LEED Platinum Hillside House

in **Mill Valley, California**

Project Overview

The Hillside House, located just outside of San Francisco with a 120 ft. x 80 ft. lot and a 49% grade, dictated the design approach. The home has four stories and totals 2,116 square feet. Thanks to comprehensive sustainable and energy- efficiency considerations, the home is the first LEED Platinum certified home in Marin County, CA. The ground floor contains the garage and a wine cellar. The first floor includes a guest room and kids' bedrooms. The second floor houses the master suite and a large outdoor terrace. The top floor features vaulted ceilings and an open plan kitchen/living area with two outdoor living spaces.

Given the lot's slope, 20% of house is below grade and able to take advantage of the ground's natural insulating properties. The house is designed to maximize passive heating and cooling and optimize solar orientation for the roof and trellis-mounted 3.75kW photovoltaic panels. Other sustainable features including a solar hot water system, radiant floor heating, a whole-house automation and lighting system, LED lighting, super-insulated doors and windows, water-conserving plumbing fixtures, locally sourced recycled-content materials, zero-VOC paint, and native, drought- tolerant landscaping.

Challange

The major design challenge was the need to keep the roof assembly profile as thin as possible to achieve the high vaulted ceilings in the upper floor yet stay under building height restrictions mandated by local codes. Spray polyurethane foam (SPF) insulation contractor SDI Insulation installed a hybrid insulation system of Bayseal® Open Cell (OC) and Closed Cell (CC) SPF to achieve superior R-value in the roof while also meeting the design intent. The hybrid approach allowed SDI to insert the SPF into the wall cavity from above, thereby eliminating almost all air pockets in the envelope.

Solution

The architect chose Bayseal® OC insulation for all exterior walls above grade. Below grade, Bayseal® CC is used on the exterior of all walls to maintain a more constant indoor air temperature, provide moisture resistance and mitigate moisture from the outdoor marine environment. All mechanical equipment is located on the ground floor.

Benefits

Bayseal® OC SPF is also used within some interior walls for added benefits. It is used on walls around the wine cellar to help maintain the cooler temperature. It is used between the floors to mitigate noise. The Hillside House received national acclaim and media coverage, including a cover feature in the prestigious Sunset magazine. It is also the winner of the EcoHome magazine 2010 Grand Award for custom homes between 2,000-4,000 s.f.

Project Name
LEED Platinum Hillside House

Architect
SB Architects

SPF Contractor
SDI Insulation

Project Schedule
January 2010

Owner
Tracy & Scott Lee

General Contractor
MCD Construction & Development

Insulation System
Bayseal® Open Cell (OC) and Closed-Cell (CC) SPF Insulation

Project Cost
Withheld by Owner

covestro

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, COVESTRO LLC MAKES NO EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY SPECIAL PURPOSE OR ANY IMPLIED WARRANTIES ARISING THROUGH TRADE, USAGE, COURSE OF DEALING OR COURSE OF PERFORMANCE, AS TO THE PRODUCT, IMPACT OF THE PRODUCT ON THE VALUE OF YOUR HOME OR ANY ENERGY OR COST RELATED SAVINGS AS A RESULT THEREOF. SOME STATES DO NOT ALLOW EXCLUSIONS OR LIMITATIONS OF AN IMPLIED WARRANTY, SO THE ABOVE EXCLUSIONS MAY NOT APPLY TO YOU. COVESTRO LLC SHALL NOT BE LIABLE FOR PUNITIVE, CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING OUT OF THE PRODUCT OR USE THEREOF. SOME STATES MAY NOT ALLOW THE EXCLUSION OF PUNITIVE, CONSEQUENTIAL AND INCIDENTAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of product evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

*Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power. Actual savings may vary depending on type of home, weather conditions, occupant lifestyle, energy prices and other factors. No specific guaranty or warranty of energy or costs savings is being given and all such guaranties or warranties are expressly disclaimed.

2400 Spring Stuebner Rd.
Spring, TX 77389
1 800 221 9000
Tel 281 350 9000
Fax 281 288 6450

www.polyurethanes.covestro.com