

Princeton's Next Top Modulars

by michele alperin

Close your eyes. Now imagine two homes: one is an energy-efficient, 2,278-square-foot, three-story home, with three bedrooms and room for two more on the third floor, full basement and custom details. Then picture a simple 1,016-square-foot, one-story beach bungalow with two bedrooms and one-and-a-half baths. Now guess which one is the prefab?

If you guessed the first one, you're right. It's one of the five models of prefab homes Princeton architect Cathy Knight, whose 20-year-old Princeton practice has focused primarily on renovations and additions, has created for a new division, Knight Classic Homes (knightclassichomes.com). "We've designed them with the Princeton client in mind — what in our experience people in this community want in their homes, based on 20 years of doing additions and renovations" Ms. Knight says.

One type of client is people who want a new home but also want to stay in place. "We can take down their existing house and put up one that is more appropriate, with a master bedroom and a nice living space on the ground floor and a study and kitchen," Ms. Knight says. "The open flow floor plan makes it easy to move around, especially if there is ever a wheelchair, and there are a couple bedrooms upstairs for adult children."

Other models will appeal to young couples moving into town. The three-bedroom Nassau has space for expansion, both on the third floor and in the basement, which is finished with dry-wall, windows, finished stairs, and space for an 8-foot ceiling.

"In the past, modular homes were built for a low price point," Ms. Knight says. "We are designing these to meet the needs of the typical Princeton client, with high-end plumbing fixtures, cabinets, ceramic tiles, windows, flooring, and granite or recycled quartz counter-

tops. The quality of the structural components is better than in traditional well-built homes in Princeton."

Ms. Knight's motivation for introducing a prefab line grew out of the unforeseen problems she often runs into with renovations, like rotting wood and other structural issues that must

A rendering of the three-bedroom "Nassau" from Knight Classic Homes.





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be fixed before construction can begin.

Working on existing housing stock also constrains what the end product can be, and renovations can be lengthy. And also pricey; in fact, Ms. Knight ballpark the cost of renovating a kitchen and adding a master suite and a family room at about \$400,000 to \$500,000 — not much less than the cost of a brand-new home. And knocking down an existing home is cheap: between about \$6,000 and \$15,000, and it's over in the blink of an eye.

Of course what really allowed Ms. Knight to consider prefabs are the drastic improvements in the industry. "There have been modular companies in the past that do low-end products, with few lights and fiberglass showers," she explains. "They are getting to the point now where they are bringing them up to the 21st century and are able to surpass the quality of traditional homes."

The homes she has designed will be built by Epoch Homes inside a huge building in Pembroke, New Hampshire, then trucked to Princeton, and put in place and completed by a local construction firm — either one selected by Ms. Knight or a customer-selected firm that she trains.

The homes' foundations are made from waterproof concrete, which Ms. Knight notes is particularly smart for Princeton. Whereas a typical concrete wall poured during construction is 3,500 pounds per square inch, the New Hampshire factory manufactures it at 5,000+ pounds per square inch, creating a much denser structure. They are created by Superior Walls in Millville.

These houses will also feature whatever is necessary for a completely green home: good insulation; water-saving plumbing devices; Energy Star-rated appliances, windows; low-VOC paints, and bamboo floor-

ing.

Prefabs have other advantages over homes built in situ. "In traditional construction you have a building site where the structure is open to the weather for a period of time as you are putting it up stud by stud and rafter by rafter," Ms. Knight says. "Here, it is built in a climate-controlled factory and brought in weather tight." So the structure is not subject to sitting out in bad weather, with its walls an easy target for potential mold.

Also, factory tolerances are tighter in terms of the squareness of floors, and sheet rock is glued down to circumvent popping nails and screw heads. Because prefabs must be built to the standards of transport, the structure has to be heavier than were it constructed in the field. For example, the joists in the flooring structure must be 12 inches apart rather than the usual 16-inch allowance.

Perhaps the biggest advantage of a prefab over other options, Ms. Knight suggests, is the time required from start to finish. Preparing the property and installing utilities is about a month's work. Setting up the foundations takes a day, with setting the prefab module on those foundations another day. Then another day for the module to be set on the foundations. Then three months of work by an onsite contractor, and you're in the front door.

Ms. Knight grew up in Natick, Mass., and earned a bachelor of architecture at Syracuse University in New York. Out of college she worked for large firms in Boston on sizeable commercial buildings as well as corporate interiors, including running one \$40 million project, with many people under her.



She then moved with her husband to New Haven, Conn., and worked for Noyes Vogt Architects in Guilford, specializing in institutional and medical renovations for various clients, including the State of Connecticut and Yale University. She supervised the renovation of a jail in the basement of the Bridgeport courthouse and, for her firm, was awarded a large contract for the construction of the new courthouse in Tolland, Conn. In 1991 the family moved to Princeton, and Ms. Knight opened her own firm, specializing in residential work. She now has four employees.

The five models Ms. Knight has designed are not immutable. As the designer, she can customize each house to fit a customer's needs. "We can tailor to exactly what you want and what your site conditions are," she says. "You're dealing with someone local to make all that happen."

Ms. Knight is also offering several potential upgrades for her prefab homes. The first is metal roofing, which is double the initial cost of asphalt shingles, but never has to be replaced. Geothermal heat, which uses the heat of earth to heat and cool, is low maintenance and its additional cost is paid off in five or 10 years. Rainwater harvesting

is another inexpensive add-on; it brings all the downspouts into a cistern, where water collects and can be used for landscape watering. Finally, solar panels may make sense if the house has a big roof with a southern exposure. "We're not going to cut down any big trees on the lots," Ms. Knight says.

Although a prefab may be slightly cheaper than a comparable house built on site, that is not what Ms. Knight is after. "From our point of view, we are looking to provide a smarter alternative to on-site construction. It's more quality of construction, efficiency in design, time savings, and environmentally friendly homes," she says. "We are not trying to bring these in at the low end of the market.

We're using our 20 years of experience working with the Princeton community to develop

a product that will meet the needs of our sophisticated client base. And of course it is a huge advantage to work with an architect to customize your home."



Examples of a hallway & stairs & garage (below) from Knight Classic Homes.

Knight Classic Homes

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