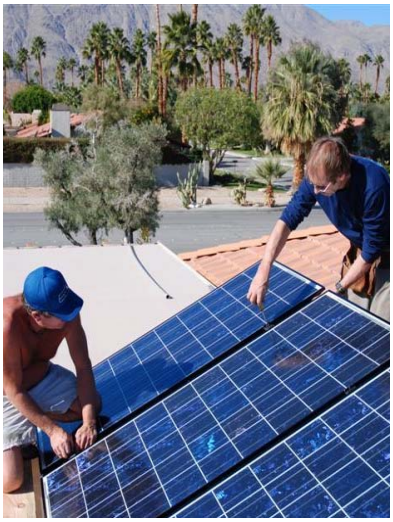
Winter 2009

House Notes

Associated Master Inspectors ● P.O. Box 230966 ● Tigard, Oregon 97281 ● 503.236.1812

- Visit our website at www.amipdx.com for maintenance tips and service provider recommendations
- Call Lisa in our office at 503.236.1812 to schedule an inspection

Experience isn't expensive, it's priceless.



GREEN CORNER – Sunshine Power

I just spent four exciting days with my sister and brother-in-law in Palm Springs, California. They had spent $18,000 on a 3.1 KW photovoltaic power system kit and didn't know quite where to start. A photovoltaic power system turns sunlight directly into electricity. After sending it through an inverter, this electricity can either provide power to the home, reducing the electric bill, or it can send it into the power company's grid, while the homeowner receives a credit for the power. In the 1980s, I installed over 30 wind-powered electric generators, micro-hydro units and photovoltaic systems that fed power back into the grid, so I felt comfortable when they called to ask me if I could help them install this unit. It had been many years since I had done this kind of work and I was excited to see the new technology, high efficiencies and low maintenance of the systems available nowadays.

I arrived in Palm Springs in the late afternoon so we pored over the engineering specs and the building permits and made a material list. There are kits available that supply all the parts you need but this kit only included a power inverter, panels and racks; we needed to purchase all of the electrical supplies and install the hardware. My sister and brother-in-law had the permits necessary to install their own system, so I was there to advise and help them. They had built a lovely 70-foot long trellis along the south side of their house for shading and on top of this trellis we were going to install a sunshade and on top of a sunshade we were to place the solar panels (that's why they needed a building permit).

On the second day, we took the material list to the local home improvement store and spent about $900 on all of the supplies needed. Remarkably, they had almost everything we wanted in stock. We then installed a sunshade on the trellis, which my brother-in-law had previously built with a carpenter friend. My sister had carefully sewn little tubes down the sides of the sunshade so we could slide pipes into the material, stretching it tight from end to end. We installed the lower and upper mounting racks on top of the trellis and placed lengthwise crossbars between them to support each solar panel. It was nearing the end of the day, but we were very excited, so we installed one panel on the rack. This system has seventeen 8-amp panels, which gives a total open circuit voltage of approximately 500 volts. That evening after dinner, we installed the inverter on the exterior wall of their house next to their electrical panel and meter.

On day number three my son showed up to help us and the three of us installed the remaining 16 panels onto the mounting racks. The panels are light, only weighing about 30 pounds each. We then installed the electrical conduit from one end of the panels to the other and down and around the house to the inverter. The inverter takes the 500-volt direct current that the panels produce, converts it to 240-volt alternating current, and feeds it into the home's electrical panel through a 30-amp breaker. We then installed the safety disconnect switch for the utility company and the conduit to the house service panel. That evening we measured and cut all the wire we needed and stretched it out on the ground and went to bed satisfied with our progress.

Continued…

GREEN CORNER – continued

Day number four was exciting. We were all optimistic that we would finish the job and have the system running before the sun went down. At breakfast, we were poring over the specifications when we realized the design engineer had not properly calculated for the voltage drop in the long distance from the photovoltaic panels to the inverter. So we went back to the store, bought new wire, stretched it out and re-cut it. This took a big chunk of the morning, but we were still able to pull all the wires through the conduit, make all of the electrical connections and install all the grounding rods and bonding wires necessary that afternoon. The wiring was complete and we were ready to test the system; but alas, the sun dropped over the horizon and we had to wait till morning.

Day number five was a beautiful day and we woke up just in time to see the sun start to rise. We turned on the inverter and held our breath as the sun just came over the treetops on the horizon and hit the panels; instantly, the inverter came on and we started making power. It was only 30 watts but the sun was barely above the treetops. As the sun rose up from the east, the consumption grew by leaps and bounds. By midday, we were producing 2-½ kilowatts [2500 watts] even with some clouds in the sky. By the end of the day, the unit had made almost 13 kilowatt-hours. [An average home uses approximately 20 kilowatt-hours per day].

I have been calling my sister and brother-in-law daily, since the installation was completed. They passed their electrical inspection and are producing an average of 15 kilowatt-hours per day. With the cost of electricity in Palm Springs, this system should pay for itself in approximately 5 to 10 years. To put this into perspective, though, in the Pacific Northwest this same system would probably produce half the electricity because of cloud cover. The cost of electricity up here is also cheaper, under seven cents a kilowatt-hour, and does not lend itself to such a rapid payback. However, while the payback might take longer in the Pacific Northwest, the environmental benefits would begin immediately. In addition, homeowners who install these systems receive the intangible benefit of becoming electricity producers instead of just electricity consumers.

What is very exciting about this whole concept are the tax incentives that are given by the state and federal governments. The federal government will give you 30% of the total cost, including installation. The state of Oregon provides additional incentives. Photovoltaic (PV) systems and fuel cells are eligible for $3 per peak watt with a maximum limit of $6,000, up to 50% of the installed cost. The amount you can claim in any single tax year may not exceed $1,500 or your tax liability, whichever is less. However, you can carry unused credits forward for five years. Oregon also allows a property tax exemption for these improvements.

I hope this will inspire some of you to think green. If you would like further information about photovoltaic or other alternative power systems, I would be happy to provide your office with a full presentation including projected images customized to your needs.

Sincerely,

Mark Lindgren
AMI

HALOGEN FLOOR LAMPS

Halogen floor lamps operate at much higher temperatures than standard incandescent light bulbs. Never place a halogen floor lamp where it could come in contact with draperies, clothing or any other combustible materials. Be sure to turn the lamp off whenever you leave the room for an extended period of time, and never use halogen torchiere lamps in children's bedrooms or playrooms.

PARTY SEWER LINES

As of January, 2008, Portland's Bureau of Environmental Services (BES) and the Bureau of Development Services (the building department) require "each property to have an independent connection and legal route of access to the public sewer." This means two homes can no longer share a sewer line.

This year-old code requirement was enacted to comply with a mandate issued by the Oregon Department of Environmental Quality (DEQ).

FAQ:

Are properties presently served by a party sewer line required to make this change?

YES with two exceptions:

1) The shared sewer may continue to exist if there is a legally recorded, permanent, private sewer easement and maintenance agreement between the owners of the properties served by the party sewer that was recorded prior to January 2, 2008; and,
2) If there is no public sewer line in the street fronting the property, homeowners may be allowed to establish a temporary sewer easement and maintenance agreement and sign a Public Sewer Utility Waiver until such time as a public sewer is available to connect to.

How does the City find out about party sewer lines?

Some party sewer lines are recorded as such in the plumbing records. Other party sewer lines are discovered when the sewer line is inspected by a plumbing contractor or home inspector. In some cases, the contractor or inspector may confer with the City about repair options. Once the party sewer line is identified, the affected properties will be notified and may be required to disconnect.

What happens if the City gives notice to disconnect the party sewer line?

The property owner has 180 days to comply following proper notice. After that, a City contractor will be authorized to make the necessary repairs or connection to bring the building sewer into compliance with City code. If this occurs, the property owner will be charged for repair costs, a $330.00 civil penalty, 40% overhead charges of contractor costs, recording fees, and Auditor's Office charges. These charges will be placed as a lien against the property.

Are there connection fees and other special assessments from the City for this change?

No. However, the homeowner or contractor must obtain proper permits to do the work. The usual building permit fees apply.

Does the City have any financial assistance for home owners?

Yes. The BES offers financing for private plumbing costs and City sewer fees, if applicable. The financing is not based on income or credit history. There are special low interest loans with deferred payment options for owner occupants who meet low-income qualifications. For detailed information and other options, we recommend you contact Chris Collett at 503-823-4108.

For more info, go to our website: http://www.master-inspectors.com/pdf/Party_Sewer_FAQ.pdf

STANDBY POWER USAGE IS COSTING YOU MONEY

CERTIFIED INSPECTOR

When preparing to leave home for a few days, most of us make sure our electrical appliances are turned off. Unfortunately, many of these appliances are not really turned off; they are in standby mode and are still using electricity. The only real way to turn them off is to unplug them.

Standby mode lets appliances respond faster when we turn them on. This is a great convenience but it comes with a cost that most people don't realize. In its standby mode, a single appliance can use the energy equivalent of a 20 watt light bulb that is burning 24 hours a day, 7 days a week. If you have multiple appliances, the energy usage adds up quickly.

For more information on saving money, visit the Lawrence Berkeley National Laboratory standby power site at www.standby.lbl.gov.