Passive House

Is New Canaan ready for a residence that consumes 90 percent less energy than a place built to code

CAROL LEONETTI DANNHAUSER

It's 20 degrees on a cliff of granite overlooking Ponus Ridge Road, but Salvatore Zarrella of Construction Management Group, and Gary Chase of Vita Design Group aren't stymied by the cold. Their mission is to construct a home that requires neither furnace nor radiator, yet can be maintained at a comfortable temperature with a unit the size of a blow dryer. Their vision for this site is a passive house, the first of its kind in New Canaan, and the third in lower Fairfield County. The premise: Combine forward-thinking architecture with environmental elements as old as the sun to regulate temperature.

"This is the wave of the future. It's the right way to build a house, and the right thing to do for the environment." —SALVATORE ZARRELLA

Architect
GARY CHASE

Builder
SALVATORE ZARRELLA

LOCATION, LOCATION
Proper site orientation is critical for a passive house. The plans for this 4,000-square-foot design show large windows on the bottom rectangle facing southwest and windows on the top facing southeast. In winter, the low-rising sun warms the house through the windows. In summer, overhangs protect those windows from the sun.

MORE ENERGY EFFICIENT
Zarrella says a passive house needs 90 percent less energy than its “gluttonous” neighbors that gobble fossil fuels. That translates to only about 1.4 watts or less per square foot needed, compared to perhaps ten times that in a conventional home. Heat can be supplied by the sun, light bulbs, appliances and the inhabitants.

NO LEAKS

A passive house is airtight. Thick, super-insulated walls and triple-paned windows keep the cold air out and the warm air in, depending on the season. An HRV (heat recovery ventilation) system moves fresh air in and pumps stale air out every day.

NO THERMAL BRIDGES

In most houses constructed in the U.S., heat travels through the path of least resistance toward the outdoors, creating thermal bridges. But in a passive house, construction materials eliminate these bridges, as well as the moisture and mold problems that result.

Find out more: http://cmgbuilder.com/passive-house