

Potawatomi Hotel & Casino

Milwaukee, Wisconsin



STORIES BUILT



The Potawatomi Hotel & Casino opened in 1991 as a 45,800-square-foot bingo hall (then called Potawatomi Bingo) and was the first off-reservation gaming operation in the country. The development was instrumental in revitalizing the blighted area and refurbishing the land, which had deteriorated into toxic brownfields. The facility has undergone several expansions over the years, adding slot machines, table games, dining and entertainment options. The growth has significantly increased employment opportunities and enhanced revenue streams to the community and the Forest County Potawatomi Tribe.

In 2013, Ceco constructed a 20-story, 380-room high-end hotel tower to facilitate Potawatomi's entry into the hospitality and resort industry. Due to poor soil conditions and the site's proximity to a canal, the first-level slab for the tower and podium levels were constructed on grade, with a deep structural beam and slab. The structural slab on grade served to ensure no settlement or cracking occurred in the towers. The elevated concrete slabs were designed as post-tensioned (PT) 8-inch slabs with heavy vertical shear wall elements to help resist large wind loads on the building. Additionally, the podium and foundation were designed with the future in mind, enabling Ceco to construct an adjacent 16-story tower on top of it in 2018.

EXPANSION TOWER

The 2018 expansion included adding 16 levels on top of the 4-story podium that also connect to the existing tower. Like the first tower, the second tower's concrete structural system is flat plate post-tensioned deck. The PT deck is 8 inches thick with a 28 x 20-foot column grid.

Ceco provided turnkey concrete frame services, which included foundation work. Ceco also provided early guidance on the second tower in choosing the formwork system (column-mounted Aluma panels) to ensure no reshoring was required for the new construction. The column-mounted deck formwork system allowed slab loads to be transferred through the columns without disrupting the rooms below. This enabled casino and

hotel operations to continue on the lower podium levels, with only minor impacts from the new construction.

The project was not without its challenges. Site constraints for the second tower prevented a concrete pump from staging close enough to the existing tower to place the first added level. A spider crane was used instead. Ceco's Director of Engineering Rick Eder ran robotic structural analysis on the tower's existing Level 4 slab to find a solution for the spider outrigger load. The team erected a 300-foot free-standing tower crane that could swing over the existing tower and provide the range and capacity to achieve the second tower's needs.

Another challenge involved a 10-foot structural slab cantilever on the last level (Level 20) of the new tower, which necessitated placing cantilevered steel beams beyond the edge of Level 19 to collect the slab shoring loads.

Ceco's construction process was accelerated to make up for a delayed start. The expansion tower project topped off on schedule August 2018, with all finish work completed June 2019. The second tower is 175,000 square feet, with each typical level adding 7,000 square feet of rooms to the first tower, bringing added hotel capacity that has helped the casino again expand revenue.

FAST STATS

Owner/Developer: Forest County Potawatomi Community

Contractor: Gilbane Building Co.

Construction Manager: Greenfire Management Services

Designer/Architect: Reigstad Engineers, Inc.

Ceco Scope: Full frame services

Ceco Project Manager: Max Wichmer

Ceco Superintendent: Terry Leinonen

Ceco Engineer: Ryan Brozek

Date Complete: June 2019