

Systems Shelter

Oldcastle Precast develops multi-unit housing prototype for New York developer

By Don Marsh

Oldcastle Precast's Building Systems Group is leveraging mix technology and placement methods, product breadth and marketing savvy to create a multi-unit housing model for urban New England and Mid-Atlantic cities. In advance of mid- to-late-summer occupancy, interior work and landscaping are well under way on an inaugural project: Melrose Commons II, located a stone's throw and home run ball away from Yankee Stadium in a working class, Bronx, N.Y., neighborhood.

Melrose Commons II combines hollow core floor and roof plank with plain or architectural precast panels in bearing and nonbearing conditions. Natural stone colored precast steps, U-shaped channels, cornices and trim round out entry, window and roof edge treatments. Product was shipped from Oldcastle operations in South Bethlehem, N.Y., (hollow core plank, demising wall panels) and North Brookfield, Mass. (Chase Precast, steps, architectural components). Panel and plank erection began in December 2001 and, along with the step and trim placement, was completed in late winter.

Although quick to note the project's "inaugural" nature – and a new method's unknown quantities – New York developer MC II Associates sees value in systems building. "This has a lot of potential. It is fast once it gets going and trades are able to move in quickly," notes MC II Partner Les Bluestone. "But tolerances are very tight in a housing plan, and there are many details to learn when everyone is working with a method the first time."

MC II is no stranger to building multi-unit housing with hollow core, albeit in combination with conventional block and brick walls. Melrose Commons II is an experiment, Bluestone admits, as the cost of using brick-clad structural and façade precast panels exceeds that of established methods. Mason labor and narrower construction windows, however, are among factors MC II figures will offset added costs, especially on subsequent jobs.

Development phase

Melrose Commons II came on the heels of nearly three years of market development exercises Oldcastle Precast refined while pursuing opportunities in modular education and corrections facilities. Visiting sites of MC II and other New York City developers engaged in affordable housing, company representatives observed material movement and building schedules on multi-family jobs of hollow core/block & brick design.

"Entry and roof conditions differ with townhomes and apartments, but the whole sequence of erecting structures and preparing for interior trades is much the same as encountered on prison and school contracts," explains Oldcastle Precast/Northeast Group Product Development Manager Harold Messenger.

After initial site observations, he and his colleagues were convinced that developers in New York – and other population centers from Maine to Maryland – would subscribe to the panel and plank systems approach for affordable housing. The company retained Boston-based Equus Design Group to work with a New York counterpart, Danois Architects, in configuring an all precast, multi-unit dwelling prototype. Equus previously worked up schematics for modular precast prison cells and school classrooms. During the past decade, Oldcastle Precast has penetrated both markets by promoting the modular concept among owners and builders.

Following a review of preliminary drawings with panel and plank placement and connections, MC II representatives urged Oldcastle Precast to improve brick facing options for housing units' front entry and end wall sections. Officials from the New York City Department of Housing Preservation & Development (HPD) – a partner in siting and funding affordable dwellings like Melrose Commons II – were especially sensitive to the use of thin clay brick inlays versus faux brick motifs achieved through formliners and stains. A brick "covenant" assures that new development harmonizes with neighborhood architecture.



Compact

The brick facing issue proved timely with Oldcastle Precast's adoption of new mix technology. "We had been experimenting with new generation [polycarboxylate type] superplasticizers to make self-compacting concrete mixes," Messenger explains. "By eliminating the need to vibrate forms, the mixes allow us to achieve a nearly flawless consistency on thin brick inlay panels – with little or no repairs."

Leading up to the Melrose Commons II contract, Oldcastle Precast and MC II representatives visited Chicago installations of a precast panel system Praire Grove, Ill.-based Prestress Engineering Corp. debuted four years ago (*Concrete Products*, April 1998) as an affordable housing solution. Oldcastle Precast then invited the developer and HPD staff to tour Chase Precast's North Brookfield plant to see fabrication of panels with self-compacting mixes and thin brick inlays. Crews were in the middle of casting brick face structural panels for an Army Corps of Engineers-built control tower at Westover Air Reserve Base in Chicopee, Mass. With quality assurance evidenced on a large scale, and a fine-tuning of architectural precast for unit entry channels, HPD officials gave MC II the go ahead to include Oldcastle Precast's system among Melrose Commons II options.

Melrose Commons II

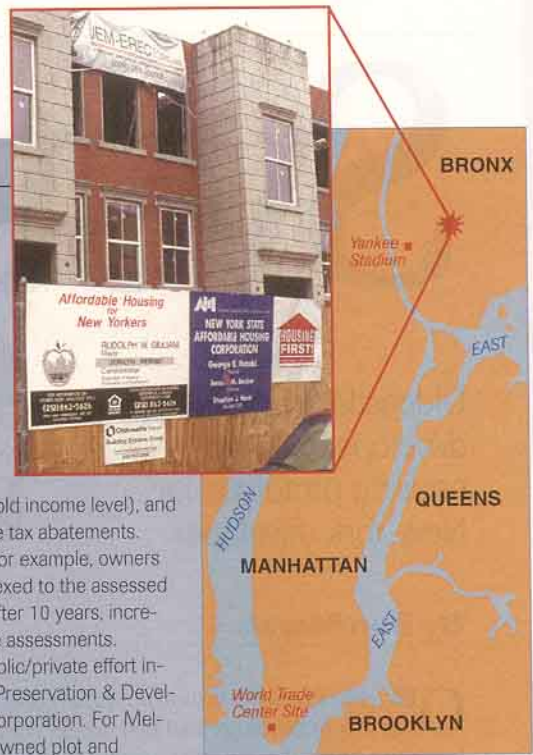
At A Glance

The project is a gated complex of 30 three-family units, with a courtyard to provide patios and off-street parking. Buyers own three units, occupying one (garden and first level, and half of second level) and leasing the other two (one one-bedroom; the other, two bedrooms). The average sale price per three-family unit (4,400 sq. ft. total) at Melrose Commons II is projected to be \$289,000.

New York City Housing Partnership guidelines qualify buyers with household income of \$42,000 (or 80 percent of market's \$56,000 median household income level), and encourage long-term ownership through real estate tax abatements. During their first 10 years at Melrose Commons II, for example, owners fulfilling occupancy requirements will pay taxes indexed to the assessed land value only, as opposed to land and building. After 10 years, incremental increases begin based on full property value assessments.

The New York City Housing Partnership is a public/private effort involving the New York City Department of Housing Preservation & Development and New York State Affordable Housing Corporation. For Melrose Commons II, the partnership identified a city-owned plot and facilitated title transfer to MC II Associates, one of several developers qualified for government-backed affordable housing.

In addition to MC II, Melrose Commons II principals are: Danois Architects, New York; designer; Blue Sea Construction Corp. (MC II affiliate), New York; builder; JEM Erectors, Indian Mills, N.J., precast erector; and Oldcastle Building Systems Division, Rehoboth, Mass., precast systems product supplier.



shorter than average lead time. Panel and plank delivery and erection were originally scheduled around a window with 50 days

of crane time – a goal not quite met as a result of delays attributable to start up conditions. With the project now nearing completion, MC II has enlisted Oldcastle Precast to supply systems packages for two jobs on the drawing boards: 1) Melrose Commons III, a 40-unit development of similar configuration across the street from the current project; and, 2) a 71-unit development of two-level multi-family homes in Brooklyn. MC II is also examining how the system could be adapted for a 12-story Bronx apartment building.

Fabrication work proceeded in North Brookfield with a

Oldcastle Precast is working on additional prototypes with pre-finished core modules containing full bathrooms and utility connections for adjacent laundries and kitchens – once again applying the example of near "turnkey" units produced under education and corrections contracts. Although the early efforts in housing have centered on New York City, the company will pursue the systems approach in all appropriate markets currently served by its hollow core plants (South Bethlehem and Manchester, N.Y., and Morrisville, Pa.)

"We know precast has a place in housing, the market is huge, and all we need is a fraction of a percent to keep busy," Messenger affirms. "The opportunity is not in quarter-million dollar homes in the suburbs, but rather in urban, multi-unit dwellings." Consistent with most other precast applications, he adds, "The design has to be repeatable – something we can offer in chocolate or vanilla. If buyers are looking for pistachio, they'll need to find another material."

From Massachusetts (below) and New York plants, Oldcastle Building Systems Division shipped Melrose Commons II's 130,000 sq. ft. of 8-in. hollow core floor and roof plank; 150 8-in.-thick interior

bearing wall panels; 60 8-in.-thick exterior bearing wall panels with brick facing; 90 6.5-in.-thick exterior nonbearing wall panels with brick facing; 30 U-shaped channel entry pieces with block facing; 120 cornice pieces; and 30 exterior front steps. As Melrose Commons II nears occupan-

cy this summer, Oldcastle will release an animated CD-ROM on the project, offering it to owners, builders and industry professionals through its Building Systems Division, 888/232-6274.



RENDERING:
Danois Architects





Window (and door) headers are integrally cast in the thin brick inlay panels enclosing Melrose Commons II units. Oldcastle Precast credits the panels' acceptance to the quality and consistency achievable with brick inlays and self-compacting concrete mixes formulated from polycarboxylate-based high-range water reducers.