Project Name: Manoa Heritage Center – Visitor Education Hale
Location: Honolulu, HI, USA

Project Narrative:

The Visitor Education Hale is the final piece of the Manoa Heritage Center master plan. It will serve as a flexible classroom for the thousands of visitors who come to MHC to experience for the ancient Hawaiian temple, Kuka’o’o heiau and well as the endemic and indigenous collection of Hawaiian plans. It also provides for the MHC administration as well as public restrooms. Please refer to the slides for the complete story about the research, design and execution of the project including a strong emphasis on sustainable design & practices.

Sustainability Narrative:

Manoa Heritage Center is the caretaker to one of Hawaii’s most prized Hawaiian artifacts, Kuka’o’o heiau (temple). Kuka’o’o is an agricultural heiau that is believed to have been constructed during 10th century. Strategically placed in the Waikiki ahu'pu'a (ancient Hawaiian land division from the mountains to the sea), Kuka’o’o heiau served as a temple for both worship and to study the cosmos related to the Hawaiian lunar calendar which determined the wet & dry seasons as well as the monthly planting & harvesting schedule. Today, Kuka’o’o heiau symbolizes the 600-800 years of sustainable living for ancient Hawaiians prior to western contact and is why sustainability was a major priority for this project. One of our major project goals was to create a Visitor Education Hale with a net zero carbon footprint and provide an educational curriculum for the school children & adult visitors who come to visit MHC. If the ancient Hawaiians maintained a fully sustainable way of life for hundreds of years, as stewards of our land today, the children learn the importance of sustainability and caring for the aina (land). Please refer to the sustainability slide which expands on all the sustainable practices (both passive & active) implemented in our project and the great MHC campus.
The campus of Manoa Heritage Center (MHC) sits at the base of the western slopes of Manoa Valley on the island of Oahu. For the indigenous peoples, Manoa Valley was part of an ancient Hawaiian land division known as an ahupua'a and where Hawaiians lived a sustainable lifestyle. The uplands of the Waikiki ahupua'a provided much of the agricultural subsistence for this Hawaiian community and why this ancient Hawaiian temple, Kukao'o heiau was built on this very strategic cinder bluff. This completely restored agricultural heiau sits on the Manoa Heritage Center campus and is revered as one of the great Hawaiian artifacts.
The new Visitor Education Hale (VEH) is the final structure for the Manoa Heritage Center campus master plan and provides a flexible auditorium space for the MHC education curriculum, activities, lectures and exhibits. The complex also provides an administrative office and men’s & women’s toilet rooms all connected by covered outdoor lanais.
The Hawaiian Archipelago stretches 1500 miles from the Kure atoll to the Pacific northwest to the island of Hawaii which is still volcanically active. Manoa Heritage Center is located on the Island of Oahu (‘the gathering place’).

To better understand the significance of the early Hawaiian culture & their sustainable practices, the geology of the Hawaiian islands was the logical place to begin the research. This dynamic volcanic chain of islands and its proximity to the equator provided ideal conditions for the Polynesian voyagers to establish a sustainable lifestyle that thrived for roughly 600 – 700 years prior to western contact. Prior to human existence, these dome volcanos experienced millions of years of erosion which eventually created valleys, streams, vegetation and excellent soil conditions, all of which enabled a sustainable future for the Hawaiians.

Millions of years of erosion carved out Manoa valley within the Ko‘olau dome volcano. This later proved essential to a sustainable existence both in the upper valley and down by the sea. Transverse rift zones created many of the significant pu‘u (cinder cones) such as Diamond Head creator.

Pu‘u Kakea (sugar Loaf) filled Manoa Valley with lava and cinder to create the bluff where Kukao‘o heiau was constructed.
Between 3000-1000 BC, the earliest voyagers from south-east Asia migrated into the western Pacific to establish island existence in Micronesia & Melanesia. Between 1300 – 900 BC, migration continued east to Tonga, Samoa & Fiji and then eventually continued north to the Marquesas, Society & Hawaiian islands, east to Easter Island (Rapanui) and south to New Zealand. Navigating by the cosmos and observing the ocean & birds is a treasured skill passed down through generations.
After discovering the Hawaiian archipelago, a Hawaiian civilization & culture evolved through a sustainable existence. As the population grew and spread throughout the islands, an ahupua'a land division system was established providing the individual villages & communities a sustainable tract of land from the mountains to the sea. The mountains provided timber and water, the midlands provided agricultural lands and the ocean provided for food & navigation; a working sustainable model.
The midlands of the Waikiki ahupua’a and specifically Manoa valley were cultivated extensively for agriculture including kalo (taro), noni (rubiaceae) & aala (sweet potato). Kuka’o’o heiau is an agricultural temple that both served as a place of worship and to observe the cosmos. The Hawaiian planting seasons were based on a lunar monthly calendar and therefore kuka’o’o was vital for observing of the cosmos. The heiau was fully restored in 1993 by master rock mason, Billy Fields.
Manoa Heritage Center
Visitor Education Hale

Hogan House 1965
Kualiʻi 1911

Visitor Education Hale 2018

Kukaʻoʻo – ancient temple

Manoa Heritage Center Campus
MHC Vision: Inspire the future generations to be stewards of the land & culture

Manoa Heritage Center is one of four place based learning centers within the Waikiki ahupua’a. From Manoa (mountains) to Waikiki (sea), sustainable principals are shared with younger children, high school and college students as well as adults.

MHC Mission: Promote the understanding of Hawaii’s natural & cultural heritage
Kuka’o’o Heiau has a precise east-west orientation allowing the ancient Hawaiians to accurately read the cosmos to determine the wet & dry seasons as well as monthly planting / harvest times. Recognizing the importance and necessity of this orientation, the Visitor Education Center is designed with an east-west orientation.
Manoa Heritage Center
Visitor Education Hale

MHC has an extensive native Hawaiian garden with both endemic and indigenous plants native to Hawaii. Prior to the design of the new VEH, the existing campus plantings were more arbitrary in location with little organization. Since the new structures will be surrounded by additional native plants, our design team created a conceptual organizational structure for the campus related to the above listed Hawaiian deities who once guided the beliefs and mythology of ancient Hawaiian people.

AKUA: (Hawaiian deities)
Lono: God of growth and rain, uala (sweet potato)
Ku: God of agricultural tools, coconut & ulu (breadfruit)
Kane: God of light, fresh water, life, kalo (taro)
Kanaloa: Ocean, seaward, star compass (navigation)
The massing of the Visitor Education Hale complex was informed by a traditional Hawaiian vernacular of keeping unrelated functional uses in separate detached structures. We found this had a two fold success of both embracing Hawaiian culture & design while also achieving a minimal visual impact on the land. The circulation walkways provide visual porosity for the massing and allow the building to find a balance with the surrounding gardens.
It quickly became evident through our extensive research that sustainable strategies would be a priority for the new Visitor Education Hale. Kuka’o’o heiau symbolizes many hundreds of years of sustainable living by native Hawaiians. The design team felt it was important that this new cluster of structures have a minimal footprint on the land and perform to the highest of energy efficiency standards. Our energy goals include a NET zero target for energy consumption as well as achieving as many LEED criteria as possible given construction budgets and that Hawaii is a very isolated regarding material procurement.

Daylight controls: Daylight harvesting with clerestory windows, lighting controls, sun shading for solar comfort
Passive cooling: Cross ventilation with open plans, ceiling fans, envelope insulation including windows
Aquifer recharge: Rain garden, French drain system, drywells, runoff control
LEED: Leadership in Energy & Environmental Design - anticipate Gold rating
Photovoltaic Energy System with Sony battery storage. Goal is NET zero for energy consumption.
Recycled site material including pohaku (rock), plant material, top soil. Native plant materials.

Early voyagers travelled prepared to ensure a successful sustainable future, be it unknown.
Visitor Education Hale as seen from the vehicular entry round about. It was important to create visual openness between the building structures in an effort to achieve a lighter physical presence and balance to the surrounding gardens.
The massing of the Visitor Education Hale complex speaks to a traditional Hawaiian vernacular with detached structures used for specific functions. The end result is a visually lighter massing of structures on the aina (land).

Native Hawaiian plants fill the landscape and provide an important resource for the educational curriculum & exploration.

Most of the exterior materials & colors are earthy neutral with a few accents which associate with traditional Hawaiian building materials. Pohaku (rock) & timber where two very important traditional materials and are expressed on the new complex.
The rain chains feed a dry river bed through the rain garden which leads to a large retention lawn for aquifer recharge. Another great tool for kids to learn about place based stewardship.
The ‘star compass’ introduced by master navigator Nainoa Thompson is used for navigation by Pacific Island voyagers. Consisting of 32 ‘houses’ each of which represent 11.25 degrees of the horizon line make up a 360 degree observation canvas. According to a school bus company, the number one complaint in residential areas is reverse ‘beeping’ by buses. The large vehicular turn about provides the required radius for school buses to avoid reversing but also provides an excellent learning tool for MHC.
This multipurpose learning space not only serves the many varied learning programs, but also provides for an excellent gathering space for higher education and community events. The timeline on the wall shares a chronological history of MHC back to the creation of the Hawaiian archipelago. Besides providing great daylighting, the clerestory windows also serve as a visual connection to Manoa valley and being on an east-west axis provide a visual tool for orientation; critical to Hawaiian culture.
Very simple, clean line covered walkways provide the visual and physical connection between the three pavilion structures. With all the rainfall in Manoa Valley, these covered walkways become essential for everyday exterior circulation and general functionality.
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<td>Paintings, Prints and Drawings of Hawaii from the Sam &amp; Mary Cooke Collection</td>
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<td>Anatomy of an Island – A geological History of Oahu</td>
<td>Gordon A. MacDonald &amp; Will Kyselki</td>
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<td>Manoa – The Story of a Valley</td>
<td>Bouslog, Chun, Gordon-Roach, Hoskins, Krauss, Lum, Midkiff, Reed, Robb, Trapido, Vicars, Wong, Young</td>
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<td>5</td>
<td>Welina Manoa</td>
<td>University of Hawaii, Hawai‘inuiakea</td>
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<td>6</td>
<td>Artist</td>
<td>Haley Kailiehu</td>
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<td>Misc. visual content from MHC archives</td>
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