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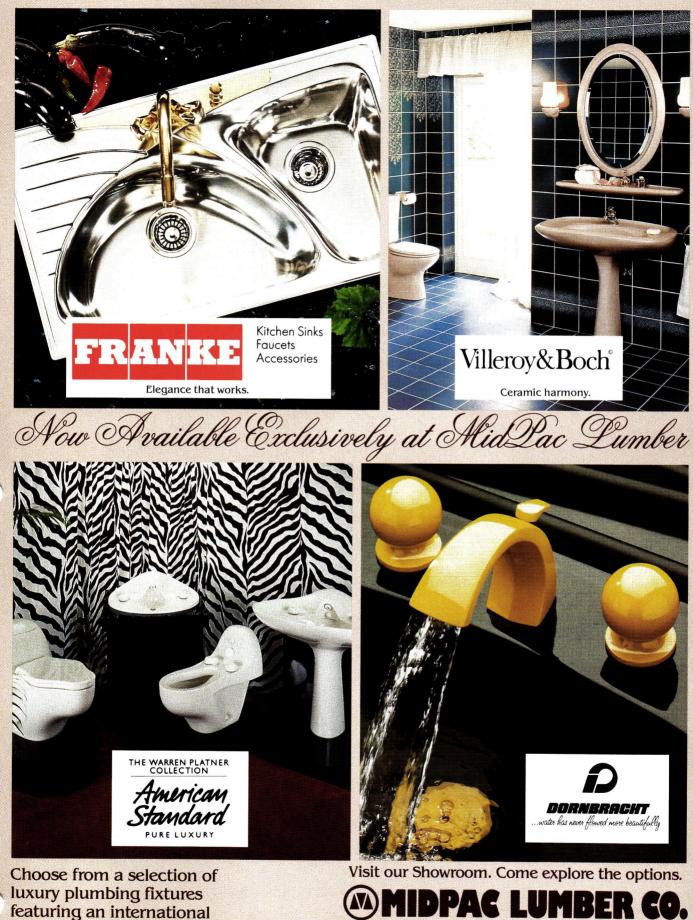


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Volume 17, Number 8

August 1988

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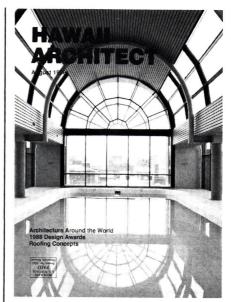
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Cover: This spectacular pool with barrel vaulted ceiling was designed with blustery antarctic winds in mind for Sheraton Hobart Hotel in Tasmania. Design consultant, WWAT&G. Photo by Andrew Payne

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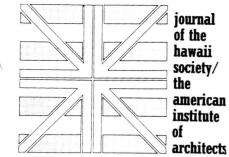


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An Outreach to the World

by Norman G.Y. Hong, AIA

ur work today has become world directional. As a profession we are well beyond the concept of "international architecture" popularized in the '60s and '70s. and as professionals practicing in a community called Hawaii we are in many ways ahead of the pack.

Why? The answer lies in our multicultural heritage. We have long served in a community known for its socio-economic cornucopian lifestyle. As we were evolving a regional style of our own, which some call "Hawaiian." others "kamaaina architecture." we became accustomed to studying the history, art and modern environment of our parent countries, depicting these in various dimensions in our craft.

In other words, architects in Hawaii are used to being inquisitive about traditions outside our own. We have not preoccupied ourselves with fixed ideas of what good design should entail. We have not been selflimiting. We have already reached well beyond our insular world, our own psyches, in pursuit of design excellence.

We might speak of this act of seeking and responding to sociocultural roots, East and West, as "derivative architecture." Missing, of course, from this title is the individual genius that pulls all the influences together, analyzes the modern user's needs. cost considerations, etc. in



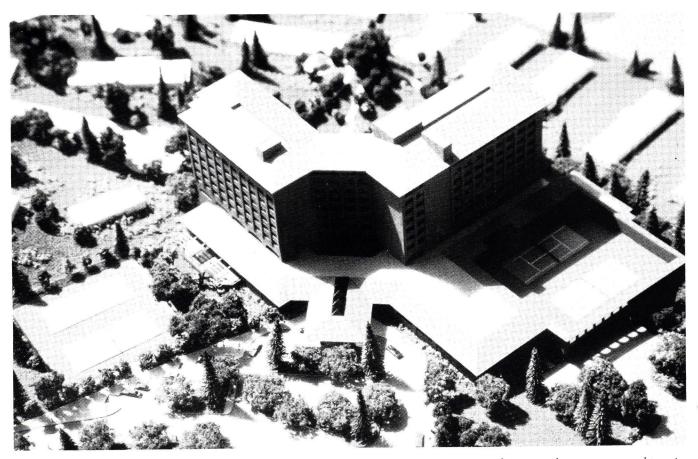
Norman G.Y. Hong

creating buildings that are enjoyed, respected and enduring. Perhaps it is best not to try to use shorthand to characterize what Hawaii architects do.

No matter . . . it is the results that count. I am pleased to see that many among us are being asked to go to foreign lands —like Tokyo, Hong Kong, Okinawa. Australia, China, Micronesia and Mexico — to envision and help create new structural complexes, large and small, commercial and resort. This is happening more and more often today because the multidimensional, culturallyinquisitive (and sensitive) expertise of our architectural community is now internationally recognized.

Enjoy this issue of Hawaii Architect and take pride in knowing that we are, truly, among the rising "movers and shakers" in architecture around the world. HA

Architecture Around the World



Aerial view of the Dragon Hill project showing guest room tower with entrance, porte cochere, retail restaurants and tennis facility at lower levels.

A Comfortable Gathering Place For American Military

by Benjamin Q.T. Woo, AIA

S eoul, Korea conjures up many different images to Americans these days. To some, it is an Asian city where shopping is plentiful, exciting and inexpensive. To others, it is part of a rapidly developing country on the verge of hosting the 1988 Summer Olympiad. Many incoming American military personnel begin their next tour of duty in Seoul.

Yongsan Garrison is the headquarters for the United Nations Command and the U.S. Eighth Army. Frequent rotation of military personnel and their families results in a high demand for temporary housing. The current transient billeting facility cannot meet this demand and lacks the ability to provide family oriented services and activities.

Dragon Hill Lodge will not only meet the need for temporary housing, but will serve as the gathering place for Yongsan Garrison.

Designed by Korean firm AMKOR A&E and Chapman Desai Sakata Inc., the facility will include 277 guest rooms, a variety of dining experiences, cocktail lounge, pub, meeting rooms and family amenities such as an hourly child care center with an outdoor play area, tennis courts and retail mall. This myriad of activities and functions is tied together by a multilevel lobby and mezzanine space.

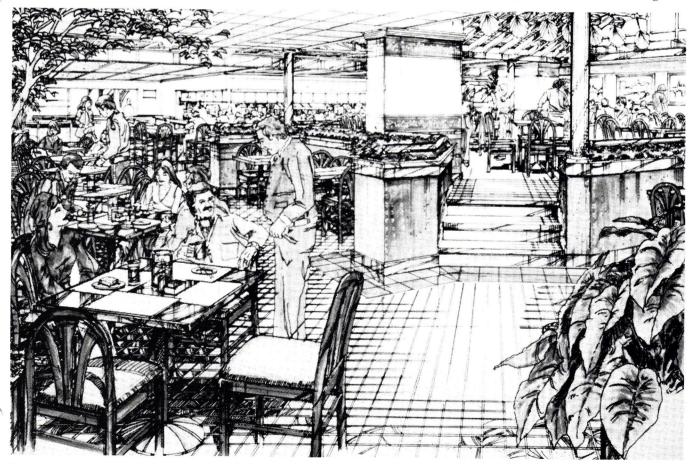
The name, Dragon Hill, is taken from the English translation of Yongsan, an area of Seoul, in which the garrison and Surrounding low profile structures and wooded hills effectively isolate the lodge from the noise of the city.

lodge are located. The facility's 10-story height was based on both site and military restraints. Surrounding low profile structures and wooded hills effectively isolate the lodge from the noise of the city.

Local manufactured brick and clay roof tiles, along with red granite spandrels serve as the major vocabulary for the exterior facade. Red brick was chosen at the request of the client to blend in with the neighboring brick clad buildings. These materials also were selected because they are commonly found within the Korean building industry, are durable and provide a human scale to the building. Arches, pilasters and recessed surface planes add rhythm and interest to the facility.

The user-requested basic design and decor is "American," drawing from the traditional to contemporary periods of American interiors. Each of the dining facilities has a particular theme. The coffee shop is Victorian, the full-service restaurant contains the elegant decor of 18th and 19th century American residences, the family restaurant and cocktail lounge are loosely patterned after the casual, informal style indigenous to the warm, arid American Southwest, and the pub invokes the feeling of an Edwardian men's club with rich wood paneling, carved cornices and classic columns.

In the guest rooms and all other public areas, furnishings



Interior view showing multilevel coffee shops. Focal points of this restaurant will be a raised platform and simulated skylit ceiling recalling a Victorian conservatory.

Reference to the local culture of the host country is incorporated by accent artwork in the lobby and guest rooms.

are contemporary in design with clean, simple lines and forms to harmonize with their architectural surroundings. Reference to the local culture of the host country is incorporated by accent artwork in the lobby and guest rooms.

An important feature of Dragon Hill Lodge is the "Oriental" landscaped garden, which is viewed from the main lobby, several restaurants and most guest rooms. The garden comprises evergreens, deciduous trees and shrubs to provide greenery throughout the year. Guests of the lodge will be able to take strolls along the garden paths and the small water feature. They also may take advantage of the traditional Korean pavilion that recalls the culture of the host country, a focal point of the garden.

The design of Dragon Hill Lodge will enable the facility to successfully meet its two primary goals. First, as a temporary home for service personnel and their families, it will provide comfortable, contemporary living quarters, convenient services for everyday needs, and help the family become accustomed to their new home in Korea. Second, it will provide a number of amenities and services not presently available to guests, military personnel and their families stationed both on and off Yongsan Garrison. HA

Ben Woo is an associate and project architect for Chapman Desai Sakata Inc., a Honolulu-based architectural firm.

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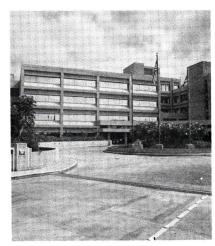


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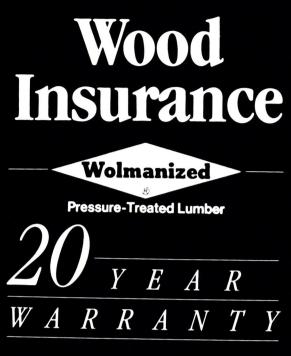
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The International Expression of Architecture

by David H. Hart, AIA

rchitecture has proven and will continue to be more than just a professional service. It is more than art, more than technology. Architecture is a way of expressing to the world a personal or cultural ethnicity.

Whether it is site planning or building, architecture is a relationship of man and nature to the past, present and future. This ideology is prevalent in architecture around the world.

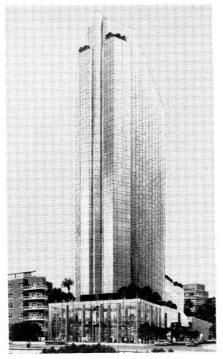
Each country, and often particular areas within a country, brings forth its image, strength and culture through architecture. The attempt to create a unique but culturally characteristic structure in other countries, especially those much less developed than our own, can be an architect's greatest challenge.

There are many examples of opportunities to create such distinct but compatible structures in other countries. From Saudi Arabia to Singapore to Egypt, each project brings with it unique obstacles, challenges and excitement to be explored and understood while creating the image for a specific project.

In the 1970s, DMJM was employed to develop a center of higher education for King Faisal in Saudi Arabia. The result, King Faisal University, encompasses a 1,200-acre campus.

At first glance, the completed layout looks similar to any university one might find in the U.S., with its academic halls, dormitories, parking areas and recreational facilities. However, closer examination reveals the distinctive qualities of the campus. Great care was taken to keep the men's and women's facilities separate. Not only does the culture require that the dormitories be separated, but the actual colleges had to be separated as well. For example, there is a "College of Education for Men" and a "College of Education for Women."

Another unique feature on the Al-Hasa Campus is the central location of a mosque. It was critical to the Ministry of Education in Al-Hofuf, Saudi Arabia, that our designers realize



A silicone glazed curtain wall was among the technology introduced to Egypt during the construction of the Ramada Nile Hotel.

the importance of a mosque as a focal point on campus, which would be easily accessible to all university staff and students.

In addition, the design of the individual buildings, although modern for Saudi Arabia, retained an eclectic, historic look with an abundant use of arches, domes and other Arabic symbolism intermingled throughout the contemporary structures.

In many cases, to adapt the design of a new facility to a traditional culture it becomes necessary for the architect to adjust to the lack of technology in less developed countries. When dealing with a country with a stunted technology, the architect, client and contractor are forced to make a very important decision: to make due with the local technology and materials available or import more advanced technology and materials. Both have highly significant financial and aesthetic effects upon the final outcome of a project.

For example, when DMJM entered an international competition to design a 3 million square foot hotel/convention center marina complex in Singapore, we found that the primary construction material available in Singapore was concrete. Thus, the designer was faced with either importing materials to complement his conceptual design or designing a structure that was suitable for concrete.

After considering options of both steel and concrete, economics required that we use concrete. However, to achieve the design intent, many technological advancements had to be explored, such as curved cantilevers which shifted the center of gravity, huge concrete frames and shear walls to transfer the tremendous load to a column-free space, and advanced concrete stress analysis. Consequently, a unique, awardwinning design was yielded, which combined Singapore's dreams of the future with existing construction capabilities.

Conversely, when asked to design the Ramada Nile Hotel and Casino, the client required that the new 624-room luxury hotel and casino be built on the west side of the Nile River in Giza, Egypt. The client requested that we not only provide a design that allowed exquisite vistas of the Nile, but that the most modern technology be utilized to symbolize the "new" Egypt. This modern technology was to be visible within the final design of the building.

To accomplish these requests the base of the facility, which houses a 175-seat specialty restaurant, a 200-seat coffee shop, a cocktail lounge and specialty shops, was terraced with a two-story glass enclosed garden facing the Nile.

The ballroom and meeting rooms were located on the opposite side of the hotel. Entrances were designed to direct the circulation of guests through the hotel, providing a continuous view of the Nile. The tower was designed using concrete, which is a commonly used material for construction in Egypt.

However, the requirements asked for something modern. Therefore, the skin, or curtain wall, was creatively designed to be hung off the concrete super structure and was to be a totally siliconed glazed system. The intent was that no aluminum mullions, neither horizontal nor vertical, would be exposed on the exterior of the building.

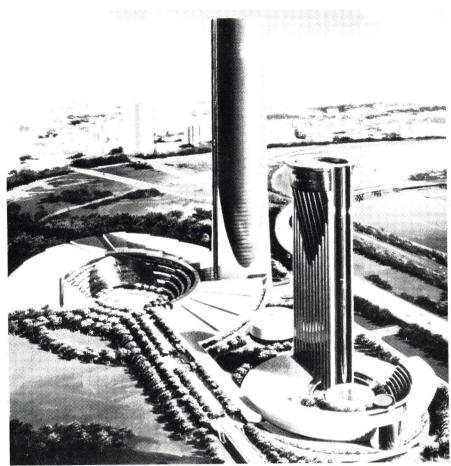
The glazing system was then designed and assembled in the U.S. in large complete panels encompassing two floors per panel. The completed window panels were shipped to Egypt and installed on the structure.

The result of this importation meant that the panels not only had to be designed to withstand the environmental conditions of their destination, but also to withstand the shipping process. The outcome of importing advanced materials to create a "new" look was one of the first entirely siliconed, pre-glazed curtain wall systems in the world.

There are many other obstacles which can surface when designing and building in foreign countries. As each project is different, it is important to be aware of the cultural and technological criteria that must be adhered to within each location. The brief discussion that preceded is only three examples of creating unique but workable structures throughout the world. *(continued)*



At Marina Center Complex, Singapore, curved concrete cantilevers and large shear walls were used to achieve the final design.



An aerial view of Marina Center Complex, Singapore, shows the 3 million square feet of hotel, convention and marina space.

But we cannot forget that the same adjustments and knowledge of constraints must be understood even at home in Hawaii. By living an ocean away from various material manufacturers, we too are somewhat restricted in our use of materials and technology.

We, then, as architects and designers, have a responsibility to recognize and push cultural responsiveness and technology to the limits necessary to achieve quality architecture.

In the many bright years ahead, architects will be required to continue to lead and guide the design process. We will have to maintain the vision and integrity to produce architecture that accounts for cultural and technology concerns while creating an international expression. HA

David Hart is managing director of Daniel Mann Johnson & Mendenhall (DMJM) of Hawaii.

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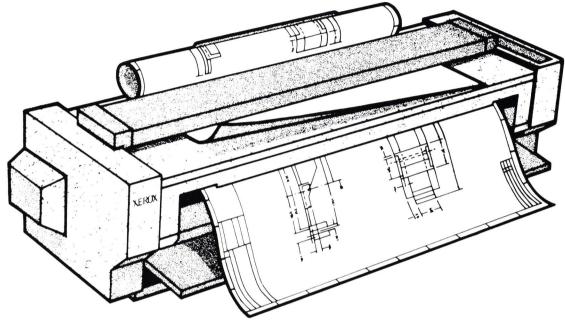
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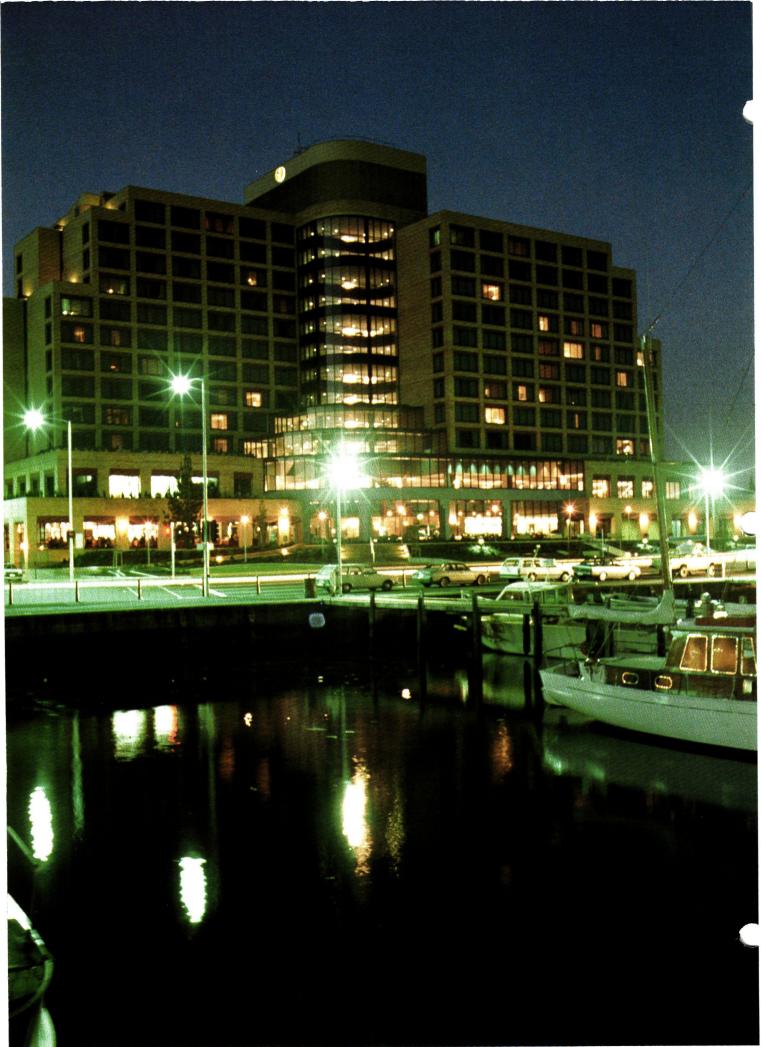


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In Harmony With a Proud Community

by Mazeppa Costa

ff the southern end of Australia lies the island of Tasmania. At the southern end of Tasmania is its capital city, Hobart, population 176,000, with an economic base of agriculture, sheep, fishing and a budding tourist trade attracted to Tassie's natural sights wilderness, rivers, gorges, wildlife exclusive to the island and its historic buildings, fine vineyards, succulent seafood, even casino action.

Left: The Sheraton Hobart at evening. The prime waterfront location offers panoramic views over the sparkling Derwent River, Mt. Wellington and the city center. Right: A dramatic atrium is focal point of the Sheraton Hobart lobby and lounge which enjoy uninterrupted views. Photos by Andrew Payne But don't think "Las Vegas," and don't equate "southern" with "warm." Think "cold and windy." Hobart's climate parallels that of Maine in the U.S. and Hobart's hospitable citizenry, befitting its insular and agrarian society, is conservative. Do not think "reticent."

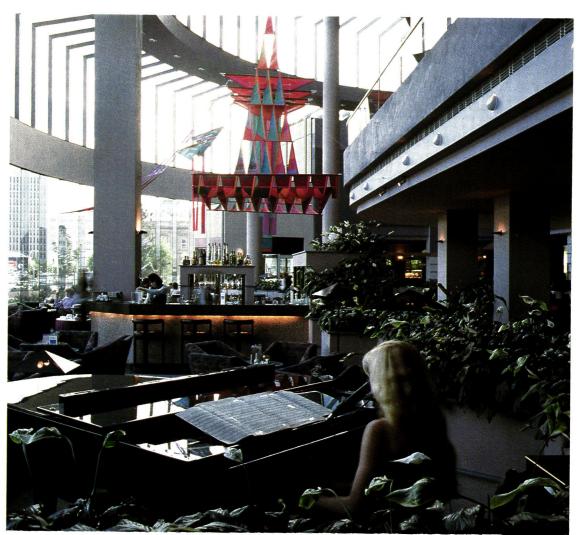
Gearing up for its growing visitor count, the Tasmanian government sponsored an architectural design competition for a 230-room urban hotel to be located on the waterfront in Hobart.

Enter Honolulu architects Wimberly Whisenand Allison Tong & Goo in joint venture with Devine Erby Mazlin Australia whose design won the competition.

Everybody lived happily ever after. Right?

Not quite.

When the client wants a contemporary building and a strong-minded, outspoken



"The state government had wanted something very modern with strong marketing appeal, but the city and the public weren't quite in step with that."

general populace stands pat for conventional expression, you may be sure the architect enjoys an exhilarating position somewhere near the middle of a tightrope especially if the client is the government, serving at the behest of the people.

Such became the position of WWAT&G architects Gregory Tong and George Berean when their group was awarded the Hobart contract.

WWAT&G design principal

George Berean remembers, "Tasmania's state government sponsored the design contest indicating that a contemporary design of landmark dimension was desirable; but the Premier comparable to our governor didn't have the input of the Hobart city authorities and various influential community groups.

"So, it came as a surprise to some of Hobart's City Fathers and the general public that our winning submission was of contemporary design. We got the backlash. The design became highly controversial. The solution was too contemporary, too much of a landmark for the city government and the citizenry. There was a public outcry — we were spread glaringly across the front page of their newspaper.

"The people of Hobart are very proud of their government, their heritage and their waterfront. The state government had

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wanted something very modern with strong marketing appeal, but the city and the public weren't quite in step with that.

"For us, it was back to the drawing board. Literally.

"The challenge was to design a contemporary building to be in harmony with Hobart's designated historic district, which is along a working waterfront. The hotel was to be sympathetic with, if not the same as, conventional Hobart architecture.

"Working with a relatively modest budget, we made a conscious attempt to give them as much 'bang for the buck' as possible without getting too sophisticated.

"The final result was radically different from our winning design, but we ended up with a building that is more sensitive to the historic nature of the site. Compared to the original design, the hotel as built is lower in height; its volume is closer to the size of existing buildings; it is more masonry than glass."

WWAT&G principal in charge Greg Tong said the hotel is designed to accommodate the conference market, primarily from Australia and Japan, and Hobart's fledgling tourist trade.

"Initially, the hotel's patrons will be largely the traveling businesspersons — Sheraton has been the forerunner in providing excellent accommodations for that market," he explained. "At present the number of rooms is probably large for Tasmania — so the hotel is maybe five years ahead for that area. But it also fits the profile of the visitor."

This was reinforced by Berean: "Designing with urban constraints and also with tourists in mind, one goal was to provide an appropriate number of activities even though the site was too limited in size for many resort-like activities such as tennis and mega-size pools.

"In general conceptualizing, we

(continued on page 36)





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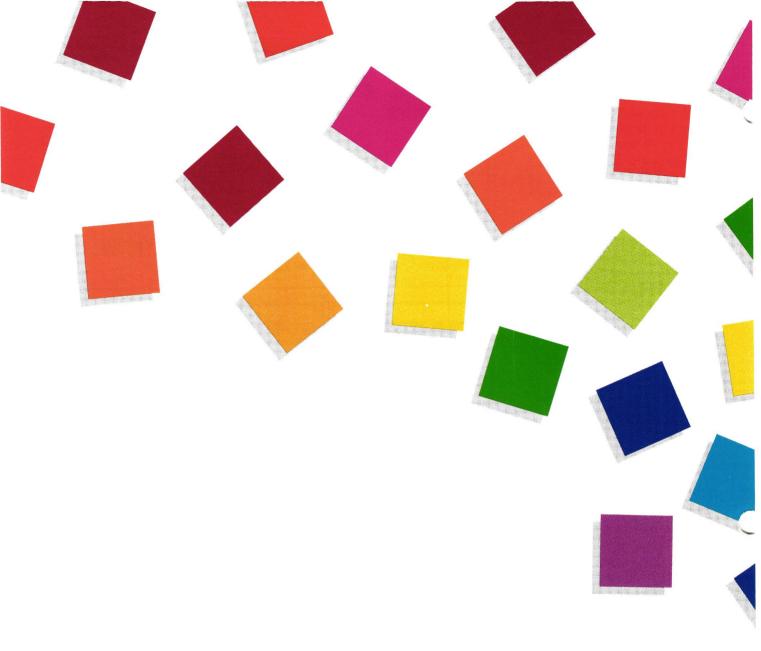


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Suspended Dreams in Iran

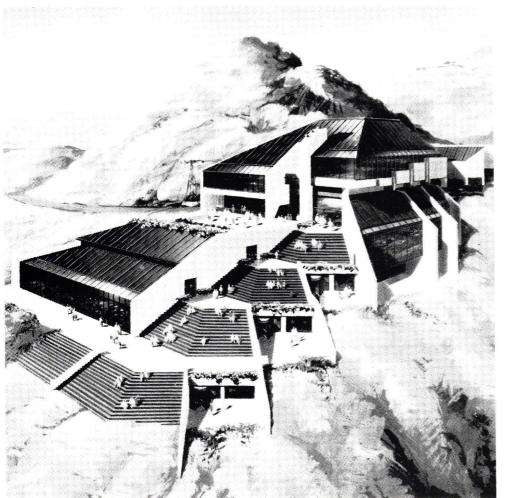
by Sam Chang, AIA

Editor's note - Although the political situation in Iran is currently unstable, prior to the Khomeini revolution, local architect Sam Chang had the opportunity to work on a number of projects in the country.

Describing his architectural experiences in Iran as simply "different than the United States practice," the following is a review of some of his work in the area. In 1971 we were commissioned by Ghodratollah Tashakori, managing director of ASSAD Construction Co., the second largest contractor in Iran, to design a prestigious residential neighborhood in the northern part of Tehran on Saltanatabad Avenue.

Lot size of the Niloorfar Apartment complex was 180 meters by 80 meters. The project

Work on a dramatic restaurant complex at the Tochal Ski Resort above Tehran City was interrupted by the Khomeini revolution.



consists of three 16-story tower apartment buildings with three floors of underground parking. A 30-meter swimming pool, tennis court and supermarket also are included.

A split level tower house type of apartment was designed in order to gain exterior exposure from living rooms and bedrooms. Two-bedroom apartments have an area of 1,905 square feet and three bedrooms 2,627 square feet.

Our structural consultant J. Brian Hughes introduced the post tension reinforced concrete slab and shear wall system. It was the first one built in Iran. To introduce a high technology lifestyle into the high-rise condominium market of Tehran represented a unique challenge.

A second project was the Tochal Ski Resort. Our Tehran office director, Kenneth K. Chang, AIA, was commissioned by Bahman Batmanghelidj to design a mid-station restaurant complex at 2,000 meters above Tehran City. It was to consist of four restaurants to handle a fast food cafeteria, a main dining room and a gourmet restaurant on top.

Due to earthquake considerations and topographical reasons, a series of shear wall structures following the mountain contour was conceived to reduce seismic effect. Numerous wide exterior steps were designed as a seating terrace to let people sit outside to watch the gorgeous panoramic view of Tehran City below. Gondola stations were planned to take skiers and visitors to the restaurant between the city and Ski Valley behind the mountains.

The structure frame was completed, but the balance of work was interrupted by the Khomeini revolution.

A third ambitious project was the engagement of Sam Chang Architect & Associates by the Pahlavi Foundation to prepare a conceptual design for a special 300-room hotel and 40 deluxe apartments complex in the Darban area adjacent to the former Shah's palace.

The area was approximately 20 acres of gentle sloped hillside. Marriott Hotel was the management operator and chief architect Charles Alison provided the hotel building program.

The preliminary concept study was submitted in filmed form in April 1973. It was well received by Pahlavi Foundation



The Niloorfar Apartment complex, located in an upscale neighborhood of North Tehran, introduced high technology to Iran's condominium market.

management. A presentation also was made to Her Majesty Empress who studied architecture in Beaux Arts, Paris. She was very pleased with the design and instructed Pahlavi Foundation to authorize our firm to proceed with the A-E design.

Unfortunately, not long after we started the work, the political situation changed. This dramatic project was suspended. **HA**

Sam Chang is chairman of Sam Chang Architect & Associates Inc., a local firm that has worked on numerous international projects.



Preservation of Historic Spanish Beauty

by Robert Crone, AIA

was sitting at a sidewalk cafe under the loggia of the old hotel overlooking the zocalo — the main square — of Oaxaca (wa-ha-ka). Around me was a cosmopolitan group of



Music is played nightly from the Victorian bandstand in Oaxaca's main square. The main square, or zocalo in Spanish, is the focus of activity for many Mexican towns and villages.

Europeans, Americans and Mexicans.

I remember being surprised that there seemed to be as many Europeans as Americans. It was the summer of 1987.

I was listening to a businessman from Mexico City. He was saying, "The thing I find most frustrating about Oaxaca is the slow pace of life here in the south. The traffic is so slow on the narrow streets of the city that I envitably fall behind on my rounds of business appointments."

I thought back to sitting in the lanai cocktail lounge at the Hilton Hawaiian Village and hearing a tourist, probably from New York, lamenting, "The thing I find the most difficult to adjust to in Honolulu . . . "

Oaxaca is a most pleasant surprise, especially for an architect from Honolulu. Although a unique and varied cultural tapestry, it seems at times to have the familiar comforts of home.

Though the main city between the national capital and the Guatemalan frontier, and the focus of life, history and culture of this large south central valley region, Oaxaca has none of the hustle and bustle of Mexico City or the congested tourism of the coastal resorts. With its slow pace of life and cool uplands climate it has a wide variety of interests.

The population is largely native Indian — Zapotec and Mixtec and less Hispanic than other areas of Mexico. The weekly markets — on Saturday in Oaxaca and other days in surrounding towns — are the most colorful in Mexico. These surrounding villages are interesting and aloha spirit abounds.

Major and incredibly dramatic archaeological sites — Monte Alban and Mitla — are nearby. The black pottery from the village of San Bartolo Coyotepec and the rugs from Teotitlan del Valle are world famous, and the rugs are a tenth the price they are in Honolulu boutiques. The city of about 150,000 is diverse and interesting, easy and fascinating to walk through, yet not overwhelming as the cities to the north.

What is perhaps most interesting about Oaxaca is the degree and success of the preservation and restoration of the historic colonial Spanish architecture and urban character.

A visit to the beautiful El

Presidente, the finest hotel in the city located in a converted 16th century convent, attests to the early arrival of the Spanish in Oaxaca. The city of Cortes, built in the area of the main Indian settlement in the valley at the time, became the major Spanish political and social center of the region. Government, cultural and religious buildings around the zocalo and up the Macedonio

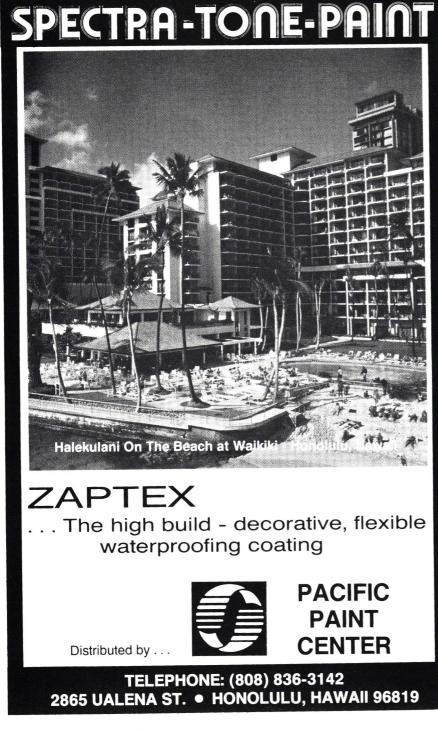


The richly-detailed church of San Domingo is representative of the Spanish architecture of colonial time.

Alcala toward the basilica of San Domingo were built in monumental style and fine urban scale from the unique green granite of the region.

Today, the *zocalo* is a pleasant relaxing space with a Victorian bandstand (where there is music nightly) at the center and lush tropical vegetation surrounding. Ringing the *zocalo* and adjacent Alameda de Leon are government buildings, hotels, restaurants and the grand cathedral with its richly carved facade, all laid out in the traditional Spanish colonial plan with loggias and cafes.

The streets near the square are closed to vehicles and paved with large green granite matching the architecture. The effect is a pleasant unification of buildings and the ground plane. The area is popular for strolling by locals and



visitors alike.

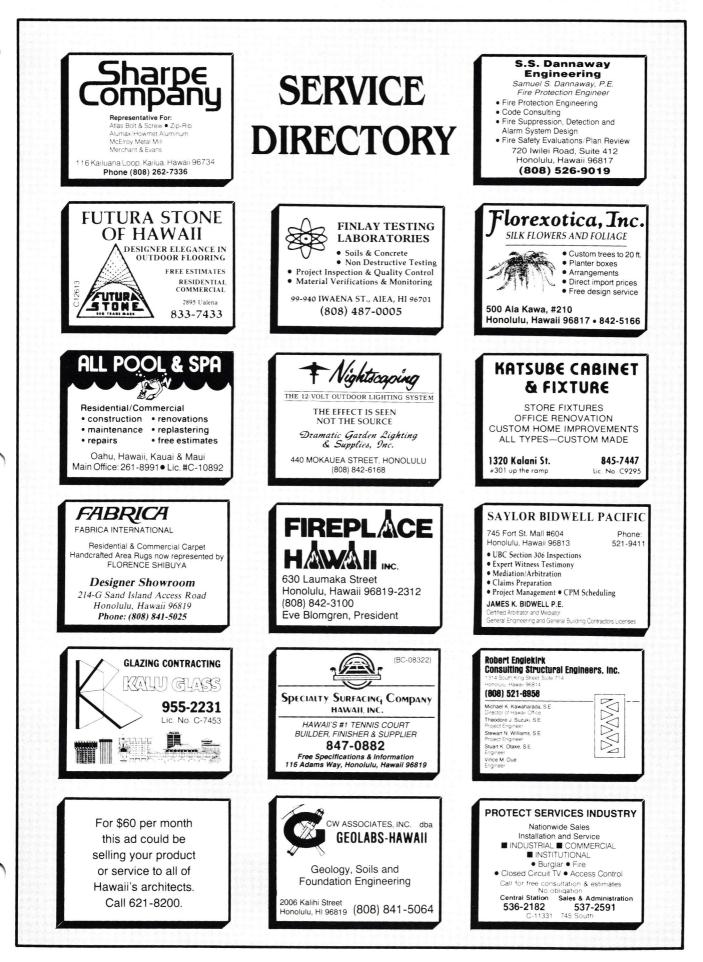
To the north and up the hill from the zocalo extends the Macedonio Alcala to San Domingo. Along the way are the Museo Oaxaca, the Biblioteca Publica and the Teatro Macedonio Alcala, all classically designed in the unique, rich green granite and all as active today as ever before. Regal facades hide elaborate and spacious courtyards inside. Again, the recently reconstructed street of large green granite pavers visually unifies the district as a mall for pedestrians only.

Away from the Corredor Turistico — or tourist path — is an Iberian styled town offering a rich serendipitous experience of activities, including parks and plazas, churches, a wonderful indoor daily market, museums and the Escuela de Bellas Artes.

Nearby, Monte Alban is a major archaeological site. It represents the zenith of the Zapotec and Mixtec civilizations. It is incredibly awe inspiring. Spectacularly situated 1,200 feet above the valley floor, the site is a mountain top which has been sliced off to form literally a manmade mesa. Its situation provided defense in pre-Columbian times and prevented discovery and pilferage by the Spaniards, thus uniquely preserving its monuments.

Looking back to the experience of Oaxaca, I remember the stage for the joys of the city as being the rich historic restoration of its center around the lush and lively *zocalo*, the tranquil Alemeda de Leon and the elegant Macedonio Alcala up to the San Domingo basilica, buildings and paving surfaces all finished in the rich green granite unique to the region . . . successful historic restoration as understated urban quality. **HA**

Bob Crone is an architect practicing in Honolulu, and chair of the HS/AIA Urban Design and Transportation Committee.



The Hawaii Society/AIA Design Awards

A Showcase of the Islands' Best

by Jamie Kemp

n what was described as the "academy awards" of local architecture, the Hawaii Society/AIA recently recognized the finest projects by Hawaii firms during the annual Design Awards Banquet. Sixteen awards, five of excellence and 11 of merit, were presented to 11 firms during the event held July 14 at the Waialae Country Club. The banquet attracted about 280 attendees, the largest turnout ever of any (continued)

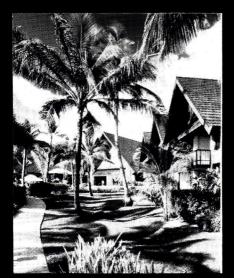




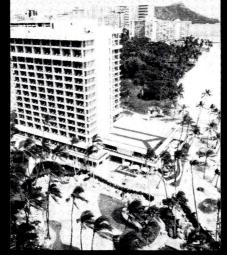


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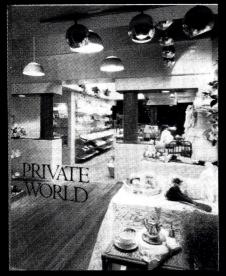
Recreation Room Addition, Lanikai Jeffrey Y. Nishi, AIA



Mililani Town Center Group 70



Nicholas Nickolas Restaurant Norman Lacayo, AIA



Private World at Ward Warehouse Lewis Ingleson, AIA



Mr. & Mrs. Leucht Residence Eugene E. Leucht, AIA



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Row Bar at Restaurant Row Johnson Tsushima Luersen Lowrey Architects



Seiko Center, Ala Moana Shopping Center Gulstrom Kosko Group

meeting of the Hawaii Society, according to Lee Mason, executive vice president.

Among those in attendance were Honolulu Mayor Frank F. Fasi, several Fellows and past presidents of the Hawaii Society, and Norman G.Y. Hong, 1988 HS/AIA president, who congratulated Gary Kawakami, the 700th member of the Hawaii Society.

Hong said the Design Awards have two functions: to recognize fellow architects for "high standards of design excellence," and publicly call attention to good architecture, thereby raising the stature of architects in the public's eye.

Fasi described architecture as "the keystone of all our environment," and congratulated architects for "making the state and city a better place to live."

"But don't do such a good job — so beautiful — that people from other countries are going to buy it away from us," he added, on a humorous note.

Charles R. "Ty" Sutton, FAIA, chairman of the Awards & Exhibits Committee, introduced the 1988 judges of the awards. They included Benjamin B. Lee, deputy director of the Department of Land Utilization: Vladimir Ossipoff, FAIA, often described as the "dean" of Hawaii architecture, Hans H. Riecke, FAIA, a prominent Maui architect; Susan Richards, executive director of the State Foundation on Culture and the Arts; and David W. Eyre, past president, Castle & Cooke and founder of Honolulu magazine.

Accompanied by a slide presentation from each project, Sutton announced the winners as Lee read jury comments. Representatives of the firms, and clients in many cases, were on hand to accept the awards.

Additional photographs of the award-winning projects, as well as jury comments and additional credits, will appear in upcoming issues of *Hawaii Architect*. **HA**



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Solving Flashing Problems

by Jim Reinhardt

A nyone who has spent much time investigating roofing problems quickly learns that most problems occur at the flashings.

There are several reasons for this. First, the coefficient of thermal expansion for the flashing metal is quite different than that of the roofing materials. As temperature fluctuates from night to day, cold to hot, the joint between the two materials is subject to constantly repeated cycles of stress. Failure is likely. If the joint is not well made, failure is inevitable.

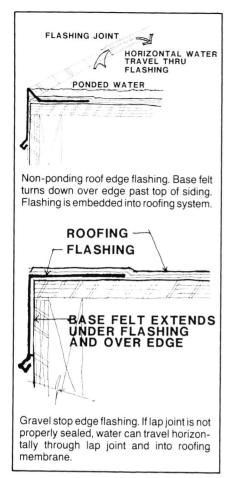
Second, these thermal stresses affect the roofing membrane as a whole plane. The effects are concentrated at the edges, which, of course, are where the flashings occur.

Third, because of these stresses, the flashings are where the highest quality workmanship is required. It usually is not achieved, partly because of incomplete specifications and/or incompetent installation.

Two different approaches to flashing problems can be taken. The first is to be sure the conditions are properly detailed, specified and installed. The second is to eliminate flashings altogether.

The first approach requires that the flashings be primed with an asphalt primer on both sides where they are to bond into the roofing membrane prior to





installation. This step should be called out in the specification as it is commonly overlooked.

Priming will greatly improve the bond between the flashing and roofing system. The easiest and most foolproof procedure is to require that the priming be done before the flashings are taken up on the roof. That way you can tell at a glance if the flashings have been primed.

The second requirement of this approach is for the base felts of the roofing system to be extended under the flashings and, preferably, turned down over the edge. The flashing is then set in asphalt on top of the base felts, a reinforcing ply about 18 inches wide applied in asphalt over the top of the flashing and the roofing system applied to the edge of the flashing. (The number of plies might vary, depending on the roofing specification.)

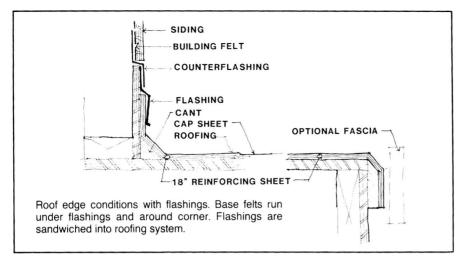
Care must be taken to eliminate horizontal water travel



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at the flashing joints, particularly where ponding (even minor) might occur.

It might seem like an easy solution to simply require that all flashing joints be soldered, but when thermal expansion is considered, that won't work. The sheet metal typically comes in 8foot or 10-foot lengths. Choices are a simple lap joint or a splice plate joint.

The second way to minimize roofing problems at the flashings is to eliminate them entirely. This, in the opinion of many roofing experts, is the preferred option.

This type of detail started as a "cheap roofer's" way to detail the edge conditions. From the contractor's standpoint, it eliminates the cost of the flashings and the coordination that goes along with that subcontractor. From the roofing designer's standpoint, it eliminates the problem of differential thermal expansion.

It does, however, still require that attention be given to application and details at the roof edges. This approach calls for the entire roofing system plus an 18inch wide reinforcing sheet be turned up 6 inches or 8 inches at the wall or parapet or down over the edge past the top of the siding material at a roof edge. With a gravel surface roof, the vertical portion of the roof should be coated with a UV reflective coating. If you're using a mineral surface cap sheet turn the cap sheet up (or down).

This brings up a related problem that is frequently involved with roof problems . . . cant strips. We have all learned that cant strips are necessary to soften the bend of a built-up roofing system at horizontal to vertical transitions, minimize thermal stress at the transitions and allow thermal movement of the roofing membrane without rupture.

What we weren't told is that

cant strips are frequently the point where termites begin their attack on the roof structure and, once established, go on to other parts of the building, even in concrete high-rises.

The problem is threefold. First, the places that the cant strips occur are the same places that stresses and leaks occur, i.e. water is available.

Second, termites need water to survive and are absolutely incredible at finding it.

Third, cant strips are frequently 2 x 2's or 4 x 4's cut in half diagonally. Even if the wood was pressure treated before cutting, this new cut (which produces the longest surface on the cant) will be field treated, if at all. Even if you specify that the cants are to be pressure treated after cutting, if you use Douglas fir or hemlock, the depth of the effective penetration is about one-eighth inch at best.

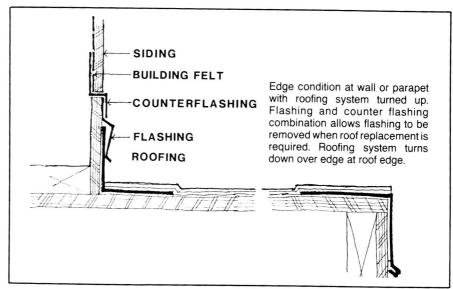
Termites are known to sacrifice

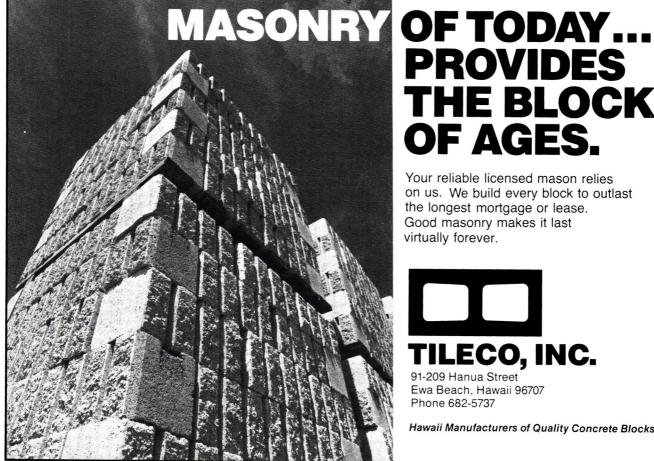
many members of their colony to get started where water is available. What to do?

First, use non-wood cant strips. Second, if you must use wood for the cant strips, use pressure treated pine. Finally, use a roofing system that doesn't require cant strips, such as a modified bitumen system.

A helpful source of information on modified bitumens and other roofing innovations will be available at the Hawaii Roofing Contractor's Association Trade Show at the Blaisdell Center Exhibit Hall Oct. 20. HA

Jim Reinhardt, a partner of TRB Hawaii, specializes in building diagnostics.





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(continued from page 19)

had as strong a concern for the extreme environment as for the conservative attitude. The building is oriented south, to the harbor — which makes for impressive views of historic Constitution and Victoria docks and the finish line of the Sydney-Hobart Yacht Race. But we definitely had to deal with southerly blustery antarctic winds.

"Among other things this meant figuring out where to locate and how to design the pool to make it truly practical and get the most impact. Our solution was a glass enclosed roof-top pool with barrel vaulted ceiling and expansive city and Mt. Wellington views.

"Also in consideration of the climate, solar tinted nonreflective glass was used for the southfacing public area, where a dramatic atrium is focal point of the lobby and lobby lounge.

"The Tasmanian government was understandably interested in specifying as much domestic product as possible — brick, marble, granite, furnishings, textiles. Artwork of local origin was used," said Berean.

"In situations like this, when government is involved, the project is given the additional goal of improving the employment situation," said Tong. "This is not only for the workers during construction, but for the hotel staff hired from local people. This becomes a part of the design process in that the selection of materials has great bearing not only on aesthetics but also on maintenance."

The hotel opened in November 1987 with 234 guest rooms, including 12 suites, a ballroom for a 500-person or 825 theater-style seating and two restaurants. It has since become the visual focus of the city. **HA**

Mazeppa Costa is a Honolulu-based writer and public relations specialist.

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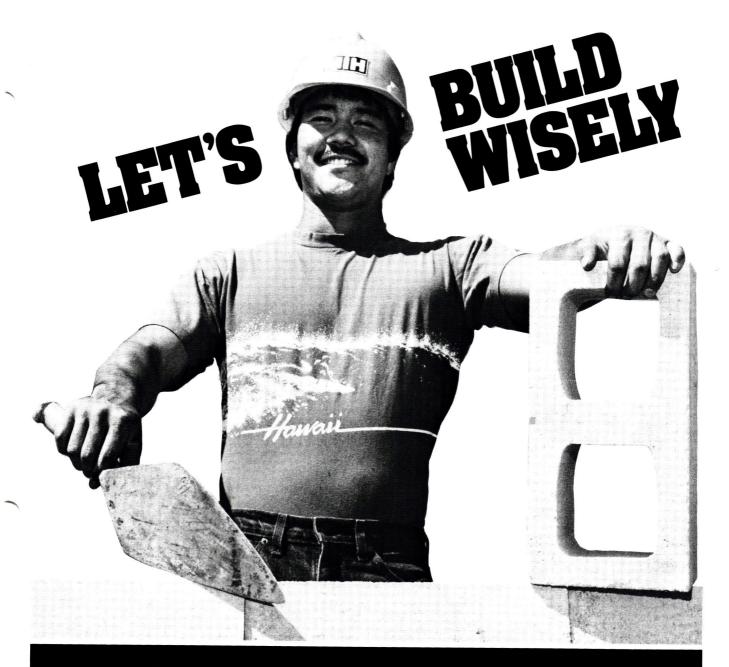
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News

Urban Planning Focus of Maui Conference

"Perspectives on Issues, Needs and Opportunities — Planning for '88 and Beyond" will be the focus of the 1988 Hawaii Congress of Planning Officials Conference sponsored by the Maui Planning Department Sept. 14-16.

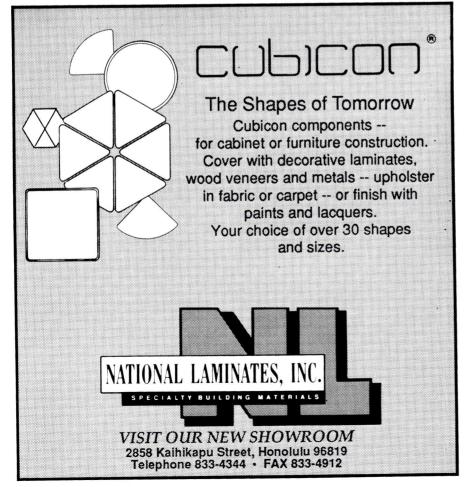
"Urban Planning and Design in Practice — a Pictorial Overview" also will be explored at the annual event open to architects, developers and land use officials. Workshops and displays will be divided between the InterContinental Maui and Stouffer Wailea Beach Hotels at Wailea Resort.

Ian McHarg is the scheduled guest speaker. Norē Winter will conduct a workshop on Hawaiian history in urban design. A demonstration of computer use in urban planning also is scheduled. Registration deadline for the conference is Aug. 10. Contact Maui Planning Department at 244-7735 for more information.

New Vice President at WWAT&G



Kevin N.P. Chun



Kevin N.P. Chun recently was elected vice president of Wimberly Whisenand Allison Tong & Goo Architects, Ltd.

Chun joined WWAT&G in 1977 as a designer. He was promoted to project designer and company associate in 1981, and in 1985 advanced to senior associate.

Chun began his design studies at the Art Center in Pasadena, Calif. and completed his studies in architecture at the University of Hawaii.

Newcomers Join Leo A. Daly

Robert Luth, Yoshimasa Kaneko and **Brad Meyers** recently joined the staff of Honolulu-based Leo A. Daly.

Luth received a degree in urban studies from the University of California at Riverside and a degree in architecture from the University of Arizona. He has worked for private consulting firms in Japan and Korea.

Kaneko comes to Daly from one of the largest Japanese architectural-engineering firms, Nihon Architects, Engineers & Consultants. Educated at the University of Arizona, he returned to Japan after graduation.

Meyers, Daly's new CAD manager, is a graduate of Arizona State University. He is presently overseeing a number of CAD space planning and building projects.

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