

## Property Owner Case Study



Helfrich-Associates performed engineering services on a property in Long Beach, California in 2013. The house is approximately 5,300 square feet and sits on a canal. A sink hole behind the seawall near the southwest corner of the property was causing the seawall to tilt. Also, the foundation on the west side of the home needed to be stabilized.

Helfrich-Associates was called in by the homeowner to help assess the engineering that would be required to address these issues. The scope of the

project included the following:

1. Increase the seawall height by about 16 inches.
2. Stabilize the existing seawall.
3. Stabilize the west side foundations.
4. Raise the floor elevation of the existing home.
5. Construct new footings for the proposed residence additions.

We knew the above scope of work would require extensive site work and we needed to perform the following tasks to accurately assess the conditions at this site:

1. Drilling and sampling of three borings on the property to maximum depths of 40 feet. The challenge we faced with, for the drilling and sampling, was that we needed a three-foot wide drill rig that had to be lifted by crane from the alley in front of the home onto the pool patio area.
2. Measurements of the elevation and tilting of the approximately 260 lineal feet of seawall. Our personnel had to gain access to the water side of the seawall using one of our client's boats.
3. Excavation of one or two locations behind the seawall to determine the dimensions of the seawall footing.
4. Floor level survey of the first floor.

The above tasks highlight Helfrich-Associates' ability to evaluate access issues and find solutions so we could gather the necessary information to bring this project to a successful completion.

As of September 2014 the client is proceeding with the seawall repairs which are expected to be completed by June 2015. The existing house is under consideration for demolition and construction of a new home. Helfrich-Associates will continue to monitor the construction and will be involved in the engineering design of the new home.

