

Hawaii Pacific Architecture

February 1996

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Translating Terrazzo.

Terrazzo, from the Italian word for terraces, came into existence several hundred years ago in Europe almost by accident. Artistic yet frugal Venetian marble workers discovered that odd-sized leftover marble pieces, which had formerly been discarded, made an interesting and colorful surface for the terraces that surrounded their living quarters. Soon, they began rubbing and polishing these new surfaces to make them more even and comfortable for walking.

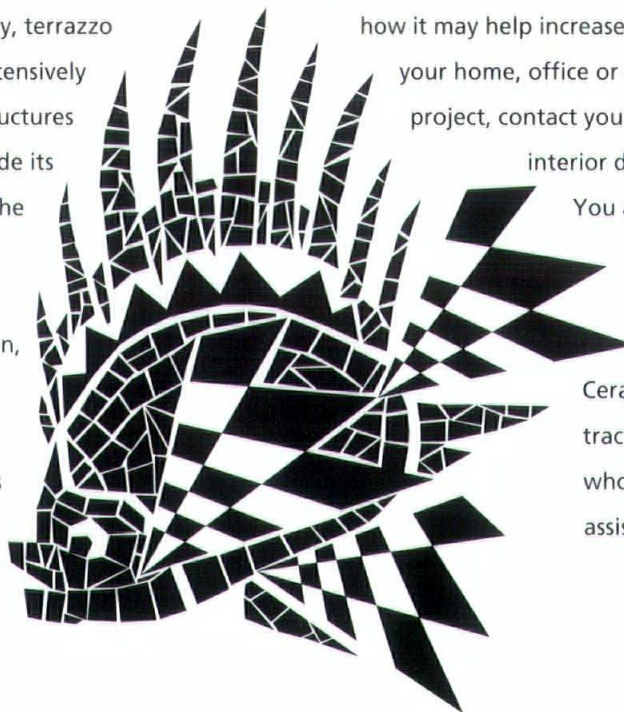
By the 18th Century, terrazzo was being used extensively in monumental structures and eventually made its creative way into the home of America's first president, George Washington, who selected the Italian import for many of the rooms at Mount Vernon.

Terrazzo's artful qualities were enhanced by American ingenuity in installation techniques and the wealth of marble available in the United States.

Architects and designers today have brought terrazzo full circle, utilizing it in contemporary as well as classic design concepts. You might enjoy seeing the fine example in Honolulu's Beretania Street State Office Building.

To find out more about terrazzo, including how it may help increase the value of your home, office or commercial project, contact your architect or interior designer.

You also may phone 591-8466 to receive a listing of Union Ceramic Tile Contractors in Hawaii who will be able to assist you.



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28 Design Award

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Barr-Kumar to Head Student Awards Jury

Raj Barr-Kumar, FAIA, president-elect of the national American Institute of Architects, will serve as jury foreman for the 1996 AIA Honolulu Chapter Student Awards Program. Barr-Kumar will deliver the keynote address at the awards banquet Feb. 6 at the University of Hawaii's School of Architecture auditorium.

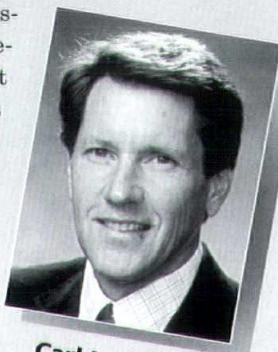
Entries for the student awards competition are selected by professors from work done the previous two semesters. The jury consists of five jurors who are practicing design professionals. All entries are on display in the School of Architecture gallery during February.

1996 CCPI of Hawaii Officers Selected

The 1996 Cement and Concrete Products Industry of Hawaii officers recently were elected at the trade association's 32nd annual meeting. The officers are: Chairman Carl L. Simons, West Hawaii Concrete; Vice Chairman Wade H. Wakayama, Ameron Construction & Allied Products; Secretary Neil R.

Guptill, Hawaiian Cement, Concrete and Aggregate Division; Treasurer Maile V.O. Romanowski, Jas W. Glover Ltd.; and Coordinator/neighbor islands Frederick K. Wong, Walker Industries Ltd. Steven K.L. Fong was reelected president and chief operating officer. Charles A. Kubo of Hawaiian Cement, immediate past chairman, and Fong will serve on the executive committee.

Established in 1963, CCPI currently has 24 members. The organization's



Carl L. Simons

purpose is to promote sales of concrete and masonry products, and provide technical assistance to builders and designers.

Risk Management Solutions Available On the Internet

Questions about avoiding professional liability problems, partnering, dispute resolution and loss prevention can be answered on the Internet, compliments of DPIC Companies, a provider of professional liability insurance for design professionals.

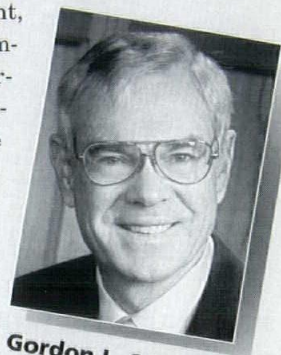
Internet users can visit loss prevention libraries for architects, engineers, environmental consultants and project owners/risk managers at no charge through DPIC's World Wide Web site, located at <http://www.dpic.com>. Visitors also can learn about DPIC's wide range of risk management programs.

A "What's Hot" page enables repeat visitors to pinpoint new additions to the web site and an interactive map allows them to locate a DPIC special-agent in their area.

"The Internet gives us an effective communication tool for sharing our loss prevention knowledge with the design profession as a whole," said Marty Becker, DPIC president and chief executive officer. "We still reserve much of our specialized loss prevention resources for the benefit of our policyholders, but we strongly believe that everyone in the profession benefits when general information and knowledge are shared. The Internet increasingly will become an important tool for providing value to the design professions, and it is only one example of how we're using automation to better serve our clients."

Scruton Named President of Nordic Construction

Gordon L. Scruton recently was named president of Nordic Construction Ltd. Mits Kaneshige, who is the previous president, as well as company chairman, will continue to serve Nordic Construction as chairman of the board.



Gordon L. Scruton

For the past 15 years, Scruton was the president of G.W. Murphy Construction Co. While he was president, the company went from \$8 million in gross revenues to \$90 million per year. Scruton said he brings the same expectations for growth to Nordic Construction.

"I believe Nordic Construction can increase its annual revenue volume by more than 200 percent," Scruton said. "With proper strategic planning, there's no reason why we can't be a 40-million-dollar-a-year company. We have a good team in place and already are involved in some exciting projects, like the Hawaii Convention Center, where Nordic-PCL (Nordic's joint venture with Seattle-based PCL Construction) is the general contractor."

Scruton participates in several professional, community and sports organizations. He is a national director of the Associated General Contractors of America, vice president of the Construction Industry Legislative Organization, past president of Habilitat Inc. and an official for state high school track and field meets.

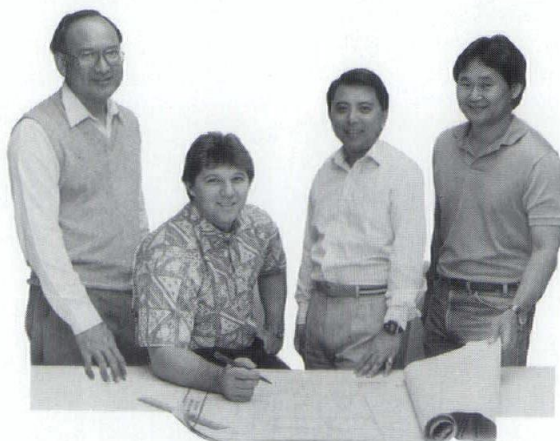


When you can't halt hospitality... Allied comes through

Major improvements in scattered areas at the Princess Kaiulani Hotel called for a supremely accommodating contractor. Even as beautifully redesigned lobbies emerged, envisioned by the Gulstrom Kosko Group, and the popular Aiea Showroom expanded with the overview of Ted Garduque, AIA, the hotelier continued to serve.

"We were on a tight timeline facing a holiday opening," observed Garduque. "Allied's crews were always responsive and concerned with quality execution. Even when the normal problems in renovation occurred, they stayed on top of things."

Adds GKG's David Chung, AIA: "Allied reacts well to the design professional. Beyond this, they know that change at hotels cannot interfere with visitor pleasure. They worked odd hours and with diplomacy when hotel guests were around."



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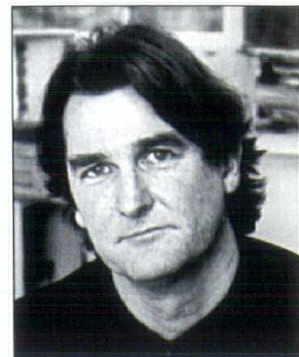
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Architect David Chung, Hotel Food and Beverage Manager Chip Bahouth,
Architect Ted Garduque, ABS Project Manager Ed Sakai

Brambuk Cultural Centre designer to share expertise

Australia's Gregory Burgess To Speak at UH in February



Gregory Burgess



Alignment of the Brambuk Cultural Centre with the highest peaks on either side of the valley, from which hikers can look down, allows for dramatically framed views.

Photos by Trevor Mein

Gregory Burgess, a winner in the Kenneth F. Brown Asia Pacific Culture and Architecture Design Awards Program, will be the guest lecturer at 7 p.m., Feb. 7, in the architecture auditorium, University of Hawaii at Manoa. Burgess, director of Gregory Burgess Pty. Ltd. Architects, received recognition in the awards program for his Brambuk Living Cultural Centre in Victoria, Australia.

Burgess, whose works include private and public housing, urban and exhibition designs as well as community, educational, health, religious and commercial projects, worked for architectural firms in Australia, Denmark and England between 1968 and 1972. In 1972, he opened his own firm, Gregory Burgess Architect. The company's name changed to Gregory Burgess Pty. Ltd. Architects in 1983.

The firm is known for its innovative, imaginative and effective designs. Architects in the practice collaborate closely with client-user groups and the builder from project inception to completion, as in the design of the Brambuk Cultural Centre.

The concept for Brambuk was to help reconnect aborigines with their land and culture and awaken in visitors a fresh understanding of that culture, nature and themselves through the building's living presence. Brambuk is located in a mountainous national park where white pastoralists engaged in a campaign of genocide against aborigines in the 1830s. Charcoal paintings in scattered rock shelters, scarred trees, ancient circular stone structures, stone fish traps and earth mounds are all that remain as evidence for surviving aborigines.

The cultural centre is the result of 10 years of discussion between representatives

of five aboriginal communities and governmental, environmental, cultural and tourism bodies. An intense 12-month "hands-on" collaboration between Burgess' firm and community elders followed.

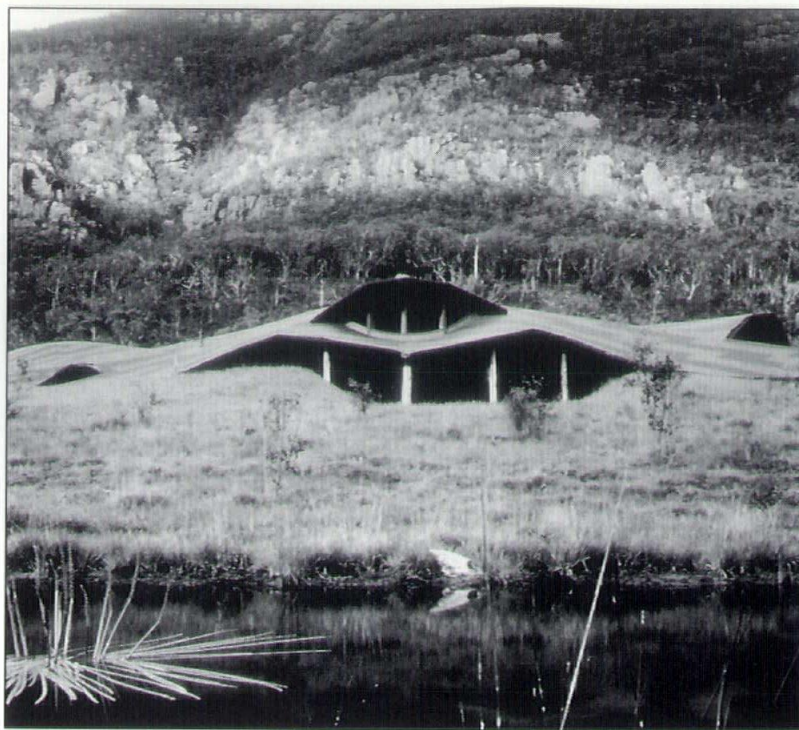
The elders' spiritual sensitivity to the land and pride in the nearby recently discovered 8,000-year-old stone dwellings and sophisticated weir systems were awakened and became significant factors in guiding the evolution of the design. The communities' individual totems animate this design—the eel (ramp), whale (ridge-spine), eagle (roof form), stone (base, fireplace and floor) and the tree (posts).

Traditional building techniques were married with advanced timber technology to create a responsive organized building within an extremely tight budget. Economics and speedy construction were aided by the use of a prefabricated 1,200 millimeter-wide, tilt-up, timber-wall system using radiata pine framing and plywood skin, which also acts as an internal lining.

A massive central stone chimney—a radiant heart of warmth in winter—supports a segmented ridge beam, constructed from short lengths of straight LVL, lapped and nailed using nail gusset technology from industrial buildings to form the complex warped surfaces required for the roof. Curved handrails and external cladding were economically steam-bent on site with an improvised steam chamber. Integrated into the structure are 100-year-old recycled local mud bricks along with new bricks made by community members.

Through its fluid and embracing forms, raw, natural materials and subdued light, the building provides a healing refuge for the fragile folk-soul to meet the future with hope and pride. It is a living cultural centre, not a museum, where indigenous culture is taught and practiced. Displays, workshops and tours give an aboriginal perspective and encourage protection of the vulnerable archaeological and art sites.

In addition to the Kenneth F. Brown Asia Pacific Culture and Architecture Design Award, Burgess' Brambuk has received the Sir Zelman Cowen National Award and the R.A.I.A. Victorian Chapter Merit Award. Other works by Burgess' firm which have received recognition include: Box Hill Community Arts Centre, "Design for Living" Charles Joseph La Trobe Award, 1991; Metal Building News Merit Award for meritorious use of



metal for construction in Australia, 1988; Hackford House, Traralgon, Victoria, R.A.I.A. Robert Joseph Haddon Award for Outstanding Contribution to Housing, 1985; and Larmer House, Donvale, Victoria, The Sun & H.I.A. Housing Award, 1983.

The roof form of Brambuk is symbolic of an eagle taking flight.

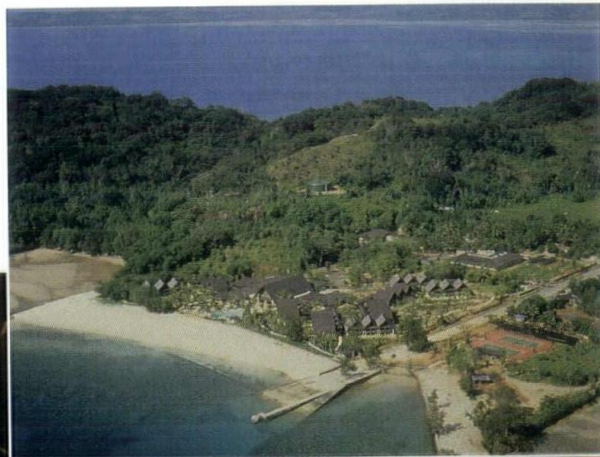


Posts used throughout Brambuk represent trees of the area.

Project draws from indigenous architecture

Palau Pacific Resort

by Michael James Leineweber, AIA



Top, a white sand beach was created at the Palau Pacific Resort by rebuilding a jetty in the bay. Bottom, legends of the breadfruit are illustrated by carvings on columns and fasciae in the specialty dining room of the resort.

Photos courtesy of Media Five Ltd.

The Palau Pacific Resort, a master-planned tropical island resort, designed by Media Five Ltd., draws upon the indigenous architecture, scenery, culture and history of Palau, to create a first-class resort for visitors from all over the world. The unique natural scenery of Palau, with mushroom-shaped limestone islands rising up from the tropical waters of coral lagoons, creates an unspoiled tropical paradise.

The area was preserved and enhanced by creating a self-contained, environmentally friendly resort which pioneered the concept of ecotourism.

An example of ecological sensitivities observed on the island are water use and conservation. Palau Pacific Resort's water supply is collected from deep wells, by damming a stream and using rooftops

as catch basins. The water is stored in a 500,000-gallon reservoir tank. An electric generating plant provides heat for domestic hot water, as well as for reheat coils to remove moisture from the guest room air-conditioning units. Waste water is treated on the property so the crystal clear lagoons and precious ground water will not be contaminated.



Storyboards, which tell the history of Palau, are featured in guest rooms and the lobby.

The design for the main lobby building of the resort was based on the *abai* or traditional Palauan meeting house.

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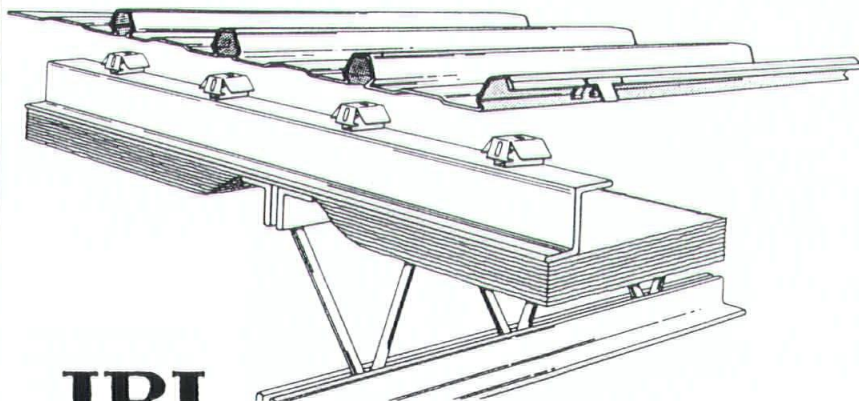


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The Republic of Belau, Palau, which lies between Guam and the Philippines, is a collection of 200 tropical islands. The Palau Pacific Resort, located on the west coast of Arakabesan Island, is one of the few resorts in Palau that is directly accessible by car from the airport on adjacent Koror Island. It also is one of the few places where there was an opportunity to create a beach.

After extensive civil and oceanographic studies, it was determined that a white sand beach could be made by rebuilding a jetty in the bay, facing the resort site. The jetty, which originally had functioned as part of a seaplane base, now provides docking facilities for diving operations.

Designing an international-class resort in a remote and almost inaccessible spot was a challenge. During planning, we took into account the scheduled expansion of the initial 100-room development into a final stage of 200 to 250 rooms throughout the 52-acre site.

This site is unique, because through the years, it has been occupied by Americans, Germans and Japanese in addition to the Palauans. During World War II the Japanese used the site as a seaplane base; consequently, there were various sites and artifacts that were preserved and incorporated into the project. This was accomplished by surveying and identifying historic places based on reports and photographs, as well as site surveys. Trails were cut through the jungle to various scenic, cultural and historic places, providing fascinating hiking paths.

After extensive research of the native Palauan culture, the site plan was based on the concept of a Palauan village. The main lobby building, centered on the property, was based on the *abai*, the traditional Palauan meeting house located in the village square. The distinctive form of the *abai*, a characteristic of Palauan culture, is the architectural signature of the resort buildings. Just as the *abai*

dominates the village square, the lobby structure is the focal point of the resort.

The steep roof slopes, open feeling and trade-wind ventilation of the lobby building reflect the form and function of the abai. Low-rise guest rooms fan out from the lofty central structure.

Local artisans were commissioned to create authentic Palauan-carved storyboards, which carry the design theme throughout the lobby and guest rooms. The local prison was a rich source of skilled wood-carvers, all eager for the opportunity to tell the history of Palau with their storyboards.

Public spaces display specific storyboard concepts, as in the "Meduu Ribtal" specialty dining room, where legends of the breadfruit are illustrated by carvings on columns and fasciae and are depicted in the stained-glass artwork and menu designs as well.

In the private guest rooms, carpet patterns, wallpaper designs, textiles and artwork were all chosen to reflect the culture of Palau, and in many cases were produced by artists and craftsmen in Palau. The artwork program also incorporates original works of M. Hijikata, an artist who produced sensitive work in Palau during the 1930s and '40s.

The goal in designing a new destination resort for this island nation was to create a Palauan resort like no other. The landscape design presented an opportunity to use indigenous flora for a lush setting that resonates with the surroundings and thrives in the island ecosystem.

The Palau Pacific Resort provides a special experience for guests, one which combines luxury and comfort with an appreciation for local customs and craftsmanship and access for eco-tourists to the unique scenery, culture and history of Palau.

♦ Michael James Leineweber, AIA, vice chairman of Media Five Ltd., has worked on numerous projects in the Pacific realm.



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Heritage tourism may boost local economy

Revitalization of Levuka, Fiji

by Gerald T. Takano, AIA

Without the alluring beach environments of west Fiji, Levuka as a traditional resort destination was unlikely. From the preservation and town-planning perspective, Levuka is one of the best "intact" late 19th century ports currently surviving.

Located on the remote isle of Ovalau, Levuka was Britain's robust capital of Fiji until the late 1800s when Suva became the gov-

ernmental seat. The colonial vernacular of Levuka has survived cyclones, economic, sociocultural and political changes.

Population declined after copra and other exotic commodities diminished. This was further exacerbated after independence from Britain in 1970 and the coup of 1987, when indigenous racial Fijian preferences and village structure were strengthened in Fiji. Fijian nationalists, however, never abandoned



St. John's College is an example of the colonial vernacular of Levuka, which has survived cyclones as well as economic, sociocultural and political changes.

Photos by Gerald Takano

British contributions for the post-colonial order. British ethics, legal procedures and imported foreign religious orders such as Anglican, Catholic and Methodist remained in place.

Preservation of the existing architectural stock and heritage development are the tools to be used in stimulating Levuka's economy. Town revitalization through historic preservation was encouraged by numerous reports, including an early study by the Honolulu-based firm, Belt Collins. Decades later, a Pacific Asia Travel Association-sponsored Australian report by two architects, Timothy Hubbard and Peter James, recommended an architectural heritage advisor be situated in the town to work intimately with the town council and residents.

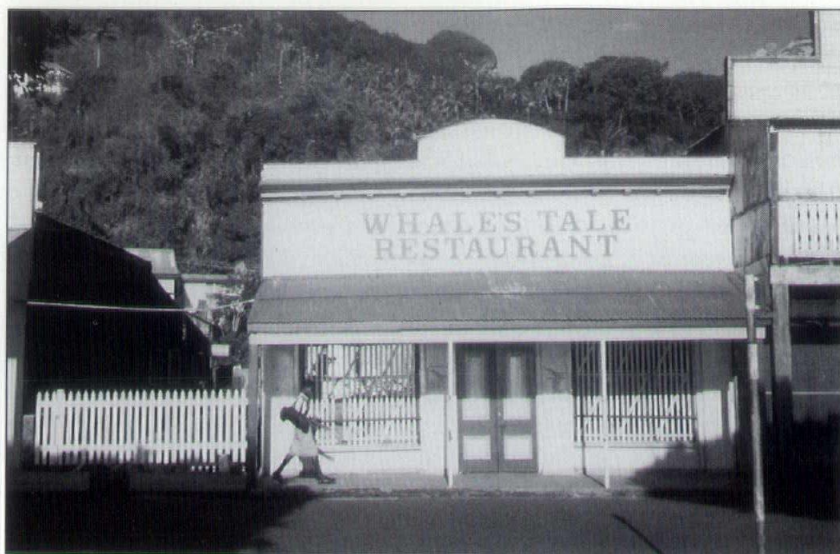
Though tattered and unrefined, Levuka's seaport and quintessential associations with Fiji's national history were its main promises. Designated as an official historical town, Levuka was ready for its next step.

Unanticipated community misinformation frustrated preservation and revitalization efforts. Even national and international appeal for heritage conservation was ineffective to defuse public fears and anxieties. To complicate matters, the architectural stock had little nostalgic attachments for the new, replacement population.

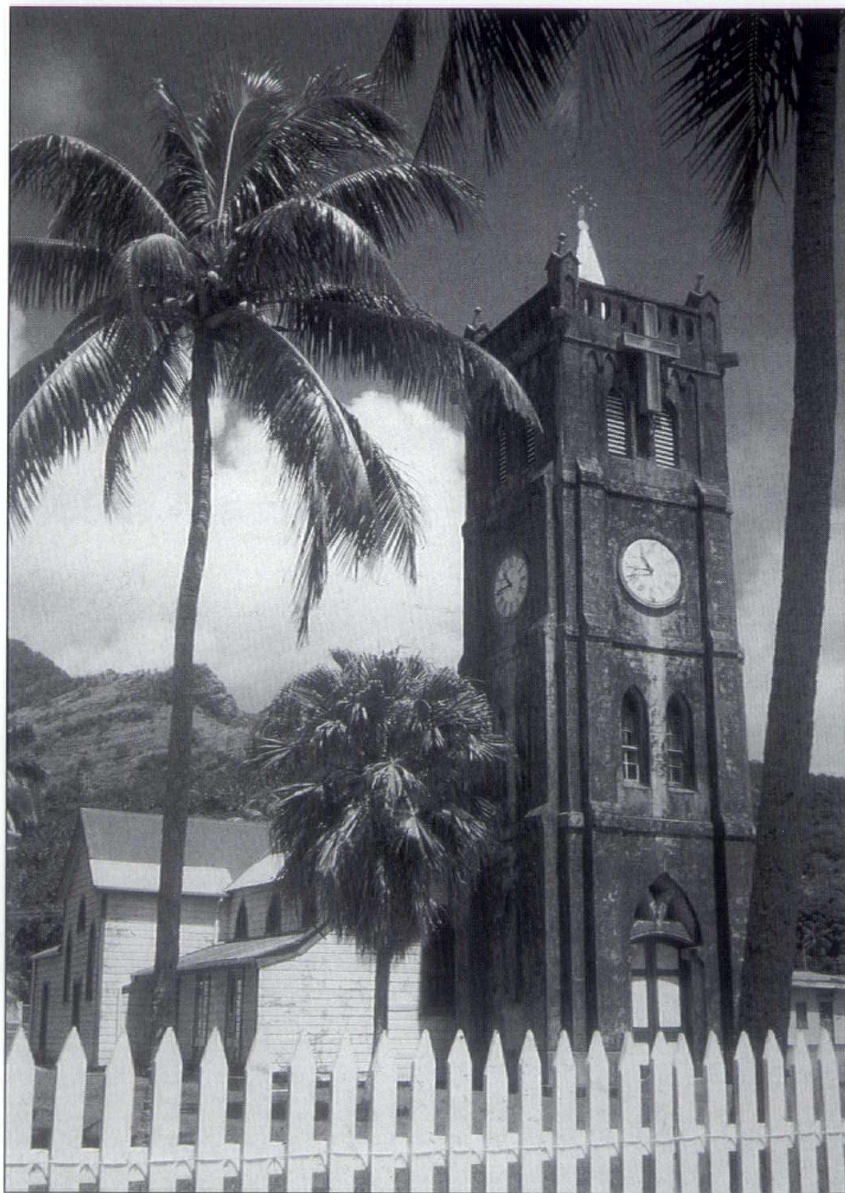
Many of the old British and Australian settlers were gone and new part-European, Fijian, Hindi and Muslim Indian and Chinese inhabitants emerged from the remnants of anglo colonialism. Some residents rallied against preservation efforts, as confusion over individual property rights, acquisition of derelict parcels and other self-interest issues surfaced. The need for heritage guidelines and restrictions, as expected, was difficult for many to comprehend.

Such concerns and problems were directed to the heritage advisor living within the town. Daily contact with individuals proved an enormous success in explaining preservation goals and linkages with town development.

After months with the multiracial town council, mayor, town clerk, overseer, shopkeepers, landlords, tenants, church officials, provincial officers, governmental workers and others, the preservation



The Whale's Tale Restaurant is an example of the typical architecture found in Levuka.



Sacred Hearts Church is not only a monument to Levuka's religious heritage, often the cross is used as a guide for ships coming into the harbor.

process was in place.

Key to overseas work is a mutual respect for other cultures. Cultural proclivities, sometimes appearing complex and contradictory, are best understood with patience and perseverance. Furthermore, project urgency and time constraints definitely test the stamina of foreign professionals. Given these considerations, goals are still attainable if the local community embraces a common direction.

In places such as Levuka, financial gains from the advent of tourism are suspect. While advancing the town's economic self-sustainability, out-of-town control from such initiatives inhibits full community participation. Support for heritage development occurs when visible improvements are evident and economic gains remain within Levuka. Heritage development, for example, encourages eco-tourism "spin-off" benefits through nature hikes, marine journeys and even the occasional well-monitored and

structured visit to a nearby "authentic" village.

Preservation in Levuka requires design directions and decisions based on clear examples and precedence. Examples define for owners a preferred final product and alternative, less costly solutions. Building restorations, construction techniques, material maintenance, "main street" approaches and other directives must relate to Fiji-based examples.

Often references from Australia or the United States are ineffective in retaining community understanding. Few local residents care about precise conservation techniques used elsewhere in the world. Restructured criteria and guidelines that reference appropriate historic Levuka forms are necessary.

Lack of money and the resultant compromised design solutions are major problems. Specific treatments in Levuka are based on the availability of resources. While local, unregulated solutions often are ap-

plied, building inspections based on approved plans are now strictly enforced. In regulating these adaptive and inexpensive improvements, sound standards for structural integrity, hurricane resistance and health and safety measures are better monitored by the government.

Countries such as Fiji rely on foreign assistance until national self-help directives are achieved. As Fiji's stability is realized through an emerging middle class, outside assistance will be transformed and diminished. Currently, Levuka utilizes volunteers from Australia, Canada, Germany, Great Britain, Italy, Japan, Fiji, New Zealand and the United States to achieve and implement preservation work.

Job training in preservation and heritage tourism development is unavailable in a developing country such as Fiji. Liasons with the Fiji Museum, University of the South Pacific, local governmental bodies and outside universities have come together to establish a Heritage Training Centre in Levuka, which will provide a range of preservation-related opportunities. The first step was the involvement of a University of Southern California preservation program under the direction of Jeff Chusid.

Levuka's unpretentious essence is still guarded with a sense of ownership and discovery by those who debate its future. Town leaders of Levuka must willingly embrace preservation initiatives as a means to increase revenues for improvements in the infrastructure. Unless preservation is integral to the town's development, revitalization efforts will be difficult. This is especially so with limited funding commitments, both internally and externally of Fiji or elsewhere.

Levuka's rough charm as a "living community" and historical framework can easily erode as town, governmental and private support decrease. Beyond historic designation and international publicity, an infusion of capital for improvements to the infrastructure,

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accessible loans, financial incentives and economic and social stability for Levuka's heritage conservation is necessary for substantial improvements.

Western preoccupations to "contain and isolate" this simple, rural place are unrealistic. In this new, post-colonial period, Levuka's innocence will gradually change with more exposure to the national and international community. If the preservation framework is successful, the town's officials will have tools and the mechanism to make decisions and choices.

Fiji's national use of historic preservation for the visitor industry indicates a significant trend in "less developed" countries. Although west Fiji resort growth remains the standard indicator of the industry, other visitor experiences that maintain the cultural fabric of the people are essential to the Fijian government. Although Levuka cannot compete economically with the resort world, it does provide an authentic, radically different destination for the adventurous.

Preservation is not limited to pretty buildings and pristine symbols of the elite. Instead, it engages the vernacular settings of the countless, unnamed individuals who now inhabit once forgotten and abandoned places like Levuka.

Levuka's heritage development in an age dedicated to the global economy, environmental responsibility, indigenous awareness and cultural plurality will broaden understanding of the preservation process.

↔ *Gerald T. Takano, AIA, who served as the resident architectural heritage advisor in Levuka, Fiji, during 1994, has more than 15 years experience in architecture, planning, preservation and urban design. Takano has worked for architectural and planning firms on the mainland and in Hawaii, including Helber, Hastert & Kimura, Hemmeter Corp. and Media Five Ltd. He recently accepted a position with the U.S. National Trust for Historic Preservation, which is based in San Francisco.*

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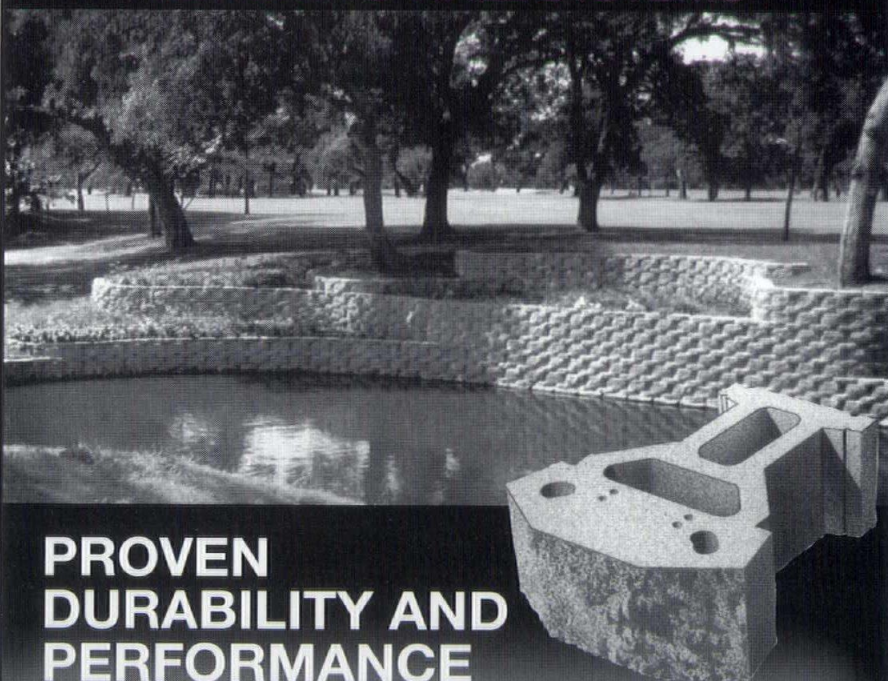
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Saving more than buildings

Historic Preservation in Micronesia

by William Chapman, Ph.D.

Preservation does not mean the same thing to all people. In the United States and Europe, historic preservation, or conservation in European parlance, focuses on older buildings, historic towns and city centers and archaeological sites. In Asia and the Pacific, the concept of preservation often extends to practitioners and processes as well—expert potters, sword makers or Kabuki performers in Japan, storytellers, traditional navigators and canoe builders in the Pacific islands.

These differences in approach can prove problematical when applying general standards, such as those set by the National Park

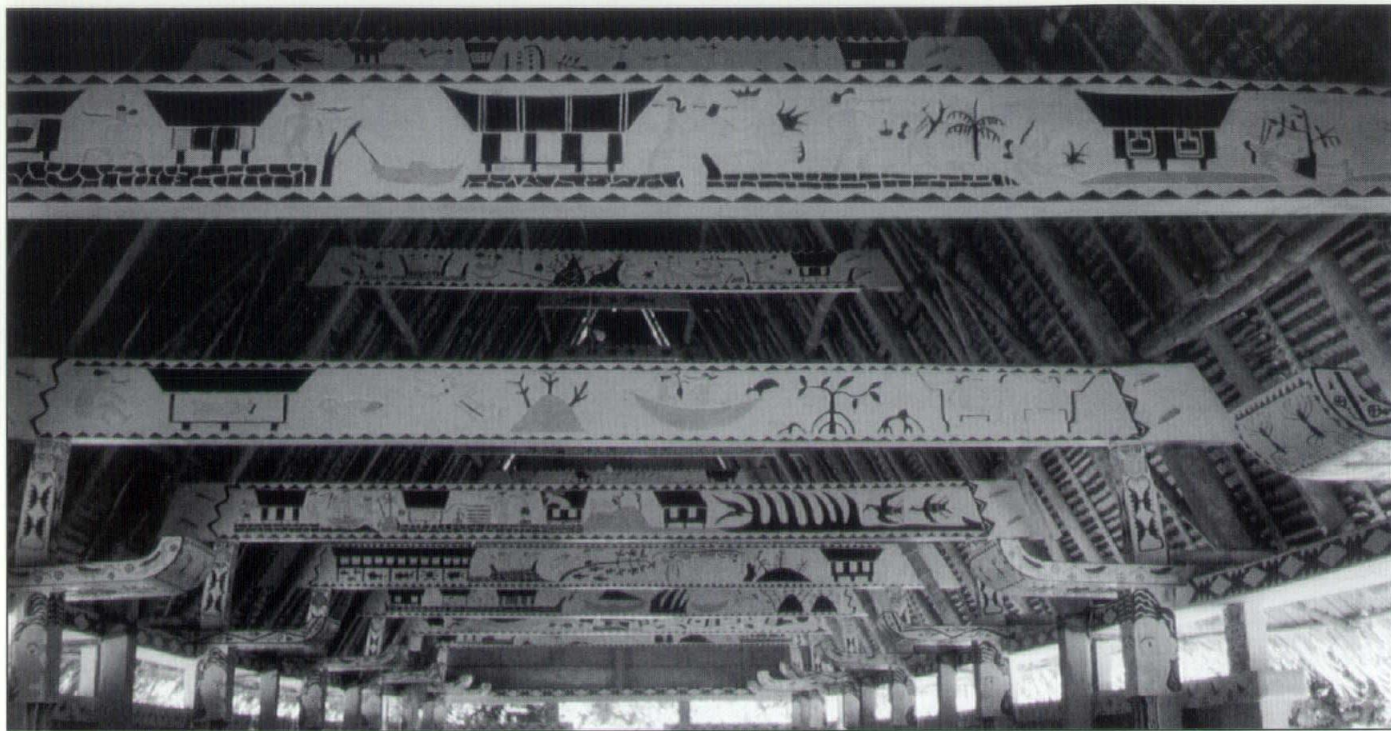
Service—the lead historic preservation agency in the United States—to less than standard areas, such as the former U.S. territories of Micronesia, now the Freely Associated States of Micronesia. It was the task of the University of Hawaii's historic preservation team to identify some of these issues and to suggest ways that the National Park Service could direct its own efforts more effectively.

The Freely Associated States of Micronesia are a diverse set of islands and atolls stretching from Tobi in the Republic of Belau to Knox Atoll in the Republic of the Marshall Islands, a distance of 3,200 kilometers or



This early 20th century church in Chuuk, Federated States of Micronesia, although not necessarily recognized for its historic or architectural significance, is evidence of many decades of Protestant and Catholic missionary activity in the region.

Photos by William Murtagh



Storyboard designs such as these inside this council house recount the history, myths and legends of the people.

nearly 2,000 miles. In all, the States of Micronesia encompass an area of 11.6 million square kilometers or 4.5 million square miles.

With Guam serving historically as the cosmopolitan hub for the region, most of the smaller Micronesian islands were absorbed as territories during the post-World War II era. These smaller islands are currently in transition to independence. The Compact of Free Association, through which the island countries are still linked to the United States, is scheduled to end in 1997. The aim of the National Park Service, along with many other federal agencies, is to provide technical expertise and a foundation of support to help the Micronesian states in the shift to independence.

Each of the newly emergent countries comprising the Micronesian states—the Republic of Belau (Palau), the Federated States of Micronesia and the Republic of the Marshall Islands—face similar challenges. Guam remains a commonwealth. All have strikingly youthful populations, both an asset and a liability. All have continuing health problems, needs for education and economic development.

There also is a significant conflict between the traditional political powers of chiefs and ruling families and the only recently established popular forms of government introduced during the period of U.S. control in the islands. These all are significant factors in as-



sessing needs in special areas such as historic preservation.

The challenges for historic preservation interests in the former territories are amazingly complex. What, for example, is the heritage to be preserved? Is it the traditional culture, still intact in many cases, but obviously different from the culture at the time of first Western contact? Is it the remains of pre-contact societies, such as the dramatic ruins of Lelu in Kosrae or even more famous Nan Madol in Pohnpei, both dating to the period between 800 and 1500 A.D.? Or the many as yet unrecorded house sites, quarries and other archaeological remains?

To what degree also does the rich heritage of colonial occupation fit into this picture—a Spanish fort in Guam, a Japanese agricul-

Traditional buildings such as this council house in the Republic of Belau rarely survive beyond a single generation. What does survive is the skill to build such structures.



Yapese stone money, from Yap, Federated States of Micronesia, which was never used as actual currency, is valued for its age and provenance rather than its size.

tural research station in Pohnpei, a former German warehouse in Kosrae? Finally, who is to decide what is significant? Is it to be traditional chiefs or is it to be the population at large?

These were the questions that the team from UH had to ask when it first traveled to Micronesia in the spring of 1994. Team members included: William Murtagh, the first keeper of the U.S. National Register of Historic Places and the founder of the historic preservation program at UH; Leonard Mason, emeritus professor of anthropology at UH and a man often considered the "dean" of Micronesian studies; Nathan Napoka, a native Hawaiian and head of cultural programs in the Hawaii state historic preservation office; and me.

Through on-site interviews, community meetings, reference to published reports and lengthy discussions with National Park Service officials, the team arrived at a set of recommendations it hopes will help sustain

preservation efforts in the island countries well into the next century.

Behind these recommendations was the realization that the unwritten culture of Micronesia was the principal cultural "property" of the people. Canoe building and tra-

ditional navigation techniques, house-building methods, sacred knowledge of chiefs and leaders, cooking skills, recipes, dances and chants—the whole of what anthropologists call the "embedded" culture of the people of Micronesia—were considered significant. So too were historic and prehistoric archaeological sites, some vacated only in recent times and still known to inhabitants, others more remote and hidden.

Finally, while the inhabitants themselves were less inclined to recognize this, the colonial heritage, including the important legacy of World War II, was found to be of great interest. If it had less cultural "meaning" to the inhabitants, occupation and involvement by outsiders was clearly an enormous factor in the history of all the islands.

Sites such as the Chuuk, formerly called Truk, Lagoon, the graveyard of the Japanese support fleet sunk in 1994, have great tourist potential as well as standing as important reminders of significant



The Nan Madol Ruins, located on Pohnpei Island in the Federated States of Micronesia, is among the most impressive monuments in the Western Pacific. The complex, comprised of basaltic columns raised on a series of artificial islands, once served as the center of Pohnpeian power from the 13th to 15th centuries.

events. The same is true of the numerous Japanese gun emplacements and concrete bunkers, not to mention the many derelict tanks and other World War II artifacts scattered along the side of roads and shorelines of many islands. Micronesia was the theater of a great world event and this heritage deserves attention.

Specifically the team recommended the following:

- Training efforts need to be coordinated more centrally. To this end, the UH team will serve as a coordinating body for further training, providing information on programs for Micronesian staffs and helping to raise funds to enable Micronesian participation.

- Increasing the emphasis on recording traditional culture through additional training in video and audio techniques as well as further ethnographic training for staff members and funding for specific projects such as canoe building and house building.

- Emphasizing heritage education training in order to improve delivery of the historic preservation method.

- Assisting in drafting new legislation for the protection of archaeological and cultural sites.

- Providing better background in the basic principles of historic preservation practice through courses at the University of Guam.

- Increasing the level of training in techniques of archaeological survey methods, including further training in areas such as underwater archaeology.

- Creating closer links between museum efforts and more site-oriented historic preservation interests. It was recognized, for instance, much of what is thought of as historic preservation takes place in the museum context and this aspect of education and interpretation deserves more support.

- Increasing training in the "nuts and bolts" of office management and technology.

- Placing greater emphasis,

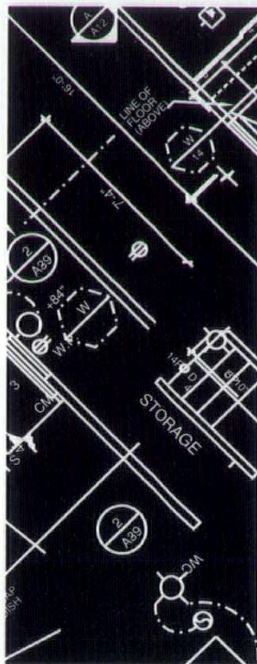
through training and research, on colonial sites and the World War II heritage.

- Establishing better links between the growing Micronesian tourism business and historic preservation interests.

Officials in the island countries of Micronesia have a long way to go in preserving their heritage, both "built" and "unbuilt." It is hoped that the efforts of UH's historic preservation program and the Na-

tional Park Service will help supporters of the fledgling preservation programs chart their own course through the next several years. This may include some of what was built and left behind and perhaps more of what the people of the region see as significant.

♦ William Chapman, Ph.D., is director of the historic preservation program, Department of American Studies at the University of Hawaii at Manoa.



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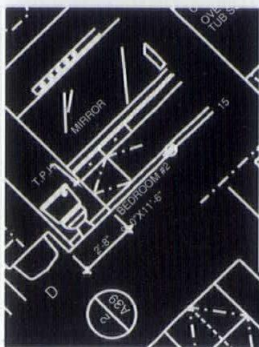
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Wimberly Remembered by Fellow Architects

Distinguished Honolulu architect George J. "Pete" Wimberly, FAIA, died Dec. 30 at The Queen's Medical Center following an extended illness. He would have been 81 on Jan. 16. The firm Wimberly founded in Honolulu, now known as Wimberly Allison Tong & Goo, marked its 50th anniversary in 1995, doing business in 35 countries last year from offices in Honolulu, Newport Beach, Calif., London and Singapore.

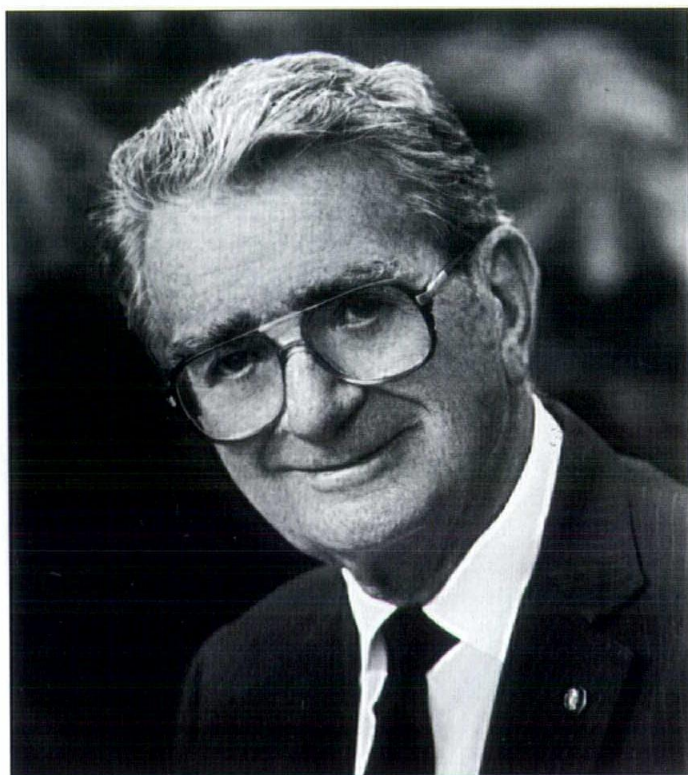
Born in Ellensburg, Wash., Wimberly earned his bachelor of architecture degree at the University of Washington, where he was president of the architectural honor society Tau Sigma Delta for two years. Following post-graduate work at the University of Mexico, he became a licensed architect in California, Hawaii, Guam and Singapore.

After working in Washington, California and Arizona, Wimberly moved to Hawaii in 1940, as chief designer for Contractors Pacific Naval Air Bases and Public Works Design Section, Pearl Harbor.

In 1945, at the close of World War II, Wimberly opened an architecture office in Honolulu. Later the same year he joined in partnership with Howard L. Cook, establishing Wimberly and Cook. Before the firm was reorganized to become Wimberly Whisenand Allison & Tong in 1960, Wimberly already was recognized for innovative and award-winning designs representing a variety of building types—hotels, banks, office buildings, residences, shopping centers, etc.

The '60s brought the construction of many of Wimberly's most notable works and marked the beginning of his venture into developing countries of the Pacific.

According to Gregory M.B. Tong, AIA, WAT&G chairman emeritus, who joined the firm in 1953, a large part of the firm's success is attributable to the visionary Wimberly. "Long ago—even before the post-World War II building boom in Hawaii and while we were only a 12-person firm—Pete realized Hawaii was going to be too small. He encouraged us to look outward. Little did he realize those early trips to Tahiti would eventually lead



George J. "Pete" Wimberly, FAIA

to WAT&G's becoming the international firm it is today," Tong said.

In 1971, the firm again underwent reorganization to become Wimberly Whisenand Allison Tong & Goo Architects Ltd. The tongue-twisting name remained until five years after Whisenand's death, when the corporate name was simplified in 1988 to Wimberly Allison Tong & Goo Inc.

Wimberly was president from 1945 until 1980 when he became chairman of the board, a position he held until 1987. Determined to never retire, he acted as a consultant to WAT&G from 1987 until his death. He worked on a project in Manila until late 1995.

"Pete's architecture speaks volumes of his understanding of tourism and people. All of us will benefit

from his vision and the legacy of his designs in Hawaii and the Pacific," said Don Goo, WAT&G chairman.

The Hawaiian Telephone Company office building, Honolulu; Ibusuki Kanko Hotel, Hayashida Onsen Hotel, Iwasaki Hotel, all in Japan; Hyatt Regency at Hemmeter Center, Aloha Towers Condominiums, Hilton Hawaiian Village Tapa Tower, Sheraton Molokai Hotel, Maui Land and Pineapple Company corporate offices, all in Hawaii; Shangri-La Hotel, Garden Wing and Arcadia Condominiums, both in Singapore; The Regent of Bangkok; The Ritz-Carlton, Laguna Niguel and Four Seasons Hotel Newport Beach, both in California, are among the many outstanding designs associated with Wimberly's name.

Among numerous architectural design awards presented to Wimberly throughout his career, one of the most noteworthy was the Aga Khan Award for Architecture, 1983, for the Tanjong Jara Beach Hotel and Rantau Abang Visitors Center in Teregganu, Malaysia.

Called the "consummate architect" by George S. Berean, AIA, managing principal of WAT&G's Honolulu office, Wimberly had, at his death, devoted more than half a century to service to the profession and in so-doing acquired a great deal of recognition and many honors. He was elevated to the American Institute of Architects' College of Fellows in 1957 and was elected president of the Hawaii Society/AIA in 1963.

Gerald L. Allison, FAIA, who became part of the Wimberly group in 1957, said "Wimberly was truly an architect's architect. He gave his best and demanded the best from his associates. To me, he was both icon and legend. It is his work against which I measure my own."

Wimberly is survived by his wife, Walton; first wife, Janet; daughter, Heather; and granddaughters, Samantha E. and Mary-Victoria Beech.

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Single- and multi-barrier systems stop water infiltration

Building Leak Prevention

by Jim Reinhardt, AIA

Why do buildings in Hawaii, with its mild semitropical climate, seem to have more problems with leaks than a place like Washington, with its infamous rain? Why do buildings seem to leak more now than they did in the "good old days?" Why do buildings leak at all?

Stated in the most general terms, leaks occur because of pressure differential. If the pressure on one side of a water-resisting membrane is greater than on the other, movement of air and/or water will occur to equalize the difference. On a roof, for instance, water at higher elevations tends to flow to the lower elevations—which, unfortunately, are probably inside your building—as a result of gravitational pressure.

The water on the outside of a wall or window, with wind blowing against the building, tends to move to the inside as a result of air pressure differential. At a retaining wall, the water in the soil tends to move to the open side of the wall as a result of hydrostatic

pressure. The movement is from areas of higher pressure to areas of lower pressure.

If pressure is the cause of leaks, how can the leaks be stopped? There are two basic approaches. The first is the single-barrier system, where the idea is to create an impervious membrane between the high pressure areas where the moisture occurs and the low pressure areas which are to be kept dry. The other approach is the multi-barrier system, where the idea is to create a two-level or more system with an outer layer to deflect most, but not necessarily all, of the water. The secondary levels of defense provide a pressure differential barrier which is shielded from the water.

The first approach, that of creating a single-layer impervious membrane or barrier, is conceptually simple and obvious. Think of a balloon: the higher air pressure is on the inside, the lower on the outside, and an impervious membrane, barrier, of rubber separates them. Simple as long as the barrier is truly impervious, but if even the smallest hole oc-

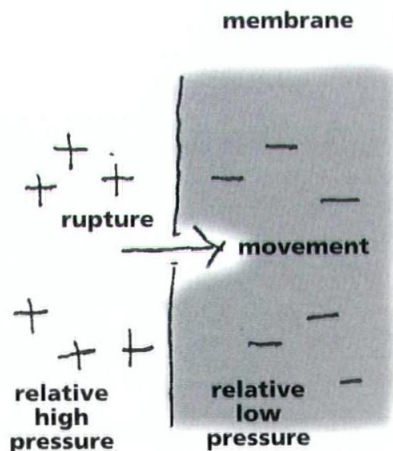
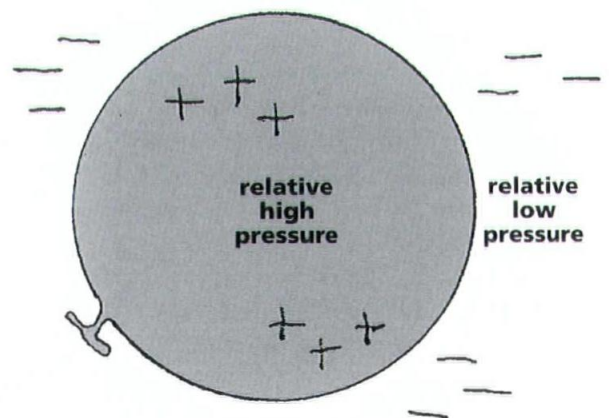


Diagram of pressure differential



Single-barrier system

curs, the pressure moves through that hole and the system fails.

In the case of buildings, when the air pressure moves through the opening, it commonly carries water and lawsuits with it. Since buildings are not as simple as balloons, creating that impervious barrier is very difficult and the consequences of even minor failures can be serious and expensive.

The second approach, in its simplest form, is to create a two-layer barrier: an outer one to shed the water and an inner one to provide a pressure barrier. The "rain-screen principal" is the most refined development of this approach. The idea behind the rain screen is that the pressure differential barrier does not have to be perfect. It may have a few holes in it. If water is kept away from this barrier, problems will not result.

An integral part of the rain-screen concept is that an internal drainage system must be built into the system to return any water that gets past the first layer, the first screen, to the outside. Needless to say, this is simpler in concept than in execution.

The rain-screen concept, in its classic form, involves integration of an internal air cavity, pressure equalization between the outside and the internal cavity and drainage of the internal cavity. The approach is used, in a high-tech setting with high-tech materials, in the design of curtain-wall systems. Extruded aluminum, glass and/or thin stone panels, very close manufacturing tolerances, high-performance sealants and highly skilled workers, all are expected parts of the system. Parts that are to be relied on to assure the performance of the system.

The same concepts, however, in modified form, can be seen in a low-tech form in com-

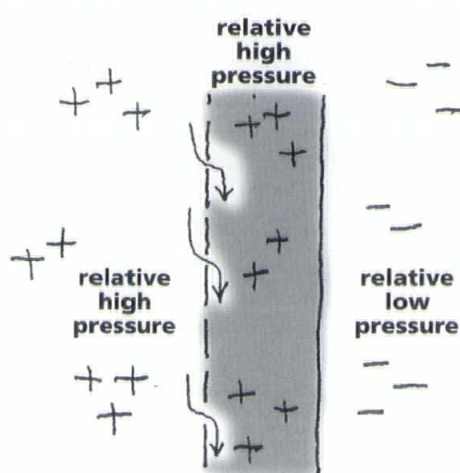
mon building practices. An example is the use of building felt under board or panel-board sidings. The first layer of materials shed the water; the second layer intercepts the small amount of water that gets past the first and provides a pressure barrier between the inside and the outside.

The first step in designing a successful waterproofing system is to decide which of the approaches to choose. There are significant conceptual differences in the detailing and selection of materials between the single-barrier and multi-barrier approaches. Either approach can work.

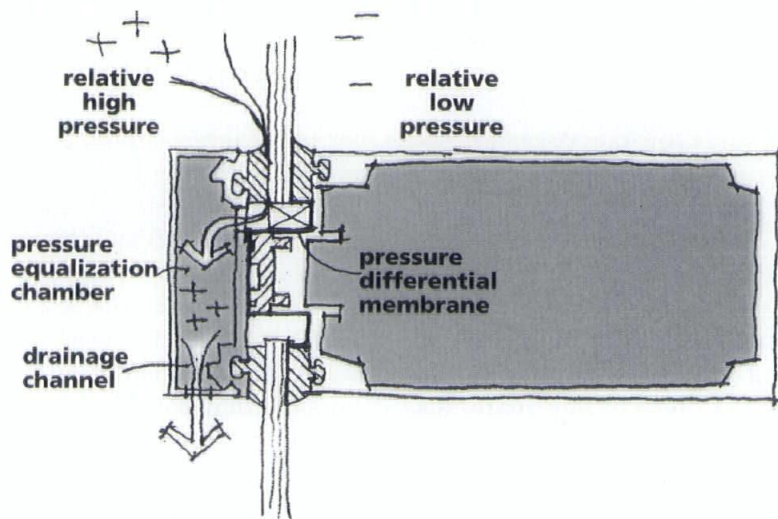
The single-barrier approach is the simplest in both concept and design details, but relies on nearly perfect execution in the field. In designing a single-barrier waterproofing system one must identify the conditions where violations of the integrity of the barrier are most likely to occur. Envision the building as being completely enclosed in a thin membrane, like the skin of that balloon. Then determine where each and every "hole" in that membrane might occur, starting with the big surfaces.

The most common location for the barrier membrane is the exterior surface of the building. Since plaster, for instance, is commonly subject to cracking, a membrane must be provided that doesn't have cracks. An elastomeric wall coating over the plaster is one good way to accomplish this.

But what happens at the edges of the membrane? How do windows fit into the membrane so the barrier is maintained? What happens where materials change? At the bottom of the wall? At corners? Each and every connection, seam and intersection must be made airtight. This is not difficult. It only



Multi-barrier system



Window sill/mullion

requires looking at each part of the building with an understanding of what needs to be accomplished. Keep the concept of that balloon in mind.

The design process for a rain-screen system is quite different. First, determine the cause of the pressure differential which drives the water. Wind? Gravity? Hydrostatic pressure? Negative air-conditioning pressure? Then consider where the water is.

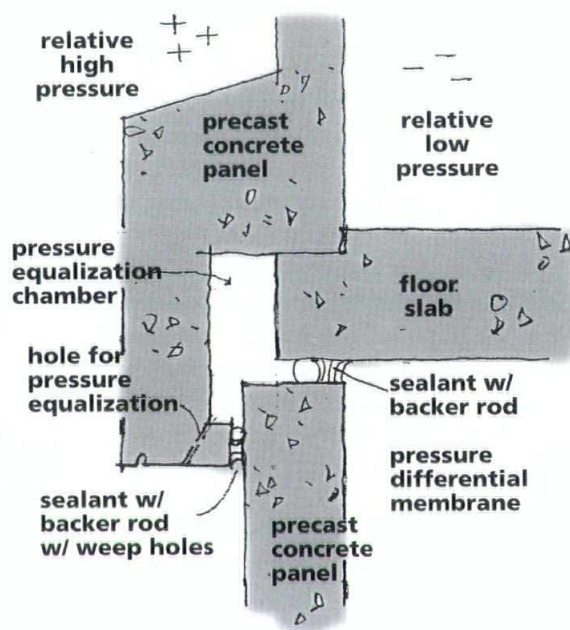
The exterior materials probably were selected as part of the aesthetic concept. Determine if and how those materials can be used to form the first layer of a system to intercept most of the water. Then select a natural location and material to form a second-layer barrier behind the first. Returning to the example of exterior plaster, the fact that the plaster may crack is OK. It will still shed most of the water that hits it, particularly if the air pressure is equalized on both sides of the plaster.

A pressure-differential membrane can be created behind the plaster with backing paper or building felt. Any water that gets past the surface of the plaster is returned to the outside through weeps at the bottom of the wall. Although building felt under plaster doesn't strictly fit the rain-screen concept because there is no cavity between the felt and the plaster, the idea is similar and operation the same. The key is to think of a two-level screen with drainage to deal with the small amount of water that might pass the outer screen.

Interestingly, this multi-layer, pressure-differential approach can be used to make a waterproof system out of nearly any materials, from roofs of thatch or coconut fronds to walls of rattan or *lauhala*. Again, the purpose of the outer layer is only to intercept most of the

water. The inner layer provides a pressure barrier which puts the outer screen material in a pressure-neutral environment and provides resistance against the small quantities of water that get past the outer screen.

So why does Hawaii have more problems with leaks than Washington? If you consider how buildings in the colder northwest climate are constructed, you will notice that multi-layer assemblies of exterior materials are more common—siding with sheathing, insulation and vapor barriers, etc. The multi-layer



Typical precast panel joint

assemblies provide, perhaps inadvertently, this multi-layer water and pressure protection. In pursuing low-infiltration exterior skins for the buildings, intended to minimize the heating bills, an effective pressure differential membrane also is created. While the intent is not necessarily to minimize water infiltration, this is the result.

What about the "good old days" when buildings never leaked? It is possible that part of the success of the old buildings is in fact memory failure. We don't remember the problems. Another aspect may be that in today's living environment,

with air conditioning, lots of electronic equipment and more abundant lawsuits, we are less tolerant of small problems than we used to be.

It's also possible, however, that many of the problems with leaks are related to the ever thinner, lighter and cheaper materials which find their way into use with increasing frequency. With these materials, more careful attention to the placement and continuity of the water and pressure barriers is essential to maintaining a watertight structure.

The goal of many of the newer material systems may be to reduce the weight and thickness of the materials and reduce redundancy, but the end result is to put more reliance on technology—sealants, films and thin membranes, etc. Where the old version of a high-quality built-up roof had four or five plies of felt, laminated with layers of hot asphalt, a new roofing system might be made of a single layer of Ethylene Propylene Diene Terpolymer.

If a worker was a little less than perfect in applying one of the layers of the old roofing system, the other three or four layers would compensate for the problem. If today's worker is less than perfect in sealing the seams of the single-ply membrane, the water will come in. This isn't new. The significance is that it changes the way we need to think about waterproofing buildings.

In the old days, redundancy was built into the materials and systems. When redundancy is eliminated, adjustments need to be made in the structure's design which will compensate for less than perfect installation. The multi-barrier technique to waterproofing offers such an approach.

♦ Jim Reinhardt, AIA, is president of Architectural Diagnostics Ltd., a firm that specializes in construction problems.

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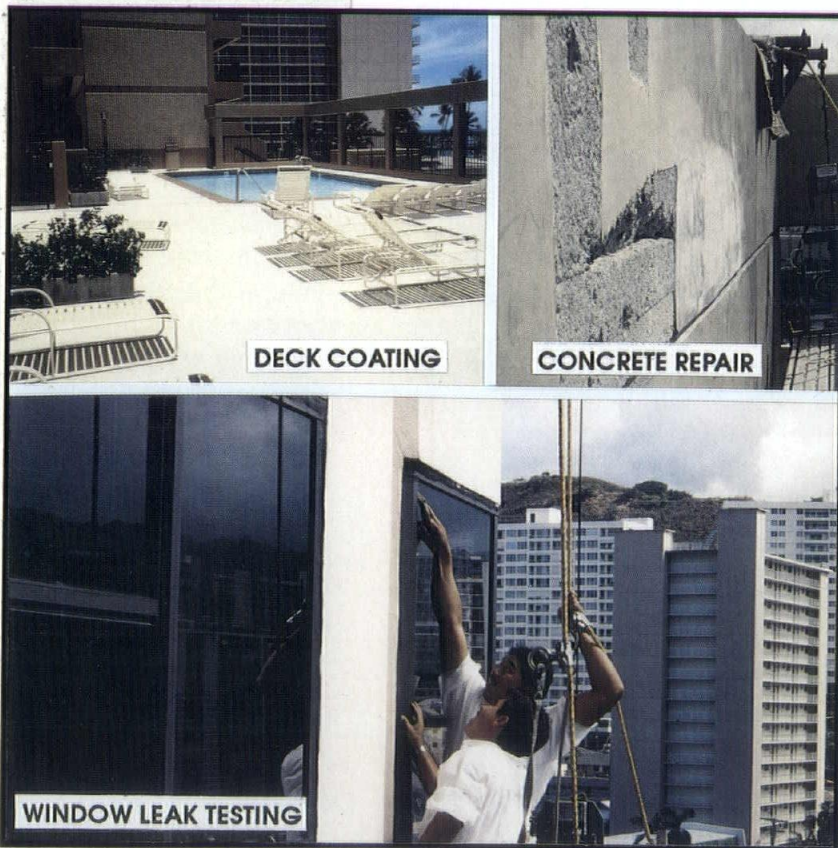


Heading a team of over 40 technicians are left to right:
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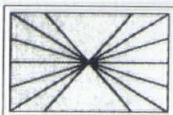
Alvin is Vice President of The American Coating Company. He is in charge of all field and estimating operations. Previously, Alvin was employed with an engineering firm in Chicago and Honolulu where he focused primarily on restoration and water infiltration problems. Alvin holds a M.S. and B.S. in Engineering from Purdue University.



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Personal attention, efficiency, trademarks of small firms

Benefits of Being Small

by Amye H. Turner

Architects provide design services for not only large-scale, multimillion dollar, commercial projects. Many design professionals focus on custom-built residences, renovations, interiors and smaller commercial projects. These types of projects often are done by small architectural firms, companies which have five or fewer employees.

Regardless of project size, personal attention to a client's needs is the main objective of most small firms. "The small firm environment encourages closer communication with the client. Projects are handled by the entire office, enhancing the possibility for success and client satisfaction," said Ted Garduque, AIA, Garduque Architects. Garduque's firm

provides general architecture, interior architecture, concept design services and full services within each discipline—administration, computer analysis, graphics, report writing, etc.

Kathleen Saito, AIA, Saito Design Associates, noted that in addition to personal attention, small architectural firms tend to be more efficient project managers because there are less channels to go through than within a large office. Saito provides architectural services for new residential projects, commercial space planning and both residential and commercial renovations.

Often, prospective clients may be uncertain about obtaining architectural services. They may question what an architect can do

specifically for a project. "Architects look at a project more holistically, taking into consideration the entire site, neighborhood, etc. Within these parameters we can take the client's wish list and turn it into a reality," said Rebecca Lively, AIA, Lively Architects. Lively Architects works primarily on custom-built residences, but does some work in the commercial sector. Between 5 percent and 10 percent of the firm's work is done off-island. The firm has projects on neighbor islands, in American Samoa, Colorado and Texas.

Paul Morgan, AIA, Suzuki/Morgan Architects Ltd., whose firm provides general



The Kaiser Kailua Medical Clinic, designed by Kimbal Thompson, AIA, Kimbal Thompson Associates Ltd., is based on the triangular unit system, a geometric metaphor which depicts the sails on the ocean, cliffs of the mountains and other natural features of the area.



Lively Architects incorporated curves into the design of this Wailua beach-front residence to accommodate tight site setbacks.

architectural services and renovations as well as Americans with Disabilities Act, historic preservation and existing building conditions surveys noted architects are able to go beyond "tract home designs" and create truly unique structures for their clients.

Nancy Peacock, AIA, Nancy Peacock AIA Inc., said in regards to assisting clients with their design needs, architects help them choose appropriate materials, demonstrate how these materials can be used sensitively and determine what would be a proper scale for use of these materials in a specific project. Peacock focuses on residential projects—new construction, interiors and renovations.

Kimbal Thompson, AIA, Kimbal Thompson Associates Ltd., who

runs a full-service architectural firm, has designed commercial buildings, scientific, educational and medical facilities and private residences. He noted that an architect's job is not just about designing buildings. It also entails educating clients about the design/construction process. Peacock agreed, adding often a client's list of questions will include: "How do you find a good contractor? How long does it take to obtain permits? How much will the total project cost? How long will it take to complete the project?"

In addition to providing value through design, Jeffrey Y. Nishi, AIA, Jeffrey Nishi & Associates/Architects, noted that architects provide an enforceable contract, take care of getting the client's project through the rules and regulations

process and administer the construction process. Nishi works on small commercial projects—up to 2 million in construction costs— and private residences.

"Small firms are capable of handling projects of considerable size," Thompson said. Perhaps in some instances, the personal attention given to clients by architects in small firms may lead to projects which are more tailored to clients' needs.

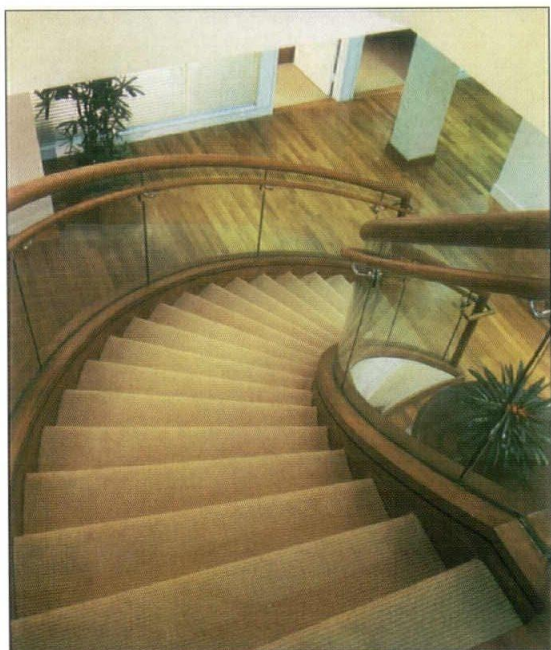
Peacock added there are many architects available to do small projects. "Having an architect involved even in the smallest renovation will enhance a project. Architects add value to a project through both their practical and design contributions," Peacock said.

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Alger Foundation Office



This curved stairway is the focal point of the building's interior.

The architect's goal for the Alger Foundation office was to make the headquarters facility bright, open, airy, warm and welcoming. The building had been a Chinese restaurant and noodle factory, but designers believed its unique location provided many design opportunities.

Originally 7,570 square feet, the three-story structure was expanded to 8,248 square feet. The architect added the extra space by extending the second floor into an area that had been occupied by mechanical equipment.

To achieve the goal of openness, a two-story space was made near the middle of the building. Natural light from windows on the front of the building and clear story light wells at the rear of the building contribute to the brightness of the office area. A curved stairway, which was constructed in the two-story space, is the focal point of the interior.

Building materials were selected carefully to meet the design goal. Glass was used extensively in the front office partitions to further the open feeling and provide a free flow of light. Natural



The original windows on the third floor, which were preserved, allow natural light to flow into the board room.

Photos by Hal Lum

materials, such as wood and sisal carpets, were used to give the building a softer, residential feeling.

One of the key design components was the creation of an "old fabric" and a "new fabric." The old fabric was used to create a sense of tradition, something the client desired. Elements in this fabric include soft plastered walls and plastered ceilings with special painted stencil and hardwood molding. This design was used to maximize the interior space. The new fabric was used to maximize the open, light and airy feeling.

Consuelo Alger, who established the foundation, selected the building partially because of the location, which is contiguous to the population she wanted to serve. The foundation works toward community development of families, women, youth and children in Hawaii and the Philippines who are abused, poor, sexually exploited or without hope.



The second-floor offices were created out of a partially open mechanical space. Clerestories were added to introduce light into the back of the area.



The renovated street facade provides a warm welcome for employees and clients.

Jury's Comments

"The exterior of this renovated office maintains the historic context of the neighborhood.

The interiors are beautifully detailed with a pleasant outdoor courtyard on the third level."



This second-floor office is part of the "old fabric" spaces, which project a sense of tradition.

Credits

Owner/Client

Alger Foundation

Architect

Architects Hawaii Ltd.

Contractor

Construction Associates Inc.

Electrical Engineer

Toft Wolff Farrow Inc.

Interior Designer

Philpotts & Associates Inc.

Mechanical Engineer

Lincolne Scott & Kohloss Inc.

Structural Engineer

SSFM Engineers Inc.



The Hawaii Procurement Code

by Michael D. Tom, J.D.

If you intend to perform or are rendering professional services on behalf of a governmental body, it is important to familiarize yourself with the rules that have been promulgated.

In 1993, the state Legislature created a statutory scheme to govern the expenditure of public funds by a governmental body. The definition of a governmental body is all-encompassing and includes not only the various agencies and departments of the state government but all counties as well. With very limited exceptions, all expenditures for construction—including the cost of architectural and engineering ser-

vices—must comply with requirements of the Hawaii Procurement Code, Chapter 103D of the Hawaii Revised Statutes.

Section 103D-303 provides two alternatives for the procurement of architectural or engineering services. The first and favored alternative is the "Request for Proposal" process outlined in Section 103D-303, titled Competitive Sealed Proposals. Under certain circumstances, a prequalification selection alternative is available. The details of the latter alternative are provided in Section 103D-304, e to g.

The Hawaii Procurement Code requires the promulgation of ad-

ministrative rules. Detailed rules and regulations have been issued, but not yet adopted. It is anticipated that these rules will be adopted in the first half of 1996. Subchapter 7 of the "Source Selection and Contract Formation" contains specific rules that must be followed by a governmental body in procuring architectural or engineering services.

♦ Michael D. Tom, J.D., is a partner in the law firm Tom & Petrus. Educated as a civil and structural engineer, his practice focuses on the construction industry.

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