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# CITY LIVING

FAST ERECTION TIME, ENERGY EFFICIENCY MAKE  
DUKANE PRECAST'S DOUBLE-WALL TECHNOLOGY  
IDEAL FOR CHICAGO HOUSING PROJECT

BY STEVEN PROKOPY

Since the biggest benefits of Double-Wall brand precast roof and wall panels are rapid construction, durability and energy efficiency, it came as no surprise to Naperville, Ill.-based Dukane Precast, Inc., when the Chicago Department of Housing selected the technology for an affordable-housing apartment building on the city's West Side.

Double-Wall technology means that both sides of the wall and floor components are form finished, with exterior surfaces of walls able to be produced with a variety of finishes and surface treatments.

Shortly after Dukane opened its robotics-equipped Double-Wall plant adjacent to the company's headquarters (see "Double Time," *Concrete Products*, September 2002) the producer set its sights on getting work for the city, a process that took more than two-and-a-half years. "In the course of promoting the Double-Wall process to architects and the industry, we held seminars for anyone interested in learning about the technology and scheduled walk-throughs of finished units," says Brian Bock, Dukane's vice president of sales and marketing. "That's how the city commissioners first became aware of us. Then, an architect we'd worked with on a project recommended us to some DOH people he knew, and things went from there."

The architecture firm was Chicago's Campbell Tiu Campbell, which had done considerable work with the city's Chicago Housing Authority and DOH, as well as used Dukane's products on a number of residential projects in recent months. In the early spring of 2005, the DOH granted permits for a 36-unit, five-story (including parking on the bottom level) apartment building on North Spaulding Ave. on the city's northwest side, with Skender Construction Co. as the contractor.

When *Concrete Products* visited the job site, construction was at the half-way point of the

45-day erection schedule. According to Bock, the operation was actually about two days ahead of schedule, and showed the perfect marriage of precast components: straight walls, parking deck components, and finished wall/floor systems.

When completed, the H-shaped building will use 15,000 sq. ft. of precast wall panels and 14,000 sq. ft. of double T's (for the garage); 45,000 sq. ft. of 12-in. double-wythe floor members; and, 34,000 sq. ft. of 8-in. double-wythe wall panels. The Spaulding job is the city's first to use double-wythe technology, which makes it possible to have conduit built into the wall. Since the walls have a smooth form finish, no drywall is necessary, and no additional top-pings are needed for floors or ceilings. The exterior walls will feature a laid-up brick veneer. Although not used on this particular job, tubing for radiant floor heating can be cast in to the panels.

The rear, west-facing side of the Spaulding job was the first third of the project to be erected. Precast components facilitate rapid construction, which reduces the amount of time materials and equipment are left on Chicago's theft-prone job sites.





Shown here at the half-way point in its construction, the North Spaulding Ave. apartment complex in Chicago is the perfect marriage of precast components: straight walls, parking deck components and finished double-wythe floor/wall systems.

At Dukane's Naperville plant, robotics operate from computer-aided design drawings to lay out panels to the exact building dimensions and specifications. Reinforcing steel is placed on the casting tables, and steel truss girders are used to connect the two wythes of concrete.

"The hardest part of our job is getting the architects to understand and adjust the specs to accommodate double-wall panels," says Bock.

Both sides of the Double-Walls are form finished, with exterior surfaces able to be produced with a variety of finishes and surface treatment. The smooth finish of the interior walls means that no drywall is necessary.

"But if you can get in and do a show-and-tell, this process is an easy sell. The DOH has been looking at this for a while, and representatives have visited several other jobs. They were convinced of the energy efficiency, durability, safety, operating costs and quick erection time.

"We see this as part of a city-wide trend toward using this process for constructing assisted-living units, rentals, six-flats, and multistory buildings."



Braced garage walls await double-T roof elements.

