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PRECAST CASE STUDY Multifamily Living: Melrose Place

Case Study by Jamie Farny
Photos courtesy Dukane Precast.

Located in a populated urban area of Melrose Park, Illinois, the multifamily building showcases just how versatile precast construction can be. The 5-story building envelope is comprised of precast components: beams, columns, double-tees, sandwich panels, slabs with integral steel joists, and cornices. Inside and out, this building exemplifies what can be done with precast.

Four stories of condos sit atop a convenient, at-grade parking garage. The exterior precast walls are made using precast insulated panels rated R-22. The exterior walls are furred out on the inside surface and finished conventionally with drywall. The interior hallway precast walls are constructed with a double-wall precast system that provides a form-finished wall on both sides, eliminating extra finishing time and costs. It contains the

electrical conduit. The high STC values deliver superior sound attenuation in hallways.

The developers selected the innovative precast flooring system from Dukane Precast: the individual precast floor panels contain integral steel joists that provide open undersides, so mechanicals can be efficiently routed through this area and enclosed by drywall attached to the bottom of the joists. This eliminates the need for drop ceilings to accommodate mechanical, permitting greater ceiling heights. The floor panels are 34 feet long and have variable widths up to 12 feet to help create the gently curving floor plan.

"Now, more than ever, precast is the key component of an energy-efficient design, ensuring low operational costs for many decades," states Brian T. Bock, VP Sales & Marketing, Dukane Precast, Inc. "This building is one of the most unique residential structures we have done in the last ten years. Dukane delivered the much-desired total building systems by combining our newest product innovations, both the European *Double-wall* and our own *Single-floor*, along with our standard prestressed product lines that we have been making for over 30 years." He adds, "The inherent flexibility of floor layouts and ceiling treatments made possible with our groundbreaking open truss design for our floors has made architects and owners sit up and notice that there are more efficient ways to build."

Bock explains, "The floors of this building did not require the usual 2-inch field topping to be placed to make the floors level, the Dukane's single-floors are already flat and smooth."

On the façade, a one-inch thick veneer of field-laid, low profile stone compliments an attractive thin brick that was formed during the precast manufacturing. This method of exterior finishing appears authentic, reduces costs and also reduces the carbon footprint during the construction cycle by decreasing the energy consumption for materials production, transportation and installation. The solid precast concrete construction of this multi unit condominium building protects its residents from extreme wind, harsh weather conditions, natural disasters and other hazards.



Precast concrete construction makes a 48-unit condominium building a place of comfort and safety for occupants, even in the extremes of Illinois' weather. The graceful curvilinear building footprint was designed to fit within the constraints of the urban site limitations, while providing open and spacious floor plans for occupants. As a bonus, it adds curb appeal to give the multi unit residential building an inviting, prestige appearance upon arrival.

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