National Children's Museum, Phase One

National Harbor, Maryland

Owner
National Children's Museum

Project Manager
Orr Partners

Design Architect
Pelli Clarke Pelli Architects

Architect of Record
Kendall / Heaton Associates

Completion Date
To Be Determined

Total Area
60,000 sf

Practice Areas
Building Structure
Building Skin

Renderings courtesy National Children's Museum/Pelli Clarke Pelli

Thornton Tomasetti performed structural services for a museum designed to educate children and families about the environment, civic engagement, the arts, health and well-being, play and world cultures. The facility, which is being developed in two phases, will consist of multiple connected pavilions of differing shapes, sizes and materials, grouped around a central courtyard. Phase One consists of a glass-enclosed arrival pavilion, two three-story exhibit pavilions and a 180-foot-tall concrete and steel wind turbine tower. The museum is being designed to meet criteria for LEED Gold certification.

Each of the steel-framed exhibit pavilions presented interesting design challenges. Structural members were routed around the long "ribbon windows" that are a critical architectural element of two sections of the building. Pavilion C's "tilted-cube" form requires the façade framing to be cantilevered off the building superstructure using hollow structural shapes. Pavilion B will be shaded by an undulating screen of greenery. Our engineers worked closely with a living wall consultant to design and coordinate hidden connections between the building structure and the steel framework that supports planters and vines.

Thornton Tomasetti also provided curtain wall consulting for Pavilion A, a glass-enclosed arrival area.

Our 3D modeling capabilities were instrumental in defining the atypical geometries of the pavilions and tower, streamlining the complex structural design to support our clients' aesthetic goals.