

# QUONSET HUTS HISTORIC RESOURCE EVALUATION AND RELOCATION PROJECT REPORT

Prepared by Pierluigi Serraino, AIA

Prepared for  
City of Alameda Community Development Department  
July 28, 2016



## A. INTRODUCTION

The military industrial complex propelled the design and construction of several novel building types to support the United States military needs during the World War II effort. The *Quonset Hut* is an iconic form in that landscape of building types. Vaulted, small scale, and one-story tall, Quonset Huts dotted the army bases all around the Pacific Rim to provide shelter to soldiers in combat. These huts, utterly serviceable in nature, were extraordinarily effective in meeting the problem their design was intended to solve. Combining principles of prefabrications and light technology, the Quonset Huts lent themselves to quick assembly and high adaptability to various terrains and climatic conditions. Even more importantly, they demonstrated a unique versatility to take on different functions over time meeting ad hoc demands both in war and peace times. If, in fact, the huts were initially designed as dwellings to house the various ranks within the United States Army, over time they became absorbed in the post-war urban landscape to serve civilian needs as diverse as the communities inhabiting innumerable sites. In time the Quonset Huts became storage spaces, community rooms, churches, schools, and a variety of assembly spaces.

The Naval Air Base in Alameda Point features about two dozen Quonset Huts. Their small scale and rounded shapes single them out from the inventory of buildings of much larger size and more rectilinear geometries. This report succinctly charts the birth and development of the Quonset Hut since from its inception in the early 1940s to the present, and makes the point through an examination of the design and construction principles underpinning this particular artifact that the huts remain, both today and in the future, amenable for adaptive reuse sensitive to the architectural context in which they stand. It has historically been the case that, in all their various formal iterations, these huts have consistently been re-claimed by other functions once the original, intended function is no longer needed. The adaptive reuse would therefore extend an approach to an artifact that is as iconic as it is flexible in its possible uses.

## B. METHODOLOGY

Pierluigi Serraino met at the City of Alameda, City Hall West with Ms. Nanette Mocanu (City of Alameda) and Mr. Ryan Gaughan (PMRG) on February 25, 2016 to learn about the City's intent, and to survey and photograph the Quonset Huts in the Northwestern Territories of Alameda Point slated to be moved to a new site located at the corner of West Tower Ave and Monarch Street. The proposed project consists in the adaptive reuse of the three relocated Quonset huts and buildings 614 and 405 which are already existing on site. Pierluigi Serraino reviewed background reports available on the City of Alameda website: Specifically: Sally Woodbridge's *Historic Architectural Resources Inventory for the Naval Air Station, Alameda*, JRP Historical Consulting LLC's *Specific Building Survey and Evaluation Report/ Cold War Era Historic Resources Survey and Evaluation Report* – and Page & Turnbull's *NAS Alameda Historic District Assessment and Historic Preservation Strategy; The Guide to Preserving the Character of the Naval Air Station Alameda Historic District* (1997); and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (1996).

Archival research and survey with the taking of measurements was the methodology the following report is based on. Literature on building activity during World War II in the United States was consulted with a specific focus on West Coast application. Additionally, research in photo archives of photographers operating in the Bay Area after World War II provided visual evidence of peacetime reuse of Quonset Huts forms. Further archival research through Interlibrary Loan at the San Francisco Public Library yielded extra documentation on the migration of the Quonset Huts imagery in the non-military construction.

### **Site Visits**

A total of three site visits were performed to photograph and measure the Quonset Huts in the Northwestern Territories and record other Quonset Huts locations on the Naval Air Basis. The visits were on the following dates:

- February 25, 2016 (with Nanette Mocanu (City of Alameda) and Ryan Gaughan (PMRG));
- April 22, 2016 (Pierluigi Serraino);
- June 14, 2016 (Pierluigi Serraino).

### **C. BACKGROUND EXPLANATION ABOUT QUONSET HUTS AND THEIR HISTORIC SIGNIFICANCE, AND THEIR HISTORIC SIGNIFICANCE TO ALAMEDA POINT.**

The official birth date of the Quonset Hut is July 18, 1941. That day a short memo written on behalf of Admiral Morell requests the name "Quonset Hut" on all the title blocks of the design and construction drawings drafted for the erection of a lightweight, portable steel structure to shelter rank and file as well as U.S. Army officers at the onset of World War II. Concerns about patent rights prompted the renaming of what was also called a "Standard Hut". From a design perspective, the architectural antecedent was the British Nissen Hut, whose origins go back to 1916. While the name changed at the beginning of the 1940s, the basic geometry and design principles however were never really challenged: a semi-circular steel arched structure with corrugated metal cladding, with no foundations, and with provisions for interior partitions, dormer windows and concrete floors (FIG.1). Moreover, the huts were intended as temporary fixes based on principles of prefabrication. Rather than permanent structures,

from the very beginning the huts were thought of as demountable (FIG.2)., movable (FIG.3)., and non-site specific. When transplanted onto American soil, fundamental changes occurred in the building technology and sequencing of the hierarchical steps securing unprecedented speed of erection. Already by 1942, soldiers lacking any construction training could assemble a Quonset Hut in one day, using hand tools. The name "Quonset" also comes from the location of the factory outside the Quonset Point Naval Station in Rhode Island where the first American Quonset Huts were built.

By the end of World War II approximately 120,000 Quonset Huts had been fabricated and shipped to almost every corner of the globe. The Quonset Hut had over eighty-six official uses. Some of them were: dispensary surgical hut, laboratory, laundry facility, pharmacy, dental facility, hospital ward, barber shop, morgue, guard house, and tailor shop. The Quonset Hut was not considered architecture, as its utilitarian use made it a quintessential form of portable architecture predicated on principles of prefabrication. In fact, it was designed for mass production, able to be portable, erected and knocked down quickly, and adaptable to any climate and geography. Its first intended purpose was to provide soldiers with the most protection and comfort possible. A 16'x36' hut would provide quarters for 10 enlisted men or 5-7 officers.

The Quonset Hut's dimensions varied greatly, but were invariably rectangular in footprint. They ranged in size from 16'x20', to 16'x36', to 20'x46', to 20'x48'. The key design hallmark is the semi-circular section of the enclosure. Regardless of scale, all Quonset Huts were steel frames with corrugated metal cladding inside and out. Typical building components and materials were: a) Steel Arched Tees; b) Tempered Presswood; c) Insulation called *Kimsul*; and d) Shatter Proof Panes for bulkhead windows used at each end of the T-Rib Quonset. Because the huts were placed in rigid climates as well as the tropics its curved metallic envelope was punctured in many different ways to provide ventilation and/or insulation, while retaining the primary structure the same.

Quonset Huts were routinely laid out as a campus (FIG.4). They were grouped in clusters either on a radial or an orthogonal grid. Rarely were Quonset Huts standing in isolation, except when being significantly bigger in size than their standard dimensions. Their spacing was predicated on mitigating the damage that weapons could inflict at a distance to their intended targets. A few modifications were attempted to maximize the use of the floor area at the perimeter of the footprint. Those variations dealt primarily with the curvature of the arch, in one iteration segmented. A new Stan-Steel design, called New Arch Rib Stan-Steel Hut (also known as the "SSAR Hut"), continued to be identified as "Quonset Hut" and featured an expanded footprint.

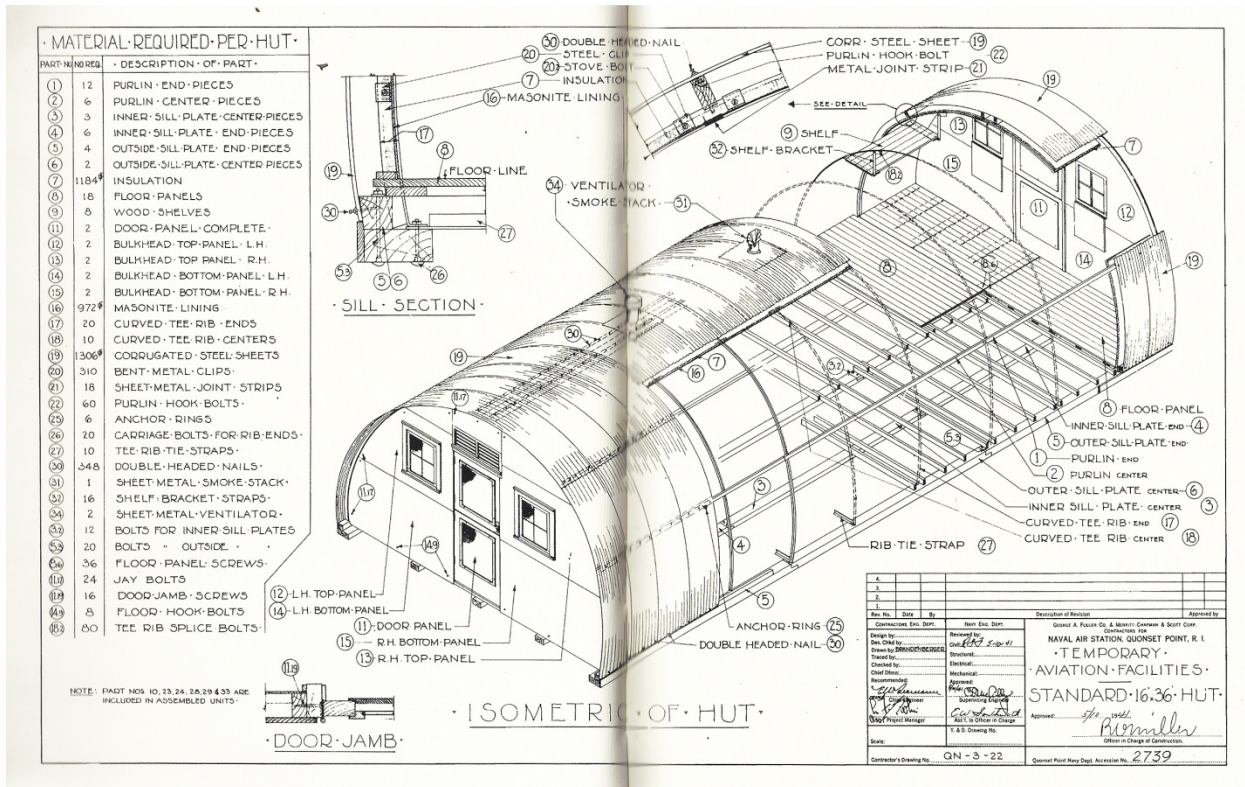


Figure 1. Construction Components of the Quonset Hut

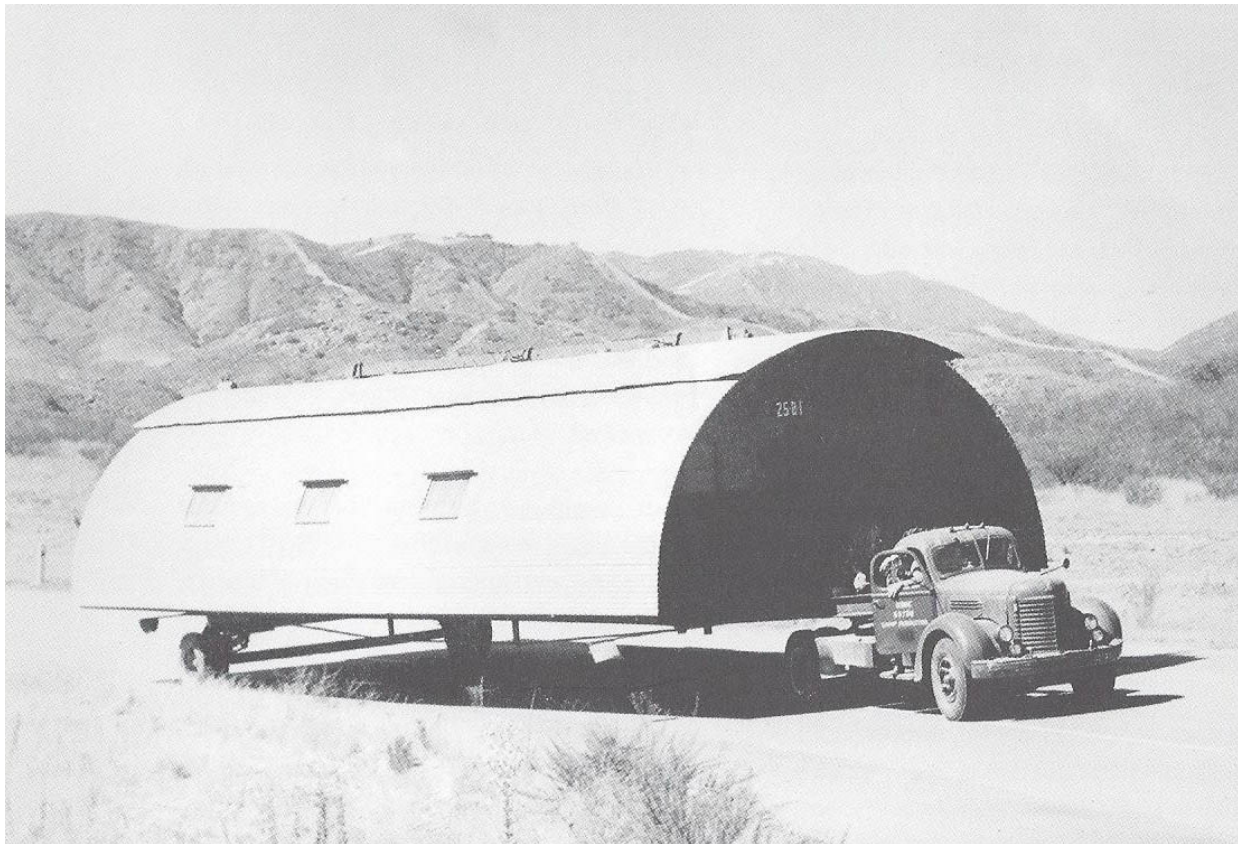


Figure 2. The Quonset Hut is inherently movable





Figure 3. Rows of Quonset Huts



Figure 4. Quonset Huts campus



Figure 5. Occasionally the Quonset Hut is standalone

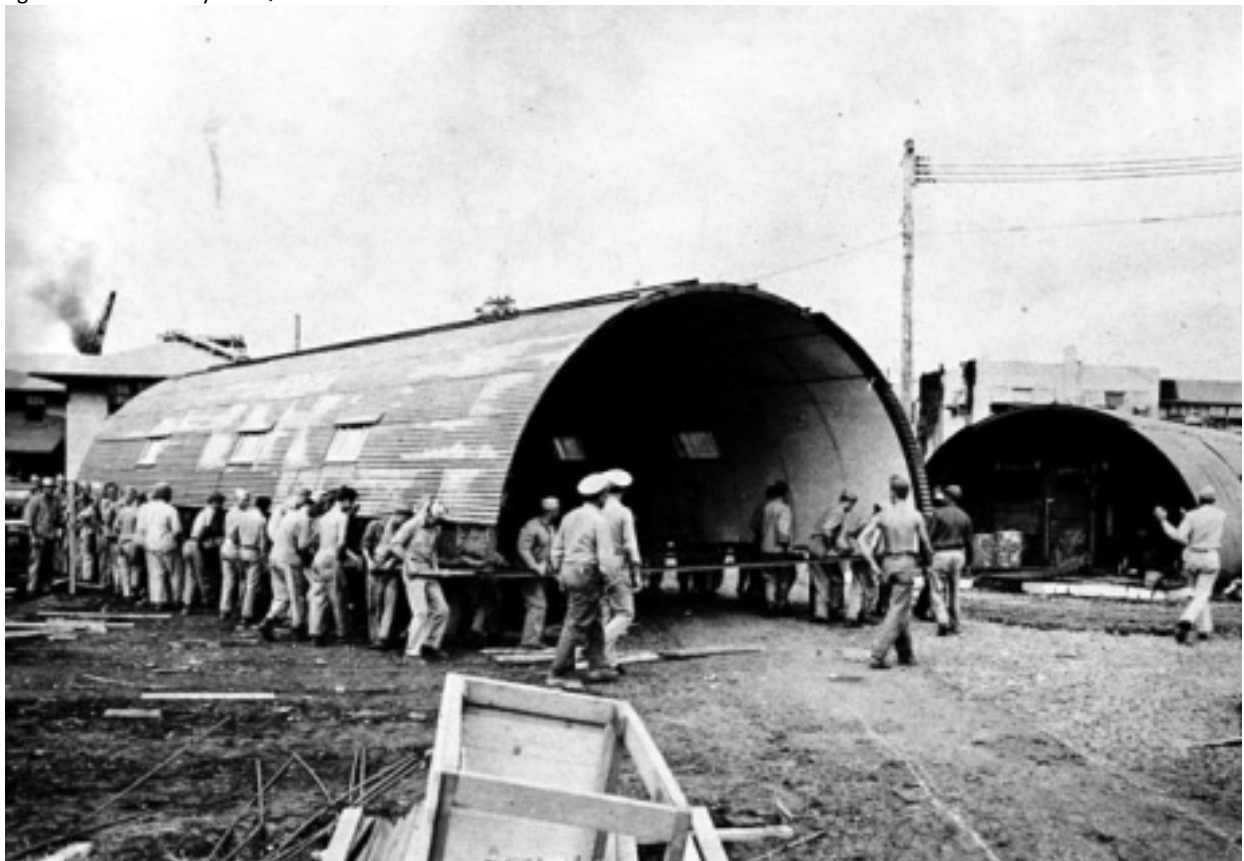
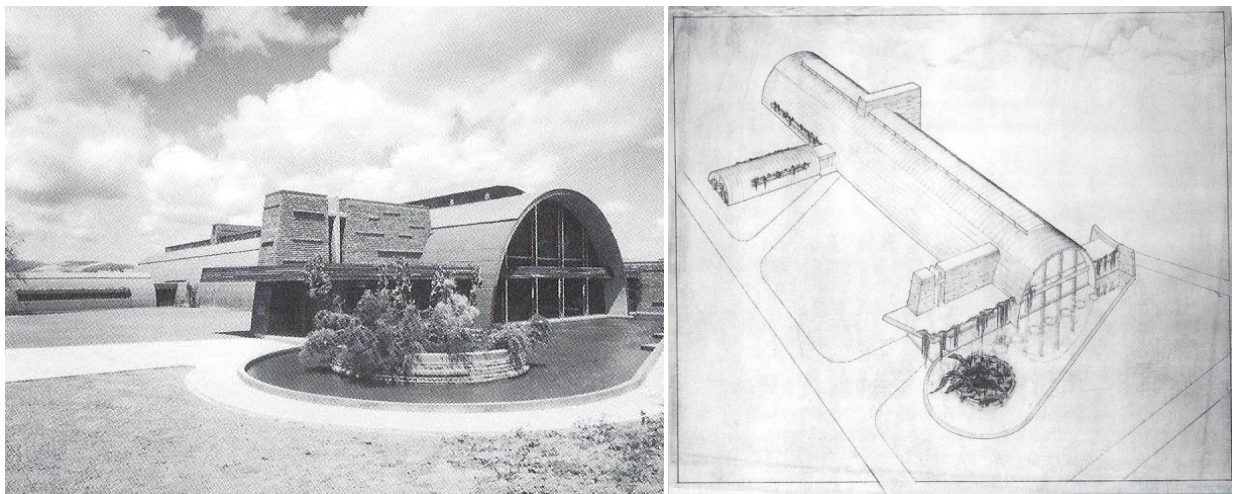
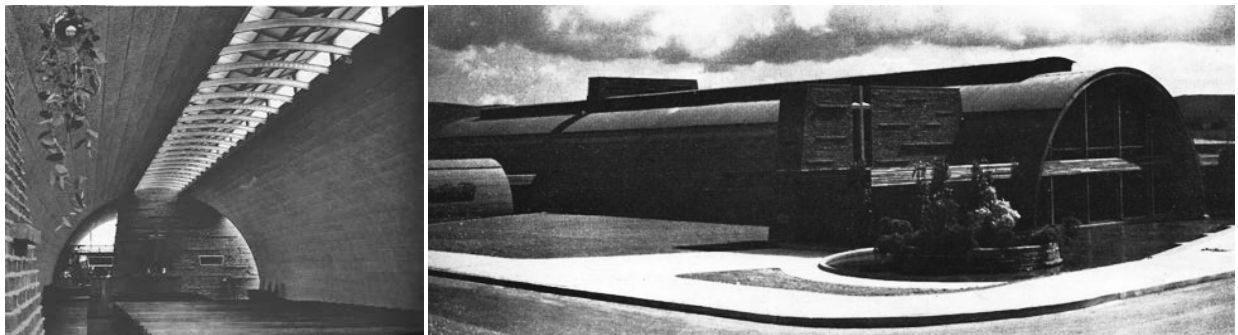


Figure 6. The Quonset Hut is lightweight

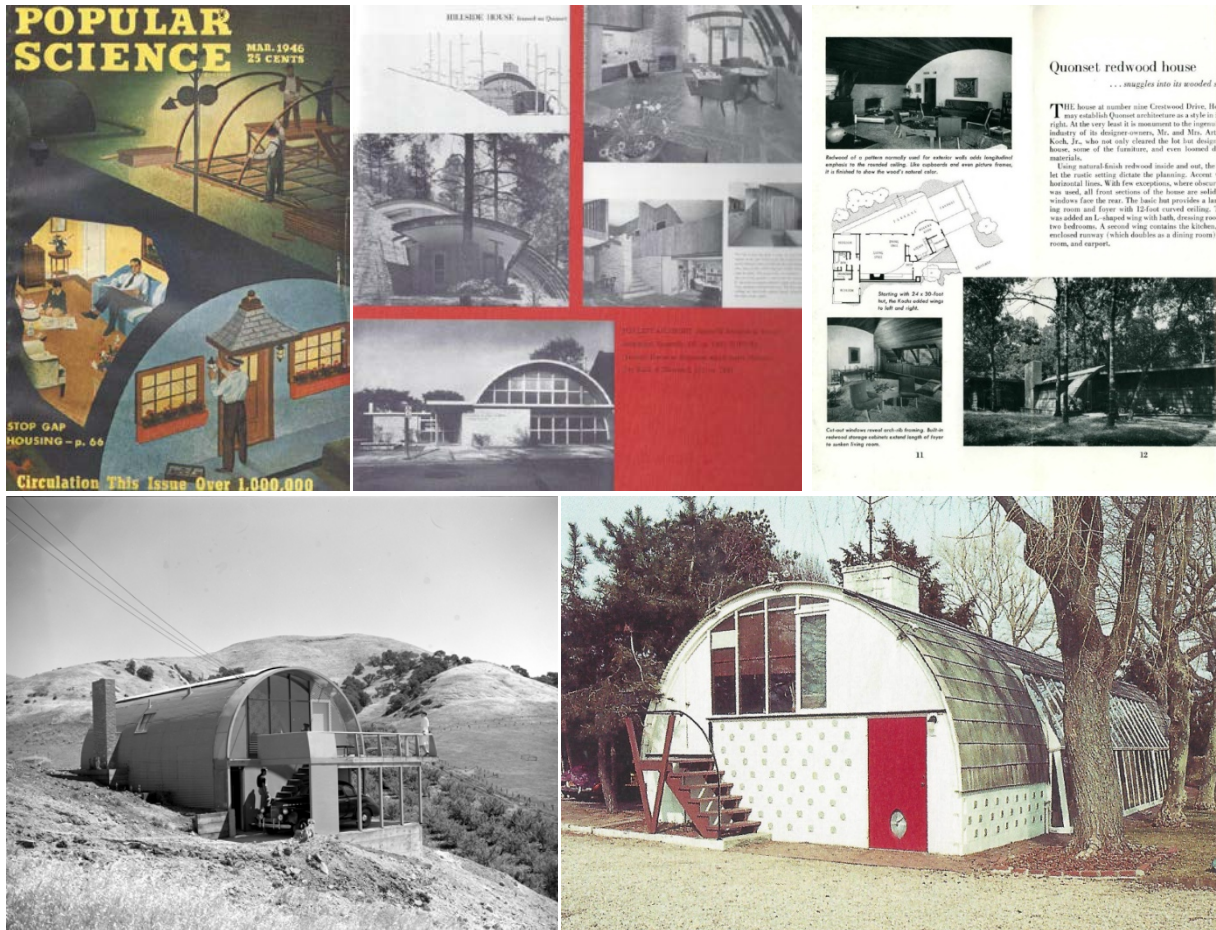
#### D. NON MILITARY USE EXAMPLES

Following the end of World War II, in peacetime the forms of the Quonset Hut was retained and assigned to even more functions than previously envisioned. What was consistently recognizable was the cylindrical section on a rectangular footprint. Yet scale, grouping, and siting varied greatly based on needs. The building envelope was consistently cut in countless ways never challenging the roundness of the massing. Skylights, punched openings, and entire sections of the skins were either removed or offset to provide natural light in the interiors. The ends of the Quonset Huts tended to be glazed or only partially enclosed with opaque surfaces. Because they do not contribute to the primary load bearing structure, they are usually assigned as entry point into the vaulted spaces.

In the main, the Quonset Hut remained primarily a container of residential function and was even featured prominently in shelter publications like *Sunset* magazine and *Redwood News*. The use of the Quonset Hut imagery though is chiefly tied to the first twenty years following World War II, and use of Quonset Huts quickly declined after that, which led to the Quonset Hut to completely disappear from the suburban landscape of the country. While the forms were popular and early on ubiquitous, they remained confined to industrial imagery without acquiring a more permanent status even in reference books (both architecture and otherwise). The Quonset Huts nonetheless are historically significant because associated to a critical segment of the nation's 20th century political history







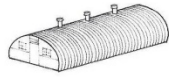
## E. TYPOLOGY OF QUONSET HUTS

Quonset Huts come in ten different types. Their differences are predicated on the technology of construction, their dimensions, their generation, the curvature of their section, the kind of openings, and the company that produced them. While the basic form remained the same their detailing was markedly different.

On the Naval Air Base in Alameda, the Quonset Huts share the same construction technology. The manufacturing company that produced them is ARMC International Corporation of Middletown Ohio. Their standard dimension is 20'x50' and are clad in heavy gauge steel for their ribbed metal panels bolted for anchorage. In Alameda, these huts sit on concrete curbs, and are scattered around the base in no particular order.



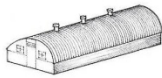
## Appendix: Hut Types



### 1. QUONSET HUT—T-RIB

16' x 36' and 16' x 20'

The original Quonset hut, which came to be known as the T-Rib Quonset, was developed in response to the Navy's desire to produce a new prefabricated hut system during World War II to shelter troops abroad. At Quonset Point, Rhode Island, George A. Fuller and his design team, under the direction of Otto Brandenberger, created the T-Rib Quonset, an adaptable building for mass production that would be portable, erected and knocked down quickly and easily, adaptable to any climate and geography, and provide soldiers with the most protection and comfort possible.

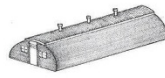


### 2. QUONSET HUT—REDESIGN

16' x 36' and 24' x 60'

The basic strategy of the Quonset Redesign was to keep the footprint of the T-Rib design but to introduce a lighter I-shaped steel arch with four-foot vertical sidewalls. The new arch, assembled in two sections instead of three, reduced erection time and required fewer fasteners. More impor-

tantly, counter-height equipment could now be installed close to the wall without out any residual loss of floor space.



### 3. QUONSET STRAN-STEEL HUT

20' x 48' and 20' x 56'

The third and final generation of the Quonset hut was produced by Stran-Steel of Detroit, Michigan. This design reverted back to the full arch profile and used many of the same structural components as the Redesign, but now it appeared lighter, thinner, or pushed to greater spans. Initially introduced with corrugated panels, similar to the T-Rib, it was later modified to use the factory-curved panel only at the ridge. The remaining sidewall and end wall panels were mounted with corrugated metal oriented in the opposite direction.



### 4. PACIFIC HUT

18'-6" x 37'-4"

Frank Hobbs, a mechanical engineer who later formed the Pacific Hut Company in Seattle, took blueprints of his all-wood Quonset design, the Pacific hut, to the U.S. Army Corps of Engineers in summer of 1942. It was designed to overcome the major short-

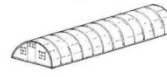
coming of the Quonset: its all-steel construction. Steel was not only a critical material during the war but also rusted quickly in the tropics and, in the Arctic, permitted cold temperature migration across metal structures. Wood structures greatly reduce thermal transfer. The Pacific hut is easily recognizable by the celotex, a water-proof form of masonite, exterior and the triangular ridge-line vent cover.



### 5. BUTLER HUT

16' x multiple of 4' and 24' x multiple of 4'

Developed by the Butler Manufacturing Company of Kansas City, Missouri, the Butler hut was an all-steel arched hut—profile slightly more than half a circle—with U-shaped arched ribs around an eight-foot radius. End walls were framed with steel and end walls and side-walls were enclosed with two-foot-wide standing seam metal sheets. Not long after World War II, however, Butler abandoned the curved-roof approach, although they still produce metal prefabricated buildings today with gabled roofs.



### 6. JAMESWAY

16' x multiple of 4' and 20' x multiple of 4'

The James Manufacturing Company of Port Adams, Wisconsin, created a version of the Quonset hut with wooden ribs and an insulated fabric covering for the Army Air Corps. This portable and easy-to-assemble hut was designed for Arctic weather conditions when personnel were wearing bulky clothes and mittens but needed shelter construction to proceed quickly. Insulated blankets in four-foot-wide lengths were made with glass fiber insulation faced with flame-proof moulton and enclosed in plastic-treated cotton that was water, vermin, and fire proof. The hardware (nails, fasteners, and connecting bars) was the only metal component, and the whole package weighed 1,200 pounds for a 16' x 16' hut. Its wooden packing crates were designed for reuse as the hut floor.



### 7. ARMCO HUT

20' x 50'

During World War II, the Armco International Corporation of Middletown, Ohio, produced arched corrugated ingot iron bunkers, ammunition magazines, and personnel shelters. The heavy steel buildings were modeled on earth-retaining structures

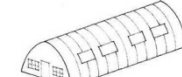
such as culverts and storm sewers. The heavy iron (8- to 14-gauge) did not require supporting ribs but was curved and corrugated much like a Quonset hut. Armcos were strong enough to be completely buried in up to six feet of dirt.



### 8. PORTASEAL HUT

16' x 37'

The Portaseal hut, frequently seen along the Alaska Highway and CANOL pipeline, is a Canadian version of the wood-framed, plywood-clad structure. These huts were shipped in prefabricated sections, could be erected quickly, and were heated with improvised oil drum stoves. Identifiable features include a tar-paper finish nailed atop plywood sidewalls, end walls with large windows, and wide batten-type trim boards atop the end walls' vertical panel joints. Some surviving examples have been observed with six-inch sheathing strips in lieu of plywood.

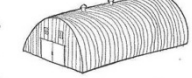


### 9. EMKAY HUT

20' x 48'

Morrison-Knudsen Company designed the Emkay (M-K) hut to shelter their crews for their large and remote military construction contracts. While they

credit the origin of the design, inspired by a chicken shed, to their engineer G. D. Foxson, the similarities to the Quonset and Pacific huts are undeniable. Built in Boise, Iowa, beginning in 1943, the Emkay had laminated wood ribs. Its distinct "two-centered arch" appears pointed, or gothic, in profile. The huts look peaked from outside after the exterior sheathing is applied. All styles were built entirely of wood and wallboard, could be built to any lengths in multiples of twelve feet, and could accommodate a dozen climates.



### 10. COWIN HUT

36' x 60'

The large, steel semicircular warehouses were developed by Cowin and Company, Inc. for the Air Corps at Wright Field. Cowin called their structure a 36' x 60' Steeldome. To resist thrust on the arch caused by snow loads, Cowins used a truss system of horizontal steel tie rods and vertical steel hangers. Not many Cowin huts were shipped to Alaska after 1943 because they were inadequate for Alaskan snow loads. A number of them collapsed in their first winter of use.

## F. PHOTOS OF THE EXISTING QUONSET HUTS LOCATED IN THE NORTHWESTERN TERRITORIES







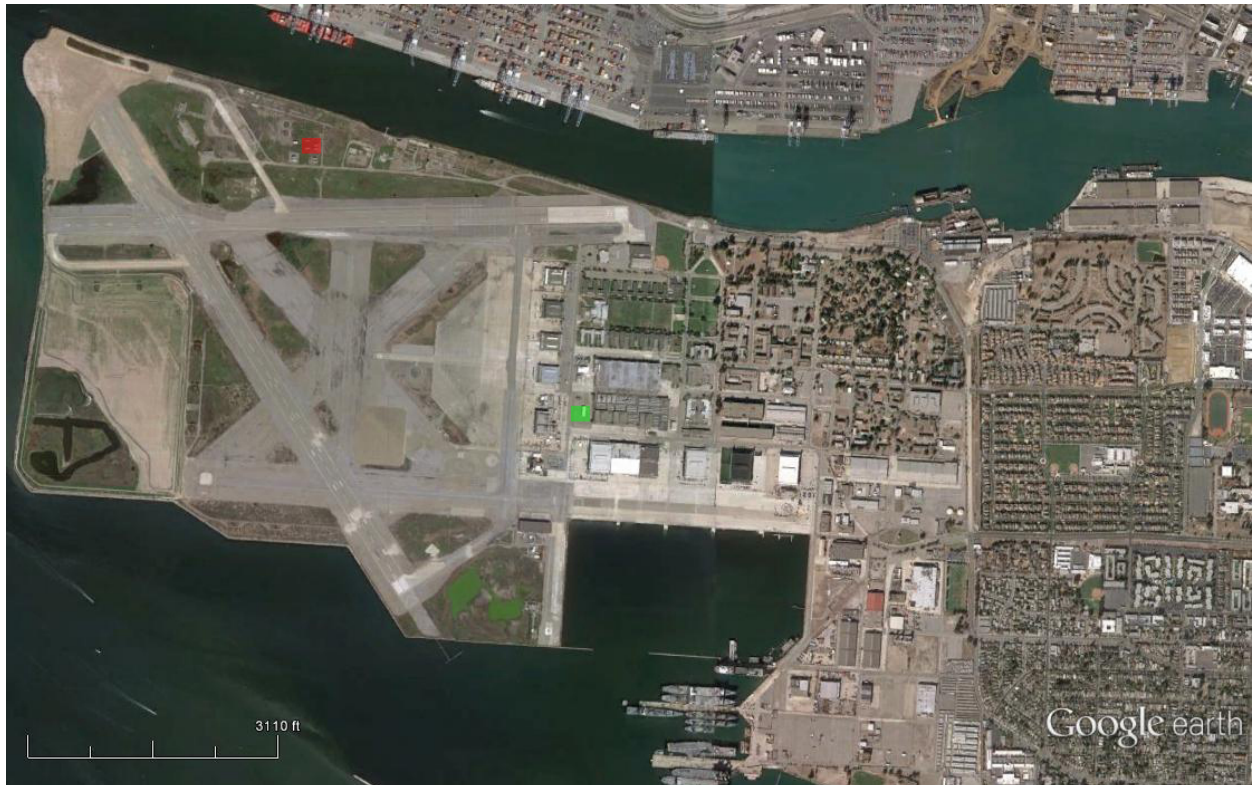
# **G. QUONSET HUTS THROUGHOUT THE NAVAL AIR BASE AND BEYOND**





## H. SITE DESCRIPTION

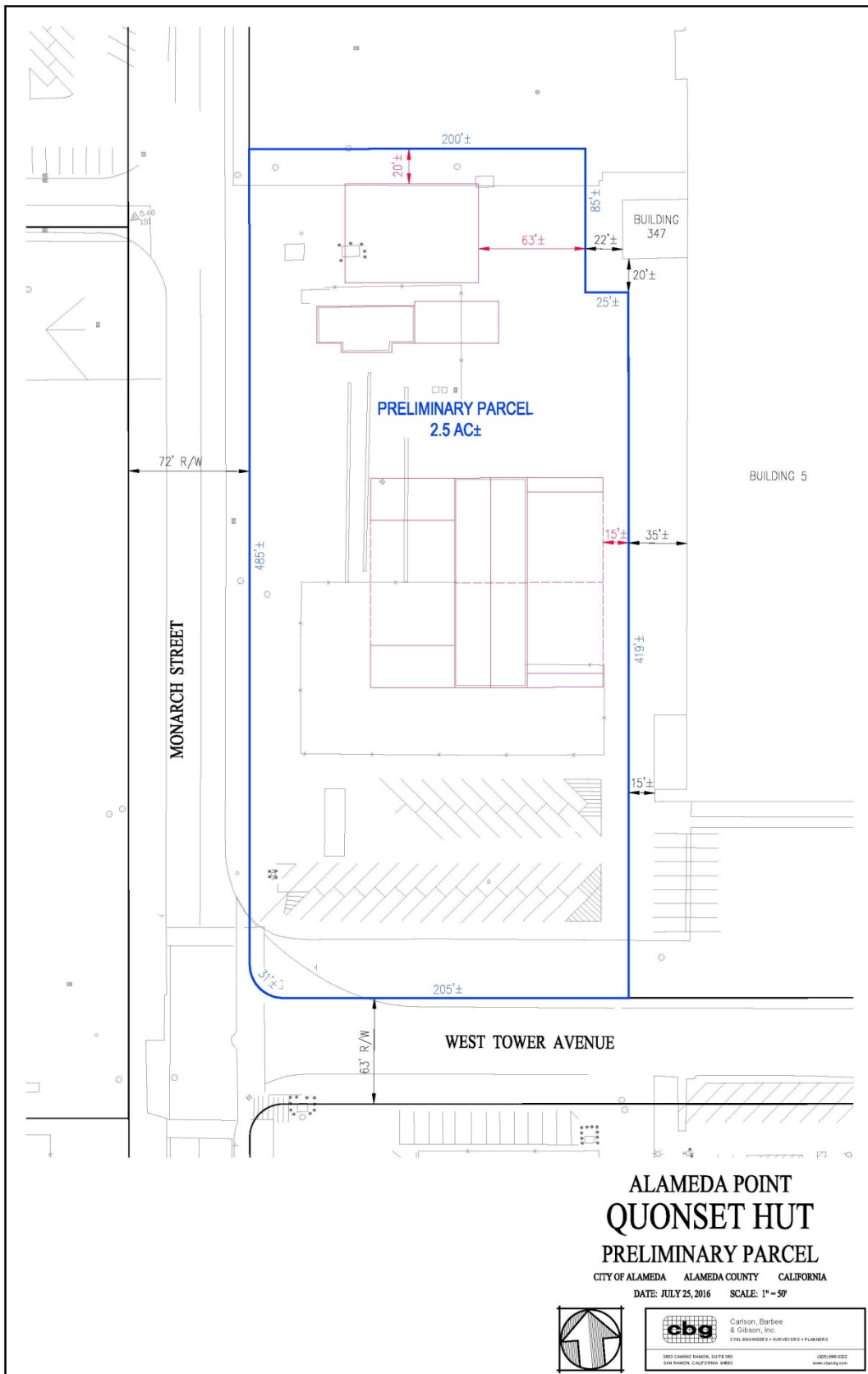
Located at the corner of Monarch Street and West Tower, the site is currently occupied by two buildings that are non-contributing to the historical district. Its grading is flat and at present not utilized. It is however at an intersection where other buildings are in full operations and several others are under renovation.



- CURRENT LOCATION OF QUONSET HUTS
- PROPOSED FUTURE LOCATION OF QUONSET HUTS







## I. DETAILED PROJECT DESCRIPTION

The proposed project is a wine|cider tasting village. There will be production of wine|cider on-site and its consumption for individual customers. The design seeks to relocate three Quonset Huts to a site at the corner of Monarch Street and West Tower. The project consists in the adaptive reuse of the three relocated Quonset huts and buildings 614 and 405 which are already existing on site. Both buildings 614 and 405 are classified as Non-Contributing Structures in the NAS Alameda Historic District. More specifically, Building 405 is listed as A/C Ground Support Equipment Repair Facility with a 1957 year of completion. Building 614 is listed as Hazardous Material Storehouse with a 1982 year of completion. At this stage the three Quonset Huts under consideration are unused and are sitting on a flat site in the Northwestern Territories within the Naval Air Base (NAS). However, the three Quonset Huts location is outside the boundaries of the NAS Alameda Historic District boundaries. Furthermore, none of the Contributing Structures is a Quonset Hut, and upon a thorough site visit, no Quonset Huts have been found within the District Boundary (FIG. 7).

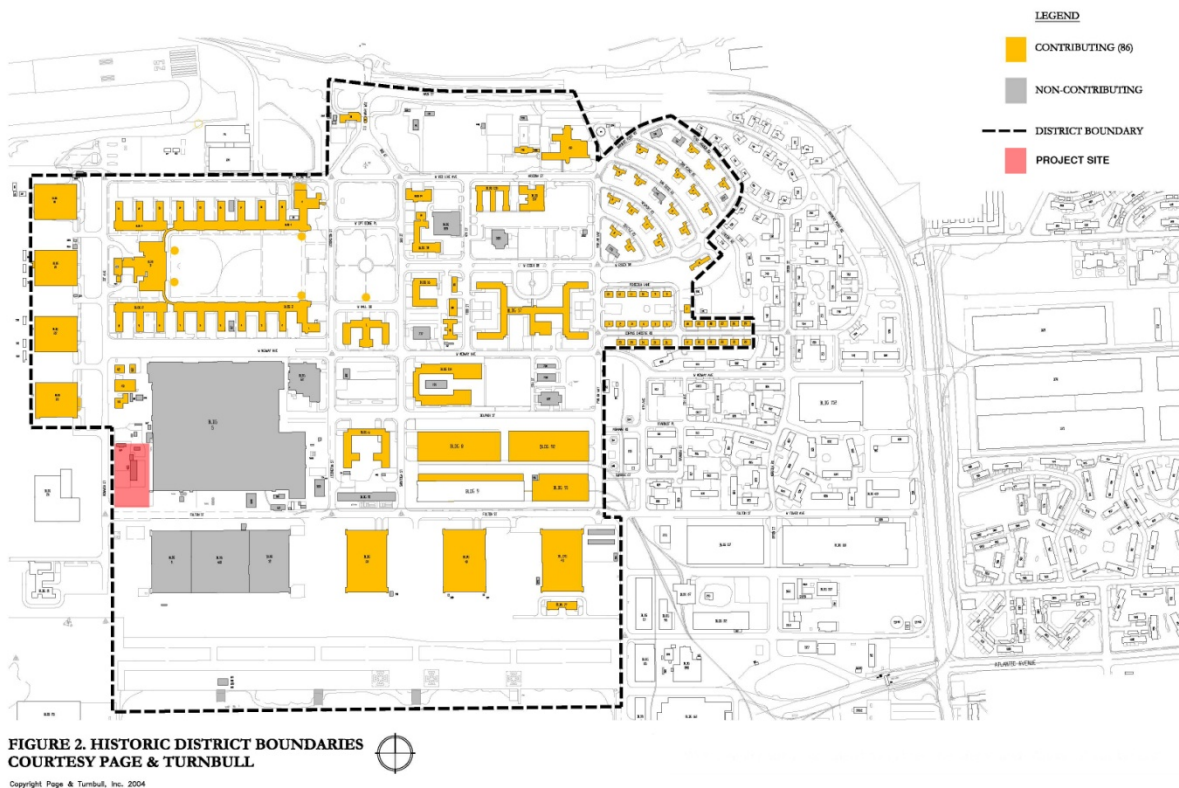


Figure 7. Historic District Boundaries

The project program consists of a wine tasting facility comprising of:

- Tasting Rooms;
- Office/Lab;
- Indoor/Outdoor Wine/Cider Production Area;
- Distillery;
- Brewery;

- Outdoor Tasting Patio.

Additionally, accessory linkages between the buildings are envisioned to maximize their functionality and determine a cohesive ensemble of buildings sited in harmony with the character of the NAS architecture.

**J. MASSING RENDERING OF PRELIMINARY DESIGN [ALL SUBJECT TO REVISIONS AND DESIGN REVIEW APPROVAL BY THE CITY];**

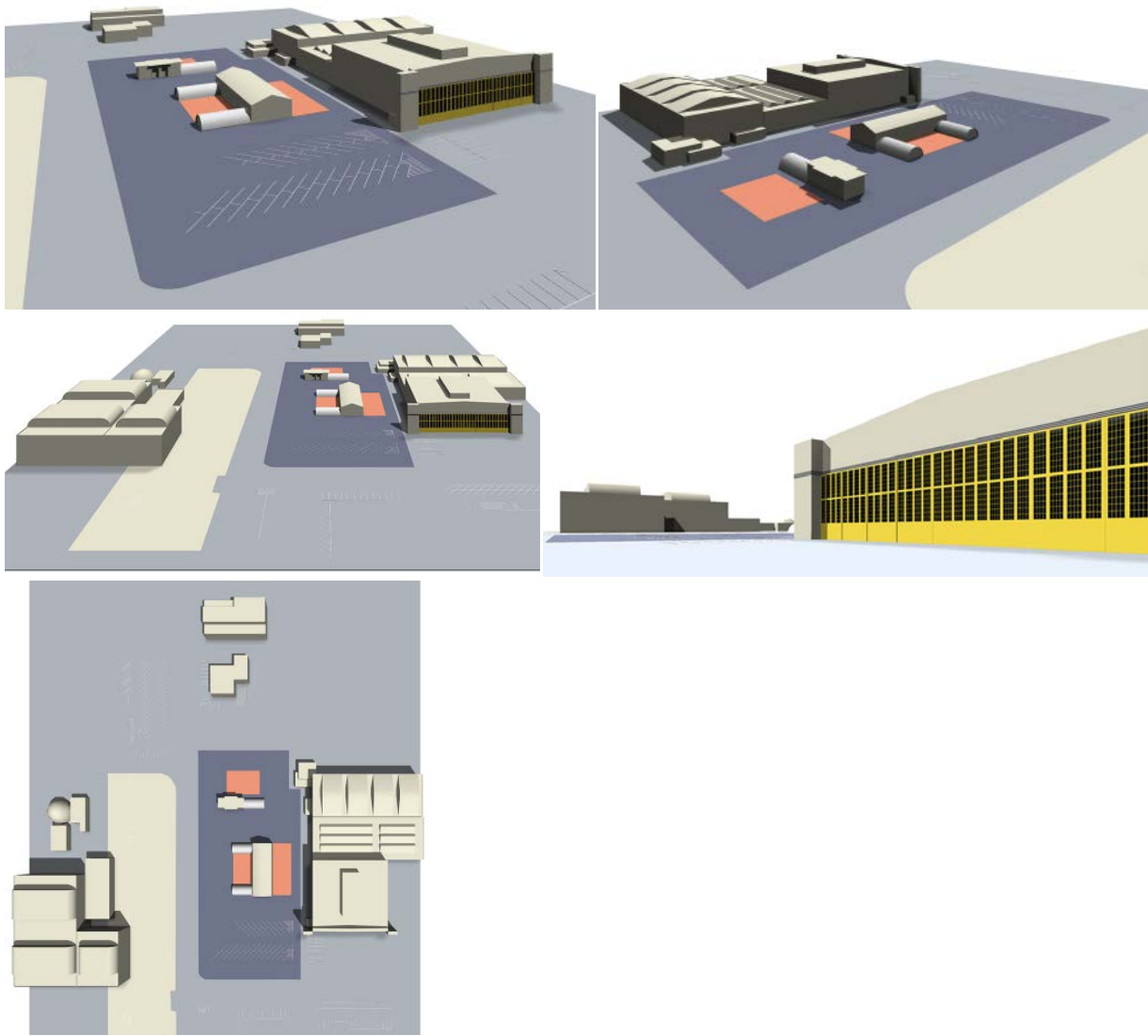
The following four schemes are presented to show initial conceptual approaches on how to group the Quonset Huts with the two existing buildings on site, and on how to signal this new intervention along Monarch and West Tower. The prospective lessee shared a first block diagram which is modeled below. Based on the program outlined in that document, three further iterations were produced to demonstrate various possibilities on how to integrate the scheme in the overall functioning of the Naval Air Base.

Being on a corner lot, it is believed that some cuing of the visitor about the presence of this wine|cider compound is necessary from a distance, both for orientation and recognizability. The program lists a combination of covered and outdoor areas with a desire to access a view corridor looking towards the Bay. The outdoor areas are managed architecturally as integral to the composition and intended as a formal plaza where customers and staff can gather to experience the goods and services that will be offered in this establishment. To counteract the lack of physical boundaries of the site, all schemes share the idea of a public space semi-protected by a porous enclosure.

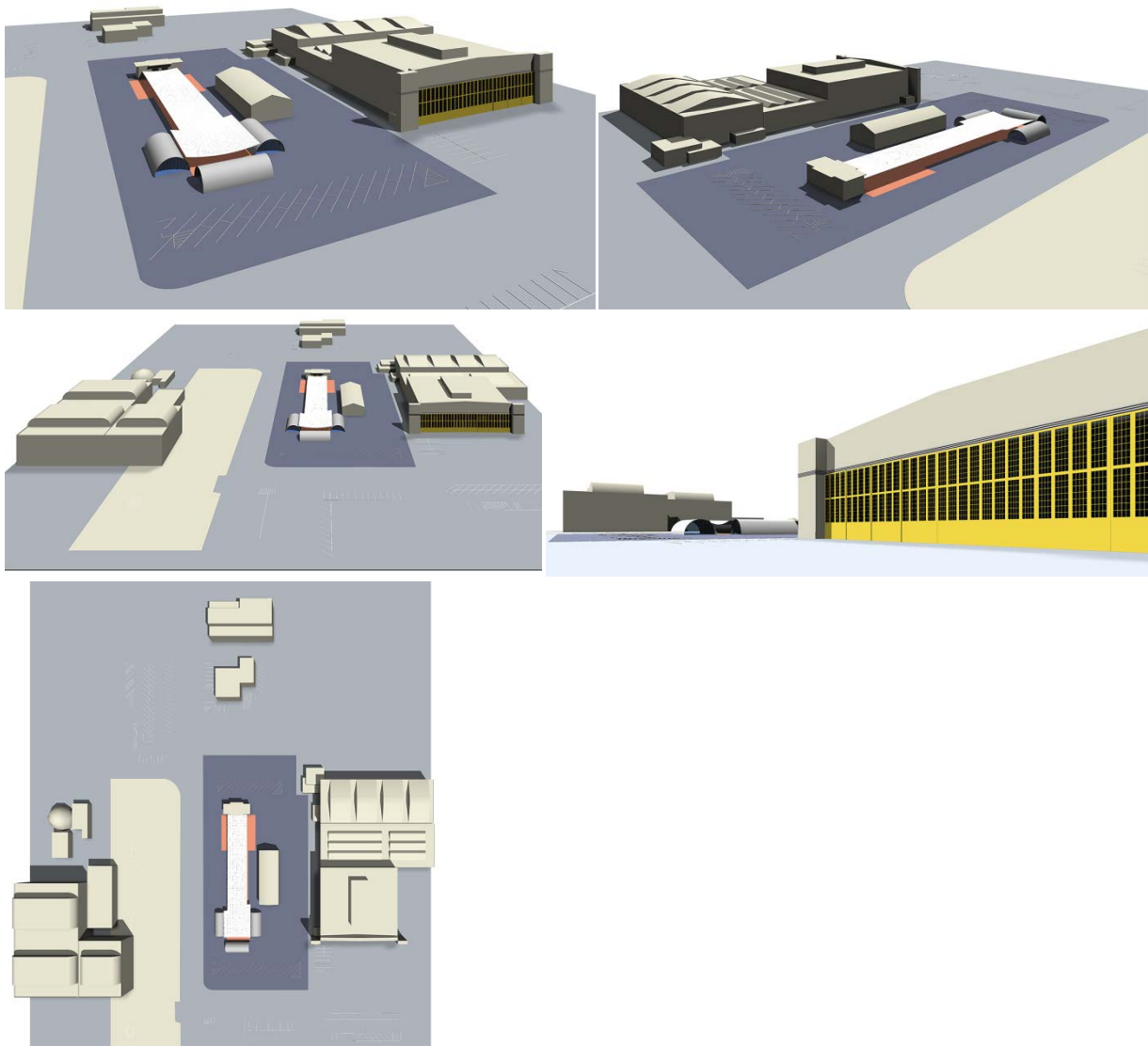
In all these iterations, the integrity of the Quonset Huts is preserved consistent with how this building type has been historically conceived and handled.

**Scheme by Lessee**

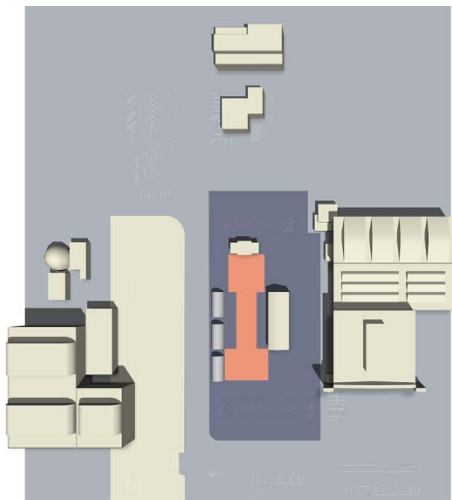
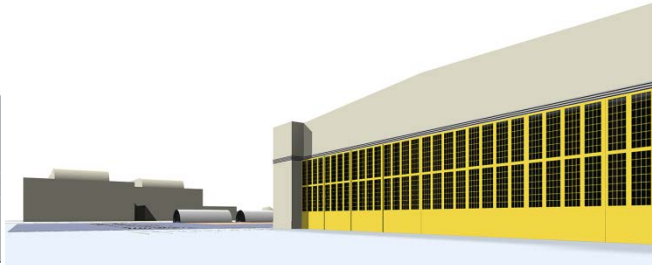
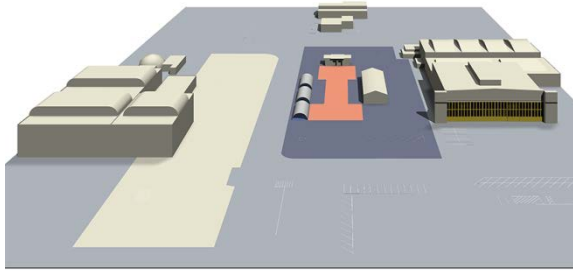
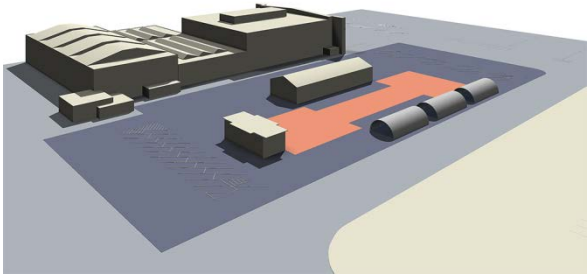
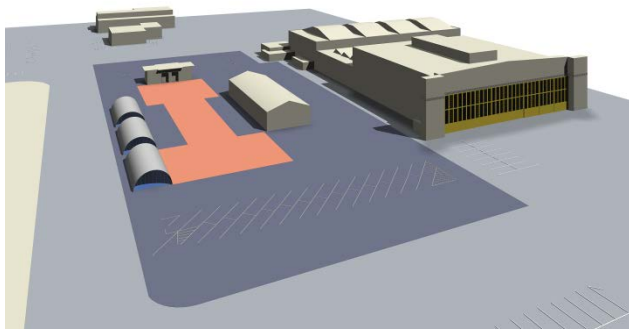




**Scheme #1**



**Scheme #2**





**K. ANALYSIS OF PROJECT-SPECIFIC IMPACTS ADDRESSING THE SECRETARY OF INTERIOR STANDARDS FOR HISTORICAL PRESERVATION, AND HOW THIS RELOCATION OF THE HUTS WILL MEET THE INTERIOR STANDARDS;**

**Rehabilitation Standard 1: A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.**

The three Quonset Huts are to remain unchanged in geometry and scale. Modifications to the building skins, where occurring, pertain where the openings would be to enhance the functionality of each hut with its new use.

The proposed project complies with Rehabilitation Standard 1.

**Rehabilitation Standard 2: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.**

The structural configuration of the three Quonset Huts is to be retained. They are currently rusted shells with no interior components. Corrugated metal cladding is to be restored to maintain the patina, while securing a longer life cycle for the individual building components.

The proposed project complies with Rehabilitation Standard 2.

**Rehabilitation Standard 3: Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.**

No design elements in the proposed scheme are suggestive of being authentic to the period. The three huts are part of larger composition that connects both functionally and architecturally the single buildings into a harmonic whole.

The proposed project complies with Rehabilitation Standard 3.

**Rehabilitation Standard 4: Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.**

The three Quonset Huts have retained the original character. No changes are detectable upon site observation. The structural integrity of these huts is preserved in their new location.

The proposed project complies with Rehabilitation Standard 4.

**Rehabilitation Standard 5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.**

Severe rusting of the metal cladding requires extensive restoration of the affected surfaces due to decades-long exposure to the aggressive marine environment. When restoration is not technically feasible, a compatible cladding component, integrated to the original structure, yet legible from the outside as a contemporary material layer different from the old will be provided.

The proposed project complies with Rehabilitation Standard 5.

**Rehabilitation Standard 6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.**

The marine environment has affected negatively in particular the fastenings tying together the individual building components. Parts of the cladding panels have rusted away. Where required the replacement is to match the existing structure.

The proposed project complies with Rehabilitation Standard 6.

**Rehabilitation Standard 7: Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.**

Not Applicable.

**Rehabilitation Standard 8: Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.**

Not Applicable.

**Rehabilitation Standard 9: New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.**

The adaptive reuse capitalizes on the integrity of the three Quonset Huts. Connecting elements between the huts and Buildings 405 and 614 are subservient to the dominant image of those huts.

The proposed project complies with Rehabilitation Standard 9.

**Rehabilitation Standard 10: New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.**

All additions envisioned in the new design are conceived with lightweight material and dry technology.

No new element affects the architectural integrity of the three Quonset Huts.

The proposed project complies with Rehabilitation Standard 10.

The proposed project was also analyzed for consistency with *The Guide to Preserving the Character of the Naval Air Station Alameda Historic District* (1997) and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (1996), as follows:

1. The proposed preliminary schemes of the Quonset Huts preserves the existing spatial organization of the NAS Alameda Cultural Landscape. The proposed project retains the overall orthogonal circulation pattern in the Historic District.
2. The proposed preliminary schemes of the Quonset Huts retain view corridors toward the Bay along Monarch Street and Fulton Street in consonance with the NAS Alameda Cultural Landscape.

Although the most immediate surrounding buildings within the Historic District boundaries (Building 5 and Building 11, 400, and 12) do not contribute to the Historic District, these initial design investigations aim at making a cohesive compound integrated in the existing site conditions minimizing their presence through the small scale of the Quonset Huts and their visual obstruction on the bordering structures. The proposed project would not affect any of these view corridors because it would be located at the east edge of Seaplane Lagoon and mostly outside the eastern boundary of the NAS Alameda Historic District. The small-scale, low-profile pier, which will be the only part of the project introduced into Seaplane Lagoon, would not obstruct any of the view corridors described above.

3. The proposed schemes leave the existing topography unaltered. The Quonset Huts would be laid out on the current spot elevations, their contour lines remaining undisturbed. Currently the lot has an uneven surface and the design would primarily re-establish its usability. The schemes are predicated on creating a sense of enclosure and architectural cohesiveness with Buildings 405 and 614 to reinforce the NAS Alameda Cultural Landscape. Most portions of the landside improvements and the parking lot included in the proposed project would match the existing grade. Some areas would have a slight grade change (+/- 3") to improve drainage. In addition, the eastern perimeter of the parking lot would have an earthen swale. Overall, these minimal changes would not affect the low-lying topography, which is a character-defining feature of the Historic District.

4. The proposed scheme are laid out on a site with no natural vegetation. While there is no existing vegetation on the site proposed for the Quonset Huts relocation, and there are no provisions, at this stage, for new natural landscaping elements, hardscape would play a significant role in the definition of the open space, connecting the five structures (3 Quonset Huts, and Building 405 and 618) into a cohesive compound.

5. The proposed schemes preserve the circulation pattern of the existing area. In these proposed schemes, vehicular access to the site is provided through the already existing main thoroughfares, Monarch Street and Fulton Street. What is envisioned in these preliminary studies consolidates the existing pattern of use.

6. The proposed scheme are on a site where water defining features are not present. The site boundaries of the parcel where the Quonset Huts are proposed to be relocated have neither direct contact with the body of water of the Bay nor have any water defining features. The proposed schemes therefore have no impact on water defining features.

7. The proposed schemes use existing buildings on the base and relocate them on a different site. The Quonset Huts have been on the NAS since the early 1940s and they are indigenous to the very birth of this military infrastructure. The proposed schemes re-position 3 Quonset Huts from a remote location in the Northwestern Territories outside of the Historical District Boundaries to a parcel within those boundaries. About two dozen Quonset Huts are still present within the base and the proposed relocation would be consistent with the architectural character of the area. No new buildings are envisioned for this project.



8. The proposed scheme maintains character defining structures, furnishing and objects. The proposed site for the relocation of the Quonset Huts comprises of Building 405 (built in 1982) and Building 614 (built in 1957) which are listed as non-contributing structures to the Historical District. Furthermore there are neither furnishings nor objects within those site specific boundaries. In the absence of these elements, the proposed scheme has no adverse impact on the character defining structures, furnishings, and objects.

#### **L. CONCLUSION**

The Quonset Hut is a functionally neutral container originally conceived in 1941 to meet the needs for shelter of the U.S. Army. It is historical significant because of its association to a period of great importance in American history. Its distinct cylindrical form stems from the modular spacing of the semi-circular steel arched structure, whereas the corrugated metal cladding was consistently punctured to accommodate small and large openings. The pliability of this architectural form is inherent in its original design intent. Provided that the rounded outline of the load-bearing structure is preserved, the adaptive reuse of Quonset Huts admits a variety of configurations in the openings to meet current needs. Therefore the essence of the Quonset Huts will not be changed by moving them and re-using them, and the essence of the Historic Base and Historic District will not be changed by moving the Quonset Huts into the Historic District.

Please feel free to contact me for any questions

Sincerely



Pierluigi Serraino

## Bibliography

- Cohen, Jean Louis. *Architecture in Uniform: Designing and Building for the Second World War*. Montreal: Canadian Center for Architecture, 2011;
- Decker, Julie, and Chiei, Chris. *Quonset Hut: Metal Living for a Modern Age*. New York: Princeton Architectural Press, 2005;
- United States. Bureau of Yards and Docks. *Building the Navy's Bases in World War II: History of the Bureau of Yards and Docks and the Civil Engineer Corps, 1940-1946*. Washington, DC: United States Government Printing Office, 1947.
- Woodbridge, Sally. *Historic Architectural Resources Inventory for the Naval Air Station, Alameda*. Report, 1992.
- JRP Historical Consulting, LLC. *Specific Building Survey and Evaluation Report/ Cold War Era Historic Resources Survey and Evaluation Report*. 2011.
- Page & Turnbull. *NAS Alameda Historic District Assessment and Historic Preservation Strategy*. 2011.