



The Rose House Project: Prototype Power Plant for the Future

Oregon is a leader in developing a sustainable economy based on innovative practices. The **Rose House in northeast Portland** is just one example of projects that help Oregonians move toward an affordable and sustainable energy future through energy savings and clean energy resources.

Oregon Department of Energy's (ODOE) Christopher Dymond and Charlie Stephens provided technical assistance to the project team working on the Rose House.

"The Rose House is a prototype power plant," says Dymond. "It generates power during the daytime when the owners are at work or play. Our electric energy grid is becoming much more like the Internet – a distributed network of power plants (large and small) all working together to meet our energy needs."

The project is part of ODOE's High Performance Home Initiative. The goal of this work is to lay the groundwork for the next generation of homes that integrate green building strategies, super insulation and onsite renewable energy systems. The project is intended to develop builder expertise, foster the emergence of new technologies and demonstrate the net energy home concept, where homes generate as much energy as they use annually.

"This type of home is very affordable while containing all the typical amenities of a comfortable living environment," says Stephens. "The home's integrated design actually creates a superior environment with better indoor air quality, enhanced lighting, consistent temperature control and a quieter interior than a conventional residence."

Dymond and Stephens provided support for engineering analysis and design. They will also use the project in a Zero Net Energy Home workshop they will teach at the 2004 National Solar Energy Conference in Portland July 11-14. The home's design includes high levels of insulation, energy efficient windows, daylighting to maximize the use of natural light, and a ventilation system that meets cooling needs. Solar photovoltaic panels on the roof generate electricity and provide thermal energy for space heating and hot water.

They partnered with the Oregon Institute of Technology's Renewable Energy Center in Klamath Falls to help with data acquisition and monitoring of the home's performance. OIT generously offered to provide both the controls system and the initial setup of the data acquisition system. Faculty and students are using the project as a teaching tool. Monitoring results will help direct future work in designing sustainable residences.

The home's owners will benefit from **Oregon's Residential Energy Tax Credit**, which covers

partial costs of solar water heating and electric systems and energy-efficient appliances.

Other Rose House team members include SERA Architects, Inc., the City of Portland Office for Sustainable Development, Froelich Engineers, Coho Construction Services, Oregon Institute of Technology, Building Comfort Systems, LLC and Solar Path Imaging.



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The mission of the Oregon Department of Energy is to ensure Oregon has an adequate supply of reliable and affordable energy and is safe from nuclear contamination, by helping Oregonians save energy, develop clean energy resources, promote renewable energy, and clean up nuclear waste.

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