

# PACIFIC CURRENTS

Multifamily News | Arizona | Hawaii | Nevada | Northern California

## Energy Efficiency Issue

- *Solar Initiatives on the West Coast*
- *New Solar Homes Residential Development Matrix*
- *Affordable Housing gets a Makeover*
- *Occupancy Question Highlights*



## NOTES FROM THE HUB DIRECTOR

Realizing energy efficient, sustainable communities is an enormous challenge that involves the cooperation and expertise by a variety of interests. Because achieving this within the multifamily housing community falls upon the shoulders of housing developers, builders, providers and managers, we've tailored the following articles to address a variety of energy efficient technologies, practices, programs and subsidies. While it's easy to be discouraged by the enormity of the task, lack of time, resources, and/or the vast array of confusing governmental programs, it is within your power to contribute, significantly, to the realization of energy efficient, sustainable communities. Ideas and

sharing of information is the first step in designing and implementing effective energy efficiency strategies.

To assist you with this effort, this edition of Pacific Currents is focused on issues of sustainability and energy efficiency. We hope you find this edition useful, and look forward to continuing our many partnerships on this most important issue.

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## PRESIDENT SETS FEDERAL PRECEDENT

On October 5th, 2009, President Barack Obama signed an Executive Order calling for "Federal Leadership in Environmental, Energy, and Economic Performance." The Executive Order was enacted to establish an integrated strategy towards sustainability in the Federal Government, and to make reduction of greenhouse gas emissions a priority for Federal Agencies. In Section I, President Obama makes the case for the Federal Government to lead by example, which will inherently "promote energy security, and safeguard the health of our environment."

Federal agencies will increase their energy efficiency by "measuring, reporting, and reducing their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and storm-water management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies and environmentally preferable materials, products and services; design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; strengthen the vitality and livability of the communities in which Federal facilities are located; and inform Federal employees about and involve them in the achievement of these goals."

San Francisco's Multifamily Hub is no stranger to these terms and conditions- and is very proud to present the next "Energy Efficiency Issue" of Pacific Currents.

## PACIFIC CURRENTS | SAN FRANCISCO MULTIFAMILY HUB

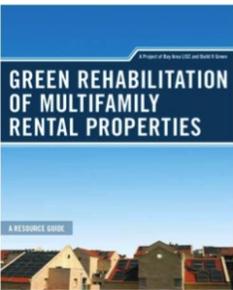
### ENERGY EFFICIENCY + BUILDING GREEN

#### Green Updates Can Bring Cost-Effective Upgrades

[Charles P. Cunningham]

There is a need for change in the way multifamily property owners and developers conduct rehabilitations of existing properties. Developments which were built in line with the styles, materials, and regulations of their time, are not always the most up to date. The Green Connections Program professionals at Bay Area LISC, one of the 29 LISC field offices around the country, are working on, and learning from, new ways to assess the needs for maximizing energy efficiency in these older properties.

Last year, Bay Area LISC co-published a manual with Build it Green entitled: *Green Rehabilitation of Multifamily Rental Properties*. Also referred to as the “Green Guide for Rehab,” this document outlined newer strategies for integrating green/energy efficient measures in existing properties. The Green Guide for Rehab focused on four main topics: site condition and systems, building construction, mechanical systems, and dwelling units. With the release of this guide, Bay Area LISC was able to begin funding Green PNAs (Physical Needs Assessment), which usually worked alongside projects which had already performed a standard PNA. Bay Area LISC aided in training local project managers with current green building standards which also included this newly created Green PNA process. The Green PNA process worked hand in hand with newly created Federal programs available through HUD’s Office of Affordable Housing Preservation (OAHP), such as the M2M or Mark-to-Market initiative. This program offered large incentives



to property owners who would upgrade, and further demonstrate these newly defined levels of energy efficiency within their existing building.

With the changing political climate in Washington D.C. earlier this year, largely attributable to the Obama administration, even more Federal money is now available for Green Retrofits through the American Recovery and Reinvestment Act (ARRA). In June of 2009 OAHP provided \$250 million in grants and loans to eligible Section 8, 202, and 811 projects for the completion of green retrofits. These applications were accepted until November of 2009. (<http://portal.hud.gov/portal/page/portal/RECOVERY/programs/GREEN>) OAHP also released its own Green Retrofit Physical Condition Assessment (GRPCA) which outlined three new requirements to obtain money through the ARRA retrofit program. New regulations required applicants to show proof of a PNA which incorporated traditional and green requirements, a current Energy Audit, and an Integrated Pest Management inspection.

The availability of Green Retrofit programs and incentives combined with the need for a Green PNA brought Bay Area LISC to work on a pilot project with an existing 150-unit affordable multifamily property in Mill Valley, CA. The building, known as ‘The Redwoods,’ was an affordable senior housing property originally built in 1972. Experts with ample experience in the field aided in testing this Green PNA project. Highlights from this experience, along with green building resources, are provided on the next page.

The San Francisco Multifamily Hub



San Francisco Multifamily Hub

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#### Hub Lines . . .

“ Treat the earth well. It is not given to you by your parents. It is loaned to you by your children.”

~ Kenyan Proverb

“ The time is always right to do what is right. ”

~ Martin Luther King Jr.

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The following are highlights from the Green PNA which was performed on the Redwoods Affordable Senior Housing property in April 2009. The full document on this project may be viewed in its entirety on the internet at this address: [http://www.bayarealisc.org/bay\\_area/assets/asset\\_upload\\_file603\\_772.pdf](http://www.bayarealisc.org/bay_area/assets/asset_upload_file603_772.pdf).

The Green PNA document focuses on Four main categories: Site Conditions, Building Construction, Mechanical Systems, and Dwelling Units. These categories are further broken into smaller sub-categories which look at the existing conditions and maintenance issues, and then make recommendations based on the findings.

- Site Conditions** focuses on: drainage, soils and landscaping, site lighting, fencing/security, parking/pedestrian and bike friendly communities, walkways, signage, parking, fire hydrants, and problem wildlife.
- Building Construction** focuses primarily on: foundation and slab, exterior walls, openings, corridors, interior walls, exterior stairs and landings, exterior decks, trash room & chute, dumpster enclosures, insulation, roofs, gutters, and downspouts, windows, building-mounted exterior lighting, and laundry facilities.
- Mechanical Systems** focuses on: electrical and lighting systems in common areas, emergency/fire alarm/fire sprinklers, common area lighting, plumbing systems, water & gas, heating in common areas and living units, cooling,

## GREEN PHYSICAL NEEDS ASSESSMENTS

elevators, renewable energy, and retro-commissioning or existing building commissioning.

- Dwelling Units** focuses on: wall and ceiling finishes, flooring, cabinets and interior doors, countertops, bathroom improvements, plumbing systems, fixtures, and fittings, electrical and lighting systems, appliances, and universal design.

After careful examination of these factors, the Green PNA outlines a course of action for sustainably 'greening' these aspects of the property. The recommendations section is broken into an Immediate Needs and Needs Over Time Recommendation Matrix. Within time, the property will be eligible, and on its way to obtaining Local and Federal money to upgrade. To learn more about Green Physical Needs Assessments and how they may pertain to your property, please take a look at some of the links provided in the Resources table at the bottom of this page.

### Recent Hires

- Bao-Tran Truong, Project Manager, San Francisco Development Division
- Erica Kodiyan, Project Manager, San Francisco Development Division
- Scott Greuel, Federal Career Intern, San Francisco Development Division
- Susan Veazey, Project Manager, Sacramento Asset Management Branch
- Anna Dennis, Administrative Staff Specialist, San Francisco Operations Division
- Robert Katsock, Appraiser, Phoenix Development Branch

Resource	Organization	Schedule	Website
<b>Continuing Education:</b>			
Energy Efficiency Classes	PG&E: Pacific Energy Center	Varies	<a href="http://www.pge.com/pec">www.pge.com/pec</a>
<b>Newsletters:</b>			
The Green Post	Build It Green	Monthly	<a href="http://www.builditgreen.org/enews-signup">www.builditgreen.org/enews-signup</a>
eNewsletter	Stopwaste.org	Varies	<a href="http://stopwaste.org">http://stopwaste.org</a>
Green Connection	Bay Area LISC	Quarterly	<a href="http://www.bayarealisc.org">www.bayarealisc.org</a>
Environmental Building News	BuildingGreen, LLC	Varies	<a href="http://www.buildinggreen.com/news">www.buildinggreen.com/news</a>
eNewsletter	Southface	Monthly	<a href="http://www.southface.org">www.southface.org</a>
<b>Peer Networks/Events:</b>			
Green Affordable Housing Coalition	Build it Green, Bay Area LISC	Quarterly	<a href="http://www.builditgreen.org/councils/gahc">www.builditgreen.org/councils/gahc</a>

## ENERGY EFFICIENCY + FINANCIAL FEASIBILITY

### Factors Affecting the Financial Feasibility of Solar Energy

[ Wayne Waite ]

Several factors determine whether a solar investment meets or exceeds the investment criteria set by the property owner. These factors include the level of electric consumption at the property, utility tariff rates and schedules, net metering rules, property location and site conditions (shade and orientation), system scope and costs, type of photovoltaic technology used, and the incentives and financing options available to the property owner. Below is a discussion of three factors that arguably have the greatest impact on the economics of solar.

#### ***I. Utility Cost Factors – The feasibility of solar investments is materially affected by the utility rates and policies and, importantly, by utility costs during the useful life of the solar investment.***

Solar investments are generally more financially feasible in areas with high electric utility tariffs and schedules.

Electricity is typically billed either on a flat rate basis where electric costs are fixed through a year, or on a *Time of Use* basis where costs depend on time of day and year. In California, Time of Use rates can range from 29 cents during summer weekday periods to 9 cents for off peak periods. Additionally, several utilities have *Tiered-Rate* systems that impose rate surcharges on customers for electric use above established baseline levels. In California, there are 5 Tiers that range from 11.4 cents per kWh for baseline use to 35.0 cents or more where residential consumption exceeds use increments over baseline levels.

Where tiered rates and Time of Use policies are in place, such as California, the dynamics of peak pricing can significantly enhance the financial gains that can be realized from solar investments because PV systems provide a stable source of electric generation during high cost peak periods at a lower cost. Additionally, where Time of Use rates are combined with Net Metering, the property owner is able to effectively “sell” power back to the utility company during peak periods at the highest rates, further enhancing the realized energy savings and financial benefits of the solar investment.

Increases in utility rates over the useful life of the solar investment have perhaps the most significant affect on out year

financial benefits and cash flows. This is because solar investments have a productive useful life of 25 years or more and deliver a stable energy supply at an “inflation protected” cost. The portion of energy savings attributable to the escalation of electric rates could total as much as 30% to 40% of the net energy savings realized from the solar investment over its useful life. Hence, it is fair to say that having some knowledge about expected price trends is essential to examining the feasibility of solar investments as these trends materially affect cash flows and thereby the financial performance and feasibility of the investment. In California, these trends have had and will continue to have a significant role in determining feasibility. Over the last 30 years electric utility rates have increased at an average of 6.7% annually and have increased by 5.4% annually over the last 20 years. Similar trends can be seen nationally as the costs of energy continue to increase well above increases to the Consumer Price Index.

#### ***II. Solar Financial Incentives – The feasibility of solar investments is significantly affected by the level of incentives that can be accessed and put to use by the property owner and financing options to cover remaining system costs.***

Accessing solar incentives is essential to bringing down system costs to a level at which debt financing and operational costs can be covered from the generated energy savings. For affordable housing this may entail “bundling” various incentives, which can be challenging in that some incentives may effectively restrict access based on a property’s tax liability or require additional transaction costs to capture funds.

The current surge in interest and installation of solar systems is made possible by two particular solar incentive sources: Utility sponsored *solar rebate programs* that provide a per watt cash outlay to offset solar system costs and *Federal Solar Investment Tax Credits* that provide income tax credits for up to 30% of the system costs provided that the property owner has tax liabilities or an efficient means to sell the credits.

- **Utility Solar Rebates** – Rates for solar PV systems are offered by utility companies throughout Region IX. In California a targeted rebate of \$3.30 to \$4.00 per watt is available for affordable housing properties, which can cover 35% to 40% of system costs. Coupled with Federal Solar Investment tax Credits, upwards of 50% to 60% of PV system costs can be covered. Arizona and Nevada utilities also offer solar rebate incentives, but thus far have elected not to provide an enhanced rebate level for low income households, making the economics more difficult to finance for existing properties not otherwise involved in seeking grants or financing for enhancements to the property. California also offers a Performance Based Incentive program that provides incentives based on system production.



*How much money can you save with a new solar investment?*

- Federal Solar Investment Tax Credits** – The Federal Investment Tax Credit provides up to 30% of net system cost of solar systems with no cap for both residential and commercial building. In that most the solar rebates provided by utility companies are not taxed, the basis for the Federal Solar Tax Credits is the net cost after utility solar rebates are applied. Information on this program is available at: <http://www.energytaxincentives.org/>. For existing properties, accessing Federal Solar Investment Tax Credits may entail additional transaction costs.
- Renewable Energy Credits** – A new and potentially important future funding resource for solar investments is Renewable Energy Credits, RECs, or so-called “Green Tags.” RECs are bundled financing instruments that sell the green part of kWhs produced by solar systems to generate additional revenue for the seller. California solar system owners can now sell their RECs. While the market for RECs is still in development, the price of solar RECs is expected to be between 2¢/kWh and 20¢/kWh in contracts ranging from 1 to 20 years. Additional information on RECS is available at: [www.green-e.org](http://www.green-e.org).
- System Depreciation** – Businesses may also depreciate solar PV systems on a special 5-year accelerated schedule, or may be able to take a 50% bonus depreciation, or use Section 179’s for 100% expensing. The “[Guide to Federal Tax Incentives for Solar Energy](#)” prepared by the Solar Energy Industries Association is an excellent resource on the use of accelerated depreciation in offsetting solar system costs.
- State Income and Property Taxes** – Some states offer State Income Tax Credits and permit solar investments to be exempted from property taxes. In California, solar systems do not increase the tax basis of your property pursuant to CA RTC, Section 73 and until recently provided a state income tax credit for solar systems.
- Power Purchase Agreements** – An alternative mechanism to financing solar systems is to utilize Power Purchase Agreements offered by energy investment companies. Use of this approach enables the bundling of various financial incentives that optimize

the level of solar incentives to offset capital costs. Under PPA, property owners typically lease available roof space to a solar investor that capitalized the installation of a PV system. The solar production is sold back to the property at a rate usually at or below the utility rate over an interim lease period. At the end of the period, the owner is offered the asset at a price substantially discounted from the initial installation cost reflecting the solar incentives, asset depreciation, and other cost offsets.

### III. Solar System Costs – The feasibility of solar investments is affected by installed cost per watt and out year operating costs.

Calculating the price at which solar systems become feasible relative to your investment criteria can be a useful exercise. The cost of a PV system depends on a number of factors, including system size, solar technology used, equipment requirements such as inverters, roof mounting, and labor costs. System costs are typically discussed in terms of dollars per Watt. Currently, solar industry market reports suggest roughly \$8.00 to \$10 per Watt for residential systems, and often times the cost is less for commercial systems (rental housing is classified as a commercial system). The table below provides a simple breakout of typical costs.

In the analysis of system costs it is also important to include capital reserves for the scheduled replacement of inverters; typically at year 15 and annual cleaning and maintenance. Costs for inverters are typically \$700-\$800 per kW and annual maintenance costs can be calculated as a percentage (2.5% to 5%) of total system costs:

In general, at \$8.00 per Watt, the cost of solar systems can be financed from energy savings where the current costs of electricity exceeds \$0.15 per kWh and if financial incentives such as solar rebates and Federal Solar investment tax credits are available and reachable by the property owner. Ultimately, it is the combination of all these factors that determines if a solar investment is feasible.

Cost Area	Costs Per Watt	
Solar PV	\$5.00 to \$6.00	
Inverters	\$1.20	
Installation	\$1.80 - \$2.80	<i>Installation may include: Standoffs: \$.50-\$1.00/W            Non-penetrating (flat roofs): Add: \$1/W            Tilt-up racking: Add: \$.25-\$.50/W</i>
Total	\$8.00 - \$10.00	
		<i>Other Cost Factors:            Electrical upgrades; Long wiring runs; Trenching \$/ft; Permit costs; Difficult installations</i>

## PACIFIC CURRENTS | SAN FRANCISCO MULTIFAMILY HUB

# ENERGY EFFICIENCY + THE SCOPE OF SOLAR INVESTMENTS

### Do Solar Investments Pay Off?

[ Wayne Waite ]

The American Recovery and Reinvestment Act of 2009, the so-called “Stimulus Bill,” provides considerable public investment in energy efficiency and renewable energy. These investments respond directly to our current economic challenges as well as growing concerns about national security and Climate Change. By facilitating greater investments in energy efficiency and renewable technologies – thereby reducing energy consumption and increasing energy savings – this investment strategy will create jobs, generate new economic activity, reduce green house gas emissions, and promote greater energy independence.

Yet, as important and lofty as these objectives are, before an investment can occur it must make economic sense. For the owners and managers of multifamily properties and the lenders and housing professionals involved in financing housing, the most important consideration is whether the possible energy investment pays off. In this regard, Solar investment consultants suggest that three performance benchmarks are central to determining whether the payback or financial benefits to the owner is sufficient to support solar investments. In short, will the investment yield a payback sufficient to cover the added investment cost, provide a reasonable return to the owner, and make our housing more affordable and sustainable in the future? These benchmarks and a sample feasibility assessment of a model solar investment are provided below to aid your own evaluations.

### SOLAR PERFORMANCE CRITERIA



*Solar Panels on a Roof*

**Performance Benchmark I:** Are energy savings generated from the investment sufficient to cover debt service and operating cost of the solar investment over its useful life?

To meet this parameter, the solar investment *must* minimally generate a net positive cash flow over the investment period. For affordable housing, meeting this

parameter is influenced by utility rates, utility cost trends, and the amount of the energy-related project costs that must be financed by the owner. If an investment fails this test, additional financial incentives may be necessary to bring down net costs or the principal and terms of financing must be adjusted to meet this parameter.

**Performance Benchmark II:** Does the Cash Flow from the solar investment produce a sufficient rate of return for the property owner?

This parameter ultimately depends on the owner’s investment plan for the asset, which can be influenced by market conditions and other factors. In general, a Rate of Return of 10% or more is considered acceptable for rental properties for investments of this type. For affordable housing, given the long-term public financial commitments and support for the project, a minimum Rate of Return of 5% provides a reasonable threshold of the level of financial performance minimally needed to incentivize and justify additional capital investments to the property

**Performance Benchmark III:** Does the solar investment increase the value of the multifamily property in excess of the initial cost paid by the property owner?

A conservative investment benchmark is whether the property value is increased by at least the initial cost of the energy-related investment to the property owner. Such a benchmark is a good indicator that the value of the investment is recoverable if the asset is sold. Two approaches may be useful for determining energy-related investments on property valuation. According to a study prepared by ICF Consulting and commissioned by the Environmental Protection Agency, property values were found to increase by \$20 for every dollar of energy savings. This approach treats valuation as a function of the benefits to household income resulting from reductions to ongoing operational costs and is best suited to single family applications. Another approach for determining the added property value resulting from energy-related investments entails evaluating net energy savings in terms of a capitalization rate. This approach is similar to practices currently used to assess the value of rental properties based on the property’s NOI.

### ASSESSMENT OF FEASIBILITY

The assessment below shows how investments in renewable technologies stack-up to these investment benchmarks.

**Project Profile** – The project used in this sample case study (Figure 1 on page 7) assumes a 74-unit HUD Insured and Subsidized Section 8 property built in the 1980s in the Central Valley. The property includes a resident common use area, laundry facilities, office, and resident parking area/carport.

**Summary of Benefits** – The 35kW solar investment described above would create nearly \$326,000 in energy savings over its 25 year useful life. During the financing period, which follows the initial Power Purchase Agreement lease period, average annual energy savings would exceed \$16,300, far in excess of the annual

**Figure I: Profile of Energy Consumption, Solar System Design, System Costs, and Financial Incentives –**

Electric Consumption Profile		Comment
Average Electric Rate (per kWh)	\$0.1760	Average current actual utility rates for area
Utility Cost Inflation Factor	3.78%	Average electric utility costs in California have increased by 5.4% per year over last 20 years.
Annual Electric Usage (kWh per yr)	60,000	Reflects estimate of typical common area usage for property of similar size.
Annual Electric Bill	\$10,560	<u>SUM</u> : kWh consumed multiplied by utility Electricity Rate
Solar System Design		Comment
PV Generating Rating (for Fresno)	5.74	kWh/sq meter/ per day. Measure of the average "Solar Irradiance" at a location in an average year. Typical values in California range from 5-6.
Solar PV System Capacity Required (kW):	35.00	Annual Usage from PV divided by percent of system efficiency * PV Generation Rating * days)
Roof Area Requirements (sq. ft.):	3,500	100 sq feet per kW. (1 sq ft per 10 watts)
Estimated PV Generation (KWh):	57,196	<u>SUM</u> : PV System Capacity multiplied by system efficiency percentage multiplied by PV Generating Rating
Solar System Costs		Comment
Installed Cost Per Watt	\$8.00	Reflects current average pricing per installed Watt
Estimated System Costs	\$280,000	<u>SUM</u> : Per Watt cost multiplied by system kW size
Net Costs After Financial Incentives	\$115,150	(Does not show benefits from RECS and Accelerated Depreciate claimed by PPA provider.)
Purchase Price to Owner after initial PPA Lease Purchase Period	\$70,000	Assumes 25% of installed cost. Based on previous transactions.
Financial Incentives		Comment
Utility Solar Rebates (per watt)	\$115,500	Rebate available from MASH program (3.30/watt)
Federal Solar Investment Tax Credits	\$49,530	Average electric utility costs in California have increased by 5.4% per year over last 20 years.

debt service on financing to purchase the solar system. Factoring in annual operating and maintenance costs of \$3,326 per year, average net energy savings total \$11,844; also above annual debt service.

**Assessment of Feasibility –** The chart to the right shows energy savings and investment cash flows by year over the useful life of the solar system. For each year during the assumed 15-year financing period the annual cash flows is positive.

The last table (Figure III, Page 9) shows the performance of the solar investment in terms of the previously discussed criteria. For each area, the investment exceeds the performance benchmarks.

**Figure II : Table of Project Energy Savings and Cash Flow After Debt Service Over 25 Year Useful Life**

	TOTAL ENERGY SAVINGS	NET ENERGY SAVINGS		CASH FLOW	NET CASH FLOW
Power Purchase Agreement Period	\$10,066.54	\$6,739.87	Year 1	\$2,749.23	(\$577.43)
	\$10,394.82	\$7,001.62	Year 2	\$3,077.51	(\$315.69)
	\$10,733.80	\$7,272.74	Year 3	\$3,416.50	(\$44.56)
	\$11,083.84	\$7,553.56	Year 4	\$3,766.54	\$236.25
	\$11,445.30	\$7,844.41	Year 5	\$4,127.99	\$527.10
15-Year Solar Investment Financing Period	\$11,818.54	\$8,145.63	Year 6	\$4,501.24	\$828.33
	\$12,203.95	\$8,457.59	Year 7	\$4,886.65	\$1,140.28
	\$12,601.94	\$8,780.64	Year 8	\$5,284.64	\$1,463.34
	\$13,012.90	\$9,115.18	Year 9	\$5,695.60	\$1,797.88
	\$13,437.26	\$9,461.59	Year 10	\$6,119.96	\$2,144.29
	\$13,875.46	\$9,820.28	Year 11	\$6,558.16	\$2,502.97
	\$14,327.96	\$10,191.67	Year 12	\$7,010.66	\$2,874.36
	\$14,795.21	\$10,576.19	Year 13	\$7,477.90	\$3,258.89
	\$15,277.69	\$10,974.30	Year 14	\$7,960.39	\$3,656.99
	\$15,775.91	\$11,386.45	Year 15	\$8,458.61	\$4,069.15
	\$16,290.38	\$11,813.13	Year 16	\$8,973.08	\$4,495.83
	\$16,821.63	\$12,254.83	Year 17	\$9,504.33	\$4,937.53
	\$17,370.20	\$12,712.06	Year 18	\$10,052.90	\$5,394.76
	\$17,936.66	\$13,185.36	Year 19	\$10,619.36	\$5,868.06
	\$18,521.59	\$13,675.26	Year 20	\$11,204.29	\$6,357.96
	<b>\$19,125.60</b>	<b>\$14,182.35</b>	Year 21	<b>\$19,125.60</b>	<b>\$14,182.35</b>
	<b>\$19,749.30</b>	<b>\$14,707.19</b>	Year 22	<b>\$19,749.30</b>	<b>\$14,707.19</b>
	<b>\$20,393.35</b>	<b>\$15,250.39</b>	Year 23	<b>\$20,393.35</b>	<b>\$15,250.39</b>
	<b>\$21,058.39</b>	<b>\$15,812.58</b>	Year 24	<b>\$21,058.39</b>	<b>\$15,812.58</b>
	<b>\$21,745.13</b>	<b>\$16,394.40</b>	Year 25	<b>\$21,745.13</b>	<b>\$16,394.40</b>
<b>TOTAL*</b>	<b>\$326,139.05</b>	<b>\$236,897.83</b>		<b>\$216,379.53</b>	<b>\$127,137.50</b>
<b>AVERAGE*</b>	<b>\$16,306.95</b>	<b>\$11,844.85</b>		<b>\$10,818.98</b>	<b>\$6,356.88</b>

\* Values show estimated savings and cash flow over selected remaining useful life period.

**PACIFIC CURRENTS | SAN FRANCISCO MULTIFAMILY HUB**

**ENERGY EFFICIENCY + AFFORDABLE HOUSING**

**Multifamily Affordable Solar Housing Program (MASH)  
Launched 2009**

[ Wayne Waite ]

One year ago, the California Public Utilities Commission adopted the Multifamily Affordable Solar Housing or M-A-S-H Program providing \$108 million in solar incentives to existing affordable multifamily properties installing solar photovoltaic systems.

The MASH incentive level can cover 40 percent or more of PV system and installation costs. Coupled with Federal Solar Investment Tax Credits, which can offset another 30 percent of PV costs, and other financial tools and mechanisms, MASH now puts solar systems within reach of existing affordable properties.

The MASH program provides two types of incentives:

Track 1 incentives provide fixed, up front capacity-based incentives for solar PV systems that offset common area and tenant loads.

MASH Track 1 Incentive Levels (shown in \$ per watt):

Track 1A	Track 1B
<b>PV System for Common Areas:</b>	<b>PV System for Tenant Units:</b>
<b>\$3.30</b>	<b>\$4.00</b>

A property may receive both Track 1A and 1B incentives for the same project if the project will offset both common area and tenant load. Track 1A and Track 1B incentives will be paid based on how the system provides electricity. For example, if a 100 kilowatt (kW) solar installation offsets both common area and tenant load, and 60% of the electricity output of the system is dedicated to common area load and 40% of the electricity output is dedicated to tenant load, the applicant will receive Track 1A incentives for 60 kW, and Track 1B incentives for 40 kW.

MASH will also make available a competitive funding track for solar projects that cannot otherwise be implemented under track 1A or 1B. Competitive proposals under Track 2 may seek higher rebate levels than offered under Track 1 based on the level of quantifiable “direct tenant benefits” (i.e. any operating cost savings from solar that are shared with tenants). Track 2 incentives will be accepted every six months through a competitive process. The MASH Program Administrators are developing a statewide application/review process for Track 2 incentives. Multifamily projects served by Pacific Gas & Electric Company, Southern California Edison, and San Diego Gas &



Electric are eligible for the MASH program. Additional solar programs may be offered by other utility companies for properties outside the service levels of the Investor Owned Utilities mentioned above.

To qualify for MASH Track 1 or Track 2 incentives, a property must meet the definition of “low-income residential housing” per Public Utilities Code 2852 and have been occupied for at least two years prior to applying for incentives. Applications for MASH Track 1 incentives were made available in early 2009., although MASH is currently not accepting new applications.

There are three primary steps for MASH Track 1A and 1B Applicants:

- Complete and submit an Application and Reservation Application Package
- Complete and submit the Proof of Project Milestone Package
- Complete and submit the Incentive Claim Form

The Reservation, Proof of Milestone and Incentive Claim forms are all available online or at the Program Administrator’s website. Additional details on the application process can be found in the California Solar Initiative Program Handbook available at: [http://www.gosolarcalifornia.ca.gov/documents/CSI\\_HANDBOOK.PDF](http://www.gosolarcalifornia.ca.gov/documents/CSI_HANDBOOK.PDF)

Applications for Track 2 incentives were made available late 2009 per development of program guidelines. The MASH program is part of the \$3.3 billion, 10 year, California Solar Initiative. These solar financial incentives are an essential component of California’s larger effort against global warming. By the end of the 10 year period, the California Solar Initiative will fund an estimated 3,000 megawatts of new solar generation.

## SUPER-SIZED SOLAR



*Crescent Park, pictured with solar panels on the left.*

### Largest Affordable Solar Installation in the United States

[ Wayne Waite ]

Last year, EAH Housing, a nonprofit affordable housing developer and manager, in partnerships with Sun Light and Power, installed a solar PV system at Crescent Park, a master metered, 378 unit HUD-assisted multifamily apartment complex located in Richmond, California..

Crescent Park was built in 1968 and financed by HUD. EAH acquired the property in 1994. The solar retrofit was included as part of a \$114 million acquisition/rehabilitation that includes energy efficient windows, new heating and cooling systems, appliances, flooring, plumbing, roofing, and the demolition of areas damaged by mold.

The 908 kW solar system includes 4,323 - 210-watt PV modules and 180 M Series inverters. It will generate over 1.5 million kWh annually to meet common residential unit electric demands at the property, making this the largest, solar-powered affordable housing community in the United States.

The solar system cost \$7 million to purchase and install; or about \$7.70 per watt. The cost of the PV system was offset by

\$1.4 million from solar rebates and \$600,000 from the sale of solar investment tax credits. The balance, \$5 million, was covered by Low Income Housing Tax Credits, which included the cost of the PV panels in the projects eligible basis.

The solar investment will lower and stabilize property and residential utility costs. Before the renovation, the complex expended \$750,000 a year in gas and electricity bills to PG&E, the local utility; about \$2,000 per apartment.

The solar panels will also reduce CO2 emission by 24,000 metric tons over the system's life and help the City of Richmond to meet almost 20% of its 5 MW goal for usage of solar power.



<b>Figure III: (continued from Solar Scoping, Page 7)</b>	Avg. Annual Energy Savings (After O&M Costs)	Annual Debt Service	Net Avg. Annual Cash Flow (After Debt Service)
Are energy savings generated from the investment sufficient to cover debt service and operating cost of the solar investment over its useful life?	<b>\$11,844.85</b>	\$7,317.30	\$6,356.88
	Simple Payback from Net Energy Savings	Internal Rate of Return on Net Energy Savings	
Does the Cash Flow from the solar investment produce a sufficient Rate of Return for the property owner?	5.91	<b>10.03%</b>	
	Initial Investment by Owner	Added Valuation from Avg. Net Cash Flow	Added Valuation from Avg. Net Energy Savings
Does the solar investment increase the value of the multifamily property in excess of the initial cost paid by the property owner?	\$70,000	<b>\$87,681.04</b>	\$236,897.03

**PACIFIC CURRENTS | SAN FRANCISCO MULTIFAMILY HUB**

**DEVELOPMENT HIGHLIGHT: KENT GARDENS, SAN LORENZO, CA**

**Project Location:**

16450 Kent Avenue  
San Lorenzo, CA 94580

**Description:**

83 - Revenue Units

1 - Manager's Unit

**Unit Types:**

83 - 1 Bedroom - 547 sq. ft.

1 - 2 Bedroom Manager's Unit

**Status:**

Completed May 2008

**Sponsor:**

Mercy Housing California

**Architect:**

Chris Lamen and Associates

**Contractor:**

James Roberts Obayashi

**Funding Source:**

HUD Section 202 Capital  
Advance: \$ 10,355,200

Merritt Community Capital -  
Tax Credit Investor Equity of  
Approx. \$7,000,000

County of Alameda CDBG -  
\$609,985

County of Alameda HOME -  
\$800,000

County of Alameda Housing  
Trust Funds - \$350,000

County of Alameda -  
\$545,484



**T**his site is historically significant - originally it was known as Kuramoto Nursery. The internment of Japanese-Americans during World War II forced the Kuramotos to lease the nursery to a trusted friend during this period.

Along with other Japanese-Americans, the Kuramoto brothers and their families boarded buses in downtown Hayward and traveled to the Tanforan Assembly Center in San Bruno in the spring of 1942. Yoshimitsu Kuramoto died during their five-month stay at the racetrack, at the age of 34. In the fall, the remaining family members traveled to permanent housing at the Topaz War Relocation Center in Utah, where they remained for the next three years.

At the end of WWII, Shigenobu, his wife Misato, and their children returned to the nursery and immediately began to plan an expansion. They added more greenhouses and purchased additional property on Kent Avenue. In about 1948 they converted to growing roses and joined Mt. Eden Roses, a Shibata family endeavor. By 1966, the family realized there was no room left for expansion at the Kent Avenue location, so the family purchased additional property in Salinas. In 1977, they decided to concentrate the business in Salinas, and sold the San Lorenzo nursery to the Goldstein Family. The Goldstein Family continued to operate the nursery until 2002, when they sold the property to Alameda County for the construction of affordable housing for seniors.

The site is surrounded by a mix of single family homes, a large multifamily apartment complex, and small multifamily properties. It is centrally located to transportation and public services such as Bay Fair Mall, Ashland Free Medical Clinic, Ashland Community Center, Eden Medical Center, and St. Luke's Hospital.

All 83 units contain a full kitchen and bath and are accessible. Eight of the units have repositionable countertops in the kitchens and roll-in showers. Two units have been designed for the hearing impaired. The property has a photovoltaic system on the roof to provide common area electricity. There is elevator access to all apartments.

## DEVELOPMENT HIGHLIGHT: ALMOND COURT, MANTECA, CA



**A**lmond Court, a 39 unit affordable apartment complex for independent-living seniors, opened in April 2009 in Manteca, California. The property was developed as a public-private partnership by Eden Housing, Inc., with support from San Joaquin County and City of Manteca officials, in addition to the HUD assistance.

Almond Court is the second phase of Eden Housing's senior citizen housing plan for Manteca. The complex is connected to the nearby 50-unit Almond Terrace Senior Apartments by a central pedestrian walkway and trellis.

Almond Court has six buildings arranged around two courtyards, one of which contains a bocce court. A central community building houses a multi-purpose room, a small outdoor patio area, laundry facilities, and management offices. The outdoor space includes gardens, comfortable landscaped seating areas under redwood trees, a potting table, and a community garden with raised vegetable planting areas.

On site supportive services will assist residents both one-to-one and in groups, to create supportive programming which will encourage community building and self-reliance. These programs include information and referral to health services, educational presentations and social activities. The supportive services program will help residents to age in place.

The property is conveniently located across the street from a major shopping center which is anchored by a Raley's Supermarket.

**Project Location:**

2030 North Union Road  
Manteca, CA

**Description:**

39 - Revenue Units  
1 - Manager's Unit

**Unit Size:**

28—1 BR—579 sq.ft.  
7—1 BR—586 sq. ft.  
2—1 BR—612 sq. ft.  
2—1 BR—575 sq. ft.  
1—2 BR Manager's Unit

**Status:**

Completed April 2009

**Sponsor:**

Eden Housing, Inc.

**Architect:**

Mogavero Notestine Associates  
Sacramento, CA

**Contractor:**

Brown Construction, Inc.  
West Sacramento, CA

**Funding Source:**

HUD Section 202 Capital  
Advance - \$ 5,988,000

Manteca Redevelopment Agency:  
\$ 1,875,000

City of Manteca HOME:  
\$350,000

Federal Home Loan Bank of San  
Francisco:  
\$200,000

## OCCUPANCY OBSERVATIONS

### Sex Offender Registration

On September 9, HUD issued Notice H 2009-11 concerning State Lifetime Sex Offender Registration. The purpose of the notice is to recommend owners/agents implement new processes to prevent lifetime sex offenders from receiving federal assistance. These new recommended processes are:

- Ask households at each recertification/reexamination whether any household member is subject to a lifetime registration requirement,
- Use the Dru Sjodin National Sex Offender Website to confirm that applicants and housing recipients are not lifetime registered sex offenders, and
- Aggressively pursue termination of tenancy or assistance, as appropriate, for tenants subject to a lifetime State sex offender registration to the extent currently allowed by law.

In addition to the recommendations above, the notice also recommends that at admission, management screen juvenile household members to the extent allowed by state and local law.

HUD recommends that there should also be a notation on the application that failure to respond to the question may jeopardize the approval of the application.

Management should verify the information provided by searching the Dru Sjodin National Sex Offender Database hosted by the Department of Justice at <http://www.nsopw.gov>. The results of the search must be maintained for a period of three years if the applicant is denied housing, or if the applicant is admitted for the term of tenancy plus three years.

HUD HQ has also issued a memorandum to owner and agents reinforcing the above recommendations. It also reminds management that they must include as part of their Tenant Selection Plan the criteria for screening applicants which should include the necessary background checks for determining if an applicant, or a member of the applicant's household, is subject to a lifetime State sex offender registration program. The memo also clarified that management can secure



a contract to conduct the background checks, or establish liaisons with local or state law enforcement agencies to run the background checks rather than using the Dru Sjodin National Sex Offender website. If using an alternative source for the information, management must ensure that the source has access to the necessary information needed as some states do not report information to commercial information sources.

### Top 10 Most Frequent MOR Findings

We polled our PBCAs to determine which findings were most frequently cited in a Management and Occupancy Review report. Here's the top ten –

1. Criminal or Lifetime Sex Offender Screening not done. Sex Offender/Criminal screening must be evidenced in the tenant file. This screening must be done for live-in aides as well. The owner/agent must establish standards that prohibit admission to sex offenders subject to a life-time registration requirement under a state sex offender registration program. The owner/agent must do the necessary criminal history background check in all states the applicant currently or has resided in.

2. Tenant Selection Plan does not contain all of the HUD required criteria. HUD Handbook 4350.3 REV-1, Chapter 4, Paragraph 4-4 and Figure 4-2 provide guidance to owners/agents in developing an acceptable Tenant Selection Plan.

3. The Waiting List does not contain all required fields, no waiting list is kept, or the waiting list does not contain sufficient comments to determine if applicants were selected in proper order.

4. Third Party Verifications for income, assets, and medical expenses are not completed at move-in, annual and/or interim recertifications. Third Party Verifications must be obtained and retained in tenant files.

5. Declaration of Citizenship and Alien Status Verifications missing, not filled out correctly, not signed by tenant, or tenant declares to be both citizen and non-citizen. SAVE verification not completed. Owner/Agent must require non-citizens to provide verification of eligible immigration status. Family Summary Sheet missing and/or does not include all household members. Owner's Summary Sheet missing, and/or does not include all household members, and/or does not contain the date declaration of citizenship was verified by owner/agent.

6. HUD Form 9887 and 9887A outdated, not signed/dated by tenant or owner/agent, headings not filled out with correct information, and/or not completed within acceptable timeframes (and signed and dated prior to EIV verification being obtained). Be sure to use the 02/2007 version of these forms.

7. 30-Day Notice of Rent Increase does not provide tenant with 30 days notice and/or is missing from file.

8. Unit Inspections – Move-in inspections are missing, not signed by tenant and/or owner/agent, missing required HUD language. Annual inspections missing.

### **American Reinvestment and Recovery Act of 2009 (ARRA) Reporting**

The San Francisco Multifamily Hub would like to take this opportunity to thank all of the owner/agents who invested countless hours in registering and reporting on ARRA funds received. As you are probably aware by now, it has recently been determined that owners/agents who received ARRA funds in the form of Section 8 housing assistance payments are not required to report these funds. We apologize for any stress the reporting requirements caused and are sorry that the decision not to require reporting on project rental assistance funds was not made sooner.

### **RHIIP Listserve**

*Do you currently receive HUD's RHIIP Listserve?*

If you would like to be one of the first to know about the latest developments on issues related to HUD's multifamily housing, be sure to sign up for "Multifamily Housing RHIIP Tips." You will receive weekly emails containing information on occupancy issues, the latest news relating to the RHIIP initiative, or breaking news from HUD related to Multifamily Housing. You can sign up for the RHIIP Listserv at: <http://www.hud.gov>.

Click on the "Mailing Lists" link on the lower left hand side of the page, then click on the "Multifamily Housing RHIIP Tips Listserv" link in the middle of the page, enter your email address and you're done! HUD will send you an email confirmation which you must respond to within 48 hours to complete your registration, then you'll receive RHIIP Tip emails weekly with all the latest news.

### **Economic Recovery Payments**

The American Recovery and Reinvestment Act of 2009 provided for a one-time payment of \$250 to more than 50 million individuals who receive social security or supplemental security income benefits. These payments were slated for distribution in May 2009.

HUD has determined that these funds should be excluded in the calculation of income for the purpose of determining eligibility and rent by tenants and applicants of HUD's rental assistance programs.

Income received while employed by the 2009 Census is also excluded.

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### **Top 10 Most Frequent MOR Findings** (continued from page 12)

9. Credit and/or Landlord screening missing or not done consistently for all applicants.

10. HUD 50059 must be signed and dated by all household members over 18 and the owner/agent prior to effective date.

## **ASSET MANAGEMENT**

### **Legal Expenses**

**A** question was recently raised about legal expenses paid out of the project operating account. When are legal expenses an acceptable project expense?

HUD Handbook 4370.2 REV-1, CHG-1, Financial Operations and Accounting Procedures for Insured Multifamily Projects, Chapter 4, Section 4-4, defines Account 6340, Legal Expenses as "...legal fees or services incurred on behalf of the project (as distinguished from the mortgagor entity). For example, managing agents charge legal fees for eviction procedures to this account."

Project funds may only be used to pay for legal expenses in connection with tenant evictions, for revisions to the lease, and in rare instances, for the lead-based paint abatement process. Project funds may not be used to pay for mortgagor or ownership entities legal expenses for matters such as the sale of the property or lawsuits filed against the owner.

Legal fees must be reasonable and necessary to the ongoing operations of the project. HUD will review the reasonableness of legal expenses during the review of Monthly Reports for Establishing Net Income and the annual audited financial statements. The project's legal expense will be compared to the previous year's legal expense and also to similar projects to determine reasonableness. The owner will be asked to explain significant increases or much higher expenses than similar properties.

### **Violence Against Women Act (VAWA)**

**H**ousing Notice H 09-15, Implementation of the Violence Against Women and Justice Department Reauthorization Act of 2005 for the Multifamily Project-Based Section 8 Housing Assistance Payments Program, was issued on October 1, 2009. This notice is similar to Notice 08-07.

The Notice provide a HUD-approved Lease Addendum (Form HUD-91067) which revises the lease to reflect the statutory requirements of the VAWA that are related to the project-based Section 8 program. Owners/Agents should also update their Tenant Selection Plans and/or House Rules to incorporate the VAWA policies and protections.

Additionally, HUD recently issued a RHIIP Listserv #186 clarifying that the law does not apply only to women, but to any tenant who is the victim of domestic violence, dating violence, or stalking. It further clarified that the VAWA Lease Addendum is to be signed by every adult member of the household. Additional lines may be added to the addendum to accommodate multiple signatures.

## PACIFIC CURRENTS | SAN FRANCISCO MULTIFAMILY HUB

### Issuances

Notice H 09-07, Fiscal Year 2009 Social Security's One-Time Economic Recovery Payments Excluded from Income



*Issuance Notices*

Notice H 2009-11, State Lifetime Sex Offender Registration

Notice H 2009-13, Supplemental Information to Application for Assistance Regarding Identification of Family Member, Friend or Other Person or Organization Supportive of a Tenant for Occupancy in HUD Assisted Housing

Notice H 09-15, Implementation of the Violence Against Women and Justice Department reauthorization Act of 2005 for the Multifamily Project-Based Section 8 Housing Assistance Payments Program

Notice H 09-16, Exclusion from Annual Income of Temporary Employment from the U.S. Census Bureau

Notice H 09-18, Policy and Procedures on Multifamily Mortgage Insurance Applications Involving Master Lease Structuring to facilitate the use of Tax Credits

Notice H 09-20, Enterprise Income Verification (EIV) System

Notice H 10-01, Extension of Authority for Processing Pre-application—Firm Invitation and Firm Commitment Extension Requests

Notice H 10-02, Enterprise Income Verification (EIV) & You Brochure—Requirements for Distribution and Use

Notice H 10-03, Fiscal Year 2009 Annual Operating Cost Standards—Section 202 Supportive Housing for the Elderly and Section 811 Supportive Housing for Persons with Disabilities Programs

Notice H 10-04, Revised Protocol for Placing a Flag in the Active Partners Performance System (APPS) When a Property Receives a Physical Inspection Score Below 60 but Above 30

Mortgagee Letter 2009-40, Policy and Procedures on Multifamily Mortgage Insurance Applications Involving Master Lease Structuring to facilitate the use of Tax Credits

Federal Register, October 15, 2009, Refinement of Income and Rent Determination Requirements in Public and Assisted Housing Programs: Implementation of Enterprise Income Verification

### Owner/Agent Change of Address

We have had several requests lately to change addresses for owners/agents in our systems. HUD considers this information “owned” by the APPS system, and owners/agents are responsible for maintaining that information in APPS. The owner/agent must log into APPS and change their address, phone numbers, etc., themselves. Doing so will automatically change the address or phone number in IREMs for every property nationwide that is owned or managed by that company, thus eliminating the need to contact individual HUD project managers for such changes. This is totally separate from the use of APPS to submit e-2530s which is still optional.

If the information to be corrected is not something that can be done by the owner /agent, a cover letter should be sent that explains the issue to be resolved. Use of company stationary is suggested. Depending on the nature of the correction to be made, you will need to provide appropriate documentation to support your request. For example if the company is changing its name, you should submit copies of the IRS forms that signed the tax ID and all notices of origin to change the name with the IRS and/or the state of origin. The information should be faxed to 202.708.0684 Attention: Participant Data correction. It may also be mailed to:

Housing & Urban Development,  
Attn: Participant Data Correction Room  
6180, 451 7th St. S.W. , Washington DC 20410

## DEVELOPMENT CORNER FY 2010

### 202/811 Initial Closing

Folsom Oaks, Folsom, CA Sec. 811, 19 units  
Valley Vista Senior Housing, San Ramon, CA Sec. 202, 89 units  
Sierra Meadows, Visalia, CA Sec. 202, 43 units

### 202/811 Final Closing

Providence Senior Housing, San Francisco, CA Sec. 202, 50 units  
Avondale Haciendas, Avondale, AZ Sec. 202, 69 units  
Almond Court Apartments, Manteca, CA, Sec. 202, 40 units

### Initial/Final Endorsements

Kachina Point Independent Living, Village of Oak Creek, AZ,  
Sec. 223(a)(7), 98 units  
Oasis at Brown and Center, Mesa, AZ, Sec. 232, 50 beds  
Esteban Park Apartments, Phoenix AZ, Sec. 223(f), 204 units  
Boulders at Prescott, Prescott, AZ, Sec. 231, 88 units  
Boulders at Prescott Assisted Living, Prescott, AZ, Sec. 232,  
44 beds  
La Serena at Toscana, Phoenix, AZ, Sec. 223(a)(7), 324 units  
Trillium Papago Apartments, Phoenix, AZ, Sec. 223(f), 270 units  
Westwood I Apartments, Fresno, CA, Sec. 223(a)(7), 102 units

## OCCUPANCY OBSERVATIONS CONTINUED

### *How to Get a Superior MOR Rating*

California Affordable Housing Initiatives, Inc. (CAHI) is currently assigned 547 properties throughout Northern California to act as the contract administrator for HUD. Of the 547 properties, 68% received a Management and Occupancy Review (MOR) rating of Satisfactory or above during the past year. While CAHI is working hard with the properties who received less than Satisfactory, one objective for the coming year is to increase the number of properties that are rated Superior in Northern California. Over 100 properties are currently in the Above Average category and these have the greatest chance of becoming a Superior property with just a few corrections and/or changes in the coming year. The following is a list of Characteristics which comprise a SUPERIOR property:

1. Leasing & Occupancy rated Superior; other categories Satisfactory and above
2. REAC scores also high (90+)
3. EH & S issues resolved quickly
4. Low vacancy rate / short turn around time
5. Documentation maintained or missing file documentation not eligibility or subsidy related
6. Waiting list is well maintained
7. Vouchers submitted on time
8. Management tends to stay abreast of changes with HUD policies and almost always attend HUD Industry meetings and on RHIPP Listserve

If you think your property can join this ever-growing group of Superior properties, start by looking at the most recent MOR to develop a plan for addressing any outstanding issues. Don't wait for the last minute to do some short and long-range planning. Remember, a Superior property can be described as a place "you would let your mother live in." And, don't we all want our moms to live in a nice place!



## ENERGY EFFICIENCY + SOLAR MAINTENANCE

### *Cleaning the Solar array*

- Some experts contend that dirt-encrusted modules don't lose much production capacity and advise against cleaning the system more than once a year. PV system owners, however, will tell you that they notice a minor jump in their kWh production after cleaning the modules. And if the array is visible from the street they enjoy the aesthetics of a clean system.

- The equipment manual will provide a suggested cleaning regimen and instructions on how to clean the modules. Some enterprising PV owners install a PVC sprinkler tube along their roof ridge line so rinsing off the array is as easy as turning on the garden spigot.

### *Inverter maintenance*

- Inverters are much like a desktop computer except they are processing hundreds of volts of power for five to ten hours a day. The unit starts automatically when there is enough sunlight to run minimum voltage through the inverter.

- Keep your inverter in as cool and dry a location as is available, and protect it from direct sunlight. Some PV owners use a small PV module (20 watts) to power a standard computer-cooling fan. When the sun hits the small module (installed on an outside south- or west-facing surface), the fan automatically starts to cool the inverter. This is not essential, but it helps in hot regions like the Central Valley.

- Try to minimize dust and cobwebs on the inverter unit as these inhibit cooling of the electric components.

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# CALENDAR

## March 2010

- 8-Basic Certifications Income & Asset Calculations for HUD and Tax Credit Properties, AHMA-NCHN, San Jose, [www.aceva.com/booking.cfm?bevaid=196924](http://www.aceva.com/booking.cfm?bevaid=196924)
- 15-17 – Certified Manager of Maintenance, NCHM, Oakland, CA, [www.nchm.org](http://www.nchm.org)
- 17-19 – Certified Manager of Housing, NCHM, Oakland, CA, [www.nchm.org](http://www.nchm.org)
- 24-26 – Certified Occupancy Specialist (COS), NCHM, San Francisco, CA, [www.nchm.org](http://www.nchm.org)
- 26 - MOR Preparation: The CAHI and Industry Perspective, AHMA-NCNH, Fresno, [www.aceva.com/booking.cfm?bevaid=196927](http://www.aceva.com/booking.cfm?bevaid=196927)
- 30-31 - Specialist in Housing Credit Management (SHCM), AHMA-NCNH, Oakland, [www.aceva.com/booking.cfm?bevaid=197278](http://www.aceva.com/booking.cfm?bevaid=197278)

## April 2010

- 7-9 - Certified Occupancy Specialist (COS), NCHM, Las Vegas, NV
- 15 - HUD Multifamily Industry Meeting, 600 Harrison Street, 3rd Floor, San Francisco, CA
- 21-23 - Tax Credit Specialist (TCS), NCHM, San Francisco, CA

## May 2010

- 14 - MOR Preparation: The CAHI and Industry Perspective, AHMA-NCNH, Redding, [www.aceva.com/booking.cfm?bevaid=197277](http://www.aceva.com/booking.cfm?bevaid=197277)

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## WWW.HUD.GOV

U.S. Department of Housing & Urban Development  
Office of Multifamily Housing, 9AHM  
600 Harrison Street, 3rd Floor  
San Francisco, CA 94107-1387



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Mailing Address Line 2  
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