



Project

Marine geotechnical engineering expertise fortifies the USS Constitution's berth for generations

200+ years

estimated lifetime for our rehabilitated berth

Summary

- Haley & Aldrich's geotechnical team helped the U.S. Navy restore the century-old berth of the USS Constitution — the oldest commissioned naval vessel still on the water.
- Our team's marine geotech engineering skills and innovative approach saved our client money and time while protecting the integrity of the site's history — a challenge that required elevated expertise and historical research.
- Drawing on historical architectural plans, we designed and built around the original berth while making the rehabilitated structure strong enough to carry the ship for the next two centuries.

Client challenge

The USS Constitution is the oldest commissioned naval vessel still on the water and has gone through many renovations through the years. The most recent rehabilitation included replacing most of the ship's copper sheeting and repairing the outside wooden planks. While the Navy rehabilitated the historic USS Constitution at a nearby dry dock, it needed to also update the ship's berth to ensure that when it returned to the water, its new berth was worthy of the revered sea vessel. The berth dates back to the early 1900s.

It was crucial to the Navy to keep as much of the original design as possible, while also rehabilitating the berth so it could be home to the USS Constitution for another 200 years — and beyond.

Because of the historical significance, this project required an elevated level of [marine geotechnical expertise](#) and service. Preserving history and budget dollars also required innovative ideas, investigations into the past, and making careful, deliberate decisions. That's why the U.S. Navy and Stantec turned to Haley & Aldrich.

"To succeed at a project of this level, you really have to know how to engineer marine structures, which is difficult. Thankfully, we specialize in challenging work."

John DiGenova, Haley & Aldrich

Our approach

Haley & Aldrich worked in concert with the engineering and architecture design firm Stantec to meet the Navy's needs, expectations, and deadlines for the USS Constitution's upgraded berth. Our geotechnical engineers investigated the past and found intricate, hand-drawn architectural plans of the berth's structure from the early 1900s, which gave them a better idea of where to start.

First, our experts performed a comprehensive test pit, which is a ground excavation to examine soil and buried structures. The test pit revealed that the original cribbing timbers were in remarkably good shape and did not need to be replaced. Because of this, the team determined that additional stabilization using tiebacks or other systems was not necessary. Instead, we installed a thin sheeting on the face and filled between the sheeting and the existing bulkhead with concrete. This decision not only saved time, trouble, and the history of the dock, it saved budget dollars.

"This was the project of a lifetime for me. The details on the hand-drawn plans from the early 1900s were incredible. Investigating and finding the plans was crucial in our efforts to keep the historical work and design around it. We brought together the past and the future"

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John DiGenova

Even more, the Haley & Aldrich and Stantec team stepped up to defend the Navy from potential contractor construction claims. The team’s deep expertise, passion, and innovative approach to this important project are the reasons why the Navy still maintains its relationship with the project team today. Our geotechnical engineers, saving the Navy from unnecessary construction costs, recognized that there was more to this endeavor than saving money and beating deadlines. They understood the crucial parts that can’t be measured — expertly blending past and present designs while ensuring that the USS Constitution is ready for the future.

Value delivered

- Carefully rehabilitated the historic USS Constitution’s berth
- Reduced overall effort & hours by investigating the berth’s history
- Saved Navy budget dollars by building around the original design
- Eliminated the need for costly stabilization by using existing construction from more than 100 years ago
- Protected the integrity of the berth’s history

For more information, contact:



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