Green Prints

The West Coast welcomes a new standard for energy-efficient residential structures


A rendering of DRKdesign's Passivhaus on Gabriola Island

Green building in B.C. is nothing new, but a standard and certification that was developed in Europe called Passivhaus (Passive house) has all the earmarks of becoming more prevalent on the West Coast.

Passive house is a rigorous, voluntary standard for residential energy efficiency that results in buildings that require little energy for space heating or cooling.

For a building to be considered a Passive house, the space heating energy demand must not exceed 15 kilowatts of usage per square metre per annum (compared to a typical home that uses 100 kilowatts per square metre, due mainly to heating escaping through window systems). The total energy to be used for all domestic applications must not exceed 120 kWh per square metre per year, and thermal comfort must be met for all living areas during winter as well as in summer, with not more than 10 per cent of the hours in a given year over 25 °C.

About 25,000 Passivhaus-certified structures exist in Europe; by contrast, less than a dozen exist in B.C. But David Kominek, architectural technologist and trained Passive house designer for DRKdesign, says more homes of this type may be built in Vancouver. "The cost difference between them and traditional homes is as low as 10 per cent because of the elimination of elaborate HVAC in favour of a super-efficient building envelope and solar heat gains," he says.

Because the cost of "going green" in this fashion is not exorbitant, the City of Vancouver—which also wants to be known as the greenest city in the world by 2020—has adjusted building certification requirements and is mulling over various Passive house projects, including an apartment building.

Another reason Passive housing may become more popular is that, like LEED, homes could be built to Passive housing standards rather than being Passivhaus-certified. "That way, Passive house principles would be more accessible to developers," says Kominek.

Kominek, whose firm designed a Passive house on Gabriola Island that is nearing construction completion, is hopeful this energy-savings standard will become as familiar to B.C. developers as it is in Europe.

"There's definitely an interest within the community, it's just that there's a reluctance to take it to the documentation level," he says. "Perhaps that reluctance will subside as the standards become better-known."