



## MOUNTAIN LAUREL LODGE SHINES WITH SOLAR ENERGY

Residents at Mountain Laurel Lodge are proud that they live in one of the most sustainable retirement communities in Oregon. Built in 2006, Mountain Laurel boasts high levels of insulation, energy-efficient windows and appliances and two different solar systems that serve common areas—an 18.4-kilowatt solar electric system and an 80-gallon solar water heating system. Whenever residents step outside their independent-living apartments, they know that some of the energy they use comes straight from the sun.

The solar water heating system provides energy for nearly all the hot water used in Mountain Laurel Lodge's common washrooms, laundry facilities and the warming kitchen located off the Ponderosa Room, where residents gather for social events and meetings.

The solar electric system generates electricity for all common areas, including the Ponderosa Room (with warming kitchen), reading room, mail room, fitness room, hallways, laundry facilities and parking garage. Residents as well as visiting school groups can monitor monthly energy output at a special website and can easily observe the system's electronics on-site.

"Tapping into solar energy creates awareness that everyone must be more concerned about sustainability," said Rob Roy from Pacific Crest Affordable Housing, LLC, which built and owns Mountain Laurel Lodge and other affordable housing developments. "Our solar systems also reduce operating costs, helping us to keep rents low. We are so pleased with the outcome that we're planning solar for two more of our affordable-housing communities."

### PROJECT-AT-A-GLANCE

#### Strategies

Pacific Crest Affordable Housing had plans to install solar systems at Mountain Laurel Lodge even before construction began on the building. To help finance the projects Pacific Crest partnered with outside investors to take advantage of state and federal tax credits, making solar more affordable. E2 Powered, an Energy Trust trade ally, sized and installed the systems. When the solar electric system generates more power than Mountain Laurel Lodge can use, excess power feeds back into the electric grid, and Mountain Laurel Lodge receives a credit on its monthly electric bill.

#### Project Benefits

- Reduced operating costs
- Helps cool global warming
- Educational tool for schools, residents and community

#### Equipment Installed

- Two-collector, 80-gallon, residential-sized solar thermal system
- 18.4 kW solar electric system

#### Financial Analysis

##### Solar Electric System

- \$148,000 installed cost
- \$22,950 cash incentives from Energy Trust
- \$33,660 Blue Sky grant from Pacific Power
- 50 percent Oregon Business Energy Tax Credit\*
- Federal Investment Tax Credit and other tax advantages\*
- \$1,985 estimated annual energy cost savings\*

##### Solar Water Heating System

- \$8,500 installed cost
- \$1,320 cash incentives from Energy Trust
- 50 percent Oregon Business Energy Tax Credit\*
- Federal Investment Tax Credit and other tax advantages\*
- \$281 estimated annual energy cost savings\*

*\*The tax situation of every business varies, and tax credits can be deferred or carried over for several years. Consult your tax advisor for more information on the advantages of solar systems.*



## RETIRE IN COMFORT WITH ENERGY SAVINGS

### SENIOR LIVING CENTERS MAXIMIZE EFFICIENCY

Retirement communities and senior care centers are highly energy intensive due to the variety of services and amenities they provide around the clock. With rising energy costs, these centers are investing in energy improvements to help control overhead expenses while meeting residents' heightened expectations for comfort. Energy Trust of Oregon can help with technical assistance and cash incentives that make energy projects more affordable and help retirement communities and senior care centers contribute to a sustainable future.

## HEARTHSTONE AT MURRAYHILL LIGHTS THE WAY WITH CFLS AND HVAC IMPROVEMENTS

As a progressive-care retirement community that offers independent living, assisted living and memory care, Hearthstone at Murrayhill takes pride in making each day "the best it can be" for every resident. So when Pacific Lamp Wholesale, Hearthstone's lighting supplier, suggested brightening up residents' apartments by replacing incandescent bulbs with compact fluorescent light bulbs, Hearthstone jumped at the chance.

By installing CFLs in all 183 apartments, plus hallways and other high-use common areas, Hearthstone nearly doubled indoor light levels and cut energy costs by an estimated \$11,095 per year. The investment paid for itself in energy savings in about a year. And because CFLs are expected to last up to 10 times longer, Glenn Simpson, Hearthstone's facility manager, anticipates labor savings from reduced bulb replacement.

Hearthstone also made several heating, ventilating and air conditioning system improvements, including retrofitting controls so heating and cooling systems wouldn't "fight" each other by cycling on and off repeatedly. "Some of our systems were operating in a vicious circle," said Simpson. "You could walk through a large room and feel three different temperatures before you got to the other side. It was very uncomfortable." HVAC upgrades significantly enhanced resident comfort and trimmed an estimated \$15,529 more from annual energy costs.



## BRIGHT LIGHTS, BIG SAVINGS

*A lighting upgrade makes Hearthstone at Murrayhill a lighter, brighter, more sustainable place to live.*



**Anytime I can save money without impacting residents, I'll do it. Saving energy and cutting costs helps keep down fees for our residents.**

Glenn Simpson,  
facilities manager  
Hearthstone at Murrayhill



## PROJECT-AT-A-GLANCE

### Strategies

Pacific Lamp installed CFLs in a variety of wattages and styles. Hodaie Engineering conducted an energy assessment of the HVAC system, paid for by Energy Trust. Reitmeier Mechanical installed a building automation system to provide better control of HVAC systems and allow Hearthstone to reset temperatures for energy savings when common areas are unoccupied. Carbon dioxide sensors adjust ventilation according to occupancy and economizer adjustments take advantage of “free cooling” when outside air is cooler than inside air. Variable frequency drives optimize fan speed and maintain system pressure.

### Project Benefits

- Reduced energy costs
- Increased comfort and light levels
- More consistent room temperature
- Reduced maintenance

### Equipment Installed

- 1,150 CFLs (ceiling fixtures, wall sconces, table lamps, bathroom bars)
- Building automation system
- Variable frequency drives and controls on rooftop air-handling units
- Demand control ventilation

### Financial Analysis

- Project cost: \$98,501
- \$30,729 cash incentives from Energy Trust
- 35 percent Oregon Business Energy Tax Credit
- \$26,624 estimated annual energy cost savings

## WILLAMETTE VIEW RESIDENTS DINE IN COMFORT WITH NEW HVAC SYSTEM

As a nationally accredited, continuing care retirement community that promotes wellness and independence, Willamette View attracts residents who have high expectations for comfort and quality. That’s why the drafty, noisy HVAC system serving Willamette View’s dining room and main auditorium simply had to go. “The area often felt breezy and experienced hot and cold temperature swings because the space was simultaneously being heated and cooled,” said Kim Buchholz, administrator, Willamette View.

Willamette View, which offers independent living and progressive levels of care for its 500 residents, turned to Energy Trust for help. A detailed engineering study recommended replacing the rooftop units serving the area with new high-efficiency models and new air distribution ductwork. But the recommendations didn’t stop there. It turned out the exhaust air from the area was a prime candidate for heat recovery. The addition of heat wheel recovery brought the project’s total estimated annual energy savings to \$54,858.

Today, Willamette View residents can enjoy their view of the Willamette River without cool drafts and the ever-present, low-pitched hum of the former system. And Willamette View has exerted control over one of its largest overhead expenses—energy costs.



**Energy Trust cash incentives made it possible for us to afford these upgrades. We have a payback window of three to five years on such improvements, and Energy Trust’s financial assistance put us over the top.**

Kim Buchholz, administrator  
Willamette View



## PROJECT-AT-A-GLANCE

### Strategies

Mechanical Systems Engineering conducted an energy assessment of the HVAC system, paid for by Energy Trust. Control Contractors, Inc., replaced the rooftop units and eliminated high-velocity air and temperature swings by adjusting the delivered air volume and temperature based on varying heating and cooling needs. They installed a larger number of variable air volume outlet boxes and zones and put all air returns at floor level. Carbon dioxide sensors adjust outside air according to occupancy levels. Heat wheel recovery captures energy from the exhaust air stream, saving additional heating and cooling energy year-round.

### Project Benefits

- Reduced energy costs
- Increased comfort
- More consistent room temperature
- Quieter surroundings

### Equipment Installed

- 12-ton, high-efficiency rooftop units with variable air volume (two installed)
- New, redesigned air distribution ductwork with variable air volume terminal units
- Direct digital controls
- Demand control ventilation
- Heat wheel recovery units (two installed)

### Financial Analysis

- Project cost: \$327,440
- \$37,567 cash incentives from Energy Trust
- \$54,858 estimated annual energy cost savings