

Cooper River Bridge

A HOCHTIEF Company

Owner

South Carolina Department of Transportation

Location

Charleston, SC

Value

\$541,000,000

Market

Design-Build - Bridges

Start - Completion Dates

12/2001 - 7/2005

- 1,546-foot span, at time of construction North America's longest cable-stayed span
- Two 573-foot-tall towers
- 12-foot-wide bicycle/pedestrian lane
- Two high-level approaches

Project Description

The Cooper River Bridge was the longest cable-stayed bridge on the continent at the time of construction, spanning 1,546 feet across the Cooper River in Charleston, South Carolina. The cable-stayed bridge, named the Arthur Ravenel Bridge, is supported by two 573-foot-tall towers visible from 30 miles away. The bridge required 128 cable stays to suspend the structural steel girders and precast concrete deck panels.

As part of the joint venture team, Flatiron constructed the bridge in five separate, simultaneous projects: two interchanges, two high-level approaches and a main span. In contrast to the very narrow existing bridges, the Cooper River Bridge main span is eight lanes wide and has a 12-foot-wide bicycle/pedestrian lane.

The bridge replaces the older John P. Grace Memorial Bridge and the Silas N. Pearman Bridge, built in 1929 and 1966 respectively, and has been designed to withstand earthquakes, hurricanes and ship impacts. Each tower is protected by a man-made rock island. The team placed 531,000 tons of quarry stone and 167,000 tons of armor stone to form a protective barrier around each of the towers. Eleven drilled shafts plunge 200 feet down through each of the main footings.

This design-build project is flanked by more than a mile of eight-lane high-level approaches and significant interchanges in Mount Pleasant and Charleston.

Company Role

Flatiron was a partner in this joint venture.

Awards

- American Council of Engineering Companies of South Carolina – Palmetto Award for Engineering Excellence in the Transportation over \$10 million Category, 2006
- American Institute of Steel Construction (AISC) – National Prize Bridge Award, 2005
- American Road and Transportation Builders (ARTBA) “PRIDE” Award for Community Relations, 2005
- American Road and Transportation Builders Association (ARTBA) – National Globe (Environmental) Award (Bridge), 2005
- American Society of Civil Engineers Outstanding Civil Engineering Achievement



Merit Award, 2006

- Associated General Contracts of America (AGC) Aon Build America Award in the New Highway Category, 2006
- Engineering News Record – Image of the Year, 2003
- McGraw Hill Southeast Construction Magazine’s Best of 2005 Award in Transportation
- National Council of Structural Engineers Associations Excellence in Structural Engineering Outstanding Project Award in the Bridge & Transportation Structures Category, 2005
- National Steel Bridge Alliance Prize Bridge Special Award, 2005