Team

Owner:
Secure Mark II, Phase I, LP, Houston, TX

Architect:
EDI Architecture, Inc., Houston, TX

Engineer:
Alliance Structural Engineers, Houston, TX

General Contractor:
High Rise Concrete Systems, Inc.
Grand Prairie, TX

Reinforcing Bar Fabricator:
High Rise Concrete Systems, Inc.
Grand Prairie, TX

Total Project Cost:
$18 million

Total Project Size:
173,451 sq ft

Photography:
EDI Architecture, Inc., Houston, TX

STRUCTURAL FRAMING SYSTEM

The building was constructed using Tunnelform, a unique poured-in-place concrete construction technique patented by Outinord Universal Company, Inc. of France. Using the system, walls and slabs are poured simultaneously in "tunnels" to potentially reduce construction costs, construction time and finish trade requirements. This production line method has achieved as much as 3,500 to 4,500sf of floor area construction daily. The ceilings and majority of interior walls are crafted by superior form-work to produce dimensionally accurate concrete that is ready to receive finishes.

Tunnelform is a production line process. On the morning of the pour, the forms used to create the walls and next floor plates are stripped, oiled and set in place. Next, the wall areas are prepared by installing the vertical reinforcing mesh, electrical conduits and leave outs for openings. Then the new floor area is prepared by installing the horizontal reinforcing mesh, electrical conduit, plumbing collars and leave-outs for stairs, lofts and other openings. Plumbing sleeves with a 2-hr fire rating are utilized to eliminate typical chase penetrations.

Once the concrete has set, the forms are pulled and moved to the next area to be poured. The ends of the tunnels are now ready to be enclosed using light gauge steel framing, concrete block or other construction methods. Often, the interior buildout may start as early as three floors below the ongoing concrete pour. Light gauge steel framing is used for the construction of fur-downs and interior party walls. Mechanical systems such as fire protection, plumbing and ventilation are hidden in these areas. Due to the dimensional accuracy and superior concrete, a thin plaster skim coat is often used to finish the concrete surfaces eliminating the need for drywall.

UNIQUE DESIGN FEATURES

The project contains two unit types in order to limit the number of bay widths and reduce formwork requirements. Floor 1 features one 1,643sf residence and building amenities. Floors 2 - 25 feature two 2,155sf residences per floor. Floors 26 through 30 feature single full floor 4,600sf residences. Other resident amenities include a community clubhouse with fitness and meeting rooms, a pool with spa and a secured structured parking.

Savvy construction sequencing and material choices permitted the structure to be in the process of topping out above while a weather proof sales model was opened for viewing within three months of the construction start while general construction occurred in-between. The production line construction sequencing significantly shortened the building process, allowing for on-site pre-sales and saving the owner dollars.

REASONS FOR CHOOSING REINFORCED CONCRETE

Reinforced concrete was selected for this luxury condominium building in order to meet stringent economic and construction completion goals while providing residents with a truly durable residence.