

Rock solid

A house made of concrete passes tests of time, durability

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When Gene and Lynn Suwanski moved into their concrete house 20 years ago, it was a one of a kind. The two-story home near Elmhurst was built as a "concept" or idea home, so new the builder wasn't sure how long construction would take or how much to charge.

But the couple have so appreciated the residence's design, energy efficiency and ability to buffer sound that they built an addition last year with precast concrete panels.

While common in European residential construction, prefabricated concrete walls and floors are seen in this country primarily in large-scale commercial ventures such as dormitories, hospitals and warehouses.

Now they are beginning to show up in some Chicago-area homes thanks to the pressure on builders to speed production, and thanks to computer technology that can produce customized components easily.

Chicago-based Dubin Residential is using precast panels at Arcadia Place, a 34-unit townhouse development at 18 S. Aberdeen St. on the city's Near West Side. The company also plans to incorporate them in its Kilbourn Park development at Belmont and Kilbourn Avenues where 116 units are planned.

Chicago Community Development Corp. has sold more than 30 of 43 units made of precast concrete panels at Archer Court Townhouses in Chicago's Chinatown.

In addition, several new single-family houses of precast concrete have been built in Bolingbrook, Plainfield and Shorewood. Three are in Bolingbrook's Heritage Knolls on Royce Road where there are plans to build 12 precast homes. The general contractor is Mustang Builders, a sister company of Naperville-based Dukane Precast, which makes the concrete panels.

Precast panels--so named because they are made in factories not on the job site--are shipped to construction sites where they can be used as interior and exterior walls, floors and roofs or combined with components made of other materials.

At the site, a crane hoists each panel onto a footing where it is held by pole braces. The panels are secured with a heavy-duty caulking to become a monolithic whole, says Tony Cellucci, partner in Naperville-based Insulated Concrete Structures, builder of the addition to the Suwanski home.

Says Catherine Baker, principal at Landon Bone Baker Architects, Chicago: "It's a very quick method of assembly and installation that gives you a high fire rating and weathers well. It is very durable.

Unlike masonry construction which might take several months to frame and enclose, you can do this in a matter of days."

Baker has worked on the Archer Court project and with Dubin. She says precast concrete is especially well-suited to multifamily projects such as townhouses where "you have the same pieces and can get economy of scale."

Dubin used precast panels for the demising walls--the walls between townhouse units--and exterior walls at Arcadia Place, says senior construction manager Matt Lenzini.

As a demising wall, the panel "is never seen by anyone but it has two functions--as a firebreak and to hold the floors up," Lenzini says.

A common method of building demising walls with 8-inch concrete block, Lenzini says. Substituting precast panels is quicker because "they can set 10 panels a day" compared "to a week for a mason" to do the equivalent work, he adds.

Furthermore, concrete panels can be erected in the winter when it's too cold for masonry construction.

"The faster I can turn a unit, the quicker the buyer can get into the unit."

"Because we are an entry-level builder, I can keep my entry-level unit costs down," he says.

"With the quick erection and enclosure time of the concrete panels, I can sell any of the units. I can pick and choose which units to finish. Now because the shell is up so quickly, the buyer that is first in, first to close can pick any unit he or she wants."

Time efficiencies were a crucial element for selecting precast panels for Archer Court, says Tony Fusco, president of Chicago Community Development Corp. (CCDC).

"We were working under a fixed time schedule," says Fusco of the first project in Chicago HomeStart, a program of providing a mix of market rate and affordable housing.

The precast components appeal to builders and architects in part because they are engineered inside factories where the vagaries of weather won't affect the quality of building materials nor slow construction.

"It is all made in the shop and [is] put together like a kit," says architect Baker. You know what you are going to get. And the product looks very good."

Looking good is in the eye of the beholder, however. Concrete has never captured the fancy of more than a small percentage of U.S. home buyers, even though it is the material of choice in most of Latin America, Africa and Europe.

Yet "concrete is incredibly plastic," Lenzini contends. Precast producers are offering a variety of patterns which look like brick or stone.