

Lake Hodges Pedestrian Bridge

A HOCHTIEF Company

Owner

San Dieguito River Park Authority

Location

San Diego, CA

Value

\$10,300,000

Market

Bridges

Start - Completion Dates

2/2007 - 5/2009

- Longest stress-ribbon bridge in the world at 990-foot long and the sixth bridge of its kind in the United States
- 87 precast concrete panels, each 14 feet-wide, 10 feet-long and 16 inches thick
- Only for pedestrian and bicyclist use
- Design chosen to allow minimal impact on surrounding environment

Project Description

In between Escondido and Rancho Bernardo, Calif., Flatiron constructed the Lake Hodges Bicycle/Pedestrian Bridge, a 990-foot long stress-ribbon bridge designed to connect the expansive network of trails on both shores of Lake Hodges with minimal impact on the surrounding environment. It is the longest stress-ribbon bridge in the world and the sixth bridge of its kind in the United States.

A temporary bridge, or trestle, gave workers access to the two points in the crossing where the bridge's support columns were built. At the piers, large cofferdams were constructed and dewatering operations were implemented to install driven pile, build concrete spread footings and cast the hourglass shaped columns. The formwork used to create the unique shape of the columns combined timber panels with high density laser cut polystyrene to ensure the architect's design would be accurately portrayed. A falsework system for the cast-in-place closure pour, designed to facilitate working over water, was mounted to the columns and required no poles or footings on the ground.

Eighty-seven precast concrete panels—each 14 feet-wide, 10 feet-long and 16 inches thick—were hung underneath the cables. The cables fit into troughs along two sides of each panel; panels attached to the cables with four steel rods. After steel ducts were placed on top of the bearing cables, secondary cables were strung through the ducts and concrete was poured into the troughs and the joints between the panels. While the concrete was curing, the secondary cables were pulled taut, or “stressed.” Finally, handrails, lights and four benches were installed.

Lake Hodges is owned by the City of San Diego Water Department, which operates the lake's recreational activities. Pedestrians and bicyclists use the bridge to access trails and to enjoy other recreation activities including fishing and boating in the area. The bridge, part of a larger planned bikeway project, crosses the lake from north to south, about 1,000 feet west of the I-15 freeway bridge.

Company Role

Flatiron was the prime contractor for this project.



Awards

- American Public Works Association - Project of the Year, Unusual Design and Construction Methods, 2009
- California Construction Magazine - Best of California Award, 2009
- Precast/Prestressed Concrete Institute - Design Award, 2009
- *Roads and Bridges* - Top 10 Bridges, Ranked #7, 2009