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Passive House: Stories from experience (Part 1)

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Composed by the CI Editorial Team, with sincere gratitude to Laura Nettleton, Steve Bluestone and James Geppner.

Steve was fascinated by energy from a young age: “We had the oil embargo. Energy prices are up, people were parking their Cadillacs and pickup trucks and buying little cars. I grew up with that and caught the bug. So anyway, I went to work in construction, but I never lost that feeling of, ‘we gotta do what we have to do to build better buildings.’ I must have seen my first ICF block sometime around 2006 probably at a trade show floor somewhere. So when I saw this ICF block I said, ‘Whoa, look at that. Stack them up like Lego blocks, you pour some concrete in, you have all that insulation and away go a lot of problems.’ We were planning a new building. 50 apartments. I started doing the math and lobbying my partner. I said, we build this building without concrete blocks and we use these ICFs. Here’s all my research. I think it’s going to be the same cost. Let’s give it a try. The R-value will be better, and we’ll save money on energy. I convinced him, and that’s what we did. It was an overwhelming success. Our energy costs were 50%, 75% lower to heat and cool the building. And it didn’t cost us more. We built more buildings with the ICFs, until I realized that we were building Passive House level envelopes. We weren’t spending any more money, and we were quite happy with the energy results. So I said to my partners—if we just tweak our buildings a little bit, put a little more caulk around the windows, buy a little better window, and maybe spend a little more money on the ventilation systems, we can do this Passive House thing and then our energy costs would be really low and people will be really comfortable. What do you think? And it took a little while, and they finally said, yeah, let’s try it, and we did it! And we haven’t looked back. I’m real proud of that.”

Laura saw design decisions transform lives: “It’s changed my whole practice. I had started out using the LEED protocol. We did that early energy model and we had been promised through the model that we were going to save our client 30% to 40% on their energy bills. We ended up actually having higher bills than their original building had, and so we really felt like we were failing in the energy area. We began to realize more and more, and read more and more, about air infiltration, but it wasn’t until Passive House that we felt like we could really offer something that was meaningful. A client introduced the [Passive House] concept to me and was redoing a single room occupancy shelter for people at risk for homelessness. The project had \$60,000/year energy bills, and part of the success of being able to take care of people was having a lower bottom line. It was an extensive remodel. We really redid the envelope and we redid it from the inside because the local township felt that the project was historic. That really got us on our way. At the time, it was the largest retrofit in the country and so that sort of put us on the map. We really felt like when we got the first energy bill,

we had something. We could see that we were saving 75% of the energy the building had originally used. That was after we had added air conditioning and an elevator, we added kitchens on every floor so that people could cook, (they had never been able to do that before), and we added additional lighting and ventilation air. That's a lot of additional load, and we were still saving 75% of the energy. We were really, really excited by that. And I think for everybody in our office, that was when we realized that this could really make a difference.”

Want to learn more? Geppner will be hosting a workshop on December 4th entitled, “Persuasive Conversations on Designing High Performance Homes.”

Register online via this link: <https://construction.org/events/EventDetails.aspx?id=1265636&group=>

Or contact Chris Kullstroem for details: ckullstroem@construction.org

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