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Fixing old house? Go with flow

Keep original windows, utilize existing ventilation

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Matthew Piner points out natural paths of cross-ventilation in his remodeled home on Capitol Avenue in midtown. Piner, an architect and owner of a design business, also points out replacing original windows with vinyl ones may not bring energy savings and could reduce the value of old homes. Lezlie Sterling / lsterling@sacbee.com

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Matthew Piner's handsomely restored Victorian blends old-world charm and state-of-the-art energy efficiency. The 1903 home, which sits on Capitol Avenue among the so-called M Street mansions, has its original double-hung windows with subtle imperfections such as wavy glass, spirals and bull's-eyes. Instead of ripping out and replacing the windows, Piner weatherstripped them with bronze springs so they would seal tightly, boosting efficiency. "There's an epidemic of replacing windows going on in Sacramento," said Kathleen Green, a preservationist and member of the Sacramento Old City Association. The group will host a round table Saturday to highlight fruitful energy-saving fixes that preserve a home's distinct and historic features. Green said replacing old windows with vinyl ones may not reap energy savings and could decrease the value of an older dwelling.



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Piner, an architect and owner of Piner Works Design Build Group, said many Sacramento Victorians and bungalows were built with ventilation to take advantage of the Delta breeze.

In his home, transom windows above doors, a feature of many old homes that predate air conditioning, offer an escape hatch for warm air and help air movement.

"The house just breathes," Piner said, pointing to natural paths of cross-ventilation throughout his home, aided by ceiling fans in the kitchen.

Indoor temperature is a comfortable 70 degrees. It's not that much hotter upstairs, either. Piner converted the attic and basement into living space, doubling the square footage of his home to 4,000.

Because hot air rises, Piner said, he installed roof windows that stay open in the summer to allow warm air to escape. He shuts the windows during the day and opens them in the evening. A solar-powered ceiling fan sucks warm air upstairs, letting cooler, denser air take its place downstairs.

"I use my air conditioner about two to three weeks out of the whole year," Piner said, adding he pays \$100 a month for electricity.

Sacramento's hot, dry climate means the region's cooling needs are greater than its heating needs.

"We're entering an era in which we have to figure out how to achieve deep energy savings on existing homes," said Charles Segerstrom, supervisor of energy efficiency training at Pacific Gas and Electric's Energy Training Center in Stockton.

U.S. buildings have a heavier carbon footprint than automobiles, said Segerstrom, citing survey data from the Energy Information Administration. Carbon footprint is a measure of the greenhouse gases emitted by human activity.

To reduce its carbon footprint, an older home likely needs to be better sealed, ventilated and insulated, he said. It should be viewed as an entire system, he added.

PG&E and its partners have developed diagnostic tools to detect leaks and to chart air-flow patterns in homes, tools that pinpoint problem areas.

Segerstrom said the utility will launch a pilot program in the fall that offers homeowners incentives to take a more holistic approach to boosting energy efficiency.

About the writer:

- Call The Bee's Ngoc Nguyen at (916) 321-1041.

Steps to preserve a historic home and boost energy savings

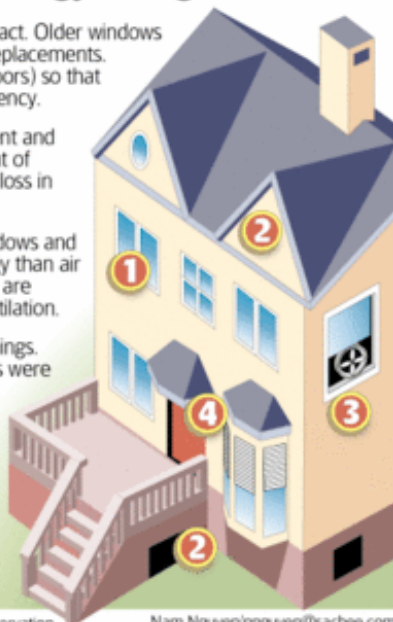
1. Keep original windows intact. Older windows can perform as well as vinyl replacements. Weatherstrip windows (and doors) so that they seal tightly to boost efficiency.

2. Insulate the attic, basement and crawl space. About 20 percent of energy costs come from heat loss in those areas.

3. In summer, open the windows and use fans, which use less energy than air conditioning. Many old homes are designed with good cross-ventilation.

4. Restore porches and awnings. Porches, awnings and shutters were intended for shade and insulation. To save energy, draw shades on winter nights and summer days.

Have an energy audit done by your local utility or do one yourself online by visiting Home Energy Saver (<http://hes.lbl.gov>).



Source: National Trust for Historic Preservation

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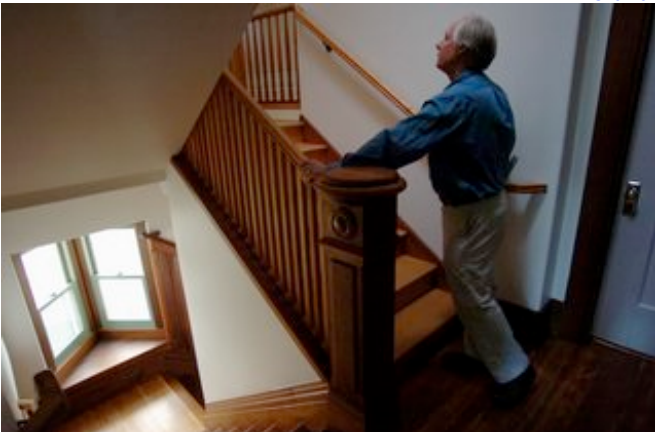
Matthew Piner says windows higher in the house offer an escape hatch for warm air and help the movement of air, cutting down on air conditioning. Lezlie Sterling / lsterling@sacbee.com

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Matthew Piner says many Sacramento Victorian homes and bungalows were built with ventilation to take advantage of the Delta breeze in the days before air conditioning was available. Lezlie Sterling / lsterling@sacbee.com

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According to Matthew Piner, the flow of air in his remodeled home travels up the stairwell, helping keep the upper levels almost as pleasant as the first floor. "The house just breathes," he says. Lezlie Sterling /

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