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Passive House: Stories from experience (Part 2)

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The Construction Institute's November article highlighted two stories from inspirational leaders in the passive house design world: Laura Nettleton and Steve Bluestone. In December and January, we will be giving deeper insight into each of their journeys employing Passive House principles. These include using passive heat sources—the energy of the sun, heat from running household appliances, and from extracted air—to satisfy most of the heating demand. Remaining energy needs are supplied by renewable energy resources like solar panels and heat pumps. The idea is to optimize thermal gain and, at the same time, minimize thermal losses. Bluestone's passive house story continues:

"In 2013 to 2015, I built my home that I live in now which is passive house certified - the first in the Americas built with autoclaved aerated concrete to passive house standards. We were happy, still happy, with the end result. Then it's Thanksgiving. My parents, aunts and uncles all of them in their late 70s to early 80s at the time, come up. The outside temperature wasn't winter yet, but we're right over the border from Great Barrington in Hillsdale. We're up 1,250 feet. I think the temperature outside the days when the everyone was there was probably in the 40's and the thermostats were all set at 63. Now, I have to add, my house had been enclosed and fully heated for a good year and a half, [but] when you build a masonry building, any building, but especially a masonry building or concrete building, you have a little bit of a sponge effect. With the temperatures outside in the low 40's and the thermostats inside 63, the only complaint that I heard was they were too warm. So, the point here is that 63 is kind of cold. For someone, a senior citizen, to say, "can we open a window," when it's 63 indoors, that just was a testament, I think, to the passive house.

We have 8 inches of thermal mass with the insulation on the outside. The walls are storing heat and radiating that back versus a stone house with no insulation where it sucks the heat out of you. When they say one of the biggest factors of passive house is comfort, they are right, and you can't describe it. I mean, until you actually live in one or spend the night, you don't get it. It's a comfort level that's unsurpassed.

I used to live in a house in the suburbs of New York City in Westchester, stick frame, 6 inches of insulation, a lot of glass in the south, solar panels and all that. But the air blew through the place. In that neighborhood, there was a lot of woods around us and tons of coyote. You could hear them howling in the woods a few hundred feet away. But I like that nature sound. This darn house I live in now, we have packs of coyote outside I'm told, but I never hear [them].

I would say to any architect or engineer that wants to get into passive house, of course you've got to

try it. You want to succeed the first time. Go out there, find a passive house consultant who's done many projects similar to what you want to do and engage them, and listen to them, and believe them."

The Construction Institute thanks Steve Bluestone and James Geppner for bringing the Passive House experience to life. Bluestone is a founding partner at ICF Panels, developing systems to increase the strength and quality of buildings. James Geppner is the founder and executive director at Erase40, an organization that uses behavioral science to speed the adoption of climate safe buildings.

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