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Architects ask clients: give pre-fab a chance

- *The Workshop on Capitol Hill will let clients see first-hand the benefits of pre-fab.*

By [SHAWNA GAMACHE](#)

Journal Staff Reporter

Two Seattle architects are designing and funding their own pre-fabricated building on Capitol Hill to convince clients and developers it can — and should — be done.

Mike Mariano and Grace Kim, the married principals of Seattle's **Schemata** Workshop, said pre-fab construction offers higher quality and a more sustainable product because it can be assembled, disassembled and reassembled with less waste and less impact on a site. But they say architects need to push for pre-fab to get their clients to try it.



Images courtesy of **Schemata** Workshop [\[enlarge\]](#)

The five employees of **Schemata Workshop will move into a pre-fab building designed by firm principals Mike Mariano and Grace Kim.**

“One of the best things we can do as architects is plan for the future,” Mariano said. “We’re putting everything we have into it.”

The prototype

Mariano and Kim both grew up in the Seattle area and met in architecture school at Washington State University. They moved to Chicago right out of school and lived in a condo tower designed in the early 1960s by architect Bertrand Goldberg, a pre-fab pioneer the two see as inspiration.

XML

For their own project, they worked with structural engineer Liz Fekete of Swenson Say Faget and Ann Schuessler of the Rafn Co. to create a kit of parts for the two-story building, including a factory-built “smart module,” a kitchen and bathroom unit that plugs into on-site utilities. The smart module fabricator is Dogwood Industries.

Kim and Mariano will pay \$375,000 for construction of The Workshop, two 1,000-square-foot floors that will sit on top of each other next to a 1912 building they’re buying on Capitol Hill near Cal Anderson Park. The total price of the project was not available because the property purchase and financing are not final.

The bottom floor of The

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Workshop will house their five-person design firm, now in Belltown, and the top floor will be home to Kim, Mariano and their eight-week-old daughter, Ella.

The Workshop will let clients see first-hand the benefits of pre-fab, they said. With their kit of parts and smart module ready to go, they hope to make people comfortable enough to try something different.



[\[enlarge\]](#)

From left to right: Peggy Heim, Mariano, Kim, Ella, Sam Schafer and Irina Wong. Mariano, Kim, and their eight-week-old daughter, Ella, will live on the top floor.

“It’s a prototype we have control over rather than having to rely on the developer,” Kim said. “If we just do it ourselves, we can put our money where our mouth is.”

Pre-fab, de-fab

Kim said she has pushed for using pre-fab construction in low-income housing projects for about four years, but she said developers are wary of straying from the traditional construction model.

“There are so many developers who do think of their buildings as just 20-year buildings,” Kim said. “There’s no long-term thought of what the building is contributing to the built environment.”

The Workshop will use pre-fab parts shipped to the site and erected by a small construction crew and a Snorkel Lift. The foundation is six auger-cast concrete piers and the superstructure is made of pre-fabricated, welded light-gauge steel tube frames assembled on site with bolt-connections. Other materials include pre-planted garden pallets over a TPO roofing membrane, pre-fab metal stairs and ramps, an aluminum curtainwall system and insulated metal panels with gasket joints.

The steel-framed concrete piers are the only construction “waste” the structure would leave behind if it were moved elsewhere, but they could be incorporated into a future building as well.

The smart module has been a major focus. Mariano and Kim worked with the fabricator, general contractor, and plumbing and electrical contractors to design a module that could be used in future projects. The modules can be easily removed and updated, and then plugged back into the structure.

The general contractor for The Workshop is Neil Chapman of Brixton Builders and Inter-Steel Structures is providing the steel superstructure. Joe Nabbefeld of Greenworks Realty is brokering the deal.

Save money, time

High-quality pre-fabrication does not cost less to build than traditional wood-and-frame-construction, Kim and Mariano said. Their project is expected to cost \$187.50 a square foot, more than a wood-frame building would run, though costs would go down for larger projects.

But pre-fab can save time, and reduce the time and expense of permits. The structures can also be disassembled and reassembled elsewhere, giving them a longer shelf-life and significant sustainability credentials.

Kim said pre-fab especially makes sense for affordable housing because of the tight financing and a short construction window. Also, significantly fewer permits are required for duplicating a single pre-fab kit of parts, she said.

Fekete said structural engineers can play a significant role in making pre-fab projects run smoothly. On The Workshop, she helped to identify problems upfront and to design the foundation and infrastructure so the smart module would plug in easily.

“The onus is on structural engineers to be more efficient in our designs and the materials we use as our contribution to green building,” Fekete said. “And when you do pre-fab, you have more flexibility to do that.”

“I’m disappointed with the quality of the construction a lot these days,” Mariano said. “Planning for disassembly, that’s the highest and best use.”

Who's going first?

Schuessler of Rafn said it is often difficult to do pre-fab projects in the Northwest because they haven't been done much here.

“We can conceptualize it, we can price things out to a degree, but we don't have the products and the manufacturers in place to compete with site-build,” she said.

She said with everyone seeking more sustainable projects and less waste, the time has come for pre-fab, but no one wants to be the first to jump in.

“There is such risk doing something different in terms of the unknowns so it really takes somebody with a vision and a lot of leadership and to a certain extent the financing to try something different,” Schuessler said. “They're going to pay the entry fee.”

Kim and Mariano are taking out a loan to cover about half the cost of the project, borrowing some money from friends, and house-sitting for eight months to save money. They formed Frog Pond LLC to purchase and develop the property, and will pay into their limited liability corporation as property owners and tenants.

Kim said financing pre-fab can be tough. She said some banks weren't comfortable financing off-site construction that could be so easily be removed from the site.

Now they're working with ShoreBank Pacific, a Washington-chartered bank with a focus on sustainable projects and community development. Its past investments include the PCC Farmlands Fund, CarSharing Portland and Washington Water Trust.

Ad Duer, ShoreBank Pacific's senior vice president, regional manger, said they were attracted to the project because the structure can be removed from the site and reused. They also liked the idea of using pre-fab for affordable housing.

“This more modular type of design means less waste,” Duer said. “Really on the sustainability feature in a broader sense, you're creating something that can assist a wider community.”

Duer said more traditional banks would have a harder time making such a loan because it is difficult to treat a removable construction type as “real property.”

“We knew that we needed to investigate that aspect as well but we could become satisfied that it was real property,” Duer said. “... We knew what we could do and other banks wouldn't know how to do.”

Mariano and Kim plan to start construction in January, soon after they expect to close on the property. The firm and family plan to move into The Workshop by

April.

Schuessler said Seattle has been slow to catch on to pre-fab, but increasing construction costs and the popularity of sustainability mean people here should finally be ready to give it a chance.

“We're starting to pay more for things and everyone's crying about the prices going up, but really it's an opportunity to sharpen our pencils and be more thrifty and be more efficient, and that's really a good thing,” Schuessler said.

Shawna Gamache can be reached by [email](#) or by phone at (206) 622-8272.

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