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Chicago's first prefab
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HOME GREEN HOME

Square Root Architecture + Design architects Jeffrey Sommers and Kate Votava discuss their long journey to bring the first prefabricated Platinum LEED Certified home to Chicago

INTERVIEW BY LIBBY LOWE



On the 1400 block of West Ohio St., what was an empty, standard 125x25 Chicago lot just weeks ago now holds what's set to be one of the greenest homes in the city. The modern 2,039 sq ft single family home with the futuristic-sounding name—C3—may have sprung up fast, but its journey toward becoming the city's first prefabricated Platinum LEED certified home has been a long one.

If you needed to tweet an answer to the question: What is prefab? a good response might be: A structure built offsite, shipped, then assembled and finished onsite. But the reality, at least in Chicago, is far more complicated. From building codes to loan issues, common misconceptions and antiquated rules slowed down the process. But Jeffrey Sommers, Principal, AL NCARB LEED AP and Kate Votava, Associate, LEED AP of Square Root Architecture + Design believe that prefab might just be the future of affordable, sustainable housing, and they have been leading the charge to educate city officials and the public about the financial and environmental benefits of prefab construction.

For Sommers and Votava, the C3 is the culmination of more than four years of work. As the final touches are being applied and the owners are eagerly packing up to move in this winter, *Mindful Metropolis* took a walk through the home and chatted with the architects about the benefits of prefab and the C3.



Thanks for inviting me to look at the house. Just glancing around, it doesn't look much different than a traditionally-built home. For those who may not be familiar with issues surrounding prefab, can you tell me what some of the misconceptions are?

Jeffrey Sommers: The major problem, when you're not talking to *Dwell* magazine readers accustomed to seeing very modern, well-designed prefab homes, is that many equate prefab with sub-standard housing. In the Midwest, there's not a lot of high-end, quality prefab work happening.

Kate Votava: The Museum of Science and Industry SmartHome exhibit raised a lot of awareness, which has helped. But people are waiting for this first one to be constructed, so this is huge.



The C3 is a pretty high-end home. In general, how does prefab construction compare when it comes to cost? And how does choosing sustainable products and practices impact the price?

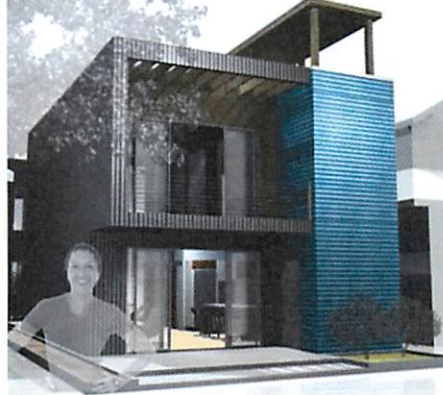
KV: This is a high-end project, but prefab can go from multi-million to totally affordable. We started working on this design when we were in a competition to create ideas for affordable housing. Using the prefab model, we were able to design prototype homes for under \$99,000.

JS: The competition came while we were already doing research on affordable sustainability. We were constantly talking with clients who were frustrated with not being able to afford sustainable amenities for their homes. In the design process, those items always get cut first. But if you focus on the infrastructure—the HVAC rather than the flooring, for example—you are putting in something that will constantly control costs and not be replaced because of aesthetics.

Right now, we're targeting the middle-income housing market, people spending in the high 300s to middle 500s. But eventually we'd love to do something far less expensive. I have read a number of studies predicting 17 million housing starts in the next 10 years, and by 2040 they expect 80 percent of existing housing stock won't be here. Chicago's population is expected to double over the next few decades—we need affordable, sustainable housing.

What makes prefab more green than traditional building?

JS: It starts with the construction process and the use of materials; it is highly efficient, as is the level of quality and our ability to control the process. The factory generates 90 percent less waste than you'd see with on-site construction. They build everything perfectly square and use scraps on other projects. And the factory we worked with, Indiana Building Systems, was able to connect us to



green materials, like sustainably harvested lumber, at a highly discounted rate. The C3 will use at least 50 percent less energy than a traditional home and we're on target for LEED Platinum certification and Chicago Green Homes certification. In addition to EnergyStar appliances, we have a room-by-room heating and cooling system in place, solar thermal panels, an on-demand water heater and a really smart shell and insulation. And the owners have selected flooring, cabinets and other finishes made from sustainable materials.

If prefab makes sense in terms of the environment and financially, why don't we see more of it in Chicago?

JS: Until we having something tangible to show, it's really hard for people to believe we can do this in Chicago. There's an ongoing myth that prefab isn't allowed in the city. But so far [as he knocks on wood] there haven't been issues with inspections.

We knew there would be a lot of legwork and we chose Michael and Kathy Caisley, our first prefab clients, carefully. They're working in tandem with us and have the same goals. Nothing would have happened without Kathy and Michael—they jumped off a cliff with us. This is bigger than their house, and they understand that. They wanted to be the first in Chicago and take the time to assemble the right team. The team has really worked together and we wouldn't be here without Helios Design Build, Indiana Build-

ing Systems, LivingRoom Realty and Green Choice Bank.

KV: We took a long, long time with the preparatory work so that we would be able to avoid problems with code or inspections. We did homework and contacted the right people.

JS: We started talking to decision-makers three years ago, and as it became more real we worked up the City Hall food chain to ensure that we met all of the requirements for building in Chicago.

I know you made sure that all factory work was documented with photos and video to meet the city's tough building inspection requirements and that you left key areas of the home open so major systems could be inspected on-site, as they would with a traditional building project. So where are you now?

JS: We're really in the final stages. It was amazing to see them crane the modules into place. It was totally surreal. There were hundreds of people walking around and taking pictures. It took about 10 hours and then there was a structure. Now, we are marrying the systems together, waiting for final inspections, finishing the exterior work and weather tightening the building.

So, in a dream world, where do you go from the C3?

KV: If we build a number of these, we can petition the city to amend the building code so that each one isn't a case-by-case basis. I also want to change the way people think and talk about houses. People really don't think of them as products, and I think it would further the discussion on what housing is.

JS: We want to make the process of building a home way less intimidating—we'd like buying a prefab house to be like car shopping. We're not there yet, but we have done so much preparatory work for this house. In theory, we will have a customizable product, you write a check and the house gets built to those specifications.

Libby Lowe is a writer and editor in Chicago. She blogs about freelance life—and sometimes her giant dog, Bucket—on the Red Bird Blog at redbirdgoodwork.wordpress.com.

Interested in owning a C3 home of your own? Read more about prefab homes, including advice from Sommers & Votava at mindfulmetropolis.com/blog