

**ARCHITECTURE**

## Have you got 220 square feet to spare?

**KERRY GOLD**

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Forget the laneway house and its 500 sq. ft. of living space.

That size house is huge compared to something called the L41 - a house that measures in at a mere 220 sq. ft.

It's designed for one occupant, and if its innovators have their way, it will house the renter, the retiree, the student, the homeless, the first time buyer, or the person who simply chooses to live small.

It's the creation of architect and urban planner Michael Katz, and artist and designer Janet Corne, who created the L41 in time for the Winter Olympics, where it was displayed on the Concord Pacific site in downtown Vancouver. Today, the demonstration model sits in the parking lot at 550 Great Northern Way, nestled in a university campus among trees and shrubs that hide a major thoroughfare.

The house is called L41 because it rhymes with "all for one," and infers "one for all," which is the egalitarian philosophy behind it.

"This is what I call sub compact," says Mr. Katz. "We concluded that to make a house affordable, we had to make it small, which is simple logic - The question was, how small?"

"Instead of setting out to build a 220 sq. ft. unit, we set out to design a unit which we considered to be delightful. We started with a full kitchen and dining bar, and the rest fell into place."



Ms. Corne, who is married to Mr. Katz, has an architecture degree and is an artist who shows her work at Buschlen Mowatt Gallery in Vancouver. The team collaborated on the design, but it is mostly the culmination of Mr. Katz's 40-year career as an architect, innovator and urban planner. He has designed both the world's first universal mobile keyboard, as well as a major resort in Hawaii as chief planner for Grosvenor International, the development arm of property owner the Duke of Westminster. By the time he settled in Vancouver in 1971, he went to work designing 720 sq. ft. townhouses throughout the city.

The L41 is a modular house he envisions to be used as either single homes, or more importantly, stacked up to make apartment buildings.

"This is by far the most important design of my career, because this is ultimately a mass produce-able house," he says. "Up to now, the furthest they've managed to get is the prefabricated house and they're not the same as the mass-produced house. It doesn't use the miracle of the assembly line. All the pieces are prefabricated and then assembled.

"The idea is, just as cars were made available because of mass production, so too could houses be made available to a much larger number of people that can afford them."

The stackable modular house is not new. Mr. Katz gives credit to architect Moshe Safdie, whose concrete modular units were a central feature of Habitat 67, at the Montreal World Expo.

"Modular housing has been thought of and dreamed about for a long, long time," he says, seated on the foldout couch inside the L41's living room that doubles as a bedroom. "The difference with this is that we're hoping we'll get pricing down."

He doesn't know yet what that price might be, and he doesn't want to reveal the cost to build the demonstration house because it would be misleading.

"We don't want people to get the wrong impression. A prototype is very expensive and state of the art. It's not a fair pricing system. What is much more important is the next phase, which is now. How much will it cost to deliver one of these units to you?"



Because the L41 is intended to be mass produced, like cars, their theory is that the pricing will be affordable enough for people who otherwise can't own homes in Vancouver. Unlike Mr. Safdie's modules, the L41 is a stackable module constructed of wood. Another feature of the L41 is that it's stocked with top-of-the-line hardware and appliances, which Mr. Katz theorizes will be made affordable because the house itself will be so inexpensive to build. As well, developers will be pleased, he says, because cost to build the modules will be kept low and consistent.

"Our whole philosophy is that less is more," says Ms. Corne. "Small is beautiful. Look at what your footprint is. What do we need?"

Mr. Katz and Ms. Corne went to great lengths to make the L41 demonstration house a testament to sustainability. They sourced materials that were less oil-based than the average house, although it was impossible to eliminate the use of oil entirely. The house itself is constructed with thick walls of Cross Laminated Timber, a layered wood product that is touted for its strength and fire resistant properties. The CLT that was custom manufactured for the house is made from blue-stained beetle-killed wood. There is an estimated 675 million cubic metres of beetle-killed timber in B.C., and putting it to use has become a bit of a hot topic in sustainability circles the last few years.

The outside cladding of the house is made from grey zinc panels. There is a living rooftop designed by landscape architect Cornelia Oberlander, famous for works such as the garden rooftop for the Vancouver Public Library. There are solar heating panels to one day produce enough energy that could be returned to the grid at zero net consumption.

Inside, the house is bright and has a surprisingly big-feeling floor plan. The designers say it is because, unlike most micro-houses, the kitchen they designed is not a galley, but rather U-shaped and regular sized.

The studio house is, essentially, a kitchen with a convertible family room attached.

"Most people spend most of their time in the family room," says Mr. Katz. "They don't use the living and the dining room that much. And then they just sleep in the bedrooms.

"So we concluded that a family room would make an ideal living unit."

The bathroom has a dark floor speckled with bacteria-killing aluminum to keep mold at bay. They added that feature because there is no shower door, so the floor will often be wet. The bathroom is separated from the rest of the space by a green glass door that is opaque but allows light. The kitchen itself is stocked with almost every compact high-end appliance available - Sub Zero under-the-counter fridge and freezer drawers, a Swedish dryer that doubles as a washing machine, an under-the counter convection oven that doubles as microwave, a two-element induction stove that doesn't get hot, a slide-out mini overhead fan, and a deep narrow sink that looks like something out of a laboratory. The cold white counter tops are made out of reconstituted quartz, which is harder than granite.

Everything is knob-less, white, clean, and minimal.

There is a tiny computer desk with drawer, and a series of built-in cabinets and deep drawers for clothes, duvet and shoes.

If its occupant wanted to watch a movie or hockey game, a pull-down blind behind the couch can convert to a film screen with a projector. The sliding glass door that takes up the entire wall in the living room was custom designed by Mr. Katz and is made of three parts on tracks, enabling it to disappear entirely so that one end of the house is suddenly wide open to a large balcony. Just off the balcony is storage for bikes, skis and barbecue.

Mr. Katz pulls open the wall where the computer desk is and reveals the "guts" of the house, a vertical assembly of the house's mechanical, electrical and heating systems.

"It's got continuous air circulation, so the cold air coming in is heated by the warm air going out. So you have very little heat loss."

The house is comprised of three modules that were created in a warehouse by a B.C.-based forest products company. The three modules, moved from the factory by a flat bed truck, were assembled

in less than a day.

"There would be very little construction on site," says Mr. Katz.

The L41 can be made bigger with the addition of modules. A one-bedroom L41 would measure 290 sq. ft., a two-bedroom 360 sq. ft.

The first L41 has been commissioned by a young couple that has property on Gambier Island, but Mr. Katz has bigger plans for his creation.

He wants to put the house's stackable qualities to use. He envisions entire communities of L41 houses clustered like condos, where people share Smartcars and gardens, and live in small spaces with equally small carbon footprints.

"I think it's one thing to want more and more, but if you analyze what you need, you find you don't really need that much," says Mr. Katz. "So the idea of the little car and the little house is all part of the same philosophy."

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