architects Honor Award for Architecture; the 2003 National American Institute of Architects Professional Interest Area (PIA) Housing Award in multifamily housing; and the 2003 American Institute of Architects Committee on the Environment—Top 10 Green Projects award. Other organizations including the Los Angeles Business Council, the World Habitat Organization, and the Southern California Association of Non-Profit Housing have recognized Colorado Court for its design excellence and innovative energy systems.

Colorado Court claims impacts on state lending policies as well. Both Global Green and CCSM have lobbied successfully for the

state tax credit allocation system to provide points for energy efficiency, a factor now included in the Multi-Family Loan Fund. Also, as mentioned above, Scarpa, CCSM and the city have lobbied the California Public Utilities Commission to increase the limit for net metering for renewable energy systems, to credit energy at the same retail rate customers pay, and to change the language and criteria for how an eligible customer is defined. If successful, this will help encourage more widespread use of multiple alternative energy generation sources.



Solar panels

Larry Scarpa, his partners, Joan Ling and others prominent in the field of affordable housing and sustainable systems have joined together to form a new organization called Livable Places, Inc. who's goal is to “promote a sustainable Los Angeles region,” and they have begun several pilot projects in the area. They plan to develop more model projects that demonstrate new visions of sustainable design, including green space, pedestrian-friendly streetscapes, new housing types, more efficient land use, and a balance between cars and public transit. All of their projects target the urban core, with the goal of sparking further revitalization efforts by the private sector and non-profit developers. Livable Places is already attracting attention, and in our conversations with representatives of the Local Initiatives Support Corporation, (LISC), it was clear that they felt Livable Places was an “up-and-coming” initiative and one in which LISC was keenly interested.

FUTURE PLANS

With Colorado Court complete, CCSM is continuing to build affordable housing around Santa Monica and has hired PSK for a new housing project on another prominent downtown site. When questioned by the site visit team about the extent to which CCSM will replicate the kind of systems used at Colorado Court, they were somewhat non-committal. PSK is currently working on four other projects in the Los Angeles area where they will employ these or similar technologies.

In the next year, Colorado Court will complete a comprehensive energy audit which will give more detailed information about energy use and patterns and will allow them to learn which of the

systems has proved most effective. The likely granting of a LEEDS gold certificate will place them more formally in the national energy rating system.

ASSESSING PROJECT SUCCESS

MEETING PROJECT GOALS

- *To provide socially and financially responsible affordable housing in the downtown.*

Colorado Court provides 44 units of very affordable housing in the heart of downtown Santa Monica. Its mix of tenants includes some formerly homeless individuals, some in need of social service support, and some who are considered working poor. Colorado Court is well designed, and fits well into the physical fabric of the city. The city provided large subsidies for construction and for the energy systems (which, while environmentally responsible, may or may not achieve financial payback).

- *To provide high quality living conditions to those who are most needy.*

There is little doubt that the tenants of Colorado Court are very much in need of the housing and services the project provides. CCSM selects applicants from their own system that assesses need on the basis of multiple factors, and is able to connect tenants with the social services needed to assist them in independent living.

While the units are small, they are well designed and appointed and the location is highly desirable.

- *To provide a new model for sustainable housing that exceeds current standards.*

Colorado Court is apparently one of the few projects in the country to combine high quality architecture and sustainable energy systems in affordable housing. It is considered by Global Green, the City of Santa Monica, and the architectural press to be a strong and successful model for this housing type.

- *To effectively utilize land by providing dense housing on an urban infill site.*

Colorado Court is located on a prominent corner in downtown Santa Monica, surrounded by buildings from two to five stories tall. Its scale is appropriate to the surroundings and it has achieved an overall high design quality for a dense infill project. The fact that the units are quite small contributes to making this possible.

- *To showcase the integration of quality design and sustainable development.*

Colorado Court is well designed and the combination of orientation and location on a prominent corner do showcase the colorful solar panels that have become a hallmark of the project. Other sustainable products used throughout the project contribute to the quality of the building, and demonstrate that there is no inherent conflict between good design and sustainable systems and products.

- *To model a new level of collaboration between the architect, the city, and the developer.*

Through its focus on sustainable energy systems, Colorado Court has forged a new alliance between the public, private and non-profit sectors. Those within city government who are advocates for more efficient energy systems view Colorado Court as a model and a basis for moving further in this direction in terms of policy and regulation. CCSM now feels that these systems combined with affordable housing have political value and give them another “hook” for persuading people of the importance of their projects. For the architect and others concerned with long-term environmental issues, such as Global Green, the project shows that sustainable systems are feasible for both energy generation and finishes. The fact that the architect, developer, and the city representatives are lobbying together for changes in Public Utility Commission regulations attests to their mutual commitment to the ideas contained in Colorado Court.

SELECTION COMMITTEE DISCUSSION

The selection committee was impressed with a number of aspects of Colorado Court. They felt that it is very important to continue to provide affordable housing within wealthy communities, despite ongoing resistance, and to reduce the operating cost for its residents. In this, Colorado Court could be considered a model and the selection committee was pleased that the designers and

developers were engaged in influencing public policy to make this kind of project more feasible in the future. They also appreciated the ways in which tenants had personalized their units, and thought it showed a degree of comfort and ownership of the units.

The combination of quality architectural design with energy efficient systems was also considered significant by the committee. They felt it was important to overcome the institutional image of affordable housing, and that Colorado Court was a well-designed addition to the cityscape. The fact that the solar panels made it instantly recognizable, and added to the design quality, was seen as a plus.

The committee also had some reservations about Colorado Court. It was clear that a great deal of money had been invested to achieve energy efficiency. (Even though much of the funding came from grants and rebates it still represents the investment of resources). But it was not yet clear that there would be an economic payback or even that the energy systems themselves would be able to meet their performance goals. This was due in part to the misunderstanding with Southern California Edison about net metering, and was in the process of being negotiated, though the outcome was not certain.

The financing for the project was also very unusual, in that the city provided most of it as a grant, without requiring debt service. This makes the project itself viable, but does not necessarily create a replicable model. Also, there seemed to be missed opportunities for

tenant involvement both in the planning phase (perhaps with tenants who had been displaced or surrogates) and also in the operational aspects of a green building; there was no visible tenant empowerment and the project's two main issues – tenants and energy systems – did not appear to have been treated as a single, integrated whole. Again, this may develop as the project becomes fully occupied, and tenants have the opportunity to gather in the common space, and develop more programming and community activities there.

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