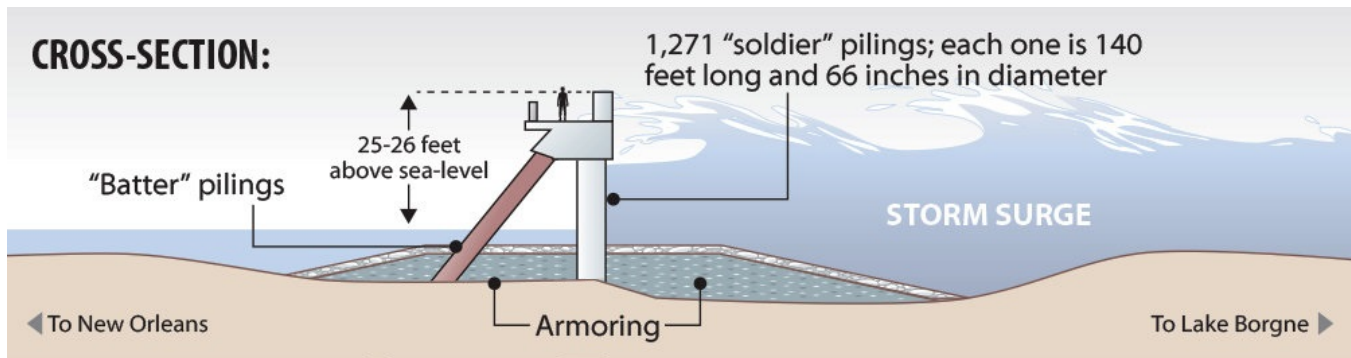


# IHNC STORM SURGE BARRIER FLOODWALL

New Orleans, LA



Dan Swenson, NOLA.com | The Times-Picayune

The Inner Harbor Navigation Canal (IHNC) Lake Borgne Storm Surge Barrier Floodwall is an important component of the Hurricane and Storm Damage Risk Reduction System to protect the city of New Orleans from hurricane surges coming out of the Gulf of Mexico and Lake Borgne.

The IHNC Floodwall is comprised of large diameter cylindrical pre-stressed concrete plumb piles driven closely together and braced by steel-pipe batter piles. Closure piles are installed in between the cylindrical piles to provide a seal to reduce leakage. The soft soil conditions at the construction site plus large storm surge loading combine to create challenges for the design of Floodwall. A thorough understanding of

performance of the Floodwall under hurricane conditions is essential for the safe and economical design.

While working at Ben C. Gerwick, Inc., Robert Bittner developed the initial design concepts for the barrier wall and Wenjun Dong, senior geotechnical engineer, led the Soil-Structure-Interaction (SSI) analysis for the floodwall. The SSI analysis was used to investigate the performance of the Floodwall under short-term hurricane conditions and long term consolidation of soft soil profile as well as the seepage cut-off of closure piles.

## PROJECT INFORMATION

**Year Completed:** 2011

**Client:** Shaw Group

**Owner:** U.S. Army Corps of Engineers

**Construction Cost:** 1.1 Billion (total barrier & gates)

## SERVICES PROVIDED

- ◆ Initial Design Concept
- ◆ Wave Force and Overtopping Estimates
- ◆ Pile Capacity Evaluations
- ◆ Soil Lateral Resistance Investigations
- ◆ Finite Element Soil-Pile-Interaction Analysis



**BITTNER-SHEN CONSULTING ENGINEERS, INC.**

SPECIALTY ENGINEERING: STRUCTURAL · GEOTECHNICAL · CONSTRUCTION · MARINE

921 SW Washington St., Suite 765, Portland, OR 97205