

Downtown



Fine Homebuilding
**2014
HOUSES
AWARD**

BEST NEW HOME

Our award for best new home goes to architect James Tuer for the infill home and laneway cottage he designed in Vancouver, B.C. Modern in style and construction, this home exemplifies forward-thinking home building.

Design

A compact infill home is at the forefront of progressive urban development

BY JAMES TUER

Living in the city doesn't have to require a compromise in the quality of living, as some rural and suburban dwellers assume. You don't have to forfeit a sense of privacy, give up a love of nature, or be forced to drive far outside city limits to find true refuge. When designed well, a home in a dense city neighborhood can provide quiet and personal space while keeping its owners thoroughly connected to the pulse of the urban landscape.

When my Vancouver, B.C., clients, a couple of empty-nesters who faced the possibility of boomerang kids, approached me for help in designing a new home, I saw an opportunity to utilize my backgrounds in urban planning and residential architecture. I wanted to design a modern home that would make use of the most-progressive zoning laws, passive-design strategies, and high-performance construction techniques in order to deliver my clients the home they'd always dreamed of. But I also recognized this as an opportunity to design a home that would challenge some of the notions about who lives in the city and how they live.

One lot, two homes

My clients' vision for their new home was pretty simple: Create a modern, efficient home within 1600 sq. ft. They were also interested in building a laneway home, what some people refer to as an accessory dwelling unit (ADU) or a backyard cottage (see "Building out back," p. 35).

Their property occupies a small corner lot in the hip Kitsilano neighborhood—the Haight-Ashbury of 1960s Vancouver. I often look at a corner lot as a gift, since it allows me to design a building that is much more than just a facade facing a street. Making this site even more special are the trees that line the intersecting streets, which are over 100 years old. Because this corner lot was on a "short" block, though, we would have to work within a site of only 80 ft. by 40 ft.—pretty tight, given my clients' wish list.

Modern urban homes on such small lots tend to be focused inward, and if they open up to the city, it's most often only on the upper floors through moderate-size windows. I rethought this paradigm with my approach to the site and the house, and the result was a house that's more open to its surroundings. For instance, an oversize corner window provides a wide view of the street from the living room. The small front-yard landscape terrace and gabion wall, softened by lush plantings, creates a buffer for privacy. Both the main house and the laneway cottage open up to the back garden through lots of glass. Clerestory windows and a raised corner window in the main house's



CARVING PRIVACY OUT OF AN URBAN LOT

The goal in designing the two houses on this small lot was to make the city go away. This was accomplished with three key strategies: First, placing the house on grade creates a level garden layout where any plants can double as screens. Second, gabion walls and board-formed walls are used to define a series of outdoor rooms and to create a boundary between the streets. Finally, designing the footprint of the laneway cottage as a trapezoid helps to make the small courtyard feel more secluded—more like a country garden than an urban patio.

SPECS

Bedrooms: 2

Bathrooms: 2

Size: 1600 sq. ft.

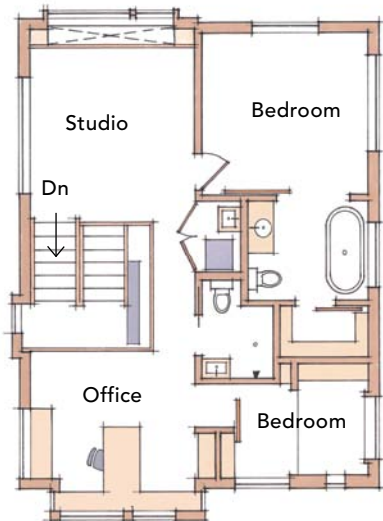
Cost: \$375 per sq. ft.

Completed: 2011

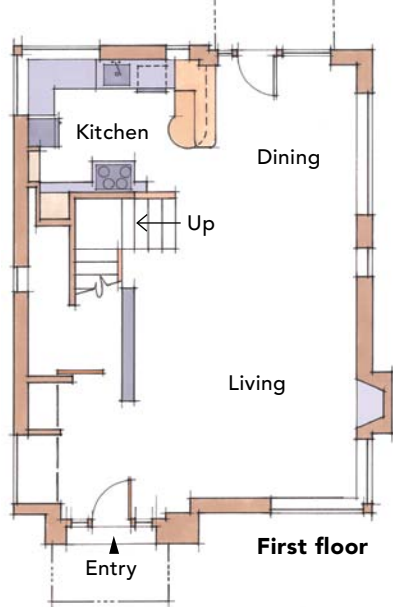
Location: Vancouver, B.C.

Architect: James Tuer,
jwtaarchitecture.com

Builder: Vision Built, visionbuilt.ca



Second floor



First floor

0 2 4 8 ft.

◀ North



DESIGN VIDEO For an inside look at this home and those behind its design, visit FineHomebuilding.com/houses.

PENDANTS
ylighting.com

SINK
kindred-sinkware.com



kitchen draw light and views of the mature trees along the north side, and the corner window permits views over the concrete wall that straddles the property line. At the same time, the wall and the landscaping soften the noise of the street and give an illusion of being removed from it.

Regional style

Broad overhangs, access to light and views, and a shed-style roof that opens up to the north contribute to a style of architecture that feels at home in this Pacific Northwest climate. Urban features include standing-seam aluminum siding and splashes of bright colors, which help define the entryways and some of the feature windows.

These design elements helped us achieve the timeless modern look the owners most desired. They wanted the house to be defined as much by its natural surroundings—the view of the distant mountains and the native plantings within the garden—as they did by the many Craftsman-style cottages in the area. As a gesture to the Crafts-

man style, I chose to expose the rafter tails and to use Douglas fir on the underside of the roofs. Rather than have simple modern picture windows, each window is unique and is defined by its mullion patterns. This is also a nod to more traditional architecture found in the neighborhood.

While the main house and the laneway cottage have similar attributes, they're not identical twins. The two buildings share one common element: the concrete landscape wall that traverses the property line. A simple aluminum gate breaks the wall and becomes the formal arrival point for the occupants of the smaller laneway cottage. The laneway cottage is sided with a 1x4 tongue-and-groove cedar siding painted light gray. The product is referred to as "fine line" because of a thin 1/4-in. reveal sawn into each board to create a subtle shadow line. We also reversed the color scheme. The windows are orange rather than yellow as on the main house, and the accent panels are yellow rather than orange. This is a simple yet effective way of making the two houses feel like

Living light. The 11-ft.-tall main-floor living space is grounded by polished-concrete floors and is daylit with large windows and doors that have been installed with reveals around their jambs, instead of trim, to reinforce the modern aesthetic.

Open above and below. The kitchen is partially defined by a tiered peninsula set under two matte-black Sentry pendant lights. Open shelves hang above a stainless-steel countertop and Kindred undermount sink. Light streams through corner windows and through a window above that illuminates the kitchen and the studio.

BUILT-IN ENERGY SAVINGS

This new home was designed with several strategies to naturally condition interior spaces and reduce energy usage and costs. The carefully detailed feature stairway to the second floor plays a major role in the home's passive performance.



Passive ventilation

Operable windows facilitate cross ventilation. Rooftop skylights provide natural ventilation via the stack effect, a cyclical flow of air driven by differences in air temperature and density. For more on the stack effect, see "How It Works" in *FHB* #213 or at FineHomebuilding.com.

Passive solar

Roof overhangs are optimized to shade interior spaces during the summer, and to allow sunlight to penetrate deep into the house when the winter sun is lower in the sky. Large windows on eastern and southern facades increase the amount of daylight entering the home. They also increase the amount of solar energy, which is stored in the interior concrete components.



Thermal mass

Solar energy heats the concrete surfaces and is radiated during low-light hours to help warm the house in cooler months. In warmer months, opening windows at night allows cool air to chill the concrete. If windows are kept shut during the day, the concrete will wick warmth out of the indoor air and help keep interior spaces comfortable.

Building out back

Laneway housing is a form of building that treats laneways as streets and allows homeowners to build small cottages in their backyards. Nearly a 10-year-old practice in Vancouver, B.C., laneway housing is slowly taking root in municipalities throughout Canada and the United States.

In concept, by allowing laneway cottages, a municipality can double the number of houses that can be built in a neighborhood. This provides a diversity of housing options within a single-family neighborhood, with the laneway cottages tending to cater to people who may not fit into the typical single-family-house demographic. This in turn creates a more interesting place to live. Kids or aging parents can take advantage of housing that is readily multigenerational and of the social benefits that this concept brings with it—a greater connection to urban services and infrastructure and a significant reduction in transportation costs and carbon footprints.



they are of the same family while retaining their own, independent identities.

A passive approach to systems

For those who aren't familiar with the Pacific Northwest, I often compare Vancouver's climate to North Carolina's. When doing so, however, I note two main differences: We have more rain and less sunshine in the winter and a drier heat in the summer, which is prone to settle over the city in long stretches. Many homeowners here want air-conditioning, but my clients wanted the house to ventilate and cool naturally. Strategically placed windows provide ventilation, and lots of exposed concrete offers thermal mass to assist in space conditioning.

Another important consideration was to ensure that large expanses of glass did not act as solar collectors and overheat the house in the summer. Fortunately, the trees that shade both floors keep the house cool. In the winter, when the trees drop their leaves, the sun reaches deep into the house and stores its energy in the exposed concrete, helping to warm the space during low-light hours.

A thick, durable shell

One of my clients' primary goals was to create a home that was durable and long lasting. The strategy, then, led to one of those design elements that set out to solve one problem and ended up helping to meet a second set of design goals. In order to increase the house's resilience and keep its main floor at grade, we decided to raise the stemwalls roughly 4 ft. out of the ground and to clad the walls above them with standing-seam aluminum siding. This required us to build a double-stud wall on the main level—one 2x6 wall atop the stemwall and another 2x6 wall atop

the slab—to meet the building code's energy standards and to allow us to finish the interior with drywall down to the slab. On the second floor, we stayed with a thick-wall approach by using 2x10 plates and staggered 2x4 studs. Filling the 12-in. and 10-in. cavities with open-cell spray foam yielded airtight walls over R-30.

Another area we paid careful attention to was the intersection of the slab and the stemwall. Concrete is a naturally conductive material, and we wanted to ensure that we would not lose heat through the assembly. The slab "floats" on 4 in. of rigid insulation, and a 2x4 strip of rigid insulation lies between the slab and the stemwall. This thermal break is also important because the slab is the medium for our radiant-heat system, and we certainly did not want that heat



Built to last. Standing-seam aluminum siding wraps the main house and ensures a long-lasting, weathertight envelope while clearly defining the home's modern style.

escaping into the stemwall, which we left exposed on the exterior.

The well-insulated, airtight home is ventilated naturally, but a heat-recovery ventilator efficiently keeps a steady supply of fresh air circulating. In the city of Vancouver, progressive in many ways, heat-recovery ventilators are mandated by city codes.

Embrace the city

The one thing about cities is that they are always changing. Embracing that change can be incredibly rewarding. For those looking to move into the city or to design an urban home, I have a few words of advice.

First, do not worry about maximizing building floor areas and building heights. Land is expensive in many cities, but you are still far better off building smaller and smarter than worrying about the future resale value of the house.

Second, bring nature into the city. Don't concern yourself with precisely mirroring the neighborhood. If you are inspired by the ocean or the mountains or the desert, bring a little of that inspiration into your landscape design. This project was partially influenced by the mountains, and so we brought in large granite boulders to grace the lot.

Finally, just because you are in the city doesn't mean you can't build efficiently. Maximizing natural daylight through clever placement of windows is easy. Also, if your site allows it, consider alternative solutions to mechanical systems. It's OK if your home looks and functions a bit differently than those of your neighbors. □

James Tuer is an architect on Bowen Island, B.C. (jwarchitecture.com). Photos by Rob Yagid.