

HAWAII ARCHITECT

August 1985



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HEADQUARTERS



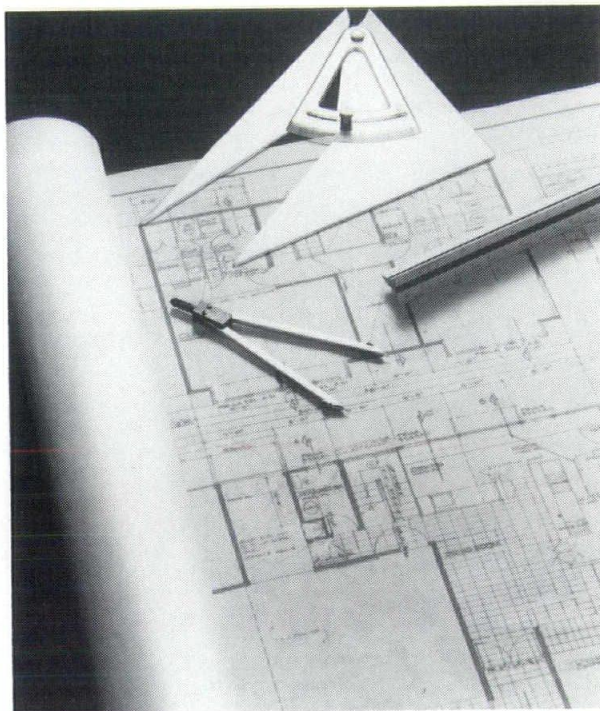
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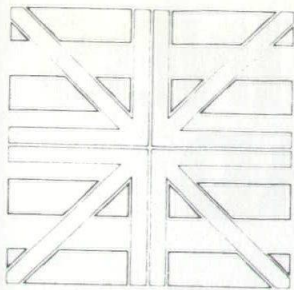
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HEADLINES

URBAN DESIGN



by Donald W.Y. Goo, AIA

The AIA Urban Design Committee has invited John Hirten, Director of Transportation Services for the City and County of Honolulu, as HS/AIA guest speaker on transportation and urban design. Hirten, who has a strong planning background, is a forthright individual, sensitive to the needs of our community, and a person who knows how to establish priorities and get things done. I believe that Honolulu is fortunate to have him direct our transportation activities. At the August 15 meeting he will be able to demonstrate not only his transportation knowledge, but also his knowledge of the character of urban cities.

Although transportation is the main theme of the urban design committee-sponsored meeting, the committee is involved in many more urban design issues. Wes Kinder's committee has established positions on public art, the new land use ordinance, Waikiki Zoo, revisions to the Kakaako Special Design District, simplification of the permit process, support of the West Beach development concept, comments on the widening of Ward Avenue and many other urban design issues.

Although many of these issues have been the consensus of the committee, opinions of the general

membership are not excluded from deliberations. The committee seeks the counsel and wisdom of all members of HS/AIA. They intend that announcements of meetings in the HS/AIA MEMO represent an opportunity for each member to participate in the committee's current discussions and deliberations.

The committee will be making a special effort to create more membership awareness of subjects under discussion. Pros and cons of an issue will be discussed and perhaps published in the *Hawaii Architect* or other journals.

At the present time, the budget for a journalist has been temporarily withdrawn. The purpose of this journalist would be to present the opinions of architects to the public in layman's language. All architects know that there is never a lack of opinion by architects on the subject of urban design. The problem of the profession has been in clearly communicating what we perceive to be "problems" and our professional solutions for the problem.

As all of you know, communication takes time and effort. We have a professional responsibility to our community to communicate our concerns and suggestions to make Hawaii a better place for our families, friends and visitors.

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HAWAII ARCHITECT

August 1985

Volume 14, Number 8

Cover: Art Deco is boldly expressed in the Base Headquarters building at Hickam Air Force Base. Photo by Michael S. Chu. Story on page 6.

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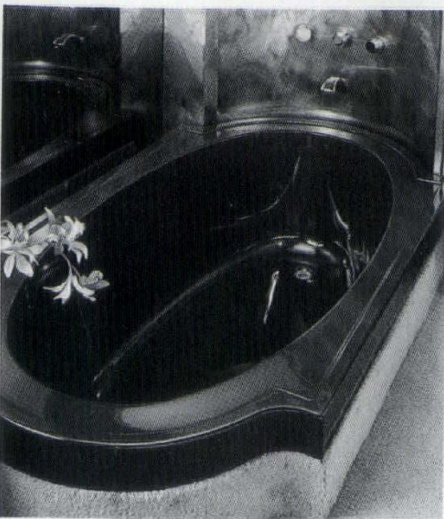
Laurels

Design Award Winner: Architects Hawaii, Ltd. 20

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by Lyna Burian, AIA



20. Design award winner.



33. Beautiful Bathtubs.



Hickam's Base Operations Building is decorated for the arrival of special guests. A "red carpet" is painted on the ground in front of the building. The Officer's Club (below) is part of a fascinating collection of buildings at Hickam Air Force Base. Photos by Michael S. Chu.

HICKAM'S ART DECO

by Michael S. Chu and Lyna Burian, AIA

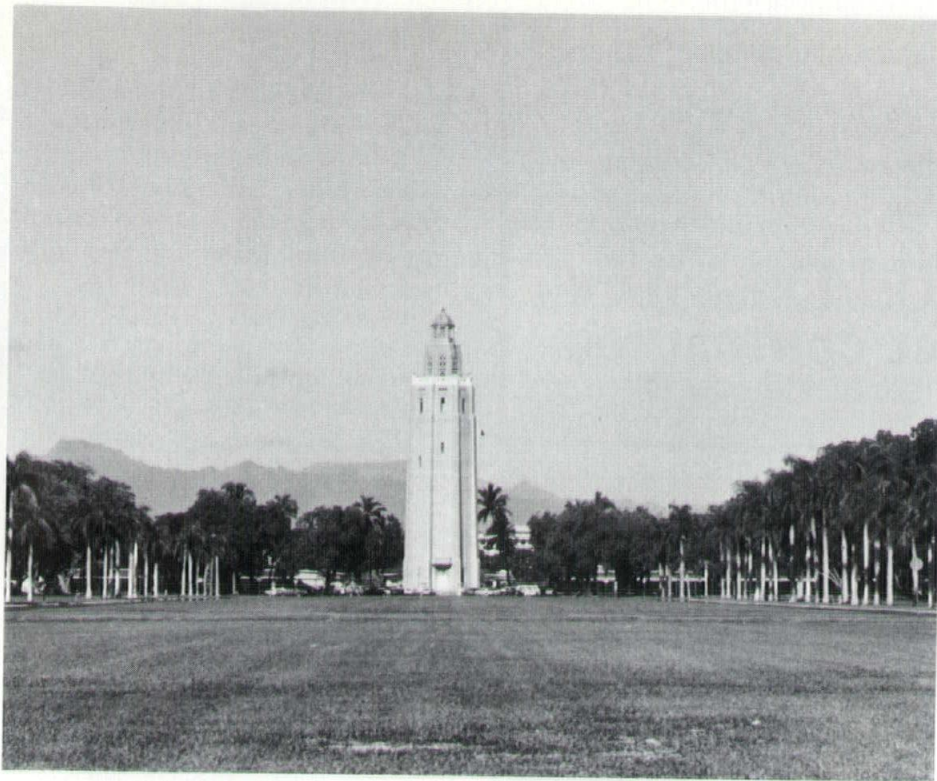
When returning from Kauai, I always try to get a seat on the left side of the plane so that I can get a view of Oahu as we approach Honolulu International Airport. My eyes are always drawn to an interesting configuration on the ground near

the entry to Pearl Harbor. There are radiating and curvilinear street patterns, flowing with massive tree canopies and rows of stately palms. Tucked under the canopies are hints of terra-cotta roofs, spacious lawns, tennis courts and an assortment of larger building masses and complexes. The view is of Hickam Air Force Base.

The base was master planned and constructed under the direction of Army Capt. H.B. Nurse in 1935. Capt. Nurse was a registered architect from Rochester, New York. He came to Hawaii in 1935 with at least two designs under his belt, Hamilton

Lyna Burian is a registered architect with Aotani and Associates and a member of Hawaii Society/AIA. Michael S. Chu is a planner and landscape architect, as well as a professional affiliate with Hawaii Society/AIA. Together they authored the architectural compatibility study for Hickam Air Force Base, on which this article is based.





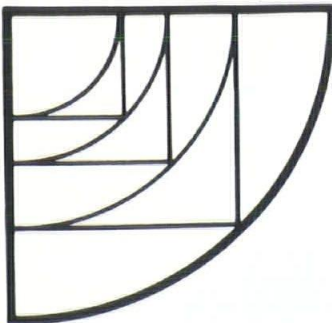
Field at San Rafael, California, and the Air Corps Primary Flying School at Randolph Field, Texas. A 1935 Army Corps newsletter described these two as the most beautiful flying fields in the U.S.

Both Capt. Nurse and Maj. Gen. H.A. Drum (Commanding General of the Hawaiian Department) seem to have held similar views concerning the architectural treatment, layout and aesthetics of the base. A 1936 *Star-Bulletin* report described the development by printing, "There will be none of the monotonous, right angled uniformity of buildings and quarters which, in the past, the name 'Army Post' so frequently brings to mind . . . in residential areas it will appear as a charming Hawaiian village of houses with wide overhanging eaves amid luxuriant growth of tropical plantings . . . roads will curve and wind with a leisurely Hawaiian indifference to the euclidean maxim concerning two points and one straight line."

There are three things that impress me about Hickam. The first is its fascinating collection (and maintenance) of original buildings which were designed in the Art Deco style. This style was brought into prominence during the Exposition des Arts Decoratifs held in Paris in 1925 and apparently caught the attention of military base planners and designers. Facades of buildings arranged in a series of setbacks emphasizing the geometric patterns, decorative spandrels and relief patterns, fluted columns and complimentary paint schemes characterize the original architectural theme of the base. This Art Deco theme is most boldly expressed in the Base Headquarters building in which the "wings" were part of the



A Moorish-style water tower (above) punctuates the terminus of a 500-foot-wide mall. Royal palms and Banyan trees line the mall. A plant nursery was started in 1935 to provide the project with an intermediate supply of plant material. Today magnificent boulevards (left) are lined with palms and shade trees.



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original architectural design (see cover). The careful observer will find the Art Deco theme in the detail of electrical transformer enclosures and rain gutters.

The second impressive point of the base is its landscaping. A plant nursery was started to provide the project with an abundant and immediate supply (300,000 trees and shrubs) of plant material. This is a common practice by today's standards but unique back in 1935. The results today are tree and palm lined boulevards which rival the most exclusive private neighborhoods in Hawaii. Over 41 varieties of fully matured palms can be found throughout the base.

The third impression about Hickam is the strength of its

*The careful observer will
find the Art Deco theme
in the detail of electrical
transformer enclosures
and rain gutters.*

original site design. It is a flat site and utilizes the classic principles of focal point, axis and radial design with great success, while still blending soft curves and informality into its layout. Most striking is a 500 ft. wide formal axis, lined with Royal Palms and Banyan trees. The terminus is punctuated by a tall water tower (recently named Freedom Tower), designed in the Moorish style.

Today Hickam is admired as one of the more aesthetical, functionally efficient, and progressive bases in the Air Force, thanks not only to Maj. Gen. Drum and Capt. Nurse but also to the interest of past and current Wing Commanders and their civilian counterparts.

Unfortunately, Hickam is not an open base so sit on the left side of the airplane on your next return flight from Kauai and gaze down as you approach Honolulu International Airport.

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SECTION 09572 WOOD PARQUET FLOORING

PART 1—GENERAL

1.01 WORK INCLUDED

- A. Prefinished wood parquet flooring.
- B. Prefinished trim moldings.

1.02 RELATED WORK

- A. Section (03100—Concrete Formwork) (03300—Cast-in-Place Concrete): Concrete substrate finish.
- B. Section (06001—Carpentry Work) (06100—Rough Carpentry) (06110—Wood Framing) (06115—Sheathing): Wood substrate finish.
- C. Section 09560: Wood strip flooring.
- D. Section 09561: Cushioned wood flooring.

1.03 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in production of wood parquet flooring with five years experience.
- B. Installer: Shall be experienced in the wood parquet flooring industry and shall have a minimum of five (5) years experience in the installation of wood parquet flooring.

1.06 REFERENCES

- A. American Parquet Association: PS-27-70 Mosaic-Parquet Hardwood Slat Flooring.
- B. ASTM C236—Test for Thermal Conduction and Transmittance of Built Up Sections by Means of the Guarded Hot Box.
- C. ASTM C355—Test for Water Vapor Transmission of Thick Materials.
- D. ASTM C518—Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter.
- E. ASTM D1667—Flexible Cellular Materials—Vinyl Chloride Polymers and Co-Polymers (Closed-Cell Sponge).
- F. ASTM E84—Surface Burning Characteristics of Building Materials.
- G. ASTM E648—Test for Critical Radiant Flux (CRF) of Flooring and Floor Covering Materials.

1.05 SUBMITTALS

- A. Submit product data in accordance with Section (01300) (01340), including manufacturer's installation instructions.
- B. Submit two samples of 12 x 12 inch parquet units that have a tongue and groove system around all edges of the tiles, both interior and exterior; and two 4 inch samples of each molding prefinished to match the parquet.
- C. Certification: The installer is to submit a list of at least three (3) successfully completed installations possessing a similar degree of installation difficulty.

1.06 OPERATION & MAINTENANCE DATA

- A. Submit three copies of manufacturer's floor care instructions in accordance with Section (01700) (01730).

1.07 DELIVERY, STORAGE, & HANDLING

- A. Deliver products to site and store in accordance with Section (01600) (01610 and 01620). Minimum storeroom temperature 60 degrees F. and maximum moisture content of 50 percent relative humidity.

1.08 ENVIRONMENTAL REQUIREMENTS ON JOB SITE

- A. Maintain room temperature of minimum 60 degrees F. and maximum moisture content of 50 percent relative humidity for a period of 7 days prior to delivery and storage of materials.

- B. Do not install wood flooring until all other construction work is complete and surrounding air has attained specified moisture content.
- C. Provide permanent heat, light, and ventilation, prior to installation.

PART 2—PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Components shall be products of Hartco, Inc., Tibbals Flooring Company, Oneida, Tennessee, or shall be certified as compatible with components produced by Hartco, Inc.

2.02 MATERIALS

- A. Parquet Units: 5/16 inch thick x 12 x 12 inches combination Appalachian Red Oak and White Oak, Natural and Better Grade, with at least 80 percent quarter sawn, 9 percent moisture content plus or minus 2 percent.
 1. Each 6" x 6" unit: Tapered tongue and groove edges.
 2. Units manufactured with 0.008 inch expansion spaces between component slats, slats secured with a knurled steel wire embedded in end slat.
 3. Tiles square within 0.009 inches.
 4. Tiles shall be sanded parallel to the grain.
 5. All tiles shall be within the grading standards of APA PS-27.
 6. Test method for thermal conductivity of closed cell polyethylene foam shall be ASTM C518.
 7. Foam backing shall be within the standards of ASTM D1667.
 8. Test method for moisture vapor transmission of closed cell polyethylene foam shall be ASTM C355.
 9. Test method for thermal conductivity of tile with foam attached shall be ASTM C236.
- B. Acrylic Impregnated: (Wood back) (1/16 inch closed cell polyethylene foam backing), (Camden) (Cambridge) (Chesapeake) color.

* * (OR) * *
- B. Heritage Finish: (Wood back) (1/16 inch closed cell polyethylene foam backing), (Foam with Par-K-Stick® backing), (Wheat) (Bran) (Barley) color.

* * (OR) * *
- B. Urethane Finish: (Wood back) (1/8 inch closed cell polyethylene foam backing), (Foam with Par-K-Stick® backing), (Standard) (Honey) (Windsor) (Old Brown) color.
- C. ASTM E-84 Flame Spread Results:

	Smoke Density	Fuel Contribution	Flame Spread Rating
Acrylic Impregnated			
Wood back	65	50	70
	(Class B)	(Class B)	(Class B)
Foam back	30	75	95
*** OR ***			
Heritage Finish			
Wood back	45	130	100
Foam back	275	155	100
Foam with Par-K-Stik	275	155	100
*** OR ***			
Urethane Finish			
Wood back	60	85	70
Foam back	170	95	90
Foam with Par-T-Stik	170	95	90

D. ASTM E-648 Critical Radiant Flux Test Results:

- Acrylic Impregnated:
 - Wood back 0.568 W/cm² (Class I)
 - Foam back 0.630 W/cm² (Class I)

E. Sub-floor Filler: Premix latex requiring water only to produce cementitious paste.

- F. Adhesive: Shall be a water and alkali resist produced by the flooring manufacturer; wood back parquet, use Hartco 80 adhesive for foam back parquet, use Hartco 100 adhesive.

- G. Moldings: Use manufacturer's prefinished matching moldings to:

1. Cover expansion space around all vertical objects (quarter round) and (combination base and shoe molding) (_____ color).

* * (AND/OR) * *

2. Serve as transition to adjacent flooring (reducer strip), (threshold), (casing), (_____ color) (5/16" thick for wood back parquet), (_____ thick for parquet with 1/16" thick backing), (7/16" thick for parquet with thick foam backing).

PART 3—EXECUTION

3.01 INSPECTION

- A. Before installation work is commenced, face shall be inspected and treated as necessary to remove laitance, loose material or surface, grease, oil and other contaminant which will affect bond of the adhesive. Surfaces shall be left broom-clean. Before adhesive installation is commenced, surface shall be broom and/or vacuum cleaned.
- B. Concrete surfaces shall be visibly dry, pass a 24-hour rubber mat test (no condensation) or phenolphthalein test prior to application of adhesive. Mat shall be taped to floor on all edges.
- C. Verify that curing methods used for concrete are compatible with adhesive.
- D. Wood subfloors shall be dry, clean, structurally sound and well-nailed and/or free of voids and with joints that do not exceed 1/8". Ensure that all nail heads driven flush with surface.
- E. Verify that substrate surface is flat to plus/minus 1/4" in 10 feet.
- F. Beginning of installation implies acceptance of substrate area as suitable to accept the adhesive.

3.02 PREPARATION

- A. Broom clean substrate and ensure that face is free of oil, grease, wax, dust, foreign substances.
- B. Use latex filler to patch cracks, small holes and for minor leveling.


3.03 INSTALLATION

- A. Layout starting lines at a 90° to each other and parallel to the starting wall in accordance with manufacturer's printed instructions.
- B. Apply adhesive to prepared subfloor in accordance with manufacturer's printed instructions.
- C. Ensure joints of flooring are aligned in direction.
- D. Lay flooring symmetrically about room center.
- E. Place flooring with full adhesive contact and permanent bond to substrate.
- F. Provide ample expansion space at walls and other vertical obstructions.
- G. Provide transition strips where flooring terminates with other floor areas at a different finish level (and at stair openings). Provide (quarter round) (combination base and shoe molding) at perimeter of rooms and at vertical interruptions.

3.04 CLEANING & PROTECTION

- A. Clean floor surfaces of adhesives and smears in accordance with manufacturer's printed instructions.
- B. Provide temporary protective covering in accordance with Section (01600) (01620).

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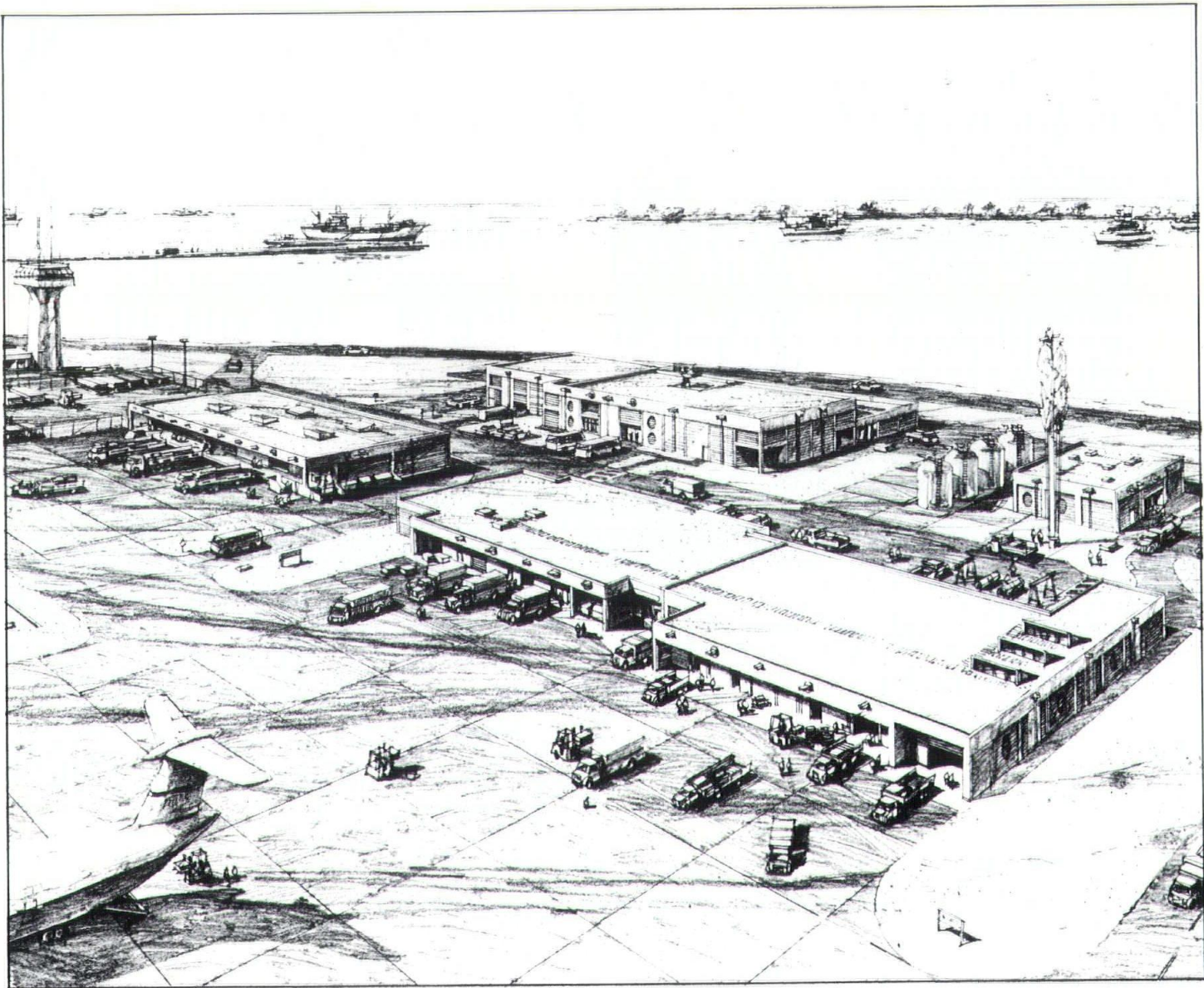
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High Tech in the Tropics

DIEGO GARCIA

*by Michael James Leineweber, AIA
Media Five Limited*



Industrial and operation facilities on the island of Diego Garcia, British Indian Ocean Territories, are part of the United States' effort to strengthen its military presence in the Middle East. Approximately 70 percent of the British-owned island is leased by the United States. Sophisticated facilities had to be designed for highly technical electronic equipment.

Unusual assignments in far-flung locations are nothing new for Media Five.

Military design has unique abilities to take you places you've never been, to do things you've never done. The results are some experiences that can have wider application in the high tech industrial world that is slowly beginning to make its presence felt in Hawaii.

We've all heard of the "Military Industrial Complex," and there is some reality to this mythical phrase. While it is well known as one of the largest employers and industrial operations in Hawaii, the military command structure for the Pacific also creates a complex of industrial and support facilities spread throughout the Pacific and Indian Ocean regions.

While unusual assignments in far flung locations are nothing new for Media Five Limited, our furthest afield work has been a three-project Air Force assignment, administered by the Navy, that took us to the atoll island of Diego Garcia, British Indian Ocean Territories. This island is owned by the British and approximately 70 percent leased by the United States. The island occupies a strategic location for United States military activity in the Middle East. The industrial and operation facilities designed by Media Five Limited are part of the United States' effort to strengthen its military presence in the Middle East.

The first project is a four building Rapid Deployment Force (RDF) facility for the Strategic Air Command (SAC). "This Rapid Development Force facility is the first in the world of its kind, as it represents what is usually a



Michael Leineweber, AIA, is a principal in Media Five Limited, a design corporation offering architecture, planning, landscape architecture, graphic, interior, and multi-media design services throughout the Pacific.

couple of separate facilities on a normal military base, combined into several well planned buildings," says Media Five principal Evan Cruthers.

The complex is located at the edge of the runway apron and includes a two-story Operations Building which functions as the Diego Garcia link with a worldwide SAC communication network. The building houses offices, a command post, communications equipment and facilities, planning rooms, an auditorium for mission briefing and debriefing, and an area for flight crew preparations with suits, parachutes and other flight equipment, and a security center for flight line police.

Other buildings in the complex include a facility to demineralize water with adjacent storage tanks, an industrial use avionics and

aircraft maintenance building for intermediate level repair and bench checks of aircraft engines, computer equipment and other aircraft parts. An industrial use warehouse is designed to store palletized materials and equipment used for the repair and maintenance of aircraft. Goods which can be stored outdoors are placed on a storage pad.

The second component of the Diego Garcia assignment is Ground-Based Electro Optical Deep Space Surveillance (GEODSS) where Media Five designed a building for three telescopes and a communications/computer center. Put simply, the system informs its operators of the locations of the world's satellites. The basic mission of GEODSS' three tracking telescopes is to detect and track objects in deep space and send this information to the computer center, which in turn transmits data to the Cheyenne Mountain command center in Colorado. A GEODSS facility operates on Haleakala on Maui, and others are sited in New Mexico and South Korea, with a future site in Portugal.

"This was a particularly interesting challenge," says project manager Ann Matsunami. "We needed to design a self-supporting utility system for a complex, high tech industrial building in the middle of nowhere. Extremely sophisticated environmental systems had to be designed to support the highly sensitive electronic equipment. The GEODSS facility has its own sewage treatment plant, water treatment plant, fire protection,

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water storage tanks, and 20,000 gallons of fuel storage for the back-up generator."

Diego Garcia's salt air and humidity created special design problems not only for selection of construction materials but also for their effect on the telescopes. "Positive pressure in the telescope domes is provided to keep the salt air away from the lenses when the domes are opened for viewing," Matsunami said.

The third project is a facility for the NAVSTAR Global Positioning System. The purpose of this facility is to serve as one of the stations which form the basis for a tracking system based on the triangulation between an object and two tracking station points. Using this system, one may exactly position and navigate by coordinates. This project, like the others, involves providing facilities for highly technical electronic equipment. This includes an Uninterrupted Power Supply (UPS) system to provide uninterrupted electrical power to the equipment with an extensive battery backup to take over in case of power failure until the backup generator takes over. Power cannot be interrupted for even one second. This project has additional requirements for High Energy Magnetic Pulse (HEMP) shielding to intercept the magnetic field given off by a nuclear explosion, spreading the field through the building and neutralizing the force in the ground, preventing interruptions to the electronics inside.

The Media Five Limited staff learned quite a lot in this three-part Diego Garcia assignment. Although we were already well-versed in creating high tech industrial environments and in designing for tropical locales, we learned to combine these skills and to create these facilities in very remote sites. Spin-off applications of this combined technology are already being applied to sophisticated resort and hotel facilities in remote tropical islands, as well as in Hawaii.

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A SENSE OF HISTORY

Pearl Harbor's Architectural Heritage Explored

by Spencer Leineweber, AIA, Spencer Mason Partnership

Photos courtesy of U.S. Navy

The U.S. Naval Base at Pearl Harbor is an unusual historic district because function—rather than form—has determined its historic status.

The base is included on the National Register of Historic Places as a national historic landmark, a designation indicating significant national or international importance. This registration is due to the role the base has played in support of the American naval presence throughout the Pacific.

Unlike most historic districts that adjust to change but are primarily concerned with a specific period of time in their history, it is the process of change that is a fundamental quality of Pearl

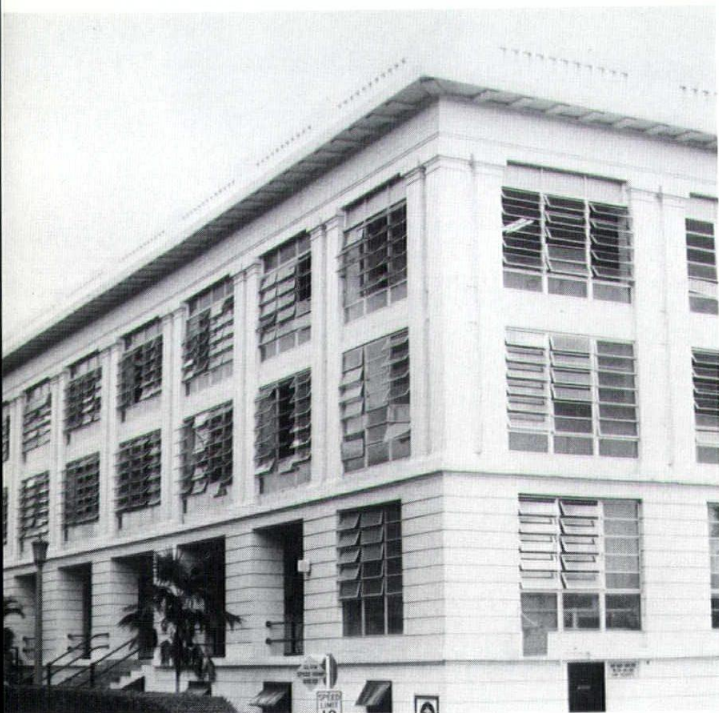
Harbor's national significance. The need to continue as an active naval facility takes precedence over individual qualities that have given it landmark status. It is extremely important that alterations required by the mission of naval presence in the Pacific preserve—yet not be inhibited by—this landmark status.

Federal historic preservation legislation was written initially to preserve structures of exceptional American historical value. All federal agencies were mandated by Executive Order 11593 to locate, inventory and nominate to the Secretary of the Interior all sites, buildings and districts within their jurisdictions which might qualify for listing on the national register.

While this executive order has been in existence for nearly 20 years, there are few agencies that have complied consistently with this mandate.

The Pacific Division Naval Facilities Engineering Command complied with the order and undertook a study in 1978 which produced a historic survey of all the buildings within the confines of Pearl Harbor. This preservation plan, in addition to documenting every structure on the base, provided criteria for establishing which buildings would be designated as prominent elements of the national landmark. The plan also provided planning tools with which to make decisions concerning repairs or removal of

Puller Hall at the Marine Barracks (left) was built in 1911 and shows no major exterior modifications from the original design. It is a category one structure. The pipe shop (below), while strictly utilitarian in design, dates from the first building phase of the base in 1911. It is a category one structure.





The administration building at Pearl Harbor Naval Shipyard (above) is a category one structure dating from the original base construction period of 1913. It still retains the additions of 1934 and 1941, reflecting two periods of base expansion. Lockwood Hall at the submarine base, a category one structure, was built in 1934 to provide quarters for bachelor submarine officers.



structures on the base.

Due to the changing nature of the support activities and the constant construction activity, it is important the base be allowed to continue to change as necessary. While fleet support is always the first priority, the historic preservation plan serves as a guideline; fleet support and historic preservation are not necessarily in conflict.

In order to preserve the mission status and yet not destroy any significant structures, a unique rating system for the nearly 2,000 structures at Pearl Harbor was developed. In most historic districts, structures are not given a rating, but rather are judged on whether they contribute to the overall qualities of the district. Often it is not the landmark buildings that determine the overall character, but the district's background buildings, which individually may not be significant, but when grouped together are important. For Pearl Harbor, it was necessary to evaluate each individual structure as it relates to the entire complex, primarily in terms of historic function. Base history documentation was important in overall thrust of the preservation effort.

The strategic military significance of Pearl Harbor has been recognized by the Navy for many years. Known to westerners since the late 18th century, the harbor was first surveyed by the Navy in 1840. Commodore Charles Wilks made soundings across the reef at the harbor's mouth and up the channel to Bishop's Point. He reported, "The water upon the bar should be deepened . . . it would afford the

best and most capacious harbor in the Pacific." Subsequent visits to Pearl Harbor by military personnel suggested the bar blocking the mouth of Pearl Harbor should be dug out before war occurred, so the harbor could provide a safe refuge in time of war.

In November, 1887, Kalakaua granted to the U.S. the exclusive right to enter the harbor and to establish a coal and repair station for the use of vessels. He also



The bachelor enlisted quarters at West Loch, 1933, is a typical category two structure, reclassified to category one.



Drydock #1 (above) is the first of four drydocks built at Pearl Harbor. It took 10 years to construct. During construction in 1913, the drydock exploded due to hydrostatic pressures. When construction recommenced, twice as much concrete was used; also—just in case—an offering was made to the shark goddess. Quarters at Ford Island (below) were originally designated in category two and due to the integrity of the structures and surroundings have been redesignated into category one.



gave the U.S. sole rights to Pearl Harbor as a port. This proclamation accompanied the extension of the reciprocity treaty of 1875. However, funds to dredge the reef were not released until 1902, when \$150,000 was allotted to acquire land for a naval station at the harbor and to channel its mouth. The land in this acquisition included the present navy yard, Kuahua Island and the southeast coast of Ford Island. The first of many contracts was let to Hawaiian Dredging Company to dredge the bar at the

Long a favorite of many architects, the category one submarine escape training tank was built to provide escape training for submarines in distress.

mouth of the harbor in 1908.

Construction activities at the base were focused on providing repair and ship outfitting facilities rather than new ship construction. The first phase of building activity continued for more than 10 years and provided adequate ship repair support for the fleet in the Pacific. Construction continued in the 1930s, but was relatively minor facility support (administration and housing) compared to the major construction that occurred during World War II. When President Roosevelt declared a state of emergency in 1939, construction at Pearl Harbor rapidly increased. The harbor's repair capability and fuel oil storage capacity were dramatically increased. It has been said that a fatal flaw of the Japanese attack on Pearl Harbor Dec. 7, 1941, was the concentration of the attack on ships within the harbor and not the repair or storage facilities on shore. While the attack was catastrophic, repair work was still able to begin immediately following.

When the Navy inventoried the structures within the base, many buildings fell into logical categories associated with two major building phases of the base. There are five designated categories of priority for preservation. Buildings that are essential to the understanding of the relationships of Pearl Harbor to the Pacific Fleet were designated as Category One structure, which includes 81 structures. Preservation of these buildings is an important—but not required—consideration in the repair rather than removal of the individual buildings. Category Two structures are buildings which function as an important part of the base and contribute to the overall historic fabric; there are 214 such buildings.

There are three categories of lesser importance: Category Three, structures that played a minor role; Category Four, structures lacking in importance; and Category Five, structures that were

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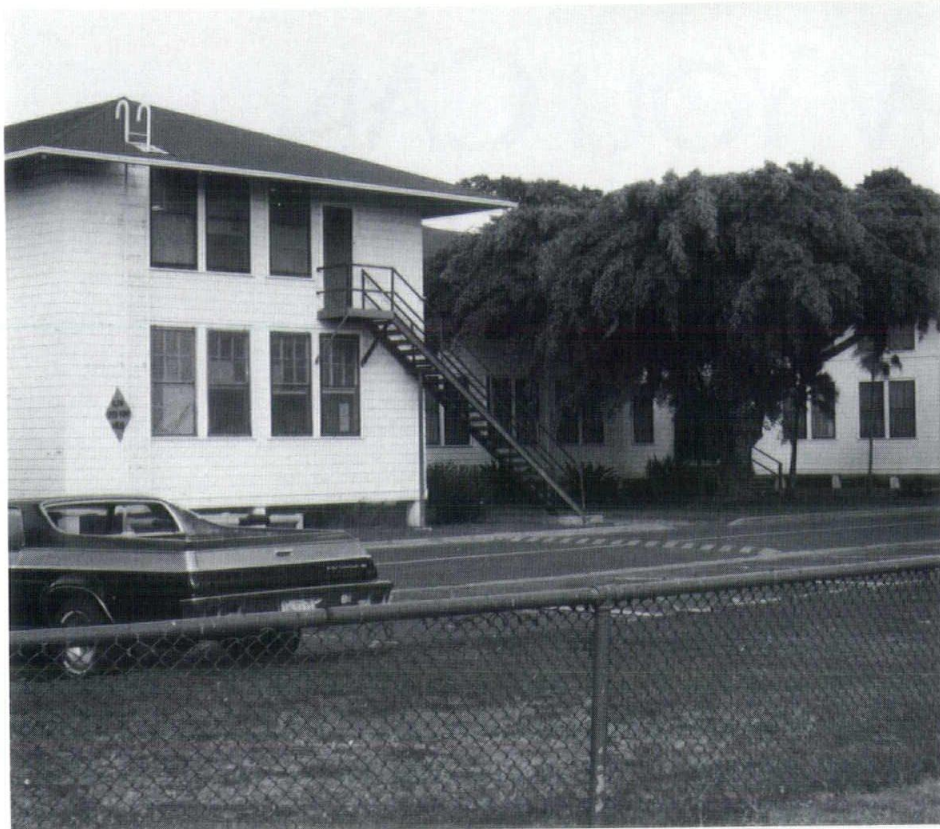
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Marine Barracks 285 was originally a category two structure, downgraded to a category three structure by the Navy. It was built in 1941 and is similar to many support facilities built during this period.

built after 1953 and not evaluated in the preservation plan.

Since the original documentation for the 1978 historic preservation plan, the Navy has continued to evaluate the structures. The intent is to allow for further development of the base, by re-evaluating structures in category two, and making them either category one or category three structures. The magnitude of the number of structures in category two was difficult to handle in the planning process. The previous preservation intent of category two structures was to document the building, with drawings and photographs, especially if removal was required. This documentation did not maintain the structure, but at least provided a record for historians. It was deemed more advisable to re-evaluate category two structures and attempt to preserve those essential elements to the base, providing record-keeping only for those that played a minor role.

The historic preservation plan for Pearl Harbor is a valuable precedent for other public agencies having to deal with the complex issue of compliance with federal preservation legislation.

The plan has accomplished several things: historic information and photographs are documented, potentially conflicting agencies (National Park Service, the State Historic Preservation Office, and the Navy) all agree on a set of evaluation criteria; a detailed survey has been conducted; and future documentation and review requirements are established. The resulting preservation plan is a useful document not only for understanding the preservation goal at Pearl Harbor, but also the intent of preservation documentation in the larger context of U.S. history. It illustrates quite clearly that a preservation plan can be a working document, and that the priority of function can be used to preserve form.



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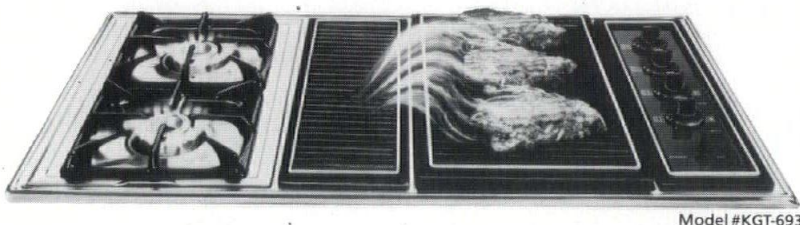
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Ku'u Makana, a luxury condominium development on Diamond Head Road, has the flavor of a country home. Large covered lanais face the ocean. The exterior is primarily of California redwood and Waianae sandstone.

KU'U MAKANA AT DIAMOND HEAD

Architects Hawaii, Ltd.

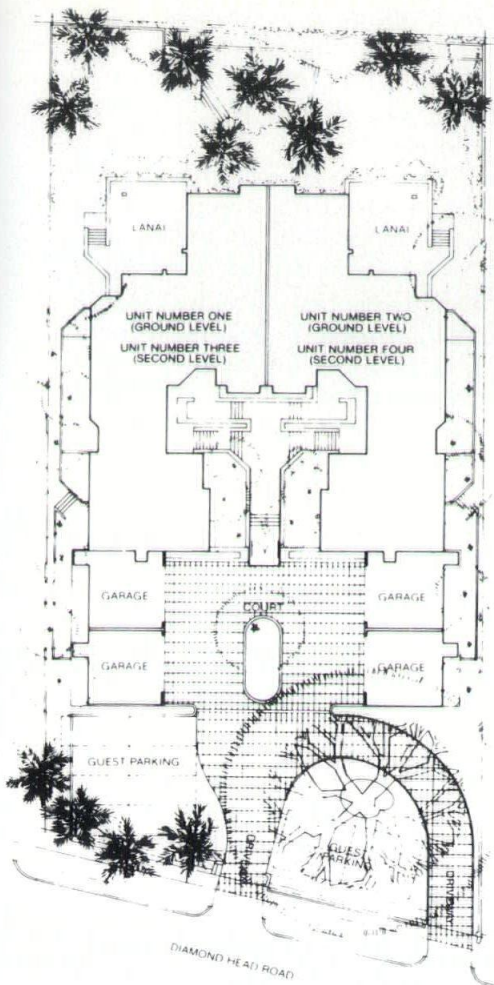


The four-unit luxury Ku'u Makana condominium development at 3165 Diamond Head Road in Honolulu was designed by project architect Timothy P. Teefey, AIA, an associate of the architecture, planning, interior design and graphic design firm of Architects Hawaii, Ltd. In planning the development, Teefey was challenged to conceptualize a residential complex that would be compatible with existing homes in the area. The idea was to create a structure with the flavor of a single luxurious country home as opposed to a project with four

distinct components.

The project required the design of four 4,500-square-foot units, each with a large covered lanai, a living-dining room with a fireplace, a study and a large kitchen with amenities suitable for use by caterers.

Separated from the living area by a large gallery which is skylighted on the upper units, the private wing of each unit contains a master bedroom suite, a secondary bedroom with an adjacent bath, and a studio with a bath. The master bedroom suite consists of a large bedroom with a private courtyard on the lower



levels, an adjacent solarium with skylighting on the upper levels, a dressing room and a bathroom with a large whirlpool bath, again with skylighting on the upper levels.

The basic forms of Ku'u Makana reflect the old Hawaiian styled homes of the neighborhood, typified by their high hipped roofs, generous overhands and covered lanais. The building's architectural details are reminiscent of the massive wood details of mansions and country homes of the past, yet are contemporary in their style and simplicity of line.

Materials used in Ku'u Makana's construction represent a variety of

Four 4,500-square-foot units comprise Ku'u Makana. The tiled, landscaped motorcourt surrounds a massive banyan tree. An oceanfront yard is shared by the four owners. Each unit includes a study (below). Skylighting is used effectively on the upper level.

mainland, European and local products. While the exterior of the dwelling is primarily of California redwood in combination with Waianae sandstone and a custom color blend on locally manufactured concrete roofing tile, the interiors are richly appointed in imperial plaster, Italian marble and tiles, and extremely select local koa wood.

Custom interiors were provided to each of the owners according to their personal tastes and specifications.

Entering the project from Diamond Head Road, the visitor enjoys the sophistication of a tiled, landscaped motorcourt surrounding a massive banyan tree. Beyond the court is the main gate and secluded entry courtyard to Ku'u Makana. Sideyards provide access to the beach, private patios located off the master and secondary bedrooms of the lower units, and private walkways to the garages.

The oceanfront yard of Ku'u Makana is shared by all four owners who also enjoy sweeping views of the ocean from their master bedrooms, main lanais and kitchens.



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Project Architect & Designer

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Principal-in-Charge

Francis S. Haines, FAIA

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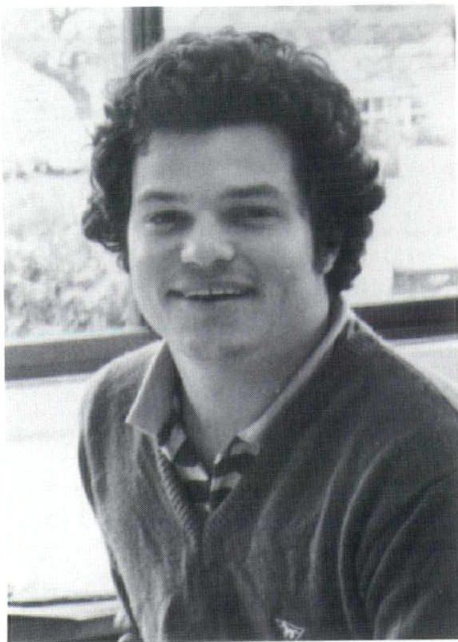
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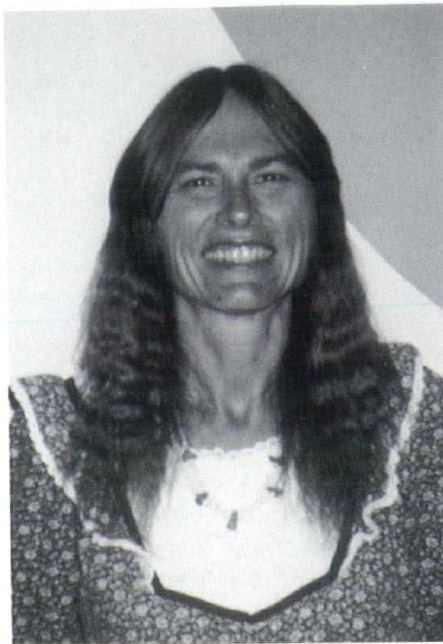
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NEW MEMBERS

by Lyna Burian, AIA

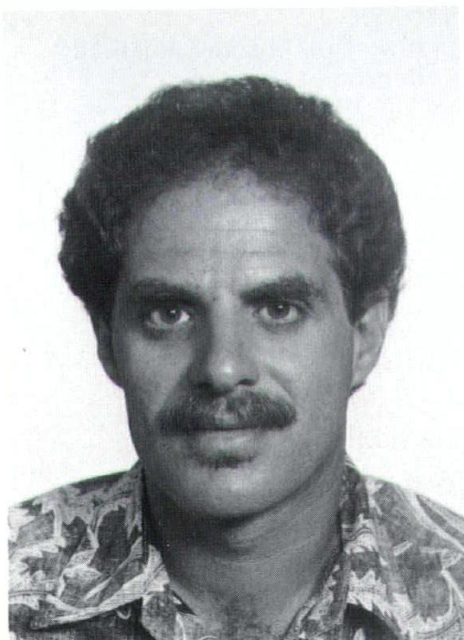
Three new Associate Members from the firm of Riecke, Sunnland, Higuchi, Kono Architects, Ltd. are: Anthony Gonzales, Steven Heller and Marie Kimmey.

ANTHONY GONZALES, one of the architectural designers in the firm, received his Bachelor of Architecture degree from the University of Hawaii in 1983. Born in California, he moved around quite a bit before he came to Hawaii six years ago. He likes to do computer programming and off-road bicycling.

STEVEN HELLER hails from Pittsburgh, Pennsylvania, and came to Hawaii 10½ years ago, shortly after he received his Bachelor of Architecture from the Illinois Institute of Technology in 1972. He is currently one of the associate architects in the firm. Steve owned a cabinet shop at one time and has extensive construction experience. He lists his hobbies as golf, photography, sailing and diving and he was once a sailing and diving instructor. He and wife, Laura, have two children, Jonah Robert and Brooke Angela.

The third new Associate Member from the firm is **MARIE KIMMEY**, a job captain, who is originally from Michigan. She received her Bachelor of Architecture degree in 1961 from the University of Michigan. She has been in Hawaii for two years and is the new president of Planners, Architects, and Landscape Architects of Maui (PALM). Marie has a son and two daughters and became a very young grandmother when granddaughter Susanna was born a year and a half ago. Whenever she finds the time, she likes to go swimming or do some knitting and sewing.

MARIANNA KNOTTENBELT, Associate Member, is working with the Maui Architectural Group. Born in the Netherlands, she was raised in Montreal, Canada, and has a Bachelor of Arts degree from Smith College and a Master of Architecture from Harvard University. Marianna is



Steven Heller



Harold McGuire, Jr., AIA



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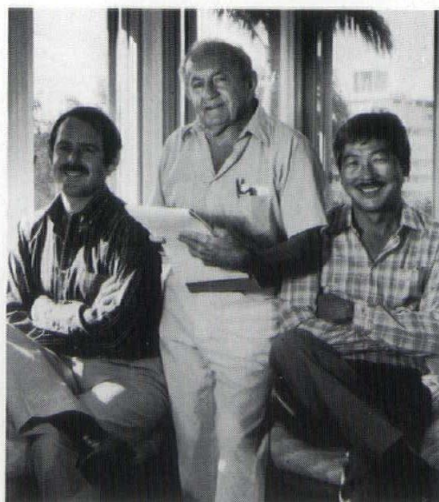
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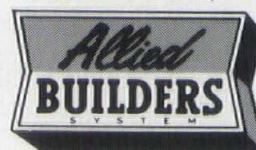
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married.

WALTER Y. ISHII, AIA, is currently employed with MLA Associates, Kauai branch, acting as Assistant Resident Engineer at the Lihue Airport construction site. One of our kamaaina architects, Walter is married to Marian and enjoys ballroom dancing and hunting.

HAROLD (JOCK) MCGUIRE, JR., AIA, is one of the principals of the newly formed Pacific Architects, Inc. Also a kamaaina architect, having been born and raised in Honolulu, he received a B.S. in Architectural Engineering in 1951 from California Polytechnic State University. His hobbies include walking and reading and, whenever he can sneak away, he likes to travel all around the globe.

JOHN ADVERSALO, AIA, is one of the principals at Walter Leong and Associates, Inc. He received a Master in Architecture in 1981, after finishing his Bachelor of Arts in Architecture in 1978, from

the University of California in Berkeley. He has been active as an Associate Member for several years and, in his spare time, enjoys music, swimming and working with computers. He was born and raised in Honolulu and he and wife, Maria, have a one-year-old son, Jeremy.

GUY JOHN JENNINGS, AIA, is one of the staff architects at Trans Oceanic Architectural Design (TOAD). He received a Bachelor of Fine Arts degree from the University of Hawaii.

Although he was born in the Philippines, his family moved to Hawaii when he was three. He and his wife, Mary Gay, have two sons, Justin Whitney and Grayhmn Andrews. He loves sports and when he is not sailing or body surfing, he plays softball for the Outrigger Canoe Club. He still finds time to finish his house, which he designed himself. He also likes to collect crystal stemware.

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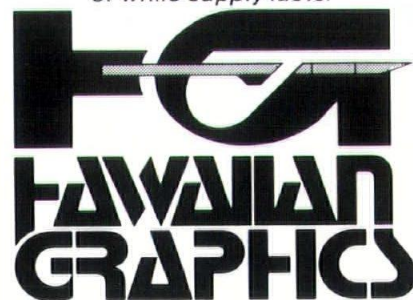
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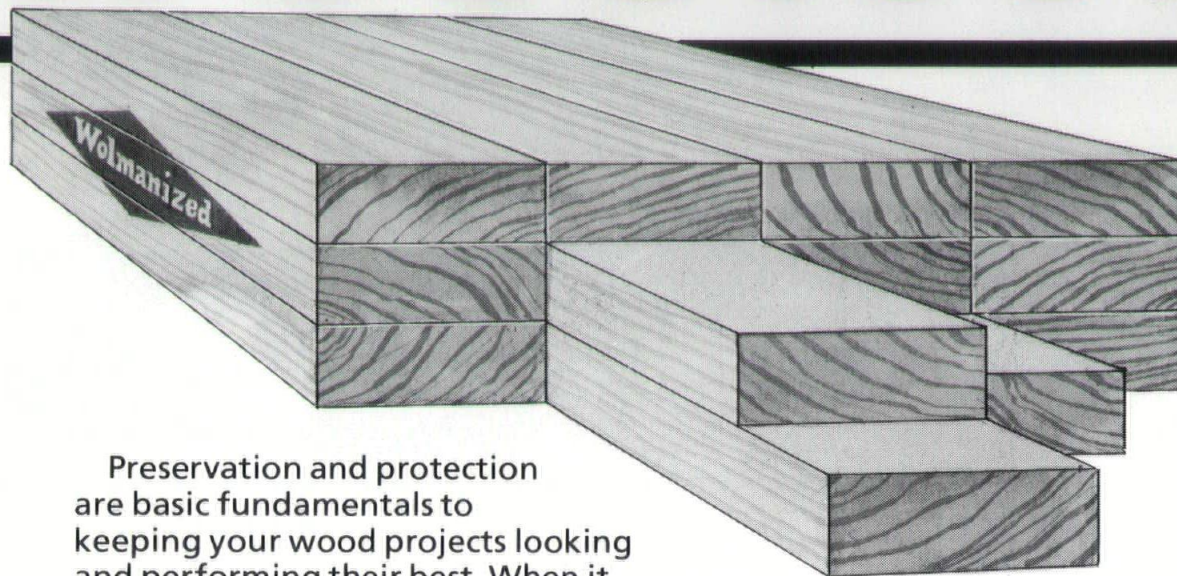
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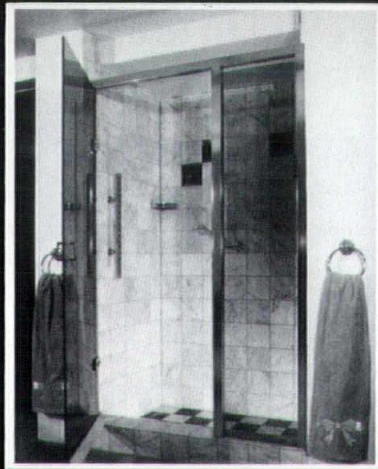
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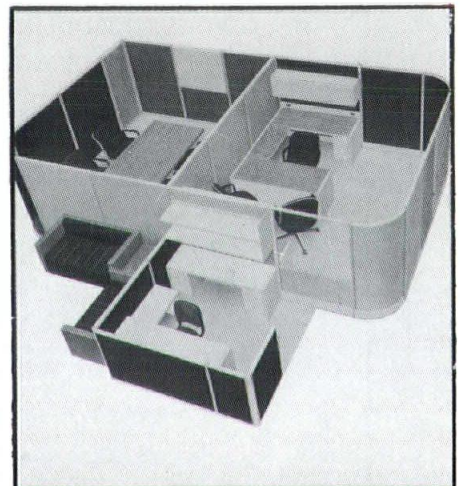
Elmer Botsai (far right), Hawaii Society/AIA president, is among witnesses who watched as Governor George Ariyoshi signed into law amendments to the design professional conciliation panel law. Also pictured are key legislators, state department heads and design professionals who were instrumental in getting the law enacted. They are, left to right, Arthur Kohara, Allen Kajioka, Elmer Phillips, Dennis Toyomura, Senator Steve Cobb, Douglas Sonoda, Representative Mitsuo Shito, Senator Anthony Chang, Representative Ken Kiyabu, Russell Nagata and Stan Kawaguchi.

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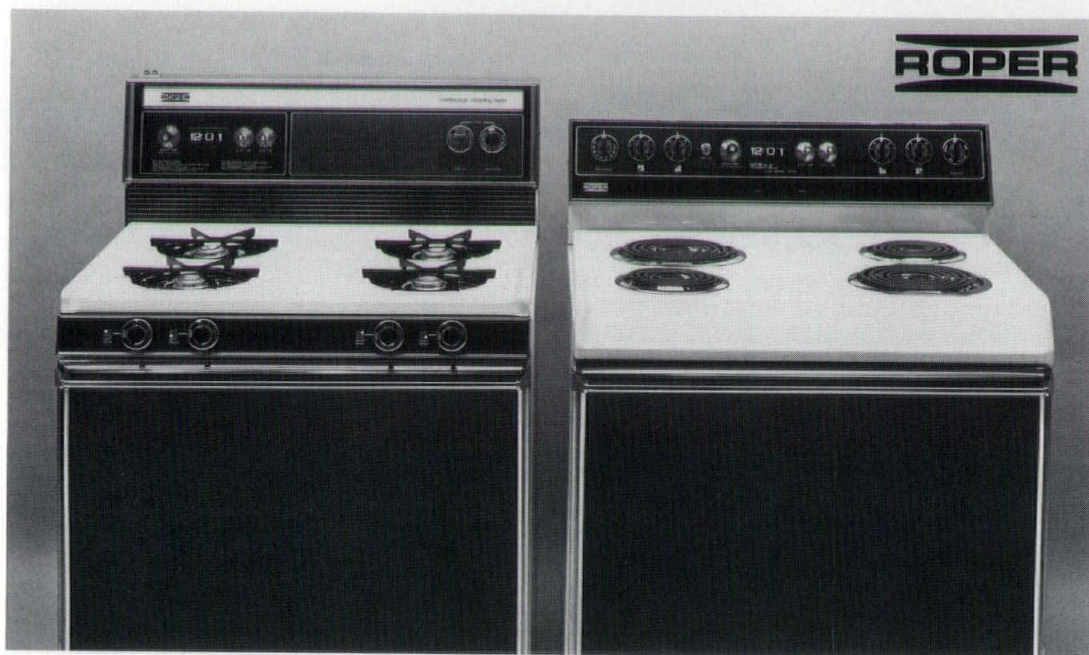
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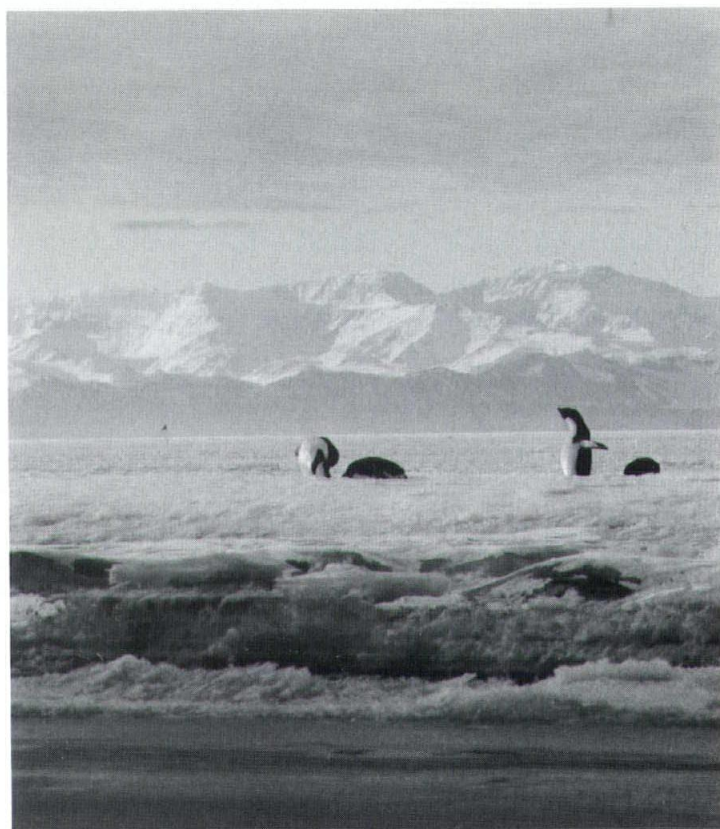
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Cargo ships arrive at McMurdo Station (above) in late January following a Coast Guard icebreaker that cuts a channel in the pack ice. Ships are off-loaded to an ice wharf (foreground island). Cargo is then transferred to the volcanic rock of Ross Island where McMurdo Station is located. The Transantarctic Mountains (right) are approximately 50 miles across McMurdo Sound from McMurdo Station. Emperor penguins are infrequent visitors on the pack ice. Thiel Earth Sciences Laboratory (below) houses the geology and glaciology research programs. The new Tucker SNO-CAT has rubber treads for effective traction in snow and in the summer exposed volcanic rock surfaces of McMurdo Station.



ARCHITECTURE ON ICE

by Lee Davis, AIA
The CJS Group Architects Ltd.

How adventurous are you willing to let your next project be? Joe Ferraro and I recently spent six weeks on an assignment at the bottom of the world in Antarctica.

The project assignment was to develop a program for new science research facilities and field investigation for the National Science Foundation (NSF) at McMurdo Station. The opportunity for this work came through the Naval Facilities Engineering Command Pacific Division (PACDIV) which has been commissioned by the NSF to be a coordinator and contract administrator of all future NSF work in Antarctica.

The least visited of all the continents and the only one with no nations, no governments, no cities and no citizens, Antarctica has a haunting beauty and the endless variety of an ice bound landscape. Five and a half million square miles, nearly one tenth of the earth's surface, contain 90 percent of the world's snow and ice with an average thickness of 7,000 feet. In other words, the place is awesome.

Preparation to visit such a place on less than three weeks notice was quite a challenge. It was much like a very serious scavenger hunt which included researching the project, passing rigorous physical and dental exams and finding sources for long underwear, wool shirts and socks and other survival items. Time was also spent celebrating an early Christmas with family and friends since the trip time frame included the holidays.

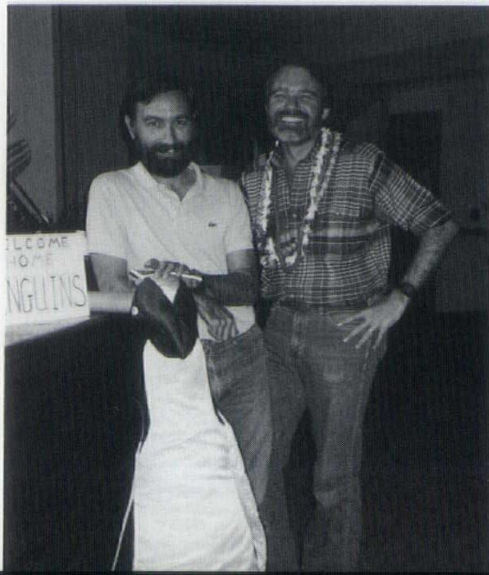
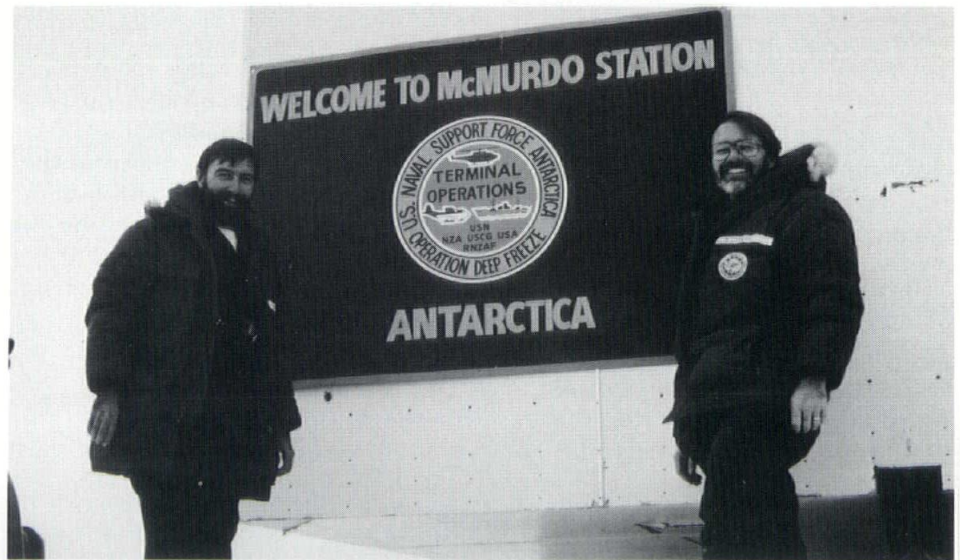
Art Weber, AIA, of PACDIV was very helpful in making

preparations for the trip and answering questions about what to expect. Weber has made several trips to Antarctica and has been instrumental in the design and construction of modular buildings at the Plateau Station and McMurdo Station.

Required reading, prior to arriving on the continent, included "Survival in Antarctica," prepared by the NSF. Actually, mental pictures and preconceptions of the conditions resulted in our being

over-prepared for the adventure.

In Christchurch, New Zealand, one of the U.S. doorways to Antarctica, we were given final orientation and outfitted with antarctic survival clothes. Personal survival equipment and clothes amounted to approximately 75 pounds. The issue included some heavy duty items such as furback mittens (bear claws), thermal boots (bunny boots/mukluks) and a pile cap (balaclava), to mention just a few. About 35 pounds of



Joe Ferraro and Lee Davis stand at the official welcome and farewell sign at McMurdo Station's Williams Field (77 degrees, 51 minutes S, 166 degrees, 40 minutes E). Beards are more common on departure. The CJS Group's mascot penguin (left) greeted Ferraro and Davis upon their return to the office.



McMurdo Station has the feeling and appearance of a turn-of-the-century mining camp found in the western United States. Approximately 130 buildings make up the community. The containerlike structure below is a typical building at New Zealand's Scott Base, just two miles from McMurdo Station.

clothing was required to be worn or carried in a personal survival bag on all intra- and intercontinental flights.

By the end of December, when we arrived, all flights were via C-130 Hercules propeller planes which have the capability of ski landing on a snow runway that covers the shelf ice. The C-130, a

cargo and troop plane, is definitely not designed for passenger comfort. Box lunches, coffee and ear plugs were offered to us while in our sling seats during the eight-hour flight.

Access to Antarctica from Christchurch is via McMurdo Station, our destination, approximately 800 miles from the South Pole on a nearly straight line between Christchurch and the South Pole. McMurdo Station, America's largest, is the primary logistics facility for resupply of inland stations and for field science projects. It is built on volcanic rock on Hut Point Peninsula on Ross Island, the

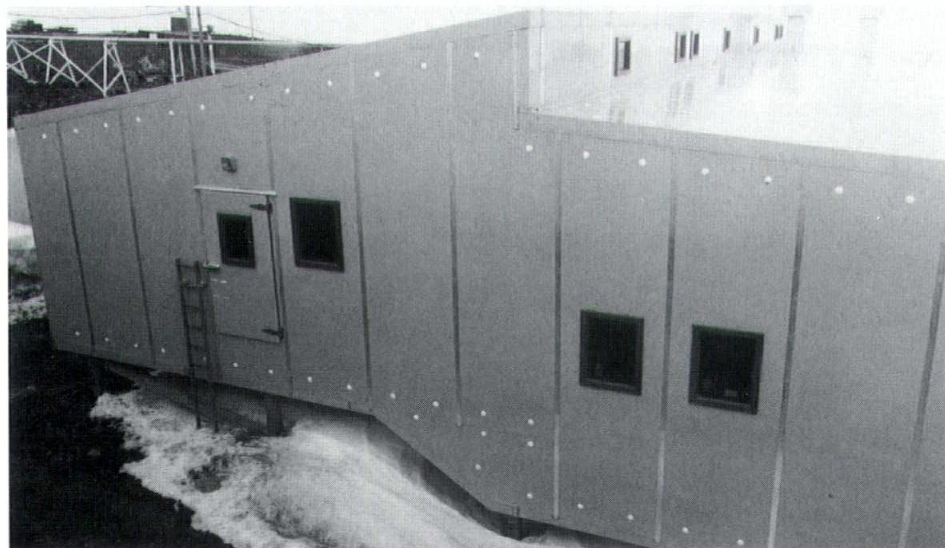
farthest south solid ground that is accessible by ship. The station has a harbor with an ice wharf and landing strips on sea ice and shelf ice that are utilized as conditions permit.

McMurdo Station was established in 1955-56 by the U.S. during the International Geophysical Year when more than 60 nations participated in world-wide programs of scientific observations. Since that time, the station has grown to approximately 130 buildings ranging in size from a small radio shack to large, three-story structures. Science laboratories, repair facilities, dormitories, administration buildings, a fire house, power plant, water distillation plant, stores, clubs and warehouses make up the community.

The station has the feeling and appearance of a turn-of-the-century mining camp found in the western U.S. All buildings are linked by above-ground water, sewer, telephone, and power lines because of the almost unworkable frozen ground conditions.

It is evident that the station is growing through definite phases. First came survival structures which met year around shelter requirements to combat severe winter weather conditions. This was followed by development of sophisticated utility systems that now produce ample and quality power and water. The next and present growth phase will include a design factor for quality of life which is evident in the recent dormitory construction and criteria for the proposed science research facilities for which we were gathering data.

There appeared to be very little deterioration to building materials except for normal wear and tear. Most buildings in the station are steel framed with roof and wall skins of metal insulated panels. Foundations, consisting of 12 x 12 wood timber blocks, rest directly on the frozen finish grade. Most buildings are raised off the ground to prevent heat transfer to the



ground which eventually destroys the frozen foundation base. Twenty-year-old exposed steel members showed no apparent evidence of corrosion or rust. This is quite a contrast to our Hawaiian environment's reaction to steel.

In the summer most snow has melted, leaving a very dry and dusty volcanic rock surface at the station. Temperatures range from 40°F in January to minus 58°F in winter. On Christmas Eve, the outside thermometer registered a surprising 60°F, far from the severe cold we had contemplated. As a result, most of our long underwear was never used. Humidity and rain are virtually nonexistent. The absence of moisture in the air was possibly the most difficult physical adjustment for our body systems.

The environment is a workaholic's paradise. The sun never sets in the summer months, giving a constant 24 hours of daylight. Part of our assignment was to photo document buildings and equipment and the constant daylight afforded us ample opportunity. An interesting note for all sunset green flash fans is that when the Antarctic sun does set for the long, dark winter, it can produce the longest green flash on record, approximately 30 minutes.

Personal calls home to the office or family were definitely possible but had unusual limitations. The cost was ten dollars per minute and calling times were dependent on a satellite's window when it passed over Antarctica. Often the window time did not conveniently synchronize with desired time zones in other parts of the world.

McMurdo's fresh-water processing facilities have traditionally limited showers to one, two-minute shower per week. The recent summer season permitted from zero to three showers per week, depending on the functioning of the system. This water restriction changed the typical daily shower into a planned and most anticipated event.

The showering limitations put a

damper on our running and exercise schedule. It's difficult not to contemplate a shower after a workout. We missed the McMurdo marathon, run in November on the ice runway, and a 10K race held in February. We were told that T-shirts from these events are coveted collector's items.

A reduced exercise schedule plus ample and well prepared food made for chunky bodies on our return. There is a two-year stock of most food staples just in case the yearly supply ships don't arrive. However, fresh fruits and vegetables are provided via the almost daily C-130 flights from New Zealand in the summer.

McMurdo Station's summer population reaches nearly 1,000 persons. The ratio of scientists to the station's Navy support staff is approximately one to nine. In the winter, the population drops to about 100 essential support staff for station maintenance only. The station is totally isolated from

late February until early October except for a plane drop of mail, fresh food and priority cargo around Midwinter's Day.

The scientific and Navy support communities are comprised of people from all parts of the United States. The station serves as a melting pot for friendships where all people, from bulldozer operators to the most renowned scientist, can interact. There is a noticeable absence of children and elderly people. Ages range from 20 to 65. Women comprise approximately 30 percent of the population and work in all job descriptions.

The splendor of its natural beauty, camaraderie of the people, sparsity of wildlife, absence of landscape and the very pronounced quietude of the Antarctic environment are most memorable. On a scale of 0 to 10, the adventure on this project assignment was 100+. Would we go again? Without a doubt, the answer is YES.

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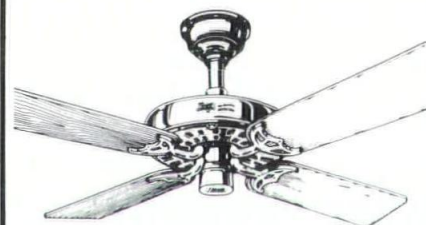
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A bathtub built for two is available for the home of the '80s. The whirlpool system enables each person to adjust and control the four jets at each end on an individual basis. Photos in this article courtesy of Kallista.

THE LUXURY BATH

The Designer in the Role of Dream Maker

*by Norman Bell, President
Kallista, Inc.*

More and more, the master bath is becoming a retreat, a refuge from the pressures of modern living. It is a room in which dreams are visualized; hopes are contemplated—a fantasy room! And for a room to achieve such mood, ambience and stimulation, it must be planned carefully, down to the last detail. Otherwise, the room turns out to be too functional, spartan and even sterile.

For the most part, plumbers prefer to work with products which have been around a long

time. Moreover, a plumber's involvement in the selection process will generally lead to the emphasis on products serving functional rather than aesthetic needs. Designers and architects need to assert themselves more in the selection process. They should be more aware of what is possible for there is a revolution occurring in new ideas and products today.

Probably the most important thing to remember while designing a luxury bath is that you are in the role of dream maker. It is crucial that you understand your clients' needs and exactly what they want you to

achieve—the ambience you are expected to create. From all the materials and products that make up a luxury bath, you have to design and specify products that will result in an intimate, spacious, grand and exotic interior. No easy task!

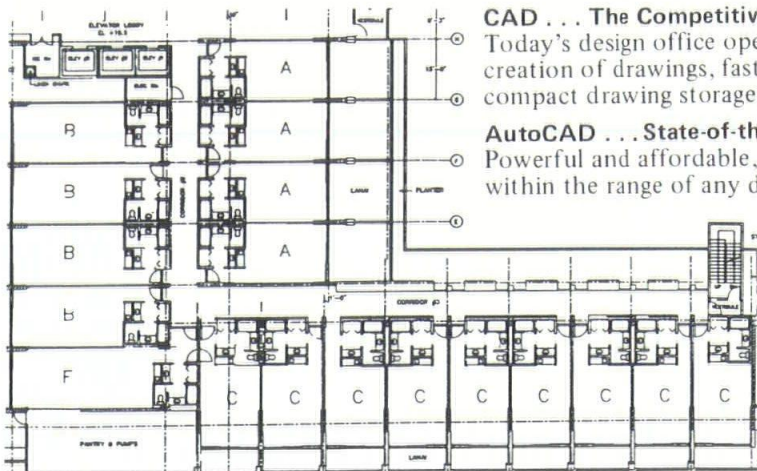
The growth of new and remodeled luxury baths over the last five years has been greater than any other room in the home, possibly because it has been the most neglected area for so long. Today it is a different matter as there is intense interest, and new ideas continue to surface or gain attention.

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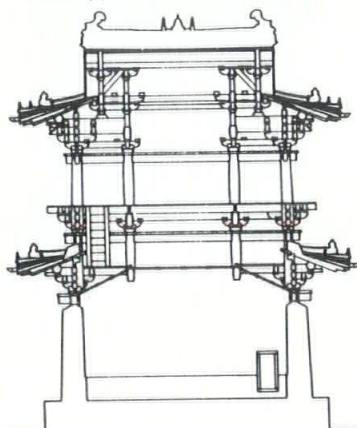
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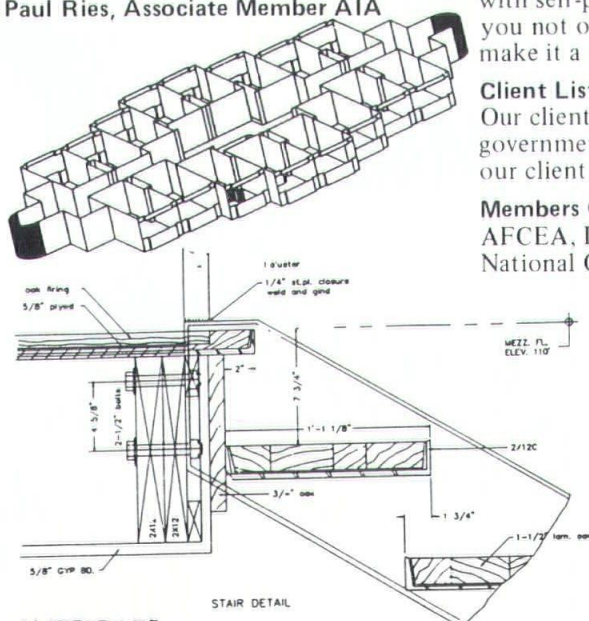
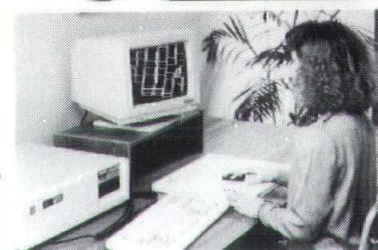
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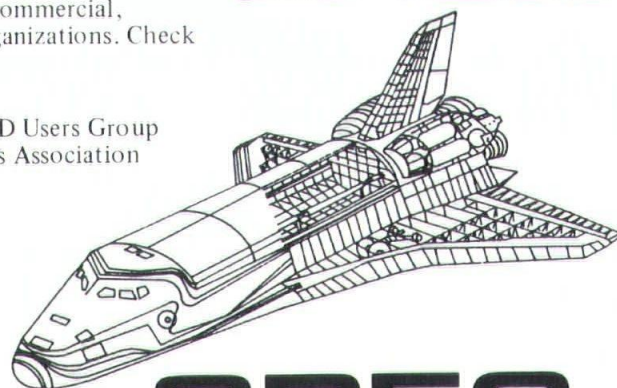
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The future for the American luxury bath seems to hold as much promise as the past has delivered in Europe.

The Bathtub. The starting point of any luxury bath is the tub itself. The client's concept of a luxury bath means that the tub must be in a sunken situation. This can be achieved by either having the tub lower than the floor level with only the rim above the floor level, or by raising the floor with a step or two.

The tub itself and the entire project will need more space than has been provided in the past.

Whether you select a rectangular, round, oval or even a corner-shaped tub, the number of styles and materials to choose from today is enormous. The important thing to understand from a materials point of view is that there is excellent acrylic production, and there is bad. There is also good and bad quality cast iron, cultured marble and even fiberglass.

The IAPMO seal of approval represents a guarantee that the product and materials are being checked and tested regularly by independent testing laboratories. Relative strengths and weaknesses of materials should be compared with regard to the specific function planned. Is the tub for bathing only? How many people will be using the tub at one time? Will the shower be separate?

The tub-shower combination serves neither purpose especially well. The tub itself, for safety reasons, is shallow and cannot have nicely reclining sides for fear of slippage. A tub should be 18 to 20 inches deep with sloping sides and back to permit a comfortable bathing position.

Whirlpool systems for the tub are making the separation of tub

and shower a necessity since the whirlpool system requires a depth of 18 to 20 inches. Whirlpool systems for the tub are a direct outgrowth of the hot tub and spa.

While standards exist for tub production and quality control, there are no present standards for whirlpool systems. It is expected that in the near future, IAPMO will introduce specifications and controls in order to achieve some level of quality and testing standards.

The difference between one system and another is mainly a question of quality and performance. Most systems are constructed of plastic for both the jets and the piping parts. Others are constructed of brass and copper. Pump size (HP) is important relative to the number of jets and the size of the tub. The method of adding air to increase the level of turbulence is important in determining the type of water action to expect. The critical issue for the designer to keep in mind is that all systems are not the same, and that variations are substantial both in cost and performance. It's necessary to look carefully into what is promised.

Other factors to consider when specifying a whirlpool system are:

- Provide for an access panel for repair and maintenance.
- Install the pump in a position which produces minimum noise. Setting the pump on a concrete base and covering it with a removable box will reduce noise.
- Most whirlpool tubs will lose between 5 percent and 10 percent heat during use. The normal method of reheating is to add hot

water. This should be considered in determining the size and adequacy of the water heater.

- Most tubs should be set in a 1½ to 2-inch bed of concrete.
- The on/off controls are normally far enough away from the tub to prevent a person from being able to operate the whirlpool system while standing in the tub. It is now possible to specify a method using pneumatic air pressure to turn the system on or off while sitting in the tub.

Finally, a word about the use of hand showers and the practicality of custom-built tubs using tile or marble. The use of hand showers, which is essentially a European concept, is growing here as more people are using the tub.

Advantages of the hand shower include the ability to shower the body after a bath to wash off soap residue, to wash hair, and to easily clean the tub after use.

Faucets, Accessories and Hardware.

The choice of styles and materials available at present is staggering. Faucets and accessories are fast becoming the focal point of a luxury bath. There is a great deal of daily pleasure to be derived from seeing fine detail in metal craftsmanship embodied in a distinctive and elegantly styled faucet. The clever use of gold with nickel silver and gemstones has added another dimension to the beauty and appeal of those products.

The future for the American luxury bath seems to hold as much promise as the past has delivered in Europe. Faucets have been developed to control the temperature of the mixed water

Whirlpool systems for the tub are making the separation of tub and shower a necessity . . .



This six-foot-diameter tub has a clover leaf interior shape which adds great visual appeal. This tub is ideal for two people and is equipped with a seven-jet whirlpool system.



A simple shower can be custom designed to create an elegant look. Tempered glass may be clear or bronzed and designs may be etched in door or panel glass.

despite sudden changes in the supply of hot and cold water. European faucets are nearly always equipped with thermostatic shower valves which can control the temperature with plus or minus 1°C. In fact, in Germany all showers and valves are required to have a stop which prevents a child from being able to turn on water with a temperature greater than 35°C. An adult can, by pressing the button, have the water at a higher temperature. The use of thermostatic valves is unusual in the U.S., perhaps due to the fact that neither product nor idea is widely known.

Further developments by the European companies on the idea of thermostatic valves have led to this concept being available now for basin-lav sets and tub sets.

Innovation in design for faucets also has produced such ideas as the waterfall effect in which a sheet of water gushes forth from a bath or basin spout or beautifully hand-decorated ceramic basins which are more like fine tableware than basins. Moreover, there are matching knobs and



Classically shaped, this graceful tub (left) is six feet long with generous width, ideal for slow, sensuous bathing. Basins come in a wide variety of sizes and finishes. This octagonal bowl (below) is of heavy-gauge brass, handcrafted by French artisans.



even wallpaper.

Further, what about the pulsing shower head or the metal bar with 18 jets to massage the body during a shower?

There is every reason to expect the use of electronics to be applied to luxury baths in the future. You can relax in your tub and have next to you a control panel which permits you to turn on the stereo or TV or dim the lights. If you have a closed circuit surveillance system, you can see who is at the front door. All this is possible today on a custom basis.

A major asset for designers is that they can create any look throughout an entire project. Faucets, towel bars, soap dishes, drawer pulls and door protectors can all be matched in detail.

However, the designer should be aware of the effect water has on metals. Traditional use of brass for castings is best, but using polished brass for the metal finish will present problems over a period of time. Using protective coatings, designed to stop tarnishing, simply delays the problem. Chemicals used to purify

water break down the preventive coating. Therefore, the use of brass as a finish is not recommended in coastal areas due to salt in the air. Designers should specify chrome, gold or nickel silver.

Of all the metal finishes available, chrome plating is the strongest and most durable. The use of nickel silver, which has a softer and more elegant look, is growing as an alternative to chrome's harsher and colder look. Nickel silver, whether in a polished or brushed finish, is slightly less durable than chrome but it will withstand salt much better than brass and slightly less than chrome.

Gold plating is expensive but not prohibitive. It clearly makes a statement of style and offers a considerable range of possibilities. With gold plating it is important to establish some prior experience with the manufacturer. If you do not have this, try to learn some independent user's experience you can rely on. While the recommended thickness of gold plating will vary according to a

product's surface and shape, generally the amount of gold which is plated will determine the quality.

The last point on gold plating concerns the color variation you will see from one manufacturer to another. This can be a problem area if it has not been known beforehand. Be careful.

Water Closets, Bidets and Lavs.

There is a trend toward separating the master bath into compartments, particularly for the water closet and bidet. If there is sufficient room, it is a good idea. The one cautionary note is to be careful the all-important sense of spaciousness is not destroyed.

The newer water-saving water closets are proving to be good products and the improvement in the flushing action makes selection easy.

The decision to include a bidet depends on whether the client will use it. There are some very uncomfortable bidets on the market with thin edges around the rim. Also, the European bidet may have an entirely different set-up and possibly be unable to meet

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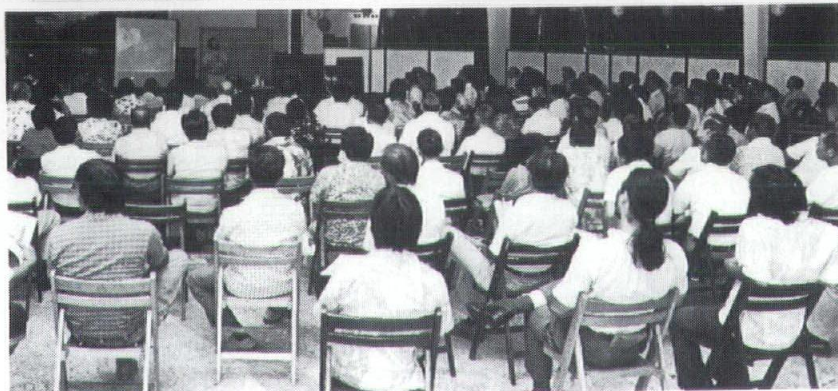
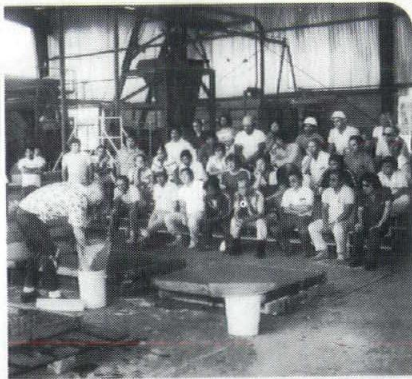
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With lavs and basins, the trend is toward a larger bowl size. The self-rimming style is coming back. There are some handsome designs coming onto the market which can only be appreciated in the self-rimming style. Hand-painted ceramic basins from France, Italy and Mexico offer a wide range of styles to accent the vanity, while metal basins and earthenware lavs add their own distinctive look.

Safety. This subject seldom receives the attention it deserves at the planning stage of the project, and yet we are all reminded constantly of the number of accidents which occur in this room—far more than in any other room of the home.

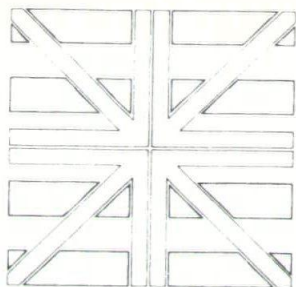
Admittedly, grab bars do look like grab bars and they will interfere with the general design unless some thought has been given at the beginning. Such accessories can be worked in with break lines so they are not obvious.

Safety ideas to consider:

- Tile and marble are traditional materials but both present major risks when used on the floor. Explore non-skid floor products.
- Carpeting is a safe alternative to traditional materials.
- Rugs on top of tile or marble can be secured to the floor using the Velcro fastening system.
- Water closets, showers and recessed tubs should all be fixed with grab bars.
- Soap or any other slippery substances near tub and shower should be placed in adequate containers.
- A shelf in the shower offers the option of sitting down.
- Tempered glass should be specified for showers.
- Good lighting is important from a safety point of view, but subdued lighting adds atmosphere and interest. The compromise is to specify a dimmer switch.

Careful planning and selection of materials can lead to a luxury master bath that will fulfill the needs of the most discriminating client.

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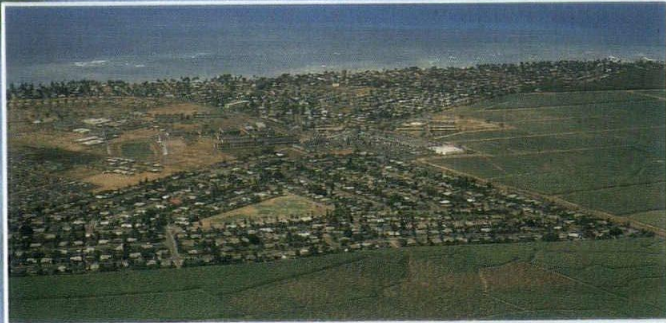
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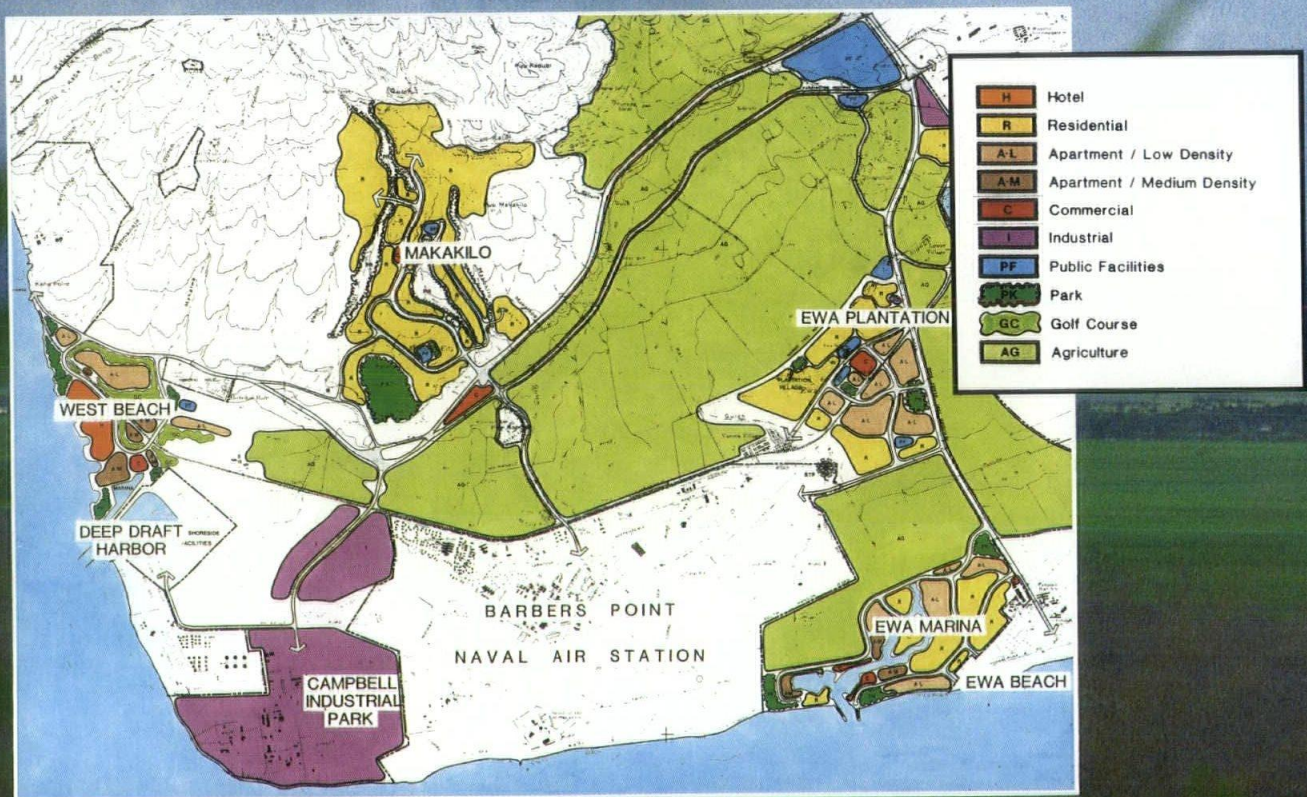
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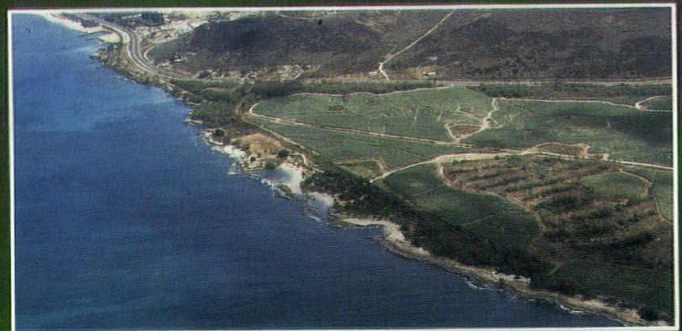
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Ewa Marina, located between Barber's Point Naval Air Station and Ewa Beach, is one of the major communities being developed in the area. The Marina's population is expected to reach 13,000 by the year 2000.



The decision to direct urban growth to the Ewa Plain became the official policy of the City and County of Honolulu when Ewa was first designated as the Secondary Urban Center (SUC) for Oahu in the 1977 General Plan. The policy was reaffirmed in 1982 when the location of the SUC was more specifically defined as being in the West Beach-Makakilo area.



A high priority is being placed on developing major employment centers in the Ewa region. The West Beach resort is expected to generate 5,100 direct new jobs by the year 2000.

HAWAII ARCHITECT

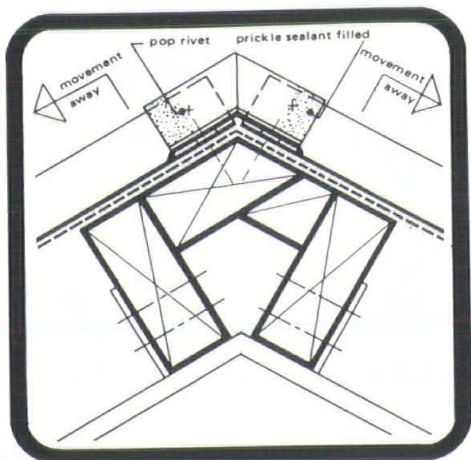
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