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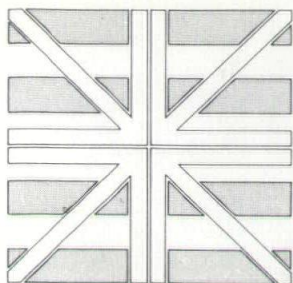
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Cover: The City and County of Honolulu, with the cooperation of community organizations, is making plans to improve Waikiki. Photo courtesy of Department of Transportation Services, City and County of Honolulu.

SUCCESS STORIES

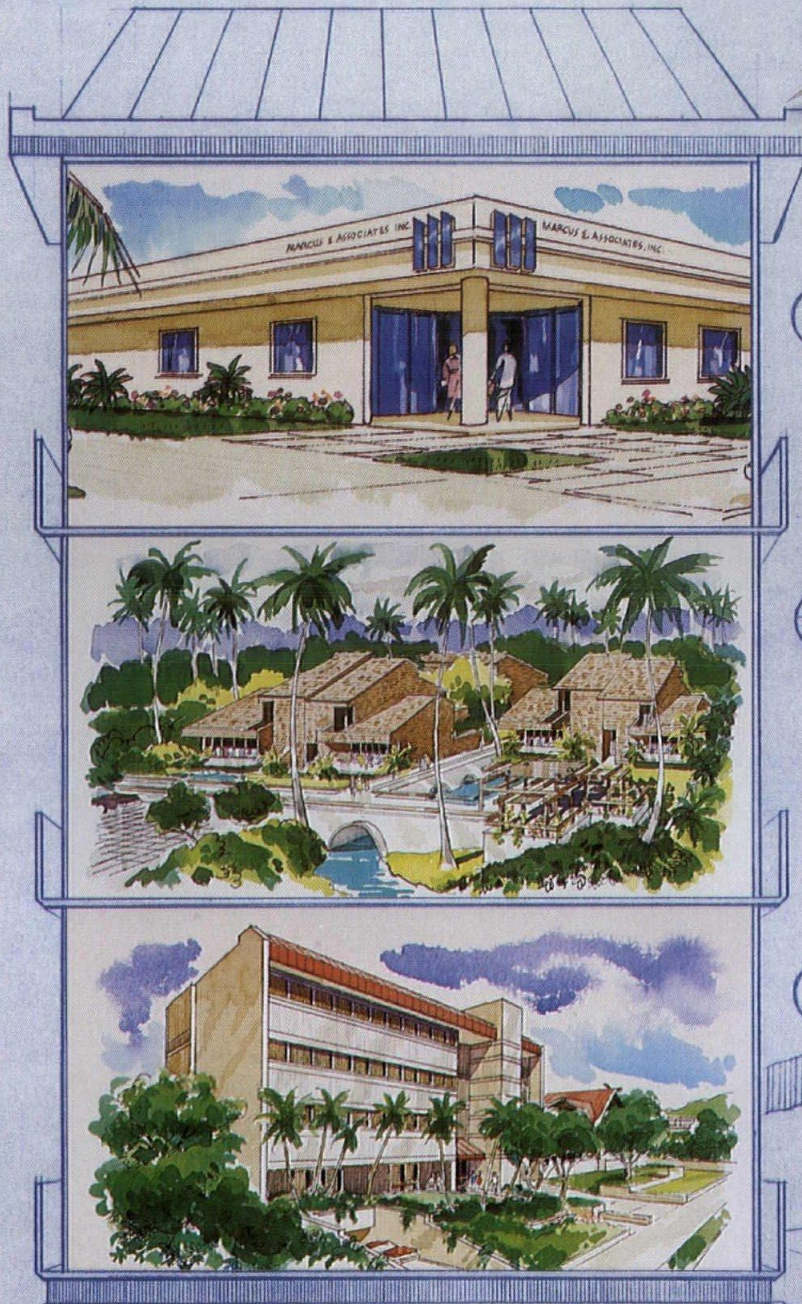
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Extensive plantings at the gateway to Waikiki would create a sense of arrival into a tropical paradise. Rendering by Belt, Collins & Associates.

KALAKAUA AVENUE 1988

by John E. Hirten

*Director of Transportation Services
City and County of Honolulu*

Tourism is our state's number one industry and Waikiki is the most important income-producing area of our state. It is home for over 22,000 people, provides direct employment for approximately 30,000 residents, and is the playground for 50,000 or more visitors each day. But despite the major role this area

plays in Hawaii's economy, its main street, Kalakaua Avenue, lacks the visual character and pedestrian appeal expected of a world-renowned visitor destination. There are numerous obstacles to the smooth flow of vehicles and people, creating hazardous situations and safety problems. Among the problems plaguing the street are conflicts

between vehicles and pedestrians, sidewalk clutter, dilapidated street furniture, traffic congestion with its accompanying noise and emissions, poor signage, inadequate landscaping, and little in the way of any unifying theme.

It is the city's objective, therefore, to correct Kalakaua's environmental deficiencies, improve mobility, accessibility and

traffic, and to enhance its visual appeal. We call this undertaking the *Kalakaua Avenue Safety and Beautification Project*.

The portion of Kalakaua Avenue selected for study extends approximately 1.2 miles from the intersection with Ala Moana Boulevard at the western boundary to the intersection with Kapahulu Avenue at the eastern end. Currently, four lanes of eastbound traffic run the length of the thoroughfare. The two center lanes are generally 12 feet in width and the two outer lanes are 16 feet. Sidewalk widths fluctuate between 10 and 12 feet along the avenue.

Serious consideration of Kalakaua Avenue improvements commenced in 1980, when a consultant was hired and traffic studies were prepared. Three alternative conceptual plans were eventually proposed by this initial effort: 1) conversion of Kalakaua to a mall or semi-mall; 2) reducing the number of traffic lanes from four to three and widening its sidewalks; and 3) a combination of both alternatives.

The consultant's analysis showed that the total mall proposal would not accommodate Waikiki's traffic volume, indicating instead that three of the four existing traffic lanes would be needed to handle present and future traffic volume. The sidewalks could be expanded into the remaining street right-of-way on both sides of the street, except where the plan proposed loading and unloading bays for use by trucks and buses.

Community reaction to this plan was ambivalent. The City Council's Waikiki Task Force supported the sidewalk widening concept but recommended a four-lane plan rather than the three-lane proposal. The Waikiki Residents Association and the Waikiki Neighborhood Board opposed the three-lane proposal because of concern about whether it would work. It was suggested that the city should simulate the plan to assure the community that three lanes could accommodate

existing traffic.

The city presented its proposal for the Kalakaua Avenue Improvement project to the 1984 State Legislature. The Legislature appropriated \$3.84 million in general obligation bond funds for the project, but because of community concerns over the proposed three-lane plan, a proviso was added requiring the results of a simulation of the sidewalk widening be presented to the Legislature before funds could be released. The City Council appropriated 20 percent matching funds of \$1.06 million with the same stipulation.

The city initially estimated that \$500,000 would be needed to physically simulate the three-lane plan that the then city administration was investigating. The governor, however, declined

Average vehicular traffic counts at major intersections exceeded 2,000 vehicles per hour, levels which national standards consider very high.

to release any of the state appropriated funds for the proposed simulation project and the City Council also decided against providing funding at this level for a demonstration.

When the present city administration assumed responsibility for the project, the previous Kalakaua Avenue plans were ordered to be critically reviewed.

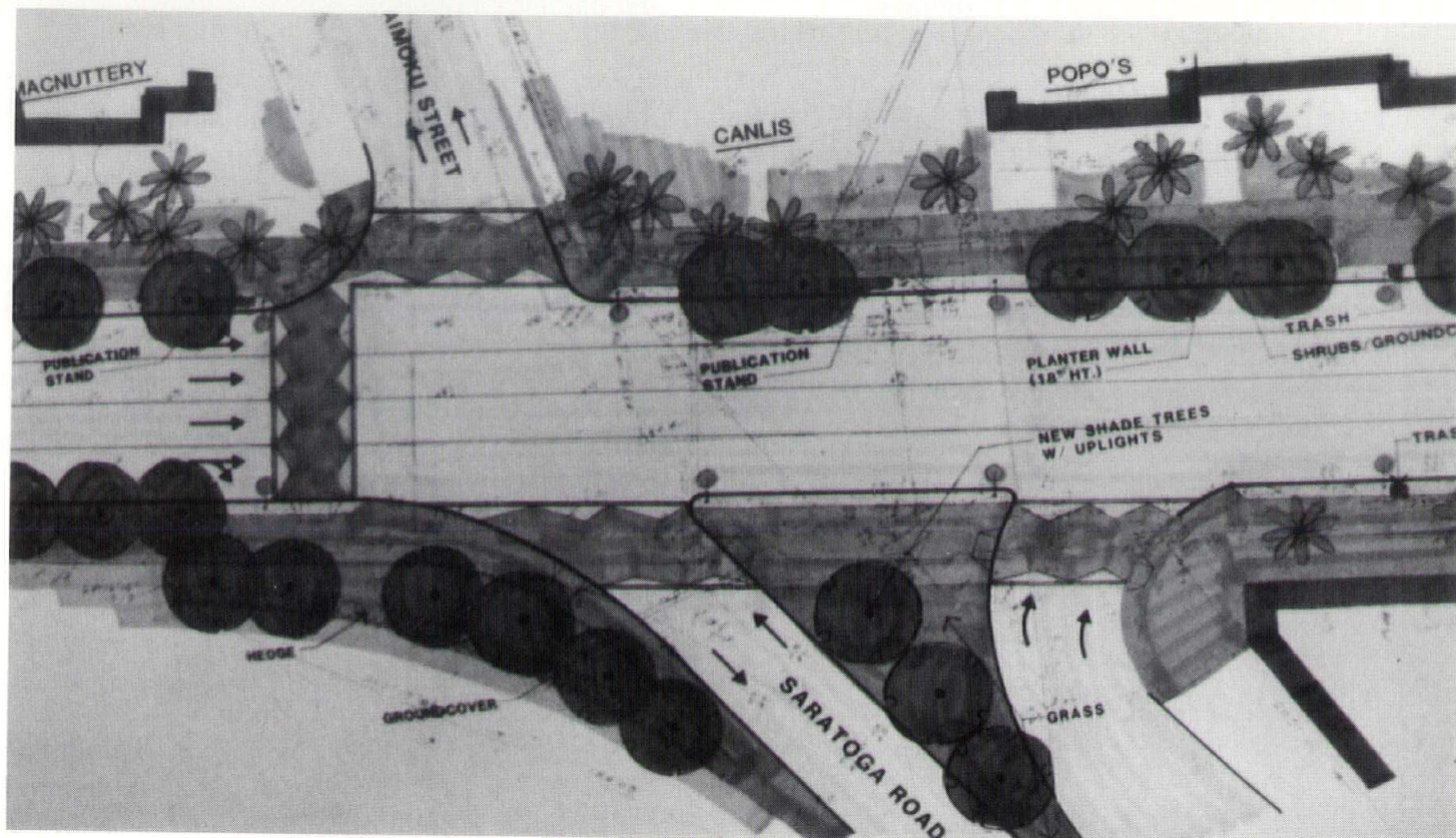
I was assigned the responsibility of project director to coordinate city departments and private sector involvement. I established a 20-member policy committee composed of city department heads, representatives of community organizations, business people and consultants to provide advice toward the action program. Rom Duran, assigned as full-time project manager, assumed day-to-day planning and interaction

with Kalakaua Avenue businesses and property owners. A technical committee consisting of city government professionals from various departments gave assistance to the policy committee through the project manager. These landscape architects, land planners, traffic and civil engineers and lawyers also provided technical data and counsel to the project consultants. The general strategy of the study was redirected and provided an innovative perspective which became the basis of the currently proposed plan.

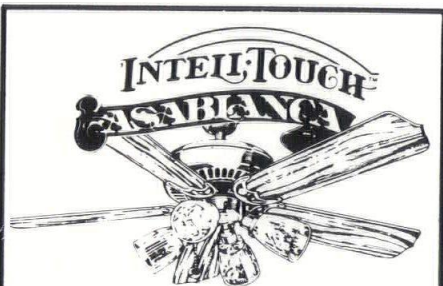
The initial step of the project was to accurately assess the performance of the existing public accommodations along Kalakaua Avenue, compare it with established traffic and pedestrian standards, and to suggest techniques to better facilitate the movement of people and goods while enhancing the thoroughfare's attractiveness.

A comprehensive combination of technical and physical simulations was conducted and tested to measure the adequacy of Kalakaua's existing four moving traffic lanes and to assess the impact of possible changes to its design. Among the study methods employed were time-lapse photography of key intersections, photo log pictures of the avenue (a series of photos taken as a vehicle-mounted camera is moved steadily along the street), photo studies of problem areas, and other on-site measurements and evaluations. Special attention was given to vehicular traffic counts at Kalakaua's intersections and left and right turning movements which accentuate the conflict between motorists and pedestrians. Pedestrian traffic counts at the intersections as well as on the heavily traveled mauka and makai sidewalks were undertaken.

The average vehicular traffic counts at the major intersections exceeded 2,000 vehicles per hour, levels which national standards consider very high. Significantly, while high these volumes are



Plans call for the Saratoga Road/Kalaimoku Street intersection to be redesigned. The right turn lane from Saratoga onto Kalakaua Avenue would be widened to two lanes.



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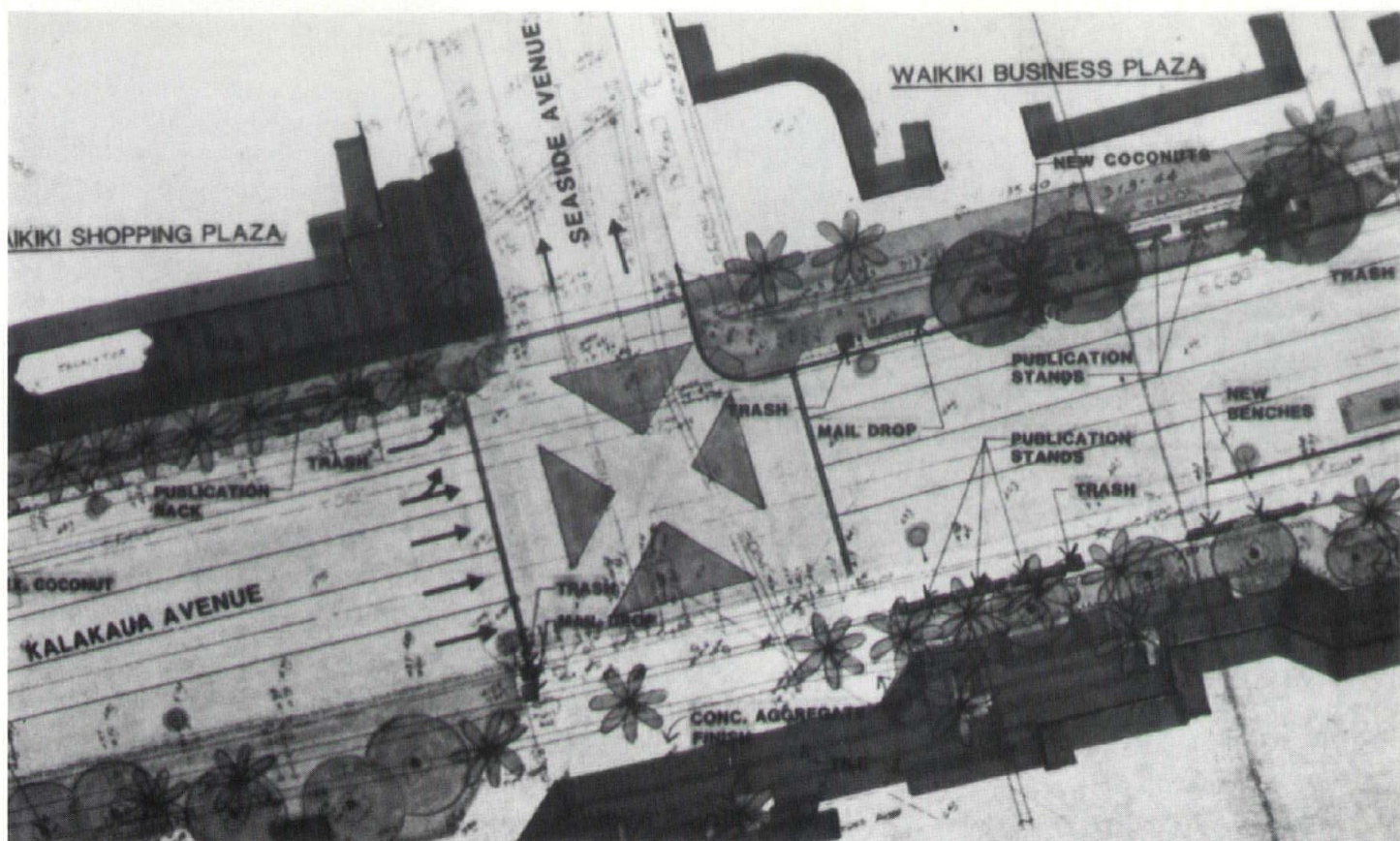
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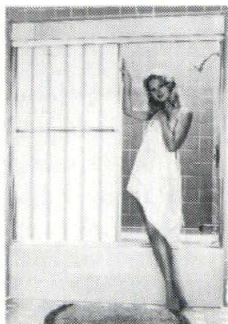


Eye-level landscaping would screen street traffic from the pedestrian. Curbside planting islands would contain benches, publication stands and other street furniture.

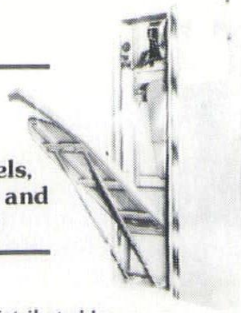
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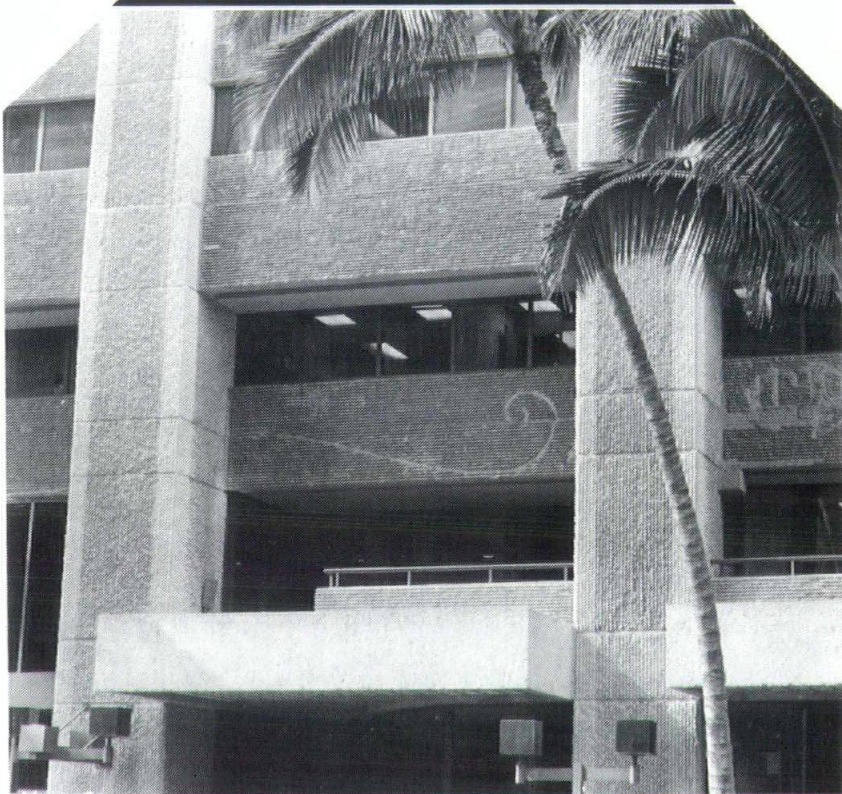
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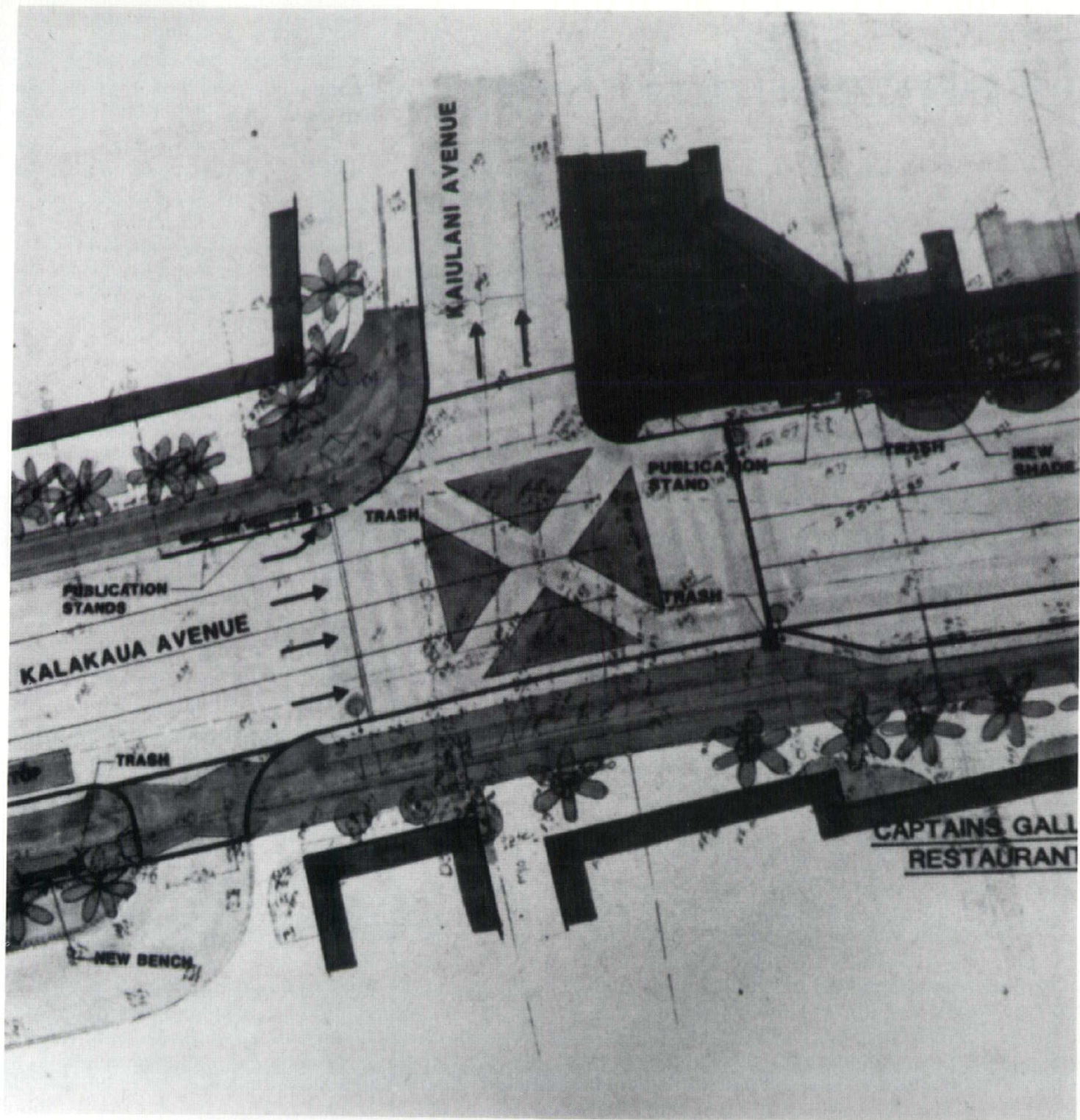
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almost unchanged from 10 years ago.

However, pedestrian traffic counts on the sidewalks at critical locations during peak periods are over 3,300 per hour, an extraordinarily high volume by any standard. Pedestrian safety, convenience and comfort were found to have been neglected over the past few decades. The sidewalks on Kalakaua Avenue are much too narrow to accommodate the current volume of resident and tourist foot traffic. Pedestrian congestion reached its present record during the summer of 1985 when the counts of over 3,300 per hour were recorded in the vicinity of the International Market Place. Crowding is exacerbated by competing demands for sidewalk space. The proliferation and disorder of newsstands, commercial vendors, pedicabs, handbillers, mailboxes, trash receptacles, trees, benches and flower boxes effectively narrow sidewalk space. At places, the paving is so cracked and dilapidated as to pose serious hazards. Major conflicts exist between pedestrians and turning vehicular traffic at most intersections and mid-block crosswalks were unsafe for a variety of reasons. Facilities for the handicapped are lacking or poorly designed and located.

The studies confirm what is intuitively obvious: human and material demands upon Kalakaua's limited space are exceptionally high. Therefore, achieving optimum use of the limited area is critical.

In order to provide for the safe flow of automobiles, a minimum of 10 and a maximum of 12 feet are required for each traffic lane. Buses require a minimum of 12 feet, and preferably 14 feet for their lanes. Kalakaua Avenue can easily accommodate three 11-foot lanes for autos and a 14-foot lane for buses along the entire project corridor. Enough space would still be available to provide for a fifth, left or right turn lane at key intersections, insuring four lanes of unimpeded traffic.



Improvements to aid vehicular and pedestrian traffic have been tested and incorporated into plans for the Kalakaua/Kaiulani intersection. The Barnes Dance system allows pedestrians to cross in all directions at the same time.

The widths of the sidewalks vary along Kalakaua. The standard space requirement for a walking person is approximately two feet. When two people stroll in one direction and meet two other people going in the opposite direction, for example, a minimum

of eight feet of clear sidewalk is required to pass safely. On Kalakaua Avenue pedestrian counts are so large that huge numbers must negotiate the limited sidewalk space and even eight feet is too narrow. Thus it is essential to minimize obstacles in

the pedestrian's path. Even a cursory glance reveals competing demands such as landscaping (trees, planter boxes and street furniture), public facilities (traffic signal control boxes, waste receptacles, mail boxes and street light poles), or commercial

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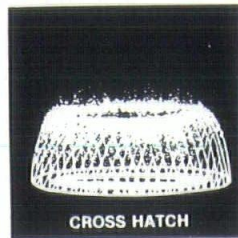
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activities (newsracks, newsstands, pedicabs, and handbills). Photographic and technical planning studies and observations indicate potentially dangerous pedestrian movement caused when pedestrians attempt to avoid these obstacles which are now omnipresent. It was determined that, as a minimum, a nine-foot sidewalk area, and more where possible, free of any encumbrances is essential for Kalakaua Avenue. The reduction of traffic lane widths would provide the additional space necessary to increase sidewalk widths when the area is not needed for delivery bays and extra traffic lanes executing turns at intersections. Using the basic pedestrian and vehicular requirements for criteria, the actual planning was undertaken.

An initial computer simulation analysis was made of the existing roadway configuration and five alternative traffic plans which were developed during the course of the study.

As a result of the analysis, it was decided (1) to maintain a minimum of four through lanes on Kalakaua Avenue to maximize capacity within the roadway space, and (2) to more closely examine those elements of the plans which have had such a dramatically favorable impact on minimizing traffic delay.

Some of the features included:

- Reserving one or more lanes exclusively for turning movements;
- Permitting the option of either turning or proceeding in some lanes;
- Providing a fifth, extra lane for turning movements;
- Eliminating crosswalks to increase turning lane capacities;
- Reversing the direction of streets approaching Kalakaua to eliminate traffic conflicts;
- Reducing pedestrian crossing times; and
- Reducing the number of traffic light phases by instituting Barnes Dance pedestrian crossings at intersections.

Actual testing on the streets of

Kalakaua Avenue of many of the computer generated techniques was conducted to empirically verify the theoretical predictions. These in turn were fed back into the model for further analysis.

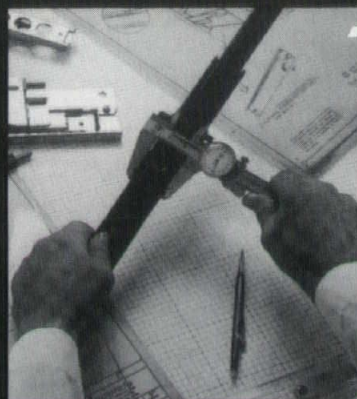
The City and County of Honolulu's Department of Transportation Services has developed a plan which would significantly improve the carrying capacity of Kalakaua Avenue while enhancing its visual appeal as well. The plan incorporates engineering feasibility and fiscal restraint in its design while also satisfying technical requirements and community concerns.

- The Improvement Plan would retain the existing four lanes of through traffic on Kalakaua Avenue between the project boundaries of Ala Moana Boulevard and Kapahulu Avenue.
- The Saratoga Road/Kalaaimoku Street intersection would be

The plan incorporates engineering feasibility and fiscal restraint in its design while also satisfying technical requirements.

redesigned. The right turn lane from Saratoga onto Kalakaua Avenue would be widened to two lanes and signalized. The existing traffic island next to Fort DeRussy would be eliminated and right turns from Kalakaua Avenue would be made from the curb lane.

- The crosswalk on the Ewa side of Lewers Street intersection would be removed to increase the capacity of the right and left turning movements off Kalakaua Avenue. The makai side on Lewers Street would be restriped to one lane in the mauka direction and two lanes in the makai direction. Parking would be removed on the Diamond Head side between Kalakaua Avenue and Ala Wai Boulevard.
- The Kalakaua Avenue approach at Seaside Avenue would be



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widened to five lanes. Two left turn lanes would be provided with optional through movement from the second lane, plus three exclusive through lanes. Parking would be removed on the Diamond Head side of Seaside.

- The makai-bound lanes of Kaiulani Avenue would be eliminated to make it a two-lane, one-way mauka-bound street between Kalakaua Avenue and Koa Avenue. The Kalakaua Avenue approach would have three lanes and one left turn lane.

- Uluniu Avenue would be converted from one-way makai-bound to two-way between Kuhio Avenue and Kalakaua Avenue. The Kalakaua Avenue approach would have three through lanes and one left turn/through lane.

- The space saved by narrowing the traffic lanes on Kalakaua Avenue would be used for one of several purposes:

1. The space would be used for widened newly tiled sidewalks; and
2. Truck delivery and bus loading bays would be constructed where no alternative access is available

and to eliminate their need to park in the through traffic lanes of Kalakaua Avenue and obstruct traffic as they do now.

- Sidewalk space available to pedestrian use would be maximized by reducing competing demands. Newsstands concentrated in centralized kiosks, streamlined street furniture, handbiller stations, and other physical obstructions would be located in the vicinity of landscaped planter islands along the curb where the sidewalks would be widened.

- Barnes Dance pedestrian crossings, which permit people to move diagonally across intersections, would be constructed of special material in a tapa design and instituted at Seaside Avenue, Kaiulani Avenue, and Paoakalani Avenue, to reduce conflicts with autos executing turning movements.

- All crosswalks would utilize the same material and design.

- New larger street signs which are easier to read and mounted higher on poles will help move motorists along Kalakaua.

- New contemporary traffic signals and street lights would be installed.

- Existing AC street surface would be removed and replaced and new curbs to improve drainage would be constructed.

- The three existing mid-block crosswalks on Kalakaua within the project area would be widened with brick or tile in a tapa design and the Gateway Park crosswalk would be signalized to improve the safety of pedestrians.

- Finally, extensive landscaping and new street furniture would be added along the curb and in parks and would be illuminated at night.

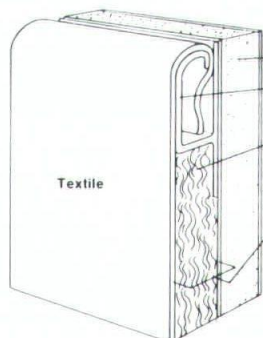
The completed project would express the special tropical character of Hawaii with more coconut trees, a generous number of shade trees and areas of ground cover and shrubs. This introduction of eye-level landscaping within the sidewalk addition would screen street traffic from the pedestrian and soften rigid lines of buildings. Pavement cutouts would be used for most trees as well as raised luxuriant planting areas surrounded by low retaining walls which could be used for sitting and people watching.

Existing landscaping at the intersections of Ala Moana Boulevard and Kuhio Avenue, on Kalakaua Avenue, Waikiki's gateway area, would be reinforced through supplemental plantings to create a sense of threshold and arrival in a tropical paradise.

A large planted traffic island with four shade trees and lush green ground cover would replace the bare white concrete painted island at Kuhio. At the redesigned Saratoga Road intersection, another large landscaped island would be constructed.

Curbside planting islands throughout the project area would contain shade trees and shrubs with cutouts for uplighting, visitor information and newspaper dispensers, mailboxes, waste containers, handbill stations, and other street furniture. Some coconut trees currently growing in the center of the public sidewalk

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area would be transplanted along the new curb of the widened sidewalk to add unrestricted walking space along Kalakaua Avenue.

The beach park would receive substantial plantings along the makai edge of the walkway to provide afternoon shade on the sidewalk while preserving views of the ocean and Diamond Head.

Almost instant mature landscaping would be realized by adding coconut trees having trunk heights of 15 to 25 feet and shade trees with over 12 feet to the lower branches.

The project is currently scheduled to be advertised for bids in May, with the contract to be awarded in June, contingent upon the release of state funds by the government before the end of

The project is currently scheduled to be advertised for bids in May, with the contract to be awarded in June . . .

June 1986. Construction is anticipated the early part of 1987.

The joint involvement of the community and government in the decision making process on such an important project affecting Hawaii's economic mainstay is essential to its success. The end result will be a Kalakaua Avenue that will handle vehicular traffic safely and expeditiously, and provide a pleasingly attractive, safe and convenient walking environment. The benefits to be gained include additional pedestrian trips, increased sales for the merchants, added value to the tax base, and a net income return to the city. The streets, sidewalks, directional signs, rest areas, landscaping, and information kiosks must be pedestrian-tourist oriented. If we do not ensure that the visitor's needs are met, there may not be a return trip.

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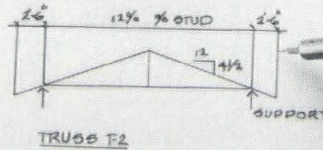
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IMPROVING WAIKIKI'S "MAIN STREET"

*by Donald A. Bremner
Executive Vice President
Waikiki Improvement Association*

Kalakaua Avenue, the major "main street" of world-renowned Waikiki, has been the subject of many proposals for special design treatment throughout its history. For instance, the concept of creating a boulevard to equal those in Washington and Paris and catering to worldly visitors was recorded in 1906 when the Territorial Board of Health proposed to landfill the low-lying, swampy area in Waikiki to create the land mass that we see today.

Recognizing that the limited land expanse would not accommodate a street width comparable to the Champs Elysee or a Connecticut Avenue, Lucius Pinkham, president of the Board of Health (later governor of the Territory) and one of the most influential planners in Waikiki's history, proposed a 40-foot building setback on both sides of Kalakaua Avenue to give it the appearance of a broad boulevard of world renown.

Many of Pinkham's proposals for Waikiki were followed: Ala Wai Canal, the street system and land elevations. Why the 40-foot

building setback proposal went unimplemented is not known. Had it been implemented, the task today of beautifying Kalakaua would be simpler and perhaps confined merely to cleaning out the clutter that subsequent generations have allowed in the broad setback areas he proposed.

Despite other proposals to change its location or its looks over the years, Kalakaua Avenue has remained essentially unaltered since the 1920s and 1930s. Modifications have been confined to the elimination of overhead wiring in the 1960s (some overhead wiring and wooden utility poles still remain), removal of parking meters in 1970 and conversion to a one-way traffic flow in 1971.

More recently there have been proposals to close Kalakaua Avenue, either partially or completely, to traffic in order to create a pedestrian mall. These proposals proved impractical when traffic studies showed that vehicles using Kalakaua, Kuhio and Ala Wai Boulevard in a 24-hour period could not be adequately handled by only two of

these three arteries. Attempting to do so would result in an impossible congestion situation extending throughout the day.

That was the bad news coming out of traffic analyses. Some good news from traffic analyses formed the basis of the present project for Kalakaua Avenue. On the "macro" scale, i.e., the traffic volumes using Waikiki's three major arteries, overall volume has virtually not increased in 16 years. Traffic volume on Kalakaua is also the same as it was in 1954, although traffic volumes on Waikiki's other arteries increased between 1954 and 1969.

Essentially we have a phenomenon working in Waikiki where traffic is evidently seeking its own saturation level (always below capacity) and not going beyond it. Now that we have achieved development stability inside Waikiki and can foresee no major outside influences which would generate traffic, Waikiki Improvement Association (WIA) can project with reasonable reliability that traffic will not materially increase in the future.

This phenomenon has provided

Waikiki with a somewhat extraordinary "windfall" in the normal scheme of urban dynamics. Traffic problems, instead of growing progressively worse, have been resolved and mitigated by not only facility improvements but also by the stabilization of traffic volumes in Waikiki. In perspective, Waikiki's traffic problems were relatively more bothersome in the past than they are today or will be in the future.

For instance, when 30,000

vehicles used Kalakaua Avenue in 1954 on a two-way street with curb parking on either side, congestion was an everyday affair. Again in the late 1960s when 83,000 vehicles used a two-way Kalakaua, a two-way Ala Wai Boulevard and a two-way abbreviated Kuhio Avenue, congestion dominated the scene. In 1971 however, when curbside parking had been removed on Kalakaua and the entire street system of Waikiki was converted

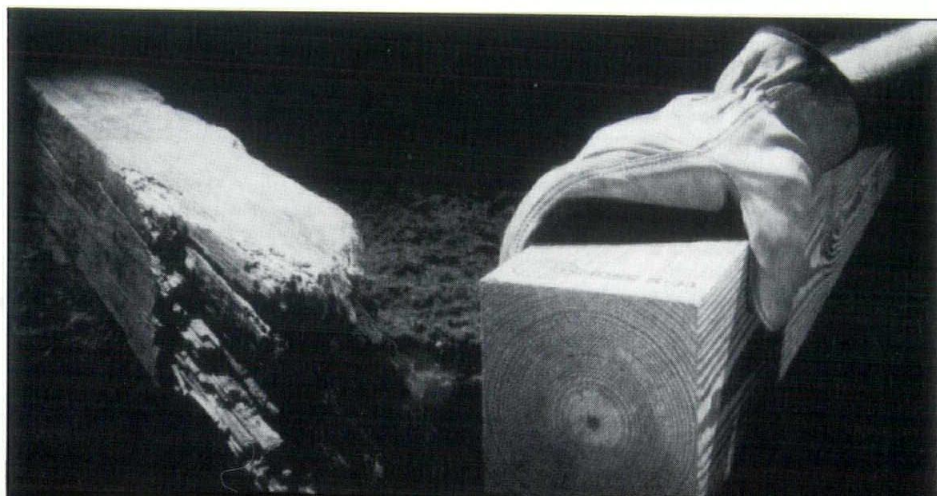
to one-way movements, capacity of the system was improved by approximately 25 percent and congestion was mitigated. It was estimated that this new capacity would serve Waikiki for about six years.

By virtue of factors which have kept overall traffic from increasing in Waikiki, new capacity achieved from the one-way conversion was never used up and exists today. It has now been augmented by new capacity provided by widening of Kuhio Avenue and traffic on Waikiki's three major arteries is being handled today quite comfortably with "room to spare."

Since this situation casts a favorable outlook on the future of Waikiki, one which must be coveted and perpetuated, a major design criteria for beautifying Kalakaua Avenue becomes the retention of present traffic carrying capacity of the street. Since space in the Kalakaua roadway previously devoted to curb parking does not add to traffic flow capacity, sidewalks can be widened into these areas leaving loading zones and turn lanes without reducing the traffic flow capacity that exists today.

This approach was initially recommended in 1971 by Mayor Fasi's Waikiki Planning Advisory Committee, chaired by me, and which involved various community leaders and organizational representatives such as Aaron Levine of the Oahu Development Conference; George McLaughlin, AIA; the late George Walters, ASLA; other planners; city department heads and City Council representatives. Our studies had already shown the impracticality of closing Kalakaua Avenue or curtailing traffic there, and the sidewalk widening and beautification project was proposed to create a mall-like effect while accommodating traffic, too. The idea was to achieve, under the circumstances of reality, the best of both worlds.

The proposed beautification project was not a top priority in the list of public improvements needed in Waikiki at that time.



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Public facilities such as storm drains, sewers, park acquisition and the widening of Kuhio Avenue were of greater necessity. Consequently, none of the \$9 million appropriated by the State Legislature for Waikiki improvements in 1971 was devoted to the Kalakaua project.

By 1977 many of the original items had been accomplished or were underway and the Kalakaua Avenue Beautification Project moved into position as the priority project of a new phase of Waikiki improvements. Legislators, motivated by the desire to keep Waikiki's position in the world-class competition of tourism wanted to see some tangible results for their expenditures. Much of the money spent to that date was either underground or invisible in "boiler-plate" items such as storm drains, sewers, acquired land, etc. Waikiki now needed a visible demonstrative statement that movement to render it as one of the notable urban resorts of the world was proving successful.

The initial feasibility study was begun in 1977 using \$250,000 of the state's appropriation but was interrupted by a change in City Hall in 1980. The then new Mayor got unduly enamored with the discarded concept of a mall on Kalakaua Avenue with major sections closed to traffic. It wasn't until March 1983 that the city's consultant on the Kalakaua project convinced the mayor that Kalakaua could not be closed to traffic. Even then the Anderson Administration clung to the idea that Kalakaua traffic could be handled on three lanes instead of four. It was on this basis that the beautification project began to move forward again. However, by this time the 1977 appropriation had lapsed.

In 1984, spurred by the previous legislative commitment to the project and with the governor's recommendation, the Legislature reappropriated approximately \$4 million for the Kalakaua beautification project to be matched by \$1 million of city

funds. Bothered by the previous city administration's proposal to reduce the number of flow lanes on Kalakaua from four to three to effect the beautification project, the Legislature enacted a protective proviso on the project appropriation. This proviso called for a "simulation" of the new proposed traffic pattern for Kalakaua prior to its final implementation. Later in 1984 the governor went on record opposing the use of state monies to fund such a simulation (requiring costs of an estimated \$400,000) because it was not an appropriate use of capital funds. Between the lines perhaps, he was reflecting what many of us thought, i.e., that such an expenditure would be a waste of money easily avoided by retention of the four existing flow lanes on Kalakaua Avenue. No need existed to test four lanes because that pattern was working well at the time.

At the end of 1984 another chapter in the saga of the project was written when a new city

administration was elected. Quickly the new administration embraced the project to "dress up" Waikiki and make it, and Kalakaua, one of the most pleasing resorts in the world.

The three-lane configuration (never supported by WIA or resident groups) was discarded completely and the project was brought forward through preliminary design preparations to the present status. Estimated start-of-construction date is September 1986. At this point it looks like a "go" to us and the excitement begins to mount over embarking on this project, the completion of which will have such tremendous positive impact on Waikiki and its future. The first major public refurbishment of Waikiki's facade in its history, this project will allow Waikiki to take its proper place in the competitiveness of attractive resorts as we move to the 21st century and help make the residents of Waikiki, Oahu and the state proud of this area. **HA**

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KALAKAUA AVENUE STREET FURNITURE

*by Robert M. Fox, AIA
Fox Hawaii Inc.*

Waikiki, unfortunately, over the years has developed a negative image which is partially due to the hawkers and garish displays which line Kalakaua Avenue.

One group that has contributed to this image was the visitor magazine publication industry which distributes literature in individual distribution stands. One problem that developed over the years was the increase in the number of visitor magazines and the fierce competition which followed. The stands kept getting brighter and more garish in order to attract the visitors' attention.

There was an awareness in the city and magazine publication industry that publications provide an important service and, if correctly presented, need not be a

blight on the environment. A solution to the problem was to design an aesthetically pleasing distribution stand which could house all of the magazines, giving everyone equal billing and an equal opportunity to vie for the public's attention while presenting a uniform and organized appearance.

A prototype distribution stand was designed using concrete legs and steel tubular braces with the magazines displayed in smoked plexiglass. Unfortunately, there is a great deal of vandalism which occurs on Kalakaua Avenue and the structures had to be virtually indestructible.

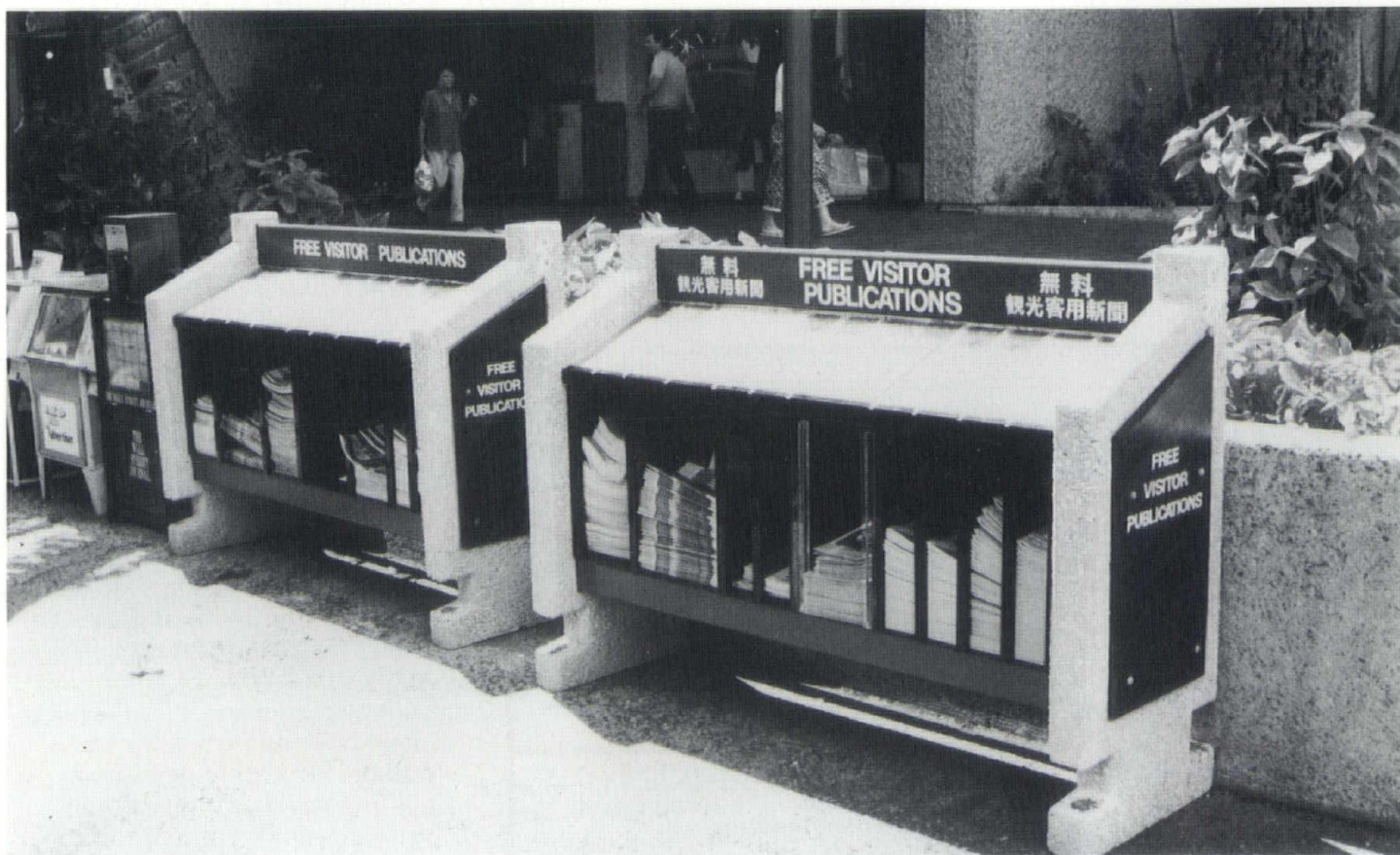
A number of solutions were considered which varied in size, handling from six to 24 magazines per unit. It was obvious that the larger racks would be out of scale and defeat the purpose of

making the distribution of visitor publications as unobtrusive as possible. Each of the prototype units holds six magazines of various sizes. With 12 magazines now distributed, two units are required. The visitor magazine stand is the first part of an ongoing program to design street furniture for Kalakaua Avenue in conjunction with a sidewalk widening program sponsored by the city.

The two prototype distribution stands are in place at the corner of Kalakaua and Royal Hawaiian Avenue. Hopefully, during the process of street widening and general upgrading of the appearance of Kalakaua Avenue, all of the individual stands will be phased out and new collective display distribution stands will be located at strategic areas along Kalakaua Avenue.



Visitor publication stands have proliferated in Waikiki creating an eyesore. Before the newsstands were consolidated, pedestrians often had to thread their way through a maze of stands.



Two prototype collective distribution stands attractively display visitor publications. Each stand holds six publications.

WAIKIKI DESIGN

by Donald W.Y. Goo, AIA

Wimberly Whisenand Allison Tong & Goo Architects, Ltd.

Waikiki can be the best designed high density resort destination in the world. It has the essential assets which, combined with design and community attitude, can make it the envy of world resorts. In addition to the natural attributes of sunshine, clear water, white sand beaches,

green foliage, and gentle trade winds, Waikiki has a superb concentration of hotel rooms, meeting spaces, restaurants and entertainment centers. At its periphery, additional recreational amenities and visitor attractions enhance the basic features of Waikiki.

The dynamic growth of Waikiki

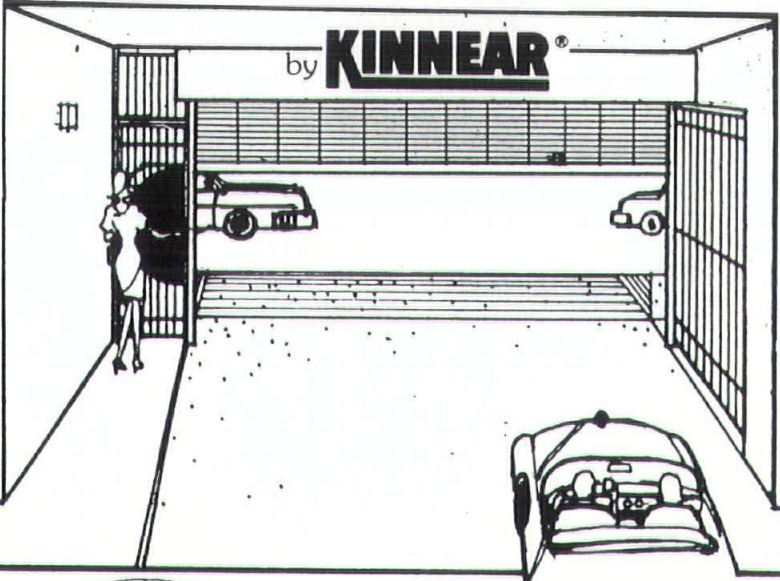
has not resulted in a design that creates the kind of pride appropriate for this valuable asset of our city and visitor industry. But we have an opportunity to remodel the public areas of Waikiki to represent our highest design aspirations.

Simplicity should be the guiding design criteria for all the public areas. The design should be obvious and easy to comprehend. Public areas—streets and sidewalks—create the greatest visual impression of Waikiki. This has an impact on everyone: motorists and pedestrians alike. All of us view the streets or sidewalks as we move about Waikiki. Motorists and pedestrians should be able to move conveniently along the major streets and sidewalks of Waikiki. Those corridors should be identified by the width of the streets and sidewalks, landscaping and lighting. The design of the streets, sidewalks and pedestrian amenities should be distinctive and create a special identification for the major circulation routes through Waikiki.

The design of Waikiki should be a source of pride for all Hawaii's residents. As tourism is our number one industry and almost 25,000 of us live in Waikiki and a comparable number work in Waikiki, we should develop the area in appearance, circulation efficiency and comfort to be comparable to its economic value and the needs of its population. **HA**

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THE OUTDOOR CIRCLE AND WAIKIKI

by Betty Crocker, President
The Outdoor Circle

When the Circle was founded in 1912 members adopted certain fields of interest that they felt were their *kuleana*. It was under Cherilla Lowrey's leadership that the Outdoor Circle resolved to:

- "... clear away front-yard empty cans and other rubbish;
- ... make a flower bloom where a broken saucepan held sway;
- ... border thoroughfares with flowering trees;
- ... discourage unsightly structures;
- ... convert careless householders to beautifiers;
- ... snip governmental red tape in the cause of beautification;
- ... fight against ugly billboards"—all this meant strenuous labor. These are still the goals that the Circle concentrates on after more than 70 years. The Circle is interested in Waikiki because it is part of the Honolulu shoreline and we want the same principles upheld there as in Kahala, Kailua, Laie, Waimea, Waianae, Ewa and Kakaako.

The Circle was instrumental in preserving Diamond Head as a national monument and has also tried to keep Koko Head free of

vehicular railways and revolving restaurants. We have fought to preserve Kapiolani and Ala Moana Parks to be sure that all residents can enjoy these family oriented parks with their palms, beaches, trees and picnic areas. These oases are the last refuge in the special stretch of beach and surf and palms that has made Waikiki "a world class resort destination."

One of the Circle's early goals was to plant trees on streets. Before the Ala Wai Canal was dug to drain the swampy lands adjacent to upper Kalakaua, the Circle planted a center row of West Indian mahogany trees down Kalakaua from Beretania to Fort DeRussy. This was about the time that the old name of "Waikiki Road" was changed to Kalakaua Avenue. On each side of Kalakaua Avenue the Circle planted a hedge of oleander backed by coconut palms. The hedges were to screen the often odoriferous pig farms and duck ponds.

Time has changed the swamps to a built-up area. The Ala Wai Canal made it necessary to build a new bridge. Traffic engineers cut down many mahogany trees to create left-turn lanes (which are no longer used). Fortunately many of these majestic trees still stand and provide the greenery and shade planned by the Circle many

years ago.

In 1963 The Outdoor Circle appealed for palms to be planted in Waikiki. The general public enthusiastically responded with money and trees. Unfortunately Kalakaua Avenue will never recover from the loss of the King's own grove of palms on the grounds of the Royal Hawaiian Hotel, that can no longer be seen from the Avenue.

In 1974 the Circle, armed with a plan donated by landscape architect George Walters, offered to augment planting along the Kuhio promenade beachside strip from Kapahulu Avenue to Uluniu Street as a gift to the City of Honolulu. The trees and planting all required special tree wells and a sprinkler system. This was a big and new venture for the Circle. As the new hotels were built mauka of Kalakaua in the late seventies, the park with its plantings has made this area one of the most attractive stretches of Waikiki.

The coconut or royal palm is the essence of the resort atmosphere that is needed for Waikiki and it is hoped all who read this article will join The Outdoor Circle in keeping not only Waikiki, but Hawaii "clean and green with its shorelines a beautiful lei of green."



Mahogany trees and palms line Kalakaua Avenue in an early rendering of the approach to Waikiki (above). The plan was a dream of The Outdoor Circle in 1912.

Two days after planting, coconut palms enhance the Kuhio Beach promenade (right). Landscape architect George Walters donated a plan for the area.



In 1974 ladies of The Outdoor Circle planted trees along the Kuhio promenade beachside strip (left). The area has become one of the most attractive in Waikiki.

WAIKIKI IS THE BEST

by Donald W.Y. Goo, AIA
Commissioner, AIA Government Affairs Commission

We respect Waikiki not only for the charm she used to have, but also for the inherent power she still retains.

The very word "Waikiki" wields tremendous power. The magic it conjures has everything to do with making Waikiki the heart of Hawaii's visitor industry, the dream capital of the resort world, and a lot to do with the problems of Waikiki.

Long gone, we know, is the languorous village—like the ambience that helped establish and spread Waikiki's magic.

The reality that is Waikiki today bespeaks a power that combines many features of Waikiki's original attraction with the color, vibrancy, and excitement of a high density 1980's resort *and*—let's be honest—the imperfections that come with age and somewhat less than miraculous foresight and meticulous upkeep. Imperfections include congestion, declining neighborhoods, haphazard development, noise, crime, litter, sleazy retail operations, and various sorts of solicitations.

Let's face it, Waikiki—like most of us—is imperfect. And she's no longer sweet sixteen. But she has enduring characteristics of universal appeal: warm surf and sun, cooling trade winds, still-

clean truly blue skies, people who are aware of and appreciate their special place under the sun. There is also an array of manmade assets. We respect Waikiki not only for the charm she used to have but also for the inherent power she still retains. If we turn our backs on her, merely tolerate her, hoping that someone else will lend her a helping hand, we do ourselves an injustice. If we claim her as our own, each of us assuming individual responsibility, getting involved, supporting her to the fullest, we can take pride in and enjoy the beauty, the excitement, all the assets, and yes, the profits that emanate from a well-cared for revitalized Waikiki.

I urge that we not think of Waikiki in the limiting context of a place for visitors only. The resource that is Waikiki is many-faceted, many things to many people: young to old, impoverished to affluent, visitors and residents alike. Many of us spend our working lives in Waikiki: children go to school, worshippers attend religious services, librarians keep track of books, and little old ladies in shorty muus tend their lanai gardens in Waikiki—not to

mention the fifty people in our firm who practice architecture in Waikiki.

It's a fact that Waikiki includes its world famous beaches, 138 hotels, 38,600 hotel rooms with numerous meeting and convention facilities, night clubs, and restaurants by the hundred as well as several major shopping centers and theaters. Waikiki *also* includes condominiums and apartments not available to visitors on a short term basis, schools, churches, private clubs, a library, zoo, aquarium, amphitheater, yacht harbor, both major and mini parks, office buildings, banks and savings and loan companies, Ft. DeRussy, and a care home for the elderly. While the daily visitor census in Waikiki averages 40,000 to 50,000, another 25,000 of us *live* in Waikiki. A scant 7/10ths square mile of land, Waikiki annually contributes 17 percent of Oahu's property tax and generates billions of dollars for the state's economy.

In the face of all this, anything less than wholehearted commitment to Waikiki would be self-defeating. It pleases me that

there are many indications of just such a commitment already underway: landscaping at the Royal Hawaiian Shopping Center and Hemmeter Center has significantly improved the look along the central section of Kalakaua Avenue; major remodeling as exemplified by Hilton Hawaiian Village Hotel, Liberty House, Sheraton Waikiki, and the Waikiki Beachcomber Hotel indicate significant commitment to an upgraded Waikiki; completion of Kuhio Avenue widening, tidying up the sidewalks, and initial steps toward improvement of the zoo point to the city's growing concern for Waikiki.

And one final mention—Canlis Restaurant for keeping its grounds impeccably manicured for 30 years. When it was still in the planning stage, restaurateur Peter Canlis set his goals in terms of the superlative. "I want to build the most beautiful restaurant in the world," he said. Later, he set about making it the best restaurant in the world. The commitment to excellence he established continues. We all recognize it, enjoy it and benefit from it. Is there any reason why we shouldn't set our goals for Waikiki just as high? Why *shouldn't* Waikiki be the very best in every way?

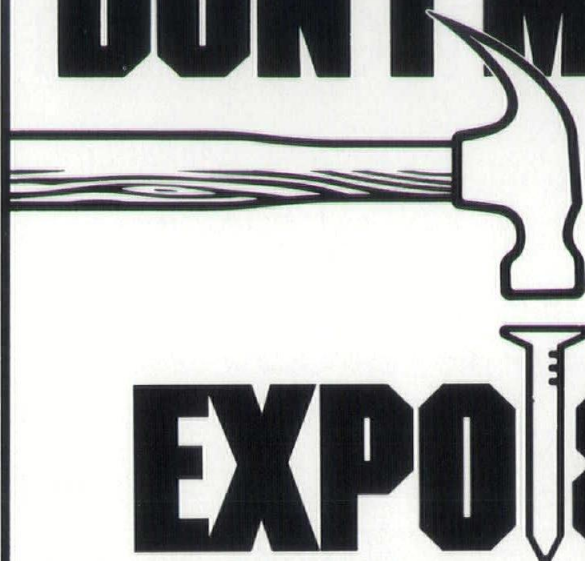
The point is that Waikiki is us and we are it. If we have allowed ourselves to think of it otherwise, it's time for a change in attitude: time to get honest about our status quo, time to appraise our potential, time to look for both public and private ways and means to improve our physical plant, time to learn how to enjoy our assets. But the most important thing of all comes first—a good positive self-image. *It's time to be proud of Waikiki/us.* When we are willing to stand tall, to say with absolute conviction, "I am very proud of Waikiki," then we will be in the right frame of mind to make it possible to say, "Waikiki is the best."

I am proud of Waikiki. Let's go for it!

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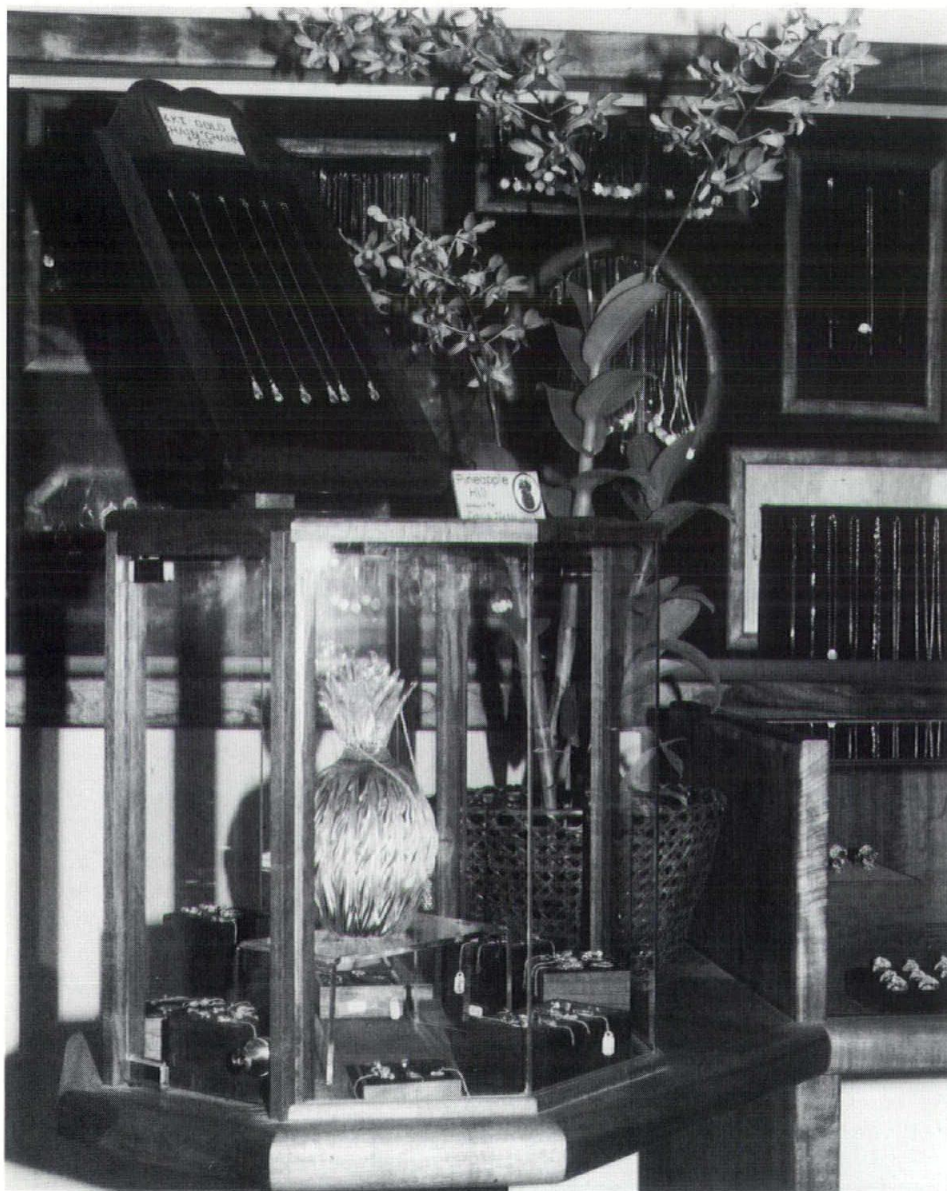


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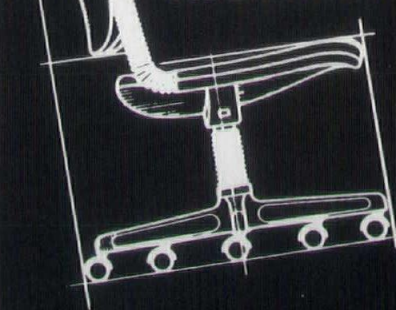
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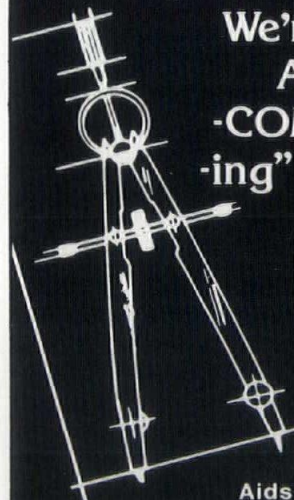


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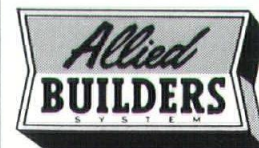
The Team: Bob Cleve, Facility Manager,
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A. Kimbal Thompson, Architect,
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covers, Alcan ceilings and other variables demanding new techniques and innovative approaches.

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DRYING HARDWOOD LUMBER

by John M. McMillen and Eugene M. Wengert

Forest Products Laboratory

Forest Service

U.S. Department of Agriculture

A great deal of scientific knowledge is unnecessary to dry wood. Some appreciation of the basic concepts, however, will help in the selection of drying methods and in the application of general information on drying to specific situations.

To dry wood, three basic requirements must be met:

(1) Energy must be supplied to evaporate moisture throughout the drying process. As the wood becomes drier, additional energy is needed to release moisture from the hygroscopic forces that bind some of the water to the wood. Very green wood with large amounts of free water requires 580 calories per gram of water evaporated. Below 30 percent moisture content, more energy is required (fig. 1). Energy also is required to raise the temperature

of the wood to increase the rate of moisture movement from the interior of the surface and to increase the rate of evaporation.

(2) The environment adjacent to the wood must be capable of receiving moisture from the wood's surface. In air and kiln drying, the relative humidity must be below 100 percent. The lower the relative humidity, the faster the drying. (But relative humidity must not be so low as to cause degradation.)

(3) Air movement through a stack of lumber must be adequate to bring heat energy in, to remove evaporated moisture, and to maintain desired relative humidities within the stack. The relative humidity within a stack of drying lumber tends to rise above the general relative humidity in the drying yard or kiln. Thus the inside of the stack tends to dry

slower than the outside.

These three factors can be manipulated to control the drying process, minimizing defects while drying the wood rapidly.

Methods

A number of methods are available for drying hardwood lumber, ranging from air and kiln drying to special seasoning processes. The customary method in the United States, except in the northernmost states, has been to air dry lumber to 20 percent moisture content, then kiln dry it as needed. If lumber is in short supply, more lumber is kiln dried from the partly air dried or green condition. Kiln drying from the green condition has been common where air drying conditions are poor most of the year.

During years of adequate energy and wood supplies, the shortest air drying time and the

best target moisture contents for air dried lumber were not well defined. Today these are much more important; the combination of air drying and kiln drying probably is the best energy-conserving method for drying better quality hardwood lumber in most of the United States.

In regions where good air-drying weather prevails only four to six months of the year, consideration should be given to accelerated air drying procedures. These have good promise for reducing lumber inventories and bringing lumber production closer to the market. They also permit quality drying of hardwoods with character marks, or minor natural defects.

Drying hardwood lumber in a conventional kiln has several advantages. Modern conventional kilns have been designed to accelerate drying by using temperatures from 100° to 180°F with air velocities from 200 to 600 feet per minute through the load. Under these conditions, a schedule of relative humidities high enough to prevent drying defects can be maintained in reasonably tight site-constructed or prefabricated buildings.

One advantage of kiln drying is the ability to achieve a low, uniform final moisture content. Another is to relieve drying stresses (case-hardening). Relief of drying stresses is necessary to prevent warp if more wood is planed off to one side of a board than the other, or if the wood is to be resawed or machined deeply from one side. Uniformity of moisture content and relief of drying stresses are especially important to large-scale operations that produce hardwood dimension cuttings from small trees. If the stock is not properly equalized and conditioned, warpage and poor joints occur when the cuttings are glued into panels.

While high-temperature drying (above 212°F) is commonly used for softwoods, it has generally been considered inapplicable to most hardwoods. However, recent research and industrial

Table 1.—Expected interior relative humidities and recommended moisture content values for most wood items for interior uses in the United States

Areas	Relative humidity		Wood moisture content	
	Average	Range	Average	Range
	Percent	Percent	Percent	Percent
Honolulu				
Air conditioned	30	25-35	8	7- 9
Diamond Head	35	30-40	10	9-11
Nuuanu	60	40-70	14	12-16
Much of the U.S. Mainland	40	30-55	8	6-10
Dry Southwest	30	15-90	6	4- 9
Damp, warm coastal	60	40-70	11	8-13

applications indicate more optimistic prospects for this time- and energy-saving method. Drying time may be only one-fourth the time required for conventional kiln drying. There are two reasons why energy is saved: (1) The vents are kept closed and (2) the shortened drying time greatly reduces heat loss through the structure and floor. Slight discoloration may bar high-temperature-dried wood from uses. The method, however, may be fully satisfactory for drying yellow-poplar and other easily dried woods for concealed uses and for drying similar hardwoods for construction purposes.

Predrying treatments include steaming for color promotion or drying rate acceleration, and treatment with hygroscopic and bulking chemical (polyethylene glycol) for defect reduction. Also included are wax, sodium alginate, or salt-paste surface treatment for the prevention of surface checks.

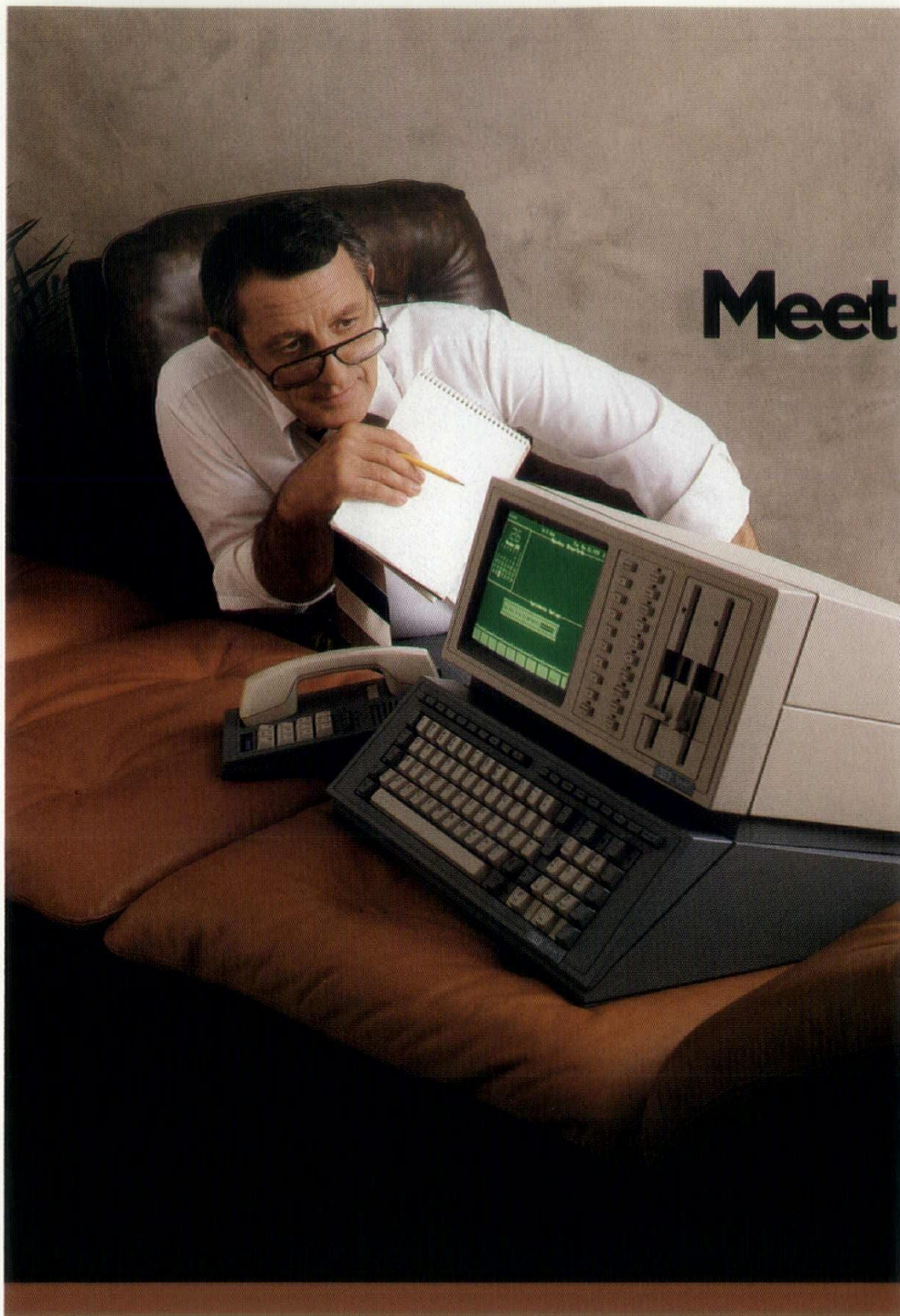
A cardinal rule in drying hardwoods is to reduce the material to the smallest practical size before starting to dry it. Drying time is more than doubled if thickness is doubled. Therefore, it would be better, from the drying standpoint, to make 3- and 4-inch material by gluing together the required number of pieces of

dry 1-inch material. This is one of the considerations that makes press drying so promising among the special drying methods. Other methods discussed are dehumidifier drying, solar drying, high-frequency and microwave drying, and solvent seasoning. None of these appear likely to replace air and kiln drying for the majority of hardwood drying operations but they do have possibilities for some purposes.

How Dry is Dry Enough?

In the many decades of dealing with the use of wood, the U.S. Forest Products Laboratory has noted that problems often arise when the wood is not dry enough. Too high a moisture content can bring about difficulties in drying, manufacturing and use. Today, with year-around climate control in offices, the in-use moisture content of wood products is quite low, lower even than in the 1950s and before. To avoid shrinkage, warping, checking and splitting in the finished product, lumber must be dried to a final moisture content (after conditioning) close to the middle of the range of expected in-use moisture contents (table 1).

Furthermore, dried wood must be stored, manufactured, and



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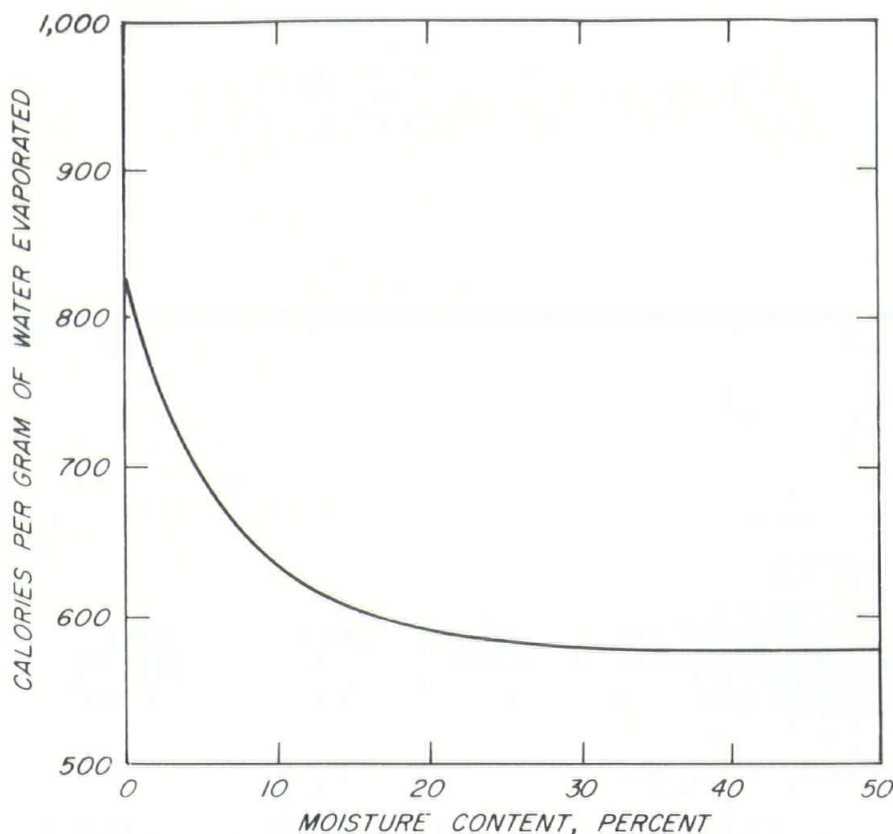
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Beyond the call



The chart shows the amount of energy required to dry wood as moisture content of the wood changes.

warehoused at or near the expected moisture content values. Failure to dry wood low enough and then keep it this low as it gets into use may result later in open glue joints, checking and splitting, finishing imperfections, and warping. These all decrease profits and waste this natural resource.

The moisture content for special uses may be higher; if so, stringent storage precautions generally are not required. Wood to be bent or used in boats should be somewhere between 15 and 20 percent moisture content. After bending, wood for interior uses should be brought down to the moisture levels indicated above. Wood to be used as framing or supports in construction should be in the 10 to 19 percent moisture content range. Wood to be treated with preservatives before use should be between 20 and 35 percent moisture content.

This article courtesy of Bill Sanders, Sanders Trading Co.



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WOOD PRESERVATION IN HAWAII

by Honolulu Wood Treating Co., Ltd.

Wood treatment in the construction and building industry in Hawaii has become an important necessity in the past 20 years. Due largely to Hawaii's warm, tropical climate and annual rainy seasons and the indiscriminate perennial attacks on homes reaching from Makawao, Maui to Kahala on Oahu, it's also becoming big business to Honolulu wood and lumber suppliers.

According to Ted Clay of Honolulu Wood Treating Co., Ltd., a forerunner in Hawaii's wood treatment business, his company uses huge retorts to chemically treat lumber with automated equipment. The process is lengthy

and expensive, and can also be dangerous if not done with extreme care by professionals.

When treating wood which has already been built into a structure, various processes have been depended upon through the years. Some treatments are solely for pest control, others are for water repellency or for a combination of both. Pentachlorophenol or creosote, chemicals once found in nearly all wood preservatives, are no longer used exclusively. They have been proven harmful to the environment and possibly dangerous to the user.

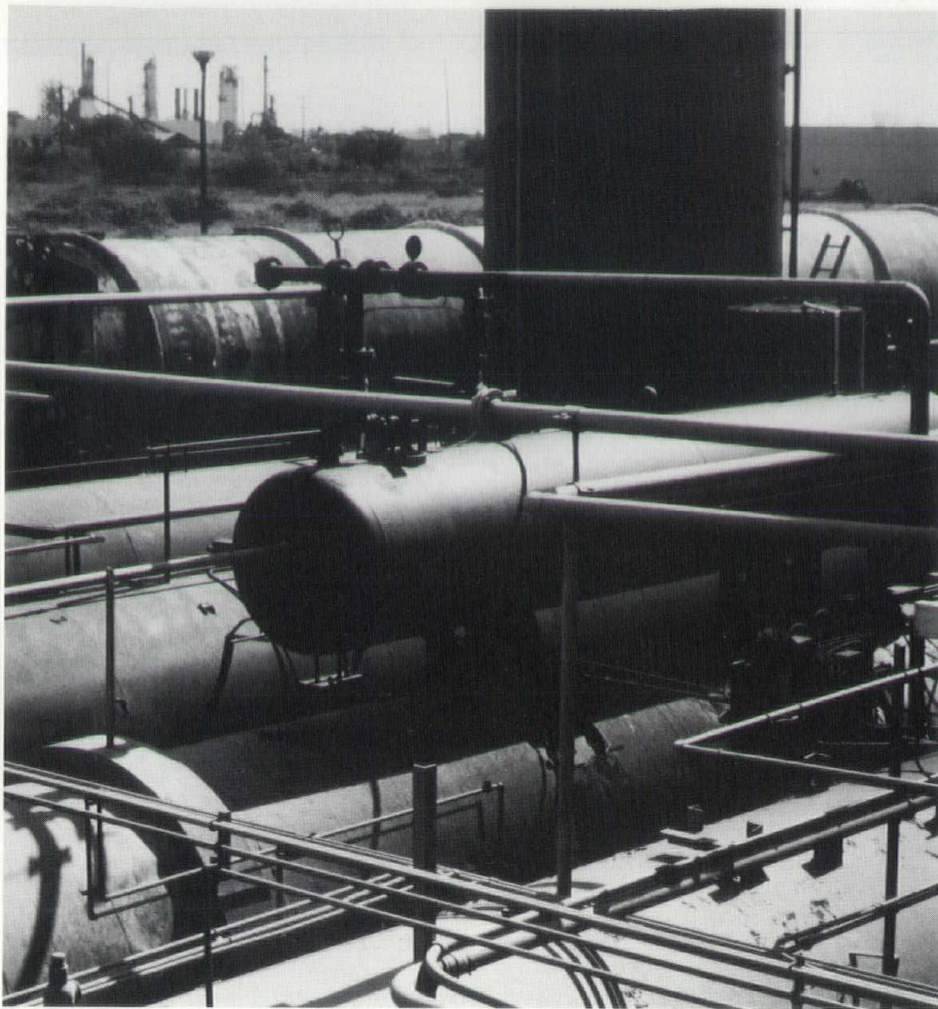
Clay pointed out that many of his products are new formulas that are strong, yet effective and environmentally safe to use.

Wolman®, a recognized leader in wood preservatives, has brush-on products for both pressure-treated and non-pressure-treated woods. Wolman Green® has a slight tint to it, Clear® is a transparent, oil-based preservative. Neither product contains pentachlorophenol or creosote. Both protect against mold, mildew, decay, bacteria, and termites with periodic application.

Wolman® also carries a water repellent called Raincoat® to protect wood, brick, concrete or other masonry from damaging

Current projects using Honolulu Wood Treating Co.'s treated wood products are Village Park in Waipahu and projects in Pearl City by Lusk.





moisture. A clear, solvent-based formula, Raincoat® brushes on to penetrate wood fiber and other surfaces.

Clay said one of the newest, most revolutionary treatments for laminated exposed wood will be available at Honolulu Wood Treating Co. by April of this year. "This new product is superior to what we now offer, and I expect it to replace Tribicide® and Penta® in Hawaii within the next few years," Clay stated. "We have an exclusive on it in the state . . . the product doesn't even have a name yet, but it's for interior and exterior use. What makes this new clear wood treatment so incredible is its penetration capabilities, and it's safe to use. It has an EPA-labeled oil base. The most common wood used here in Hawaii is Douglas Fir," he continued, "and this product protects it beautifully. You can't detect it once it's on, because it's

Retorts or vats used to pressure treat wood chemically are automated so that very little manpower is necessary to complete the lengthy treating process.

clear. The other brand we've depended on for so long is water-based, and green." This new wood treatment may be applied only by professionals, Clay warned.

Clay added that Honolulu Wood Treating Co. is expanding its product line further by offering packaged wood preservatives to consumers. No applicator's license is necessary, and they're EPA-labeled. Packaged wood preservatives can be used around the home by the consumer in many ways, and with complete safety, he said. Other Honolulu Wood Treating products sold both wholesale and to the consumer are stains, specialty wood products, interior fire retardants, decking, glued-laminated timber, timber connections and poles.

NEWS

Intelligent Buildings Conference Featured

A/E/C Systems Conference Director George S. Borkovich has announced that the newly formed International Intelligent Building Association will hold its first major exhibit and conference in conjunction with A/E/C Systems '86, June 23-27, at McCormick Place in Chicago. Called Intellibuild '86, the event will encompass a two-day professional conference as well as exhibits throughout the week by vendors specializing in the intelligent buildings market.

"Our objective is to provide a cutting edge presentation to the people who will be most involved in the development of 'smart buildings'—the A/E's who will design them and specify their components; the developers and facility managers who will own and operate them; and the contractors who will build them," stated Borkovich.

For information on attending Intellibuild '86, contact the Conference Director, P.O. Box 11318, Newington, CT 06111, 203/666-6097.

Wudtke Watson Garduque Receives Recognition

Wudtke Watson Garduque Associates has been recognized as one of the 26 best design firms in the nation in a recent publication of *Restaurant and Hotel Design* magazine. The criteria for selection was based on continuing outstanding and eminently workable restaurants, each of which are worthy of special recognition. That factor, more than consideration of size or business volume, guided the selection of restaurant professionals by the editors of the magazine.

NEWS



Christopher J. Smith, AIA, 1984 president of the Hawaii Society/AIA, installed 1986 officers and directors at the annual installation banquet (above). Behind Smith, left to right, are Spencer Leineweber, AIA, director; Scott R. Wilson, associate director; Gerald W. Hiyakumoto, Neighbor Island director; Theodore E. Garduque, AIA, director; Arthur M. Weber, AIA, director; Benjamin B. Lee, AIA, director; Donald W.Y. Goo, director and government affairs commissioner; Sheryl B. Seaman, AIA, director; Douglas P. Luna, AIA, director and associate commissioner of government affairs; Norman G.Y. Hong, AIA, secretary; Carol S. Sakata, AIA, treasurer; Evan D. Cruthers, AIA, vice-president/president-elect; and Arthur A. Kohara, president.

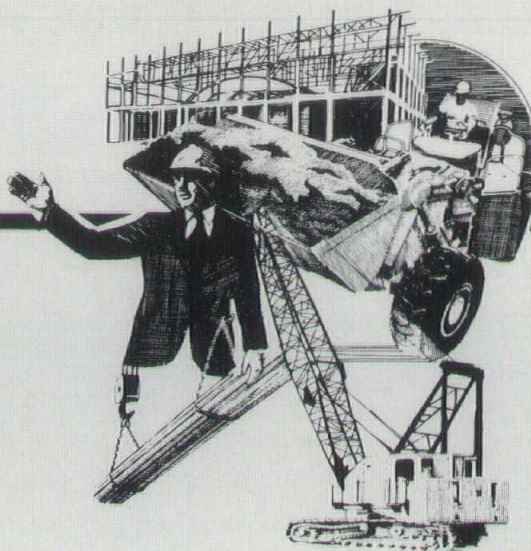


At the Hawaii Society/AIA's Thomas H. Creighton Journalism Awards presentation in December (left), Loretta K. Paraguassu received her award certificate from Elmer E. Botsai, FAIA. Paraguassu was a co-winner of the Society's 1985 journalism awards competition. Outgoing president Elmer E. Botsai, FAIA (below) turned over the reigns to Hawaii Society/AIA's 1986 president, Arthur A. Kohara, AIA (right).



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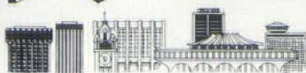


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