Protection from Hurricanes
Koa Wood Substitutes
1993 HC/AIA Awards
When you need a contractor to beat the clock and not cut corners...

...the craftsmen from Allied Builders come through. At City Bank's new data center in Mapunapuna, Allied finished 70 days early in executing intricate plans from GTE Hawaiian Tel and Geoffrey Paterson & Associates.

"They don't just talk teamwork, they get right down and do it," recalls GTE Hawaiian Tel's Project Manager Mark Peterman. "We had a fairly tight space, a lot of equipment, and needed everything yesterday."

"I'd say they almost made 'yesterday' our move-in date," adds a pleased Ben Fong from City Bank, who monitored the job carefully. "There was quality performance from infrastructure on out."

"We always like working with Allied," notes Paterson, the project architect. "They understand design, respect budgets, stay ahead of problems and get along well with people."

ALLIED BUILDERS SYSTEM
Teamwork. Our motto. Our method.

1717 Akahi Street
Honolulu, Hawaii 96819
Telephone (808) 847-3763
Contractor License BC-506

Benjamin B. Fong, City Bank
Mark Miyashiro, Allied Builders System
Mark A. Peterman, GTE Hawaiian Tel
Tile work at The National Memorial Cemetery Of The Pacific had to withstand heavy traffic, yet be aesthetically in tune with “Punchbowl’s” beauty. The non-skid, attractive texture of Summitville’s Williamsburg and Concord Flash Walnut brick tiles was ideal for the 22,000 foot walkways. Unglazed mosaic flooring in public areas also is non-skid while a combination of Williamsburg and Pavers enhances seating locations. Another historic moment in creative tile design.

Phone: 526-0467

Contractor:
Sandwich Islands Construction, Ltd.
THE HAWAII STATE COUNCIL

1993 Hawaii State Council/AIA Officers

President,
Daniel G. Chun, AIA
Vice President/President-elect,
Stanley S. Gima, AIA
Secretary/Treasurer
E. Alan Holl, AIA

Directors
Christopher J. Smith, FAIA
Gerald N. Hiyakumoto, AIA
Virginia Macdonald, AIA
John Oki, AIA
Charles A. Enthorn, AIA
Steven H. Heller, AIA
Francis Oda, AIA

AIA Honolulu
1128 Nuuanu Avenue
Honolulu, Hawaii 96817
(808) 545-4424

Honolulu Chapter President
Kurt H. Mitchell, AIA

AIA Hawaii Island
P.O. Box 1893
Kamehameha, Hawaii 96743
(808) 885-4431

Hawaii Island Section
President
Ed W. Campbell, AIA

AIA Maui
P.O. Box 929
Wailuku, Hawaii 96793
(808) 244-9574

Maui Chapter President
Thomas R. Cannon, AIA

Leadership Message

Stanley S. Gima, AIA

Kamehameha Schools
Site for AIA State Convention

The beautiful hillside campus of the Kamehameha Schools is a very appropriate location to stage a convention for architects. Many exceptional examples of graceful Hawaiian architecture blend with the landscaping and the mountainous environment of the Schools' beautiful 600-acre campus overlooking the city below. For example, most of the convention proceedings will occur in the Schools' auditorium, which was designed by C. W. Dickey.

Convention attendees (and their spouses and friends) will have a rare opportunity to join an architectural tour of this unique campus on the second day of the convention, Oct. 10. The tour is one of the social activities planned to complement the technical and business facets of the convention, which begins early Saturday morning, Oct. 9.

Although the statewide convention will be filled with a variety of scheduled activities, we have planned many interjections of "free time" throughout the convention schedule. During these free moments, you could enjoy refreshments of food and drink and views of trees and mountains above. Or enjoy views of the city below and the ocean beyond. Or you could meander through the many exhibits, and talk with sponsors from the construction industry. Or just renew old acquaintances (or start new friendships), while enjoying one of several inviting walkways and courtyards on the campus.

Survival in the 90s is the convention theme, and the workshops and seminars will be full of valuable information worth several times the price of admission. However, it's the free "intangibles" of the 1993 Convention—the fellowship, new friendships, relaxing walks, the panoramic views, and glimpses of architectural history—that will probably provide the pleasant memories you'll treasure for a long time.

So make the decision and register now. The convention is only a month away, and the hard-working Convention Committee is meeting each week, working out the convention details while anxiously awaiting the latest registration count, for an indication of the expected attendance on which to base the final planning commitments. So why not do the committee a big favor and register now? You deserve a break from the routine; come and enjoy the 1993 convention—and also learn some new tricks to help you "survive in the 90s!"
## September 1993

**Volume 22, Number 9**

### Contents

#### Leadership Message

**4** Site for AIA Convention: Kamehameha Schools
The Convention Committee has planned a program that is well worth the price of admission.
by Stanley S. Gima, AIA

#### Interior Architecture

**6** Professional Focus: Adjusting to future needs
Strategic planning pays off for local architecture firm.
by Aubrey Hawk

**12** Technology: Impacting the design approach
Interior designers must take into account computer technology requirements.
by Sandi P. Quildon, AIA

**26** Diversity: Key to a firm's success
Experience in the various categories of interior design gives a firm the competitive edge.
by Thomas Fudge

#### Woods

**8** Koa Wood: Selecting other timber alternatives
Designers are urged to select other species of wood.
by Len Tai Venuti

**14** Treated Wood: An update
Methods of protecting wood from termites reviewed.
by Elmer E. Botsai, FAIA

#### Features

**10** Iniki: Part III - Taking preventive measures
Recommendations are made to protect dwellings from hurricanes in the future.
by Sam Monet

**16** The Client: Major ingredient to success
Cultivation of client interface can make or break a project.
by Ted Garduque, AIA

**18** Air-Conditioning: Alternative to conventional systems
Sanyo family of air-conditioners are ductless.
by Paul Sanders

**28** Antarctica Projects: Test stations for Hawaii?
Design solutions developed for the preservation of the fragile South Pole environment are adaptable to Hawaii.

<table>
<thead>
<tr>
<th>19-21, 30</th>
<th>News</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>HC/AIA Design Awards</td>
</tr>
</tbody>
</table>

**In this issue...**

Interior Architecture is the focus of this issue of Hawaii Architect.
A project in the Queen Victoria Residences designed by INK Architects, Inc., is featured on the cover. The project won an Award of Merit in this year's Honolulu Chapter/AIA design awards program in the interior category—the only interior design project selected for award.

The sluggish state economy is affecting architects as well as professions associated with construction.

As major design projects become scarcer, some architects are re-examining their options and finding that interiors design remains a lucrative option. Firms or building owners today would rather renovate or remodel than sink large sums into large new projects. With the increasing availability of office space, building owners often find they must re-design interiors to upgrade in competing for new lessees or to satisfy American Disabilities (ADA) or other technical requirements.

In the residential home market, mortgage institution executives, such as Marvin Koshi of GECC Financial, remark that many young people today are moving back with more established family members because they cannot afford escalating rental costs. This tendency spurs families to re-think interior space requirements.

Advances in computer technology are having an impact on work trends. Designers are advised to familiarize themselves with computer requirements and to design residences and offices accordingly.

---

**PMP Company Ltd**

**Publishers**

Publisher/E
Executive Editor  Peggi Marshall Murchison
Sales Manager  Miki Riker
Managing Editor  Paul Sanders
Art Director  Maria Bracho
Production Manager  Cynthia Becklund
Graphic Artist  Cheryl Ruddoch
Typography  Lara Prestfield Jaracz
Production  Rose Cabanlit
Accounting Manager  Susan Colletto

Copyright 1993 PMP Company, Ltd., 1034 Kilani Avenue, Wahiawa, Hawaii 96786. Phone 621-8200, Fax 622-3025. All rights reserved. Reproduction of the whole or any part of the contents of Hawaii Architect without written permission is prohibited. Postmaster send change of address to Hawaii Architect (ISSN 0919-8311) at 1034 Kilani Ave., Wahiawa, Hawaii 96786.

9/93 Hawaii Architect
When architects Joe Ferraro, AIA, and Gerald Choi, AIA, formed their business plan in 1987 they had something going for them: focus. "We took a hard look at where the economy was going," says Ferraro. "We realized that in a small state like Hawaii there will come a time when the land resources can no longer support new buildings. So we decided to focus on interior architecture in institutions and corporations. With technology advancing so fast, people will always have the need to redefine their immediate surroundings."

FERRARO AND CHOI are registered architects and Ferraro also has a degree in interior design. Choi's mathematical background enabled him to fully embrace computer-aided drafting and design (CADD), so the small firm efficiently handles projects and client relationships that span years.

Ferraro says that developing the client relationship is key in the interior architecture business. "The spaces we create are where our clients spend the majority of their time. We have to remain sensitive to their needs. It's what we call 'design from the inside out.' Not just the inside of the building, but the inside of the human element."

The firm is also committed to the well-being of the planet, specifying environmentally sensitive building materials whenever possible and, locally, instilling the spirit of Hawaii into the architecture and design.

A PRIME EXAMPLE is the new headquarters for The Estate of James Campbell in Kapolei. The heritage of the Campbell family and the culture and traditions of Hawaii were paramount in any design decisions. This 49,000-square-foot project features an interior atrium space, 16 feet x 22 feet x 40 feet high, with the top 20 feet taking the shape of the traditional Hawaiian hale. Custom carpets are done in crimson and black, with petroglyph symbols of family groupings.

For office seating, the architects worked with Carnegie, a leading international textile company, to develop a new textile appropriately called "Ohana," which incorporates petroglyphs of family groupings set against a background of waves and stripes representing the layers of the Campbell family and island culture. During this process, the architects worked with kapuna to ensure that custom was honored and no kapu was broken. The design was so well-received by Carnegie that this Hawaiian textile will be added to their 1993 line.
FURNITURE WAS SELECTED not only on the basis of design and value, but also on the manufacturers' contributions to preserving the environment.

The new office of Bays, Deaver, Hiatt, Kawachika, Lezak also benefited from the firm's interior architecture expertise. This 19,000-square-foot project had to look upscale and urban while remaining relaxed enough for the Hawaii market.

The solution was to employ simple, almost austere geometric forms in the entry and reception areas, letting granite paving and theatrical lighting create a quiet elegance. In the private offices, a softer color palette combines with white oak for a more relaxed setting.

BANK OF HAWAII is another client that enjoyed the firm's unique approach to interior architecture. The new Waimea and Mapunapuna branches and the renovated Employee Banking Center in Honolulu utilize flexible Herman Miller "Ethospace" systems specifically researched and developed for the bank. The Bank of Hawaii Trust Department, a two-and-a-half year project, needed to be completely remodeled, with consolidation of five floors of office space—approximately 60,000 square feet—in the bank's downtown Financial tower Building. The architects handled the complex project with extensive programming and planning on computer, thereby streamlining the process.

Aubrey Hawk is account supervisor, AdWorks PR.

REPLACE THOSE OLD WINDOWS!
CUSTOM CONTRACTORS, INC.
"The Awning Window People™"

Campbell Estate moves to Kapolei

The Estate of James Campbell began a new era in its history in July when it moved its corporate headquarters from downtown Honolulu to the City of Kapolei. The Estate occupies 45,000 square feet of Campbell Square, a two-building, 126,000 square foot office complex which covers an entire city block at the entrance to Kapolei.

The buildings were designed to reflect the character of Hawaii. The kamaaina-style architecture conveys a charm and tradition reminiscent of old Hawaii.

The complex was designed by Kober/Hanssen/Mitchell Architects; Ferraro Choi & Associates are the interior architects for the estate's office space.
Ask Hawaii architects or interior designers to name their favorite wood, and the word “koa” immediately bursts forth from reverent lips. Beautiful, functional and in high demand, koa is considered the most valuable native timber species in Hawaii. From the time of early Hawaiians, when it was used to make voyaging canoes, the acacia koa has been prized for its exceptionally fine wood. But koa’s popularity may be setting the stage for its demise.

“If we keep promoting only koa we may exhaust our available supply before current planting efforts can replenish the forests,” said Mike Robinson, Executive Director of the Hawaii Forest Industry Association.

“KOA IS DEFINITELY the wood of choice in Hawaii ... it speaks of wealth, it speaks of richness, it speaks of heritage and culture,” he said. “But there are many other beautiful, useful woods growing in Hawaii that are plentiful and easily harvested.”

Concerns over supplies of native species and the need to sustainably manage resources have prompted HFIA to develop Woods of Hawaii ’93, a statewide woodworkers competition and exhibit.

HFIA hopes to promote Hawaiian-grown, non-native woods and educate the public about Hawaii’s forest industry, current reforestation efforts and the need to manage Hawaii’s forests wisely.

Woods of Hawaii, which takes place Sept. 8–12 at the Ala Moana Center Exhibition Area, will give architects, designers and craftspeople a first-hand look at Hawaiian-grown woods other than koa.

“ANY TIME WOOD elements are incorporated into architectural and decorating design, it interests the (forest) industry,” Robinson explained. “Items displayed in Woods of Hawaii will demonstrate flexibility, and create alternatives for the designer, the architect, to be creative in what they do. It gives them color variations, it gives them texture variations. They’re not locked in to one color, they have a full painter’s palette.”

Peter Simmons, Bishop Estate’s Forestry & Natural Resources manager, said alternative
woods can also address client cost concerns.

"In 1971 koa stumpage (unprocessed wood) was selling for two cents a board foot," Simmons said. "Now the price gets as high as $1 per board foot.

"By using koa when appropriate, familiarizing yourself with new veneer techniques and making better use of veneers, you can get high quality, environmentally sound resources that are economically feasible.

"WITH THE AVAILABLE supplies, the price of koa isn't going anywhere but up," added Robinson. "The more it goes up, the more cost-effective it becomes to use other locally-grown woods such as toon, Queensland maple, or tropical ash."

Robinson said that reliance on koa not only depletes a dwindling resource, but limits creative flexibility.

"You can't go wrong with koa, but the wishes of the client might come into play," Robinson said. "The client might want a lighter room, a different pattern or color. I think architects may want to use some of the unknown woods in the show because they have qualities similar to oak and other traditional mainland woods that are already being used. The woods in the show are grown here instead of having to be imported."

Both Robinson and Simmons agree that healthy forests and a healthy forest industry will depend largely on the use of alternative woods.

"WE HAVE TO START making enlightened use of our resources and understand what's available," Simmons said. "Using a greater variety of planted woods is an environmentally sound practice. And if we are going to start using more woods, I would rather we get them from here than from someplace else."

According to a recent University of Hawaii study, Hawaii's forest products industry is at least a $25 million a year enterprise, employing many people.

"It's our industry's responsibility to use these resources wisely, and plan for the future," Robinson said. "Anyone who works with wood or is interested in healthy, productive forests should be a member of HFIA, and they should definitely come to Woods of Hawaii."

HEIGHTENED SENSITIVITY to environmental concerns coupled with the availability of alternative woods may serve to bring more variety to Hawaii's buildings, furniture show rooms and wood shops.

"The key is to create markets for these other woods," Robinson explained. "Doing so will give us time to regenerate productive koa forests while maintaining industry jobs."

Woods of Hawaii '93 is sponsored by Kamehameha Schools/Bishop Estate, Martin and MacArthur, Bello's Woodturning, C. Barton Potter, Hawaii County Research and Development, the state Department of Business Economic Development & Tourism and the Department of Land and Natural Resources—Division of Fish and Wildlife.
This is the conclusion of a three-part article assessing Hurricane Iniki’s ravages on Kauai and offering personal observations and recommendations.

Therefore, the time to prepare for hurricanes is now, not when the Civil Defense’s warning sirens are activated. By then, it’s too late and residents may have just enough time to board or tape windows, if plywood and tape are readily available.

Long-term hurricane preparation measures do not only involve retrofitting of existing structures, but also the routine specification of reinforcing materials and hardware at design and construction stages, drawing on lessons learned from the Iniki experience.

ON KAUAI, in the aftermath of Iniki, interviews with residents indicated that many of them took refuge in bathrooms as their homes collapsed.

Based on this information, it would seem advisable on new construction that walls and ceiling in one bathroom per dwelling be reinforced with ½-inch plywood for sheeting instead of drywall or both, using drywall as the finish material. This would create a “shear wall” to stabilize the structure and give residents a safe shelter to ride hurricanes out.

At the minimum, the following preventive measures are recommended and it would seem appropriate that retrofits in existing dwellings should receive tax credit incentives:

- hurricane ties at joist/girder, joist/wall and roof rafter/top plate junctures;
- minimum 2x6 engineered, gang nailed trusses and 2x facia;
- plywood (½ inch) sheathing on all roofs and use of asphalt shingles;
- louvered vents at gable ends on drop ceilings;
- corner, diagonal bracing on single wall construction;
- some louvered windows or venting in the living area to release pressure on interior space;
- automobile type safety glass (plastic laminate) on concrete or tile construction for hotels, office buildings and condominiums;
- and trim all coconut trees at the beginning of each hurricane season.

It is imperative that design professionals, contractors and builders incorporate wind-resistant engineering in all new construction in Hawaii. Many destroyed homes on Kauai were built by unlicensed builders. These builders should be cited by building inspectors.

Home insurers have been warned that, as a result of global warming, hurricanes in the middle latitudes are likely to become more
frequent and destructive.

Data published by the insurance industry indicate that approximately 80 percent of its major losses over the past 10 years have been the result of wind-related damage.

Island insurance agencies know that insurance hurricane in Hawaii is a risky business with the potential for loss outweighing the potential for rewards.

IT IS RUMORED that the insurance industry is considering covering only residential structures after a dwelling’s inspection has confirmed that structure is permitted; surrounding trees are trimmed annually of ripe coconuts (airborne coconuts on Kauai caused more damage than all other projectiles combined); roofs, walls and foundations are in good shape; and structures are fitted (or retrofitted) with hurricane ties.

Changes in global ecology and greenhouse warming are facts. Government must provide the incentives, guidance and leadership and design and engineering professionals the expertise that would prevent mass destruction of homes during hurricanes.

Kauai County has adopted the provisions of Appendix 2518 of the 1991 Uniform Building Code. Perhaps it's time to make this code mandatory statewide.

Meanwhile, if no action is taken, an Iniki-strength hurricane hitting Oahu would have the potential to cripple the entire state economy.

Sam Monet, principal broker, is vice president, sales and marketing, Pacific Investors Realty Services, Inc.
local architect once asked me which I preferred—interiors or architecture. I replied that I didn’t view these classifications as mutually exclusive. The tendency in this profession is to separate these two areas of design or “professional practice,” because it allows us to somehow neatly categorize and define the boundaries between the two.

Interior architecture—the design and building of interior spaces—relates directly to characteristics and elements of function, aesthetics and structure. More importantly, the design of interior architecture requires the very same skills and methods of organization and resolution of problems that were used to design the original or existing building and its components.

Interior architecture has taken a backseat in the overall planning and design of buildings in the past. However, we now recognize as designers and planners that project requirements and clients are changing with technology.

If interior architecture is to respond to the needs of more sophisticated clients and users (both functionally and aesthetically), when computers, communication and information systems are evolving with greater complexity, planning for the integration of these systems cannot be overemphasized.

RESPONDING TO THE INCREASED use of computers and resultant glare and eyestrain associated with their use necessitates the knowledge and integration of various lighting levels and types. Planning for flexibility and growth when analyzing the needs of potential users of a space or facility is invaluable in satisfying project requirements.

Additionally, there are advantages in creating “marketable” interior space. To attract prospective tenants requires the upgrading of existing interiors and facilities to provide newer and more durable materials and more visually stimulating and physically responsive interiors, and amenities which satisfy building user needs (restaurants, healthclubs, shopping, etc). Given an economic recession that left, in some areas of the country, a glut of commercial, retail and office space, a higher level of vacancies and more negotiable lease arrangements, providing more marketable interiors is a must.

BEARING IN MIND abundance of existing space, the adaptive reuse of existing buildings and interiors may be a worthwhile alternative and investment to owners and clients. By reducing the amount of time and the arduous task of obtaining zoning, building department and land-use approvals, the adaptive reuse of existing buildings could provide the necessary elements in satisfying project requirements, provided it is a feasible choice.

This provides interior architects, designers, and planners with the challenge of matching client/user needs against existing building constraints—low ceilings, outdated materials, antiquated HVAC and electrical systems, etc. As a proponent of adaptive reuse, I believe these constraints should be explored as part of the design solution and not merely as a problem or restriction. To this end, architects and designers are challenged with incorporating state-of-the-art technology in outdated and historic structures with antiquated mechanical systems and components.

The exploration of new technology in developing new materials, recycling existing materials to derive new materials that are “environmentally safe,” and using existing materials in a non-traditional and innovative way are only a few areas where interior architecture has brought about a new focus and perspective.

Sandi R. Quildon, AIA, is project architect, AM Partners, Inc.
We Go The Distance For Architects and Designers!

At HPM Paint And Decorating Center With Benjamin Moore and Co., We Provide:

- Complete Library of Color and Specification Materials
- Professional Representative For On-site Job Inspection And Specification
- Video Color Planning And Color Computer Matching Service
- External Warranty Program And Much More!

Let Us Go The Distance For You!..............3 Convenient Locations

WAIAKAMILIO  KANEOHE  PEARL CITY
419 Waiakamilo  98-425 Kam Hwy.  45-1015 Kam Hwy.
847-2444       235-3018       486-2001

Not All Concrete Floors Are Created Level.

To anyone who works with concrete, the problem of a rough, uneven, out-of-level floor is all too familiar.

Luckily, there’s a solution.

In fact, Gyp-Crete has a full line of underlayments that pour over concrete and correct a multitude of sins.

Dura-Cap” is a gypsum floor underlayment that smooths rough spots without dusty grinding. It dries without shrinkage cracks, accepting foot traffic within 90 minutes of application.

Level-Right” is a cementitious floor underlayment that self levels to a smooth hard surface. With compressive strengths up to 5,500 psi, it can create a flat floor without time-consuming surface preparation or hand troweling.

For new or old concrete, over precast or slab-on-grade, let us bring our one billion square feet of experience to your next floor.

For more information, contact: Jackson Contractors
P.O. Box 30668, Honolulu, HI 96820
Ph: (808) 847-2191 Fax: (808) 845-5237
Maui, Big Island, Kauai
Toll Free 1-800-344-5104 (Ext. 101)

License: BC 10545
An update
Treated Wood

by Elmer E. Botsai

The standards discussed in the June, 1992 article, "Pressure Treated Wood in Hawaii," in Hawaii Architect, set forth my recommendations to help keep buildings intact and avoid legal action over termite risks. However, two important changes have taken place since publication of that article:

1. AWPA, and standards LP-2 and LP-22 (which were well understood), no longer exist. These standards may not be recognized by building departments or accepted in the courts.

2. Honolulu is considering new termite protection standards. These standards, if adopted, either:
   a. Require soil treatment with approved chemicals or installation of a BTB barrier and treatment of all structural lumber, including plywood and decking, in accordance with the Hawaii-use-only standard that includes end cuts to be field treated.
   b. Only require treatment of structural lumber, including plywood and decking, in accordance with AWPA C1, C3, C9 (approx. old CP.2) or the approved Borate treatment.

I RECOGNIZE THE DIFFICULTY of making changes in the building code, which is a political process. As such, I strongly endorse the proposed changes because they represent major improvements in meeting Honolulu's termite protection needs. Nevertheless, I still strongly recommend our profession use more stringent standards in our work. I believe the proposed code standards will still not provide adequate protection against a significant Formosan termite colony, nor do I believe soil poisoning is worth the money, or that BTB is routinely installed in a completely effective manner. Accordingly, the following is an update on my previous comments:

a. Currently available soil treatments are generally useless over any reasonable life expectancy of normal buildings. If you rely on soil treatment, allow for re-treatment at the end of each chemical application life. I believe money spent on soil treatment can be better spent elsewhere with greater long-term effectiveness.

b. BTB barriers appear permanent if properly installed. BTB is a good material, but suggest full-time inspection throughout slab pouring operations to ensure the barrier stays intact.

c. CCA is a permanent material. Unfortunately, it does not normally penetrate heartwood, and, more unfortunately, Douglas Fir is mostly heartwood. The new incising machines offer hope in this regard but they are not yet available in Hawaii. Currently, I would not use CCA on Douglas Fir.

I WOULD PERSONALLY CALL for .5 pound/cubic foot retention with an assay zone of ¼ inch to ½ inch deep in 2X material and ½ inch to 1 inch deep in 4X material. I find no problem in any thickness of plywood. In fact, I would accept .4 inch/cubic foot in plywood.

d. ACZA is also a permanent material that has a problem penetrating heartwood; however, it does a considerably better job than CCA. You can get adequate penetration in Coast range Douglas Fir. I would not even use ACZA on the inland region Douglas Fir. Incising is required. Finally, ACZA warranty is intact with or without soil treatment.

I PERSONALLY FEEL COMFORTABLE with either a .25 pound/cubic foot or a .4 pound/cubic foot retention with an assay zone of ¼ inch to ½ inch in 2X material and ½ inch to 1 inch in 4X material. Again, no problem with plywood.

e. HI-BOR is a chemical that is not permanently fixed to the wood but disperses through
moisture in the wood. This unusual property can be good or bad, depending on the conditions. It is bad if the wood is exposed to rain, irrigation water or soil contact because the Borate may leach out of the wood; it is good because the normal moisture in the wood will slowly disperse the Borate throughout the member.

EXCLUDING THE INLAND REGION Douglas Fir, Borate penetration appears to be better than even ACZA; it does not require incising. Accordingly, I recommend .3 pound/cubic foot retention with an assay zone of 1/2 inch to 3/4 inch for 2X material and .4 pound/cubic foot with an assay zone of 1/2 inch to 1 inch for 4X material. Again, it provides plywood excellent protection.

I like borate, but it appears to have a slower kill rate than either CCA or ACZA. As such, surface attacks may occur.

In conclusion, keep the following points in mind. Termites don’t eat CMU but use it as a highway system. I would not advise using CMU below grade without stringent details to stop termite travel.

SECONDLY, I BELIEVE a continuous glob of BTB around the perimeter of the structure is an excellent idea to deny termite entry. I would also cover this BTB with pavers or thin concrete to keep it intact.

Thirdly, take care of pipe penetration through slabs; that is, do not allow the insulation to stay on pipes as they pass through concrete and do something about tub and shower block outs, they can be deadly.

LASTLY, AS MUCH AS POSSIBLE, control cracks in concrete. I like good rebar placement, low water cement ratio and some poly propylene fiber in the mix. Remember, termites do not eat or go through solid concrete.

I still like wood, and it can be used, but I recommend we take precautionary measures.

Elmer E. Botsai, FAIA, is professor of architecture, University of Hawaii-Manoa and past president, Honolulu Chapter/AIA and AIA (national).
Major ingredient to success

The Client

The client is an important factor in the success of any project. A worthy client brings the necessary capital to execute a project, an experienced one sets the philosophical tenor for design and the spiritual kinship of team members on a project. From this instruction comes the ensuing leadership of the architect, who then translates the client’s visions and aspirations (as well as the architect’s own) into an economic and sculptural reality.

The design process is as important as the end result. This is often misunderstood by novice clients who look only to the economic end. Often, meager fees are not enough inspiration to continue in this hallowed profession. One must view the practice of architecture as an avocation to survive with dignity, not as a mercenary endeavor.

Some of our firm’s most enjoyable moments have come at the hands of “professional” clients, my term of endearment for those clients possessing wisdom. The many hours of exchange of information and criticism that an architect spends with a client increases the understanding of the client’s needs, thereby increasing the chance of a project’s success. A by-product of this relationship is the enhancement of a practitioner’s own self-development and knowledge.

ACCOLADES AND PRAISE from a client are rare. We do not expect this from anyone, and therefore it is a joyous occasion when a compliment is received. Instead, we again look to the process of creativity and exchange as the reward for a project well done. We know ourselves when a project is deserving of recognition and whether a project has met expectations of excellence.

A good client can be the driving force of excellence. In this pursuit, they will leave no stone unturned to reach optimum design. And, they will pay for this service. On one project, our firm generated 42 different schematics for Thos Rohr and Alan Beall. After design development, we were $2 million over construction budget.

After construction documents and prior to bidding, we were $1 million over construction budget. To their collective credit they said, “Don’t change the design, we love it. Find a way to meet the budget by taking the cost out of your fees.” It was in the spirit of compromise that the design team found a way to meet the budget set by the client and save our fees. One of the joint measures we took to bring the project back on line was to excuse the attorneys from our list of consultants.

ATTORNEYS CAN BE GOOD clients. Our firm values their patronage and their connections to other clients. Attorneys are educated people with the tendency to be contrary. Law firms retain us to decipher CC&Rs, zoning or litigation briefs that they have written. In some instances, after completing this type of assignment, we are called into a meeting room with lawyers and asked to defend our interpretation.

As a result, we have learned that with this type of client, architects must be prepared to defend themselves for something they had noth-
while worked was one of these were marketable role keen and Maui. Discussing spending from greatest space "maxing a posely.

"Beware...not all Built-In Vacuums are alike. Studies have shown that VACUFLO with its “true cyclonic” separation keeps the cleaning level after sustained usage. Most other brands decrease in cleaning power once their bags/filters become loaded with dirt.

Call for more information about the VACUFLO® BUILT-IN CENTRAL VACUUM SYSTEMS™

Home Convenience Center JCD Enterprises Inc.
Kailua-Kona, HI 96740
329-3356 • Fax 326-1859

The Key To Your Dream House Is At Your Finger Tips.

A secure, dependable locking system is a basic feature every house should have. With an Alpha Digilock, it’s now within your grasp. Our Digilocks with microcomputers, turns any door into a state-of-art stronghold which can be accessed with a simple combination.

And a variety of colors and styles to match any house means you can have security without having to sacrifice any aesthetic appeal. The key to owning the latest in Digilock technology is at your finger tips, so call us today at 944-8833.

CTS INTERNATIONAL CORPORATION
P.O. Box 15637 • Honolulu, Hawaii • 96830-5637 • Phone (808) 944-8833 • Facsimile (808) 944-8765

Ted Garduque, AIA, is founder and principal architect of Garduque Architects, and is past president of the AIA/Honolulu Chapter. Garduque Architects recently won national recognition for the design of Kings’ Shops, from the National Commercial Builders Council in the Award of Excellence Program.
An alternative to conventional systems

**Air-conditioning**

Retrofitting a home or office with conventional air-conditioning systems can be a major undertaking requiring considerable demolition to incorporate ducting. However, there are less expensive alternatives worthy of consideration at the design stages, or after the fact. Sanyo manufactures a line of state-of-the-art and economical ductless air-conditioning systems.

The Sanyo systems provide quiet and efficient cooling in places where air-conditioning is truly needed, and installation is not a major undertaking. Connection between the cooling system inside a home to the main unit outside is accomplished through a three-inch wall opening.

WITH THIS SYSTEM, there is no ductwork, no window obstructions and no noise. An advanced computer control system reduces energy consumption, while automatically maintaining a comfortable room temperature. Several models also feature heating for year-round versatility.

The systems are available in several models and shapes to accommodate practically any application. For example, Model 24XS22 is a recessed ceiling-mounted unit for cooling; Model 09KS11 is wall-mounted; or Model 24THS22 is a space-saving ceiling suspended split unit.

There are many options and shapes to choose from, each with voltage ratings and cooling and heating capacities to satisfy most needs.

ONE OF THE SYSTEM'S MAJOR ADVANTAGES is its flexibility. The units are small and can be installed quickly at a fraction the cost in areas where air-conditioning is truly needed, while consciously ignoring areas exposed to cooling tradewinds.

For applications involving mobility or spot-cooling, Nippondenso of Los Angeles, Inc. manufactures air-conditioning units, MovinCool, which are designed for the high ambient temperatures found in industrial environments or which can be used for supplementary or emergency back-up cooling.

THE SYSTEM'S MAJOR ADVANTAGE is that it conditions only the critical areas, allowing large central systems to shut down, thus resulting in considerable savings.

A few applications include automotive service bays, computers, PBX equipment, medical equipment, temporary work stations, production lines, clean room/laboratories, etc.

In Hawaii, the entire line of Sanyo ductless split air-conditioning systems and Nippondenso's MovinCool and SpotCool are carried by Servco Pacific, Sanyo Fisher Division.
Smoke poured from behind the graceful facade of the landmark Waikiki Bank of Hawaii building for 37 hours, beginning at 7:45 a.m. July 26.

Before it was over, 22 fire companies responded to the smoldering inferno at 2222 Kalakaua Avenue, where a fire in Woolworth's second-floor storage room in the base of the structure proved to be one of the most stubborn building fires the Honolulu Fire Department has ever encountered.

Tremendous heat, with temperatures estimated at 2,000°F, and lack of ventilation and clear access to the fire hampered firefighters' efforts.

At press time (Aug. 19) some facts had been established, and evaluations continue: structural damage was confined to the building base, where four concrete beams and the exterior wall facing Lauula Street were damaged. Structural engineers Martin and Bravo had begun shoring work and estimated that permanent repairs may require four months to complete.

Assessment of electrical, mechanical, and telephone systems had not been completed at press time.

Smoke damage prevailed throughout the 16-floor tower.

On the ground floor the Bank of Hawaii had reopened. Woolworth's had estimated a loss of $4–$5 million and set no reopening date.

The tower's 43 displaced tenants were relocating as and where they could. It was estimated they may be able to return to the building within two months.

One of the largest among tower tenants is Wimberly Allison Tong & Goo, architects who designed the prize-winning building in the mid 1960s.

They relocated to Kalakaua Center, at 2155 Kalakaua Ave.

WAT&G principal Donald G. Lee attributed the speedy recovery to “determination on the part of all hands to keep servicing clients with as little interruption as possible and without missing critical deadlines.”

He explained that they began informing clients, from home, even before the fire was out and organized a phone tree to keep staff informed.

“The day after the fire was out we leased relocation space and we moved in over that weekend,” he explained.

“By Monday, Aug. 2,” Lee said, “we had set up some 50 drafting stations and our full staff was back to work.

Mazeppa King Costa

In construction, it’s always one thing after another.

In the building trades things happen fast, and unforeseen problems always seem to pop up, one right after another. So it’s nice to know there’s one thing you can always count on: Tileco. We have the mass production speed and an inventory to keep your job on schedule. No matter how big it is.

Hawaii Manufacturers of Quality Concrete Blocks.

TILECO INC.

91-209 Hanua Street
Ewa Beach, Hawaii 96707

682-5737
Manual to Benefit Designers

A "Resource Manual for Design Professionals," currently in preparation, will not be ready in time for the AIA's state convention Oct. 9 and 10, as had originally been planned.

The publication deadline was slipped by a few weeks said Stanley Gima, AIA, president-elect, Hawaii State Council/AIA, to ensure completeness and accuracy of contents and give architectural firms which have not yet reacted to a letter sent by the council a chance to respond at this time. The letter asked member firms to support this effort by contacting engineering firms which might be interested in supporting the publication through advertising participation.

The aims of this task group are to publish a resource manual which contains "all the names and telephone numbers designers, engineers and associated design professionals commonly call during the course of a business day."

Gima indicated the manual will not only benefit architects but also participating engineers and associated design professionals because it provides, under one cover and for all islands, the names and telephone numbers of AIA members—individual members and firms—state, city and county permitting offices, names and addresses of engineering and other design professional organizations, current list of elected officers and many more useful numbers at the national and local levels.

For additional information, contact Bob Lazo, AIA, 528-3139.

Achievements Recognized

Special presentations and announcements were made at the 1993 Design Awards Banquet at the Hawaii Prince Hotel on July 22.

Kurt H. Mitchell, AIA, president of the Honolulu Chapter/AIA, said work has begun on a Humanitarian Award to be given in memory of Gordon Bradley, AIA, who died earlier this year. The award will be presented to an architect each year who has made significant contributions to the community "in ways not directly connected to the architecture profession." The effort is headed by Chris Smith, FAIA.

Alison Nakatani, who graduated this spring from the University of Hawaii with a Master of Architecture, was presented with a President's Award for the design and construction of a traveling exhibit entitled "Architecture and the Built Environment" in one of the two Department of Education artmobiles at UH.

Frank Haines, FAIA, and Buck Welsh, AIA, Architects Hawaii, made an eight-minute presentation honoring company founder Cyril W. Lemmon, FAIA, who died June 10 at the age of 91.

The slide presentation featured some of the notable buildings designed by Lemmon, among which the Boysen Paint Building, the Waikikapahulu Library, the Gregg Sinclair Library at U.H., the First Hawaiian Bank Building and the state Capitol Building.

The presentation also highlighted significant milestones in Lemmon's life, which started in England in 1902.
ADR Workshop Scheduled

The Professional Development Committee of the Honolulu Chapter/AIA will host a workshop, “Alternative Dispute Resolution (ADR),” at the Hilton Hawaiian Village Sea Pearl Suite, Oct. 2, 8 a.m. to 3 p.m.

Presenters include Keith Hunter, regional vice president and founder, Honolulu regional office of the American Arbitration Association; and Mary Yashimoto, account executive, Finance Insurance Ltd. Panelists include Phillip L. Deaver, Esq., managing partner of the Honolulu law firm of Bays, Deaver, Hiatt, Kawachika & Lezak, and Allan Holl, AIA, CSI, project manager, Media 5.

Attendance is $75 for members and $90 for non-members. Contact the AIA office for additional information. 545-4242.
Project Profile: Kukui Gardens Repair and Maintenance Project

Architecture

The Kukui Gardens Complex is the largest low-income rental project in the state of Hawaii. It consists of 822 units distributed among 44 buildings along Vineyard Boulevard, College Walk, Kukui Street, Aala Street, Beretania Street and King Street. The complex is a mixture of three- and six-story buildings constructed out of CMU and concrete.

The project is approximately 23 years old and 70 percent of the residents have lived there since its opening. Kukui Gardens is a highly visible part of Downtown Honolulu.

The project was originally designed with a flat roof. In recent years, however, the buildings experienced water infiltration through the built up roof. Maintenance of roof area has been a constant problem for the owners. Kukui Gardens Corporation, a non-profit organization, which runs the project, retained the architectural firm of Mitsunaga & Associates, Inc. to solve the water infiltration problem.

The firm is highly specialized in solving building problems of this nature. Architect Steven D. Wong, A.I.A., said a study was made and various alternative solutions were presented to the Board of Directors.

Input from Bob Tsushima, a Board of Director member and a principal from the architectural firm of Johnson, Tsushima, Luersen, Lowrey, Inc. was especially helpful. It was finally decided that the ultimate solution was to construct a steel roof and steel framing system over the existing flat portion of the roof of each building. This solution meant a double roof over each building and hence double protection against water.

Steel was selected for its durability, strength, ease of fabrication, fire resistance, light weight qualities and aesthetics. The architect specified a roof sheathing called “Huski-Rib” from HCI Steel Products with a Kynar 500 coating.

The new pitched roof design on all of the buildings have conveyed a more residential character on the entire project. The residents and owners have expressed much satisfaction on the final outcome. Maintenance personnel are also pleased since a 20-year warranty on the roof was provided.
Details of roof framing plan for the Kukui Gardens Complex. Steel was selected by the Architect and Structural Engineer for this repair and maintenance project because of its durability, strength, ease of fabrication, fire resistance, light weight and aesthetics.

Engineering

Jong Nam Gung, structural engineer for Mitsunaga & Associates, Inc., agreed with the architect that steel was the best choice for this project.

A wood truss system was originally examined as an alternative structural system for the metal roof sheathing. Steel was eventually selected because of its durability. The steel trusses were all prefabricated and shipped to the site.

The framing was then lifted by crane to the top of each building and easily erected. Purlin members were precut and then installed. On the average, it took only about three days to frame one of the buildings. Using this system, the ease of construction was evident.

Kukui Gardens Repair and Maintenance Project

Gross Roof Area:
250,000 square feet
Structural Steel:
1,000 tons
Prime Contractor:
Mitsunaga Corporation
Steel Contractor:
Mutual Welding
Architect:
Mitsunaga & Associates, Inc.
Steven D. Wong, A.I.A., Project Architect
Structural Engineer:
Mitsunaga & Associates, Inc.
Jong Nam Gung P.E.

For further information call 839-5111
In 1992, a young professional couple with one child challenged INK Architects, Inc., to create from a bare concrete loft condition a custom two-story townhouse residence in a mid-rise multi-family apartment structure with the ambiance of a single family home—The Queen Victoria Residences.

The architects accepted that challenge, successfully “integrating one spouse’s desire for a contemporary clean look with the desire for an Oriental motif of the other spouse.”

It was decided early in the design process to use simple and disciplined interior architectural elements and details to achieve a contemporary clean look.

The selection of architectural lighting and finishes and fixtures complement and feature Oriental art objects rather than vie for attention. The Oriental motif was delicately and tastefully satisfied through interior furnishings, accessories, art work and certain finishes.

High vaulted faux finished ceilings, an architectural geometry not common to apartment units, soothe, cap and integrate the otherwise rectilinear features of ground level spaces. White veneered plastered walls, ledges and soffits with radiused vertical corners and crisp 90 degree horizontal corners project simplicity and clean lines—adjectives common to both Oriental and Contemporary work.

Contemporary elements utilized include high-tech low voltage recessed lights and sculptural wire hung fixtures, Forms and Surfaces hardware and state of the art appliances, audio/video and lighting systems.

Polished black granite, polished, lacquered and exotic wood-veneered cabinetry and faux finished surfaces project a custom residential look while bridging the Oriental and Contemporary realms.

Light stained wood flooring on the entire ground level, wool berber carpeting on the second level and fabric covered bedroom walls provide the warmth of a custom residence in a concrete structure.

CREDITS
Architect:
INK Architects, Inc.
Principal in charge:
Maurice Kondo, AIA
Mechanical engineer:
Syntech Ltd.
Electrical engineer:
Toff, Moss, Fardon Associates
Structural engineer:
Consulting Structural Hawaii, Inc.
Interior Furnishings:
Pam Lacayo Interiors
Faux Finishes:
Sharman Miller Studio
Contractor:
GW Murphy Construction Company, Inc.
Judges Comments:
"An apartment that feels like a single-family residence. ... Nicely detailed, restrained interior design. ... Took advantage of every available space." The result is an apartment that, in the words of one juror, "feels like a custom single family residence."
Key to a firm's success

Diversity

In commercial and interior architecture, diversity is key to a firm's continued success. As a firm adds to its "knowledge bank," it improves its chances for new business in many interior design categories. Each category is approached differently to satisfy specific clientele requirements. Four of these interior design categories are discussed below.

Tenant Improvements

In Honolulu, office building developers generally contract with a TI (Tenant Improvement) architect. The TI provides interior architectural services for prospective and existing tenants within a given building. As a member of the building's leasing team, the architect quickly develops space plans to provide prospective tenants with the opportunity to review their space requirements and make a leasing decision. Tenant signing of lease agreements is the architect's signal to proceed with design and construction documentation based on the building-specific standards.

Building Improvements

Building improvement projects generally deal with public spaces within a building. This work usually involves areas that tenants continually see and touch. The importance of building improvements is that they set the tone for the rest of the building. Two major factors influence building design improvements in Honolulu's office buildings.

New buildings must attract tenants from existing buildings in town. Older buildings must renovate their public spaces in order to remain competitive and retain their tenants.

Another important factor is the ADA (Americans with Disabilities Act of 1990) which dictates special accommodations and access for all public accommodations.

Restaurants

Design is an important determinant in the success of a restaurant. It is the part of the...
working collaboration that successfully blends environment, food, clientele and the personality and style of the restaurateur. Failure in any one of these areas is likely to precipitate failure in other areas as well.

The designer's knowledge of the cuisine the restaurant will serve is essential, because it is the responsibility of the designer to create the desired ambiance through lighting, table settings and the energy of the restaurant.

**Corporate Interiors**

At Kober/Hansen/Mitchell Architects, the goal is to achieve high-tech corporate interiors that are softened with colors, textures and materials which are uniquely Hawaiian in character. To meet the efficiency demands of the nineties, it is important that office spaces provide warmth within a much more "open office" environment. Combining high-tech modular panel systems with warm inviting fabrics and graceful wood detailing gives these projects an efficient, yet elegant style.

**Design Philosophy**

Interior architecture is a complex art form. Each assignment demands a different, yet integrated blending of texture, color, light and mood. Hawaii's tropical setting, combined with contributions from many other cultures have created a distinctive "island" style.

The firm's interiors design approach derives its character from Hawaii's unique cultural blend which incorporates design elements influenced by the Orient, Pacific Islands, U.S. mainland and even Europe. We then mix these elements with high-tech and urban elements to create a unique, bold yet graceful "Hawaiian style" of design.

Our principal goals is to understand and satisfy our client's needs and desires.

* Thomas Fudge is director of interiors, Kober/Hansen/Mitchell Architects.
What could Antarctica and Hawaii possibly have in common? Plenty, according to Joe Ferraro, AIA, partner at Ferraro Choi & Associates and principal in charge of a design project for the Amundsen-Scott South Pole Station and McMurdo Station, Antarctica.

The firm is under contract with the U.S. Navy for work with the National Science Foundation (NSF), to provide architectural and engineering services for the two stations.

In Antarctica, Ferraro's design team must incorporate preservation of the environment in its work by introducing new sources of power generation and waste processing and disposal.

The team must also address the need for a self-supporting food supply, and the life and safety of year-round staff and logistics for construction and ongoing support.

With these criteria in mind, Ferraro notes...
that Antarctica could serve as a “test station” for Hawaii—both are isolated and remote.

THE HYDROPONICS, aquaculture and waste recycling technology the firm is developing on the ice could be implemented in Hawaii, resulting in less dependence on the mainland and foreign shipping.

The crucial programming phase for the design project at Amundsen-Scott South Pole Station was initiated earlier this year and completion is expected this fall.

Ferraro, Lee Davis, AIA, project director and Jim Guequierre, designer, say their findings confirm the need for the new design elements they are working on. “The original station was built on the snow’s surface, in the 1950s. As a result of drifting snow, the structure is now buried 30 feet under snow. The current structure, built in the 70s, is experiencing similar problems. The new station will be raised above the snow’s surface and will even be capable of future raising as snow heights increase,” Davis said.

A snow drift design guide is being created to gauge the effect of building placements, and to determine the need for additional structural supports.

DAVIS ADDS that the new station will respond to the environment more efficiently, with better insulation, solar energy, solid waste reclamation and even a fresh water “well” that utilizes the building’s waste heat. This means the structure will also have a relatively gentle impact on the fragile Antarctic environment.

The design process is scheduled to start in October. It is expected to be a multi-year project.

A 50 percent increase in life expectancy for the new research station is anticipated—30 years compared to 20 years for the first two stations.
Publisher Releases Architecture Book


This 152-page book, features 240 full-color photographs depicting more than 150 architecturally and historically significant buildings in the islands. It was written by Rob Sandler, noted architecture writer, and edited by Frank S. Haines, FAIA, chairperson, Architects Hawai‘i, Ltd.

Renewal of Fort Street Mall

Hawaii Architectran an incorrect photo with last month’s article on recent renovations to Fort Street Mall. Here is a current photo of the renovations designed by PBR Hawaii, for the City & County of Honolulu. PBR removed heavy concrete trellis ways and carefully placed seating areas, and located moveable concrete planters covered with colorful ground cover to create a pleasant mall environment for its visitors. Tropical coconut palms dominate the landscape of the mall.

The Traditional Look of Cedar Shakes... With the Endurance of Stone & Steel.

- A new roofing system that’s crafted in lightweight steel and coated in natural stone chips
- Recreates the profile of cedar shakes without sacrificing precious forests
- High strength created by interlocking panels combined with horizontal fastening...there’s no chance of vertical uplift under high wind conditions.
- Corona can be laid over the top of existing shakes or shingles eliminating expensive “tear-offs”.

Workshop Features Peter Calthorpe

San Francisco-based architect Peter Calthorpe, one of the leaders of the movement to re-think the nature and quality of growth, and to redesign the American Dream, will present his design philosophy along with Dr. Anne Vernez Moudon, director of the Urban Design Program, University of Washington, in an all-day workshop charrette scheduled for Oct. 22 at Tokai University.

The hands-on workshop will offer participants an opportunity to apply Calthorpe’s new community planning model to the Hawaiian context. Three sites on Oahu will be used for the application and evaluation of Calthorpe’s design principles.

Workshop co-sponsors include the American Planning Association, the American Institute of Architects, and Mullaley & Mullaley in association with the Commission on Housing and Community Development (Department of Housing and Community Development—City and County of Honolulu).

For additional information contact Alex Neuhold, AIA, at 263-0671 or Ramona K. Mullaley, APA, at 533-0777.
Now you see it. Now you don't.

Look at a side view of our new electric built-in wall oven and you see how beautifully flush it fits with the cabinet surface. And its advantages over European competitors are evident from any angle: It's self cleaning. Electronic controls give your customers precise cooking temperatures. It comes in white-on-white. It fits into frameless construction, as well as traditional cabinetry, and it comes with the most extensive network of factory service professionals in the business. For more information, call the GE Answer Center® service at 800.626.2000 any time of the day or night any day of the year.

We bring good things to life.
Top it with Dimondek®!
the ideal roofing for Hawaii
A time-tested, architecturally versatile, efficient and practical system

JORGENSEN STEEL & ALUMINUM
91-104 Kalaepoa Boulevard, Ewa Beach, Hawaii 96707
Phone (808) 682-2020, Neighbor Islands 1-800-352-3612