

Published August 27th, 2014

## Green House Rises on Lafayette Hillside

By Cathy Tyson



The Milovic family on site, from left: Ed, Carolyn, Tanya and Danica. Photos provided

Starting from scratch on a challenging acre-sized lot on the west side of Lafayette, Ed and Carolyn Milovic designed their new home for maximum energy efficiency and included durable, sustainable products in their 4 bedroom, 2,700 square foot home. It just makes sense in the long run to have a smart home and to embrace sustainable design, explains Ed Milovic.

Their goal is for the new family home to achieve the highest Leadership in Energy and Environmental Design (LEED) rating possible: platinum.

LEED is a voluntary building rating system based on existing proven technology to promote sustainable best practices. All rating is done by an independent third party, and construction and energy performance is documented. There are 136 points possible; to achieve the platinum level takes 90 points.

There are eight categories that points are divided into; the Milovics were mindful to make choices that would garner points in every category. For example, the water efficiency category has a possible 15 points for water conservation practices both indoor and outdoor, the materials and resources category is worth a potential 16 points for reduction of material waste during construction

and selection of green products. Other categories include energy and atmosphere (38 possible points) - that covers efficient insulation, and the home's heating and cooling system, as well as the indoor environmental quality category (21 points possible) - which specifies the type of appliances that are installed.

Many of the features that contribute to the home's green design are hiding in plain sight. The sturdy retaining wall concrete is composed of 30 percent fly ash, the walls are made from SIP panels, or structural insulated panels - prefabricated insulated foam core sandwiched between two structural facings that are airtight and significantly reduce construction waste.

On a recent tour, Milovic points out resilient bamboo flooring, along with nearly indestructible recycled quartz countertops, both items a wise choice for a family with two young daughters who will surely contribute to wear and tear over the years. Milovic, a mechanical engineer, and his wife Carolyn are the owners/builders of the very functional structure, with input from the city's Design Review Commission.

A significant part of the challenge of the sloping site was to engineer the structure for adequate drainage and meet city standards for runoff. "Nothing was easy," says Milovic. Piers are sunk into to the earth and he jokes that they've created a dam with the amount of concrete required to secure the foundation. In addition, they needed to carefully work around existing mature oak trees. At some point when it eventually rains, the home will "harvest" 50 percent of the water that falls on the metal roof; it will be directed to a cistern at the base of the structure and can be used on landscaping.

Milovic has a blog where he posts regular updates on construction. Colorful pictures and a

perky narrative illuminate many milestones along the way to the finished project, including the change of shade of the exterior's green paint. Readers can learn about the "wonderful world of spray foam," which is similar to robust shaving cream and is a top-of-the-line insulating material, and that walking on the newly finished metal roof is a bit slippery, "but man, it's going to be real easy to clean."

As with any project, there is always something that doesn't quite go according to plan. May rains brought standing water to the site, and when combined with the recently installed subfloor that was guaranteed not to swell, produced - you guessed it - swelling.

In addition, lifting the very heavy manufactured roof trusses on the sloping site surrounded by large trees was difficult. Milovic explains it took some interesting positioning and crane operator skill to unload the substantial trusses on the top of the home. Once the trusses were installed, then a "cool roof" topped off the building which reflects the visible, infrared and ultraviolet wavelengths of the sun and of course, solar panels.

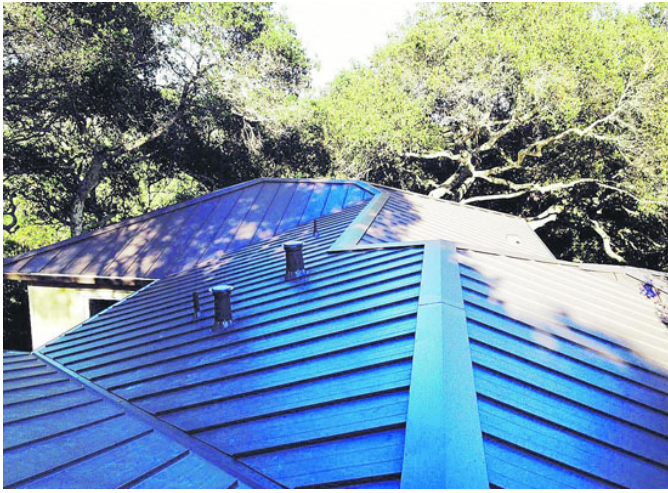
Other unique features include a high-efficiency air conditioner, and an new eco-friendly decking material called NyloDeck, made of recycled carpet fiber that has been made into mold, mildew and termite resistant planks for the upper deck.

"Ed Milovic had a challenging job to locate his house on a highly constrained lot with dense vegetation and steep hillsides," said Michael Cass, the city's associate planner. "He managed to minimize the impacts by constructing a modest-sized home that limits its impact on the natural environment. The city strongly supports his efforts to obtain LEED Platinum certification and use of 'green' technologies such as a rainwater catchment system, structural insulated panels, pervious pavement, and solar panels."

The couple and their daughters Tanya, 10, and Danica, 7, were looking for a parcel in Danville and Alamo originally, but widened the search to Lafayette and Orinda for their great schools, cooler temperatures and a greater inventory of available parcels. "We liked the outdoor feel the area has with the trees and reservoir nearby," says Milovic. Indeed as the project nears completion the structure has the feel of a tree house, due to the mature oaks just outside the windows and the slope of the lot.

If all goes according to plan, the family should move in around mid-September. For the time being they are in temporary cozy digs in Danville until the house is finished.





This specially grooved metal roof will harvest approximately 50 percent of the water that hits it, diverting it to a cistern below.



Heavy roof trusses and mature trees make for a tricky installation.



Milovic holds flooring and countertop samples. Foam insulation can be seen above.

Reach the reporter at: [cathy@lamorindaweekly.com](mailto:cathy@lamorindaweekly.com)

[back](#)

Copyright © Lamorinda Weekly, Moraga CA