



Old Homes, New Opportunities

New technologies and financial incentives make energy improvements easier than ever

BY BRIAN HENSON

Contractors have been building homes in America the same way for the last 120 years. Though engineering and codes have improved, the fundamentals of homebuilding are archaic at best. Fortunately, the last few years have brought significant changes to the way that homes can be built, remodeled and updated. The burgeoning green building industry, driven by significant developments in building science, is changing the way that we design, build and live in our homes. With millions of homes in the US built prior to any energy codes (approximately 80% of the homes in our area fall into this category), homeowners have a tremendous opportunity to

increase the comfort and health aspects of their homes while simultaneously reducing energy and water use.

How Home Performance Audits Can Save You Money

Until recently, green building practices have been governed by prescriptive measures that were based on trial and error. Prescriptive measures include items such as switching out old windows with high performance models, replacing inefficient water heaters with tank-less units, and adding insulation. With advances in building science, technology

and training, we can now test the performance of a home. This data can then be used to guide your retrofit or remodel in the most cost effective manner.

Using sophisticated equipment and techniques, a professional home performance auditor can test your existing home and provide you with a retrofit road map to increase your energy efficiency, water efficiency and indoor air quality. We do this by pressurizing your house and the heating/cooling system to find leaks, testing for gas leaks and carbon monoxide, energy consumption calculations and visual inspections. Oftentimes the retrofit measures can be achieved with little or no cost. For example, we often hear the mantra that dual pane windows are the solution to increased energy efficiency, however changing out your windows can be very expensive is usually the last thing you should do to increase the efficiency of your home based on cost and effectiveness.

A good audit should show what steps should be taken and provide the relative cost for each measure. Common low cost audit recommendations include:

- **Air-seal your home. Building shells in older homes leak 2-3 times what they should.**
- **Seal your ducts. Heating and cooling ducts shouldn't leak more than 6%, but we commonly find them leaking 30-40%.**
- **Add Insulation. Many homes we test have do not have insulation in the crawl spaces and walls. Where there is insulation it is often inadequate - especially in attics.**
- **Eliminate Gas Leaks. We find a lot of gas leaks from heaters, water heaters and ovens. Sometimes we find leaks at the meter. The gas company will fix those for free.**
- **Clean the attic/seal the crawl space. Just about every time we go into an attic or crawl space, we find rodent feces, poison, and sometimes rodent carcasses. Considering that most homes receive up to 40% of their fresh air from these spaces, cleaning them and sealing them can have dramatic impacts on your indoor air quality.**

Unprecedented Rebates and Incentives Packages

Recent federal, state and local incentive programs have developed that make it the better than ever to improve the energy efficiency of your home. Below are the most notable

Home Star aka "Cash for Caulkers"

This federal program is part of the Obama stimulus package recently passed by the House

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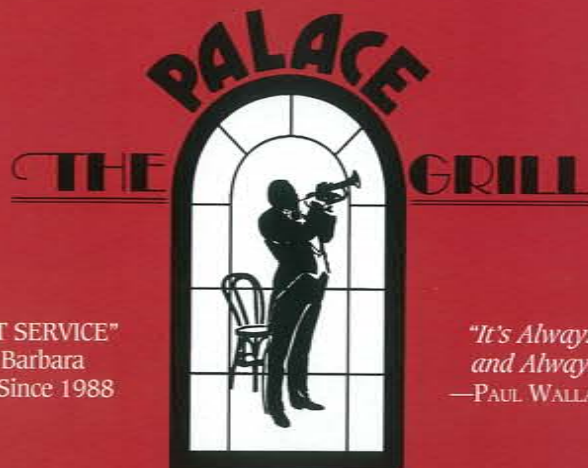


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GREEN BUILDING

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and currently awaiting passage by the Senate. As early as this summer thousands of dollars will be available for homeowners to update their homes. The program will have two paths. The Silver Star program provides up to \$3000 for specific energy conservation measures such as increased insulation, heating system upgrades and windows. The Gold Star program provides up to \$8,000 and requires a comprehensive audit to earn the money. The rebate is based on the increased performance of the home. More details can be found at <http://www. efficiencyfirst.org/home-star/>

emPowerSBC

If the upfront costs of greening your home are too much, then Santa Barbara County's innovative finance program may be able to make the upgrades a reality. The emPowerSBC program is one of a few in the nation to provide low interest loans that are financed through property tax assessments. This means that you can get the immediate benefits of the green upgrades including reduced energy and water loads thus reducing your utility bills, while helping to create jobs and help the environment. For more information on this program go to www. empowersbc.org.

Gas and Electric Company Rebates

Our local gas and electric companies are still offering rebates ranging from \$50 to \$200 for various household upgrades such as energy star appliances, efficient heaters and new windows. These rebates can be combined with both of the other programs mentioned above.

Net Zero Energy Homes – The Future of Housing

Though zero energy consuming homes have been built for years in the US, the materials and systems are now readily available and "off the shelf". Though some on site power generation is required through solar or wind, paying attention to efficiency first is the most economical method to make your electric meter run backwards. Advances in energy efficient lighting, appliances, heating and cooling equipment, and tankless water heaters can reduce the energy demand required for our homes. Tightening the shell through advances in air sealing and insulation materials can cut heating and cooling loads in half. Combined with passive solar design and orientation, Net-Zero energy homes are possible now.

It is somewhat surprising that we know the miles per gallon our cars consume, but the average homebuyer has no idea how well the house they want to purchase performs. In the near future it will

be possible to give a "miles per gallon" stamp on homes. The technology exists to put every home in the country on a relative scale. For those pursuing energy efficiency, this stamp is a way to show how well their home performs.

Allen Associates is a custom home builder specializing in green building practices. Bryan Henson is General Manager at Allen Associates and a LEED Accredited Professional. Call Allen Associates' Home Performance Division at (805) 884-8777 for more information on a Home Performance Audit.

5 Reasons to Upgrade Your Older Home

(or Five Reasons to Schedule a Performance Audit Of Your Home):

40% of the world's energy is used to heat, light and ventilate our homes. A significant contribution to the generation of global warming gasses....

Over 25% of the heat lost from your home is due to leaks in your building envelope. And another 35% is lost from leaking space heating ducts. That's a loss of over 50 cents on every dollar you pay on your heating bills!

Did you know that residential heating systems manufactured prior to 1990 operate at less than 80% efficiency and new systems can run at 95-97% efficiency?

Did you know that one drop of water per second leaking from a faucet amounts to 2,500 gallons of water wasted in one year?

The air inside your home can be 8 to 10 times more toxic than the air outside your home. A few simple retrofits can dramatically increase the air quality of your home.

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