

Department of Civil Engineering and Geological Sciences

Challenges and Innovation in Civil and Environmental Engineering

Tacoma Narrows Caissons: Stability, Mooring, Touchdown, Sinking

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Company

Thursday, April 17, 2008

6:00pm – 7:15pm
138 DeBartolo Hall

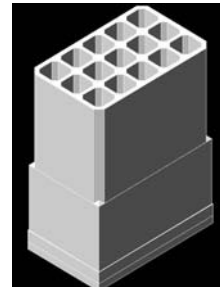


The second Tacoma Narrows bridge was built alongside the first Tacoma crossing and was opened to traffic in 2007. Caisson construction represented one of the highest risk items in the entire design/build scenario.



The original bridge, made famous as “Galloping Gertie”, was, at the time it opened in 1940, the third longest suspension bridge in the world. The superstructure of the first bridge collapsed in a relatively minor windstorm within 4 months of its opening. It was rebuilt in 1950. The foundation of the new bridge, like the old, consisted of two deep concrete caissons which were constructed while floating and then sunk into the sea bottom using open dredge well techniques.

This is the second in a two part series highlighting the engineering principles associated with the construction of the Tacoma Narrows main piers using caisson technology. Major issues to be covered include naval architecture principles, flotation devices, structural makeup of the mooring system, scour, touchdown, ballasting, and sinking into the seabed. As such it concentrates on structural and geotechnical aspects of the caisson construction.



*Tea, coffee, pastries and an opportunity to meet the speaker will take place at 5:30pm
in the CE/GEOS conference room, Fitzpatrick 156*