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## Harnessing the green power of windows

By Tom Watson

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With an average of more than 300 cloudy or partly-cloudy days a year in the Seattle area, we can use all the natural light we can get.

Delivering that light, and playing a potentially crucial role in energy conservation, are features in our home that we barely even notice. After all, they're so ... transparent. But windows matter.

Follow these tips to take full advantage of the green potential in your windows.

### Big fix, big bucks

Owners of older homes often fantasize about replacing all their drafty old windows with energy-efficient ones. The harsh reality is that this could set you back anywhere from \$7,000 to \$20,000, and more if you need custom sizes, according to Consumer Reports.

So even though they would likely save you more than 15 percent a year on heating and cooling expenses, it



Gabi Campanario / The Seattle Times

### Window resources

**Energy Star:** [www.energystar.gov](http://www.energystar.gov)

**Efficient Windows Collaborative:** [www.efficientwindows.org](http://www.efficientwindows.org)

**National Fenestration Rating Council window ratings:** [www.nfrc.org/windowshop](http://www.nfrc.org/windowshop)

**Puget Sound Energy/discounts:** 800-562-1482

**Seattle City Light:** [www.seattle.gov/light/conserves/resident](http://www.seattle.gov/light/conserves/resident)

**U.S. Department of Energy:** [www.eere.energy.gov/consumer/your\\_home](http://www.eere.energy.gov/consumer/your_home)

may not be cost-effective to put in new windows for energy savings alone, since they would not pay for themselves for at least 20 years.

As an alternative, you could retrofit your home with storm windows to improve energy-efficiency at a lower cost.

### **The great vinyl debate**

When you do need to replace windows or install new ones, energy-efficient windows are the clear choice. Consult the Web sites for Energy Star, the Efficient Windows Collaborative and the National Fenestration Rating Council (a nonprofit that rates energy performance of windows, doors and skylights). You'll need their help to window-shop through the confusing array of energy-efficient options now available, including double-pane, triple-pane, gas-filled (to reduce heat loss) and windows with heat-reflective (low-emissivity or "low-E") films and coatings.

The material used in the window frame also makes a big difference for energy conservation. Since window frames made from vinyl (polyvinyl chloride, or PVC) are energy-efficient, durable, easy to maintain and affordable, some green-building advocates recommend them.

But because production of vinyl can release dangerous chemicals, the Washington Toxics Coalition and other environmental groups recommend window frames made from alternative materials such as sustainably harvested wood.

Though each type of window and frame has its proponents, everyone agrees that poor installation can negate the benefits of even the most energy-efficient windows. Spend as much time evaluating contractors and getting recommendations on them as you do researching windows.

### **Follow the money**

A federal tax break for home energy-efficiency improvements, including windows, expired last December. But Puget Sound Energy (PSE) customers can save \$500 on the purchase of seven or more Energy Star-rated windows using PSE's Contractor Referral Service through July 31. A Seattle City Light program provides discounts for building owners to install energy-efficient windows in apartments and condominiums.

### **Breaking the mold**

One advantage of energy-efficient windows is that they can reduce water condensation on your windows. If moisture routinely collects on windows in the winter, you should also take steps to reduce humidity in your home. For example, use bathroom and kitchen fans, keep lids on pots of boiling water and avoid drying firewood in the house.

If mold collects on window sills as a result of excess moisture, the U.S. Environmental Protection Agency recommends scrubbing it off with detergent and water, and drying the area completely. You don't need bleach or specialized products to clean mold on hard surfaces.

### **Let the sunshine in**

"Daylighting" is the modern name for a centuries-old idea — using windows or skylights to fill your home with natural light. Green builders design homes with this in mind, placing large windows facing south to catch the sun. A related technique, "passive solar," may utilize interior materials that soak up heat from the sun, such as concrete floors.

It might not make sense financially to undertake major renovations such as large skylights to bring in additional daylight. But for a more modest solution in a room without much natural light, consider an Energy Star-rated solar tube, or tubular skylight. Consisting of a reflective tube 10-21 inches in diameter running between the ceiling and the roof, these usually cost \$150 to \$600, not including installation.

In the summer, the trick is to keep sunlight from pouring into your windows and heating up your home. You can employ various strategies indoors and out, from simple blinds and draperies to shades, shutters and awnings.

And don't forget shade trees, the old green standby. Mature deciduous trees (those that drop their leaves in the fall) will allow 60 percent or more of the winter sunlight to stream in through your windows, and their leafy canopy will cool your home over the summer.

If you plant a flowering tree or one with vivid fall color, you'll have even more natural beauty to enjoy through your green windows.

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