

Facts

Description:

A 55,000 SF visitor center marking the site of the Pearl Harbor attack

Project Owner:

National Park Service/U.S. Navy

Architect:

The Portico Group

Completion Date:

2010

Objective:

Create a flagship of sustainable architecture to pay homage to those lost in the deadly World War II attack

Results

A LEED Gold rating with 30% improvement in energy efficiency compared to the baseline.

PEARL HARBOR VISITOR CENTER AT THE WWII VALOR IN THE PACIFIC NATIONAL MONUMENT, HONOLULU, HI



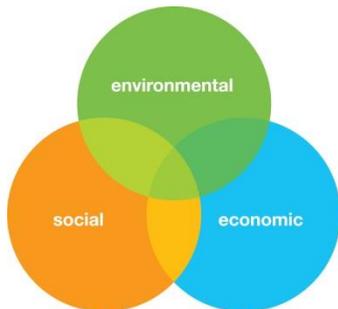
The Pearl Harbor Visitor Center underwent a full renovation to accommodate growing visitor traffic and to replace an aging and worn building that did not adequately pay homage to those lost in the deadly World War II attack on the U.S. by the forces of Japan on December 7, 1941. The 54,900 square foot Visitor Center serves as an orientation facility for visitors taking a boat to the USS *Arizona* memorial located above the sunken ship. The seven buildings comprising the center contain welcome pavilions, theaters, a book shop, interpretive exhibits, administrative offices, and a memorial to those who lost their lives in the attack. It doubles the previous center's visitor capacity to 1.5 million annually and opened on Pearl Harbor Day, 2010.

The owner's stated sustainability goal was to create a 'flagship of sustainable architecture' that would maximize the constrained site footprint and honor those lost. A limited project budget of \$32 million implied a need to demonstrate wise use of technologies and resources to minimize construction and operating costs for the joint owners the National Park Service and the U.S. Navy. Paladino was engaged as a sustainability expert to advise the design

About Paladino

Paladino is an industry-leading green building consulting firm providing sustainability expertise over a wide range of building and business issues. We work with high aspiration organizations of all sizes to develop advanced green building strategies for both new and existing construction.

A pioneer of the green building movement and one of the original creators of the LEED green building rating system, Paladino's esteemed clients include ConAgra Foods, Starbucks, PNC Financial Services, Microsoft, Verizon Wireless, Corporate Office Properties Trust and many more. At Paladino, we help our clients create business value by optimizing human, environmental and financial performance. Our customized technical approaches center on the unique concept of abundance as a driving force for organizational transformation. To learn more, visit www.paladinoandco.com.



*Paladino's abundance framework
(people, planet, prosperity)*

and construction team on behalf of the owners and study proposed sustainability alternatives.

Paladino Approach

Paladino's initial task was to take the owner and team through the sustainability planning process to translate the owner's goals into clearly achievable strategies with quantitative sustainability metrics that could be designed and constructed by the team, and then validated for performance. The concept of abundance – harvesting site resources such as wind, light and heat to optimize building performance – was used as a driving framework to inform the design.

Biophillic inspiration was taken from the monkey pod tree, a native species that captures prevailing winds for cooling and provides shade and dappled sunlight through its broad, low and leafy canopy. This approach resulted in a recommended design strategy that would replace a single conditioned 'black box' exhibit building with a series of smaller, passively cooled environments that minimized light and temperature shock (lower range of temperature variability from indoor to outdoor), captured daylight and breezes and provided shade for visitors waiting to enter exhibits.

Technical analysis, including energy modeling, ventilation studies, climate analysis and renewable feasibility studies, was performed to validate the proposed design strategy delivered a better visitor experience, and environmental and financial performance than the single, enclosed building approach.

Results

Analysis revealed that the proposed scheme of smaller multiple buildings utilizing energy efficient, passive cooling was feasible, but sensitive exhibits needed some mechanical air conditioning. Instead of cooling the entire exhibit gallery, individual display cases were cooled and dehumidified to preserve valuable artifacts. The project achieved a LEED Gold rating with 30% improvement in energy efficiency compared to the baseline.