

Cruise on the Bay

It was sunset on a beautiful Friday evening as we cruised along the Bay. In the background, sounds of excitement, laughter and conversation emanated throughout the boat. We were on the CSI Berkeley dinner cruise and the topic of the evening was the San Francisco - Oakland Bay Bridge's Self-Anchored Suspension (SAS) span and Skyway. This public works is the largest in California's history. Sound boring? Well, it wasn't. In fact, it was very fascinating.



The original Bay Bridge was built in 1936, and it was the largest and most expensive bridge of its time, costing \$77 million. Talk of building a bridge between San Francisco and Oakland started in the 1870s. However, the dream did not start to take shape until the 1930s with the support of President Herbert Hoover.

Within its first year, the completed bridge served nine million vehicles, exceeding expectations. The new Bay Bridge, currently under construction, is designed to carry 350,000 vehicles per day, to have a life span of 150 years and to withstand a major earthquake with only cosmetic damage.

The SAS span and the elevated Skyway viaduct are the two main sections of the East Span portion of the Bay Bridge. The SAS will be an elegant 525-foot-tall single steel tower that will be a signature architectural feature. Motorists, bicyclists and pedestrians will enjoy the majestic view of the Bay Area.



Traditional suspension bridges use two separate cables. In contrast, the SAS will use one continuous cable that will be anchored in the eastern section of the SAS, carried over the single tower, and extended down and around the two western decks. The single steel tower will be made up of four separate legs connected by shear link beams.



A giant crane barge dubbed "Left Coast Lifter" was custom built for this project to lift up to 1,873 tons, which is a remarkable feat. The largest lift in Caltrans history will be a 1,700-ton steel girder that will connect the Skyway to the SAS span.

The existing East Span is double-decked and made of grey steel that currently incases drivers. The new Skyway of the East Span will be side-by-side roadways, and it will feature a 15-foot-wide cantilevered bicycle and pedestrian path on the eastbound side of the bridge.



The Skyway decks are made up of 452 pre-cast concrete segments that are produced in Stockton, CA and are the largest in the world with some standing three-stories high. The deck will use 450,000 cubic yards of concrete, enough to fill a football field 210 feet high. The concrete segments contain fly ash that is recycled from burning coal, which saves natural resources and avoids landfill disposal. Concrete containing fly ash is a superior product that is stronger, durable and resistant to chemical attack.

Massive steel pipe pilings weighing an average of 365 tons each and eight and a half feet in diameter are driven deep into the bay's soil by one of the world's largest hydraulic hammers. Pier tables are cast in place at the site and erected on top of enormous pier columns that support the Skyway's concrete segments. The structure features state-of-the-art seismic safety innovations that are designed to move during a major quake.



The East Span portion of the bridge is scheduled to be completed in 2013. Then the old bridge will be dismantled section by section and the steel will be recycled.

After the presentation by Jordana Jackson of the Bay Bridge Seismic Retrofit Projects ended, we arrived at the turn-around point of the cruise, which was spectacular! It was the AT&T Park right off the water's edge! The Giants and Chicago Cubs were playing, and we were so close to the stadium that we could see and hear the fans cheering for their team. It truly was an unforgettable cruise on the bay.



Aloha,
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