

All Children's Hospital

St. Petersburg, FL



Team

Owner:

All Children's Hospital, St. Petersburg, FL

Architect:

Karlsberger Architects, Columbus, OH

Engineer:

Paul J. Ford & Co., Columbus, OH

General Contractor:

Brasfield & Gorrie, Lake Mary, FL

Reinforcing Bar Fabricator:

Gerdau, Tampa, FL

Total Project Cost:

\$163 million

Total Project Size:

670,000 sq ft (10-stories)

STRUCTURAL FRAMING SYSTEM

The All Children's Hospital is a 10-story, 670,000 square foot facility with a 308 bed capacity housing emergency, radiology, oncology and surgical services. The gravity system for the building is comprised of cast-in-place, conventionally reinforced concrete columns, beams and wide module joist system. The wide module joist system allowed for a flush soffit condition while maximizing the efficiency of the conventionally reinforced slab. Lateral loads are resisted by site-cast walls at the vertical circulation cores and concrete moment frames. While the main structure of the building is conventionally reinforced, site-cast concrete, the majority of the exterior skin of the building consists of precast concrete panels.

UNIQUE DESIGN FEATURES

The All Children's Hospital consists of several unique features. At first glance, the main building structure at the façade is the most obvious feature. The entire building façade on the north and south elevations is comprised of a continuous, broad arc. The building structure follows the arched shape of the façade behind the precast concrete wall panels. This curved design concept is carried through the canopy at the southeast entrance of the building. At this entrance, there is a site-cast concrete canopy on a 32' +/- radius, which cantilevers 16' from the main building structure. Both the top and bottom surfaces of the structure are sloped to accommodate the architectural intent of the feature's design. Another design challenge was presented by the loading dock being located at the basement level, approximately 16' below grade. The entire dock area is surrounded by site-cast, cantilevered concrete retaining walls. Finally, the main concrete building structure was designed to support a roof top helipad to accommodate emergency transport of patients

REASONS FOR CHOOSING REINFORCED CONCRETE

There were several factors which influenced the choice of site-cast, conventionally reinforced concrete as the structural system for All Children's Hospital. By utilizing the wide module joist system, the structure depth was not only minimized, but it was cast at a constant depth. This was done for maximum flexibility of the ceiling space for the required mechanical space for HVAC, electrical, plumbing and medical gases, in addition to the efficiencies recognized in the forming process. By utilizing this system, the construction team was able to minimize costs. There were further efficiencies recognized in the repetitive framing scheme.