

Marine Transportation Projects

“In-the-wet” assembly of pre-cast concrete segments transported to the construction site has numerous advantages in the construction of navigation structures and bridge piers:

- Reduced disruption to navigation traffic, water flow and a lower cost of construction through the elimination of conventional large sheet-pile cofferdams.
- Reduced environmental impact by reducing dredging and elimination of site dewatering.
- Shorter construction time by allowing concurrent construction of precast segments and foundations.
- Higher quality by allowing the use of precast concrete produced in a controlled environment.

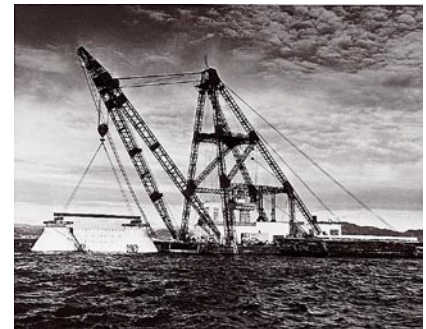
In partnership with the US Army Corps of Engineers (USACE), we have examined the use of a catamaran barge to lift-in 4,000-ton precast concrete shells onto a prepared bottom with predriven piles for a new navigation dam on the Ohio River while keeping existing navigation traffic uninterrupted. Tremie concrete will be used to integrate the shells with the piles to form a continuous dam and stilling basin. Similarly, we have developed “In-the-Wet” construction techniques with off-site pre-fabrication combined with lift-in or float-in of large precast concrete segments onto preinstalled foundations for Braddock Dam near Pittsburgh, replacing an existing navigation dam.



Float-in pre-cast concrete segment concept for tunnel construction.

These projects were designed with our partners, Sverdrup Civil and Bergmann and Associates for the Louisville and Pittsburgh districts of the USACE, respectively.

The 4.1-mile-long Richmond-San Rafael Bridge, spanning across San Francisco Bay is currently being seismically upgraded. New precast pile caps, through which large diameter piling is driven, ensures that horizontal seismic forces are transferred between the new piling and the as-built foundation. Precast concrete jackets are designed to enhance the ductility of the existing concrete shafts. All new foundation work is designed to allow no interruption of traffic flows. This project was completed with our partners, Sverdrup Civil and DMJM for the California Department of Transportation (CalTrans).



Construction technique pioneered in the 1950's.



Catamaran barge for pre-cast shell deployment.