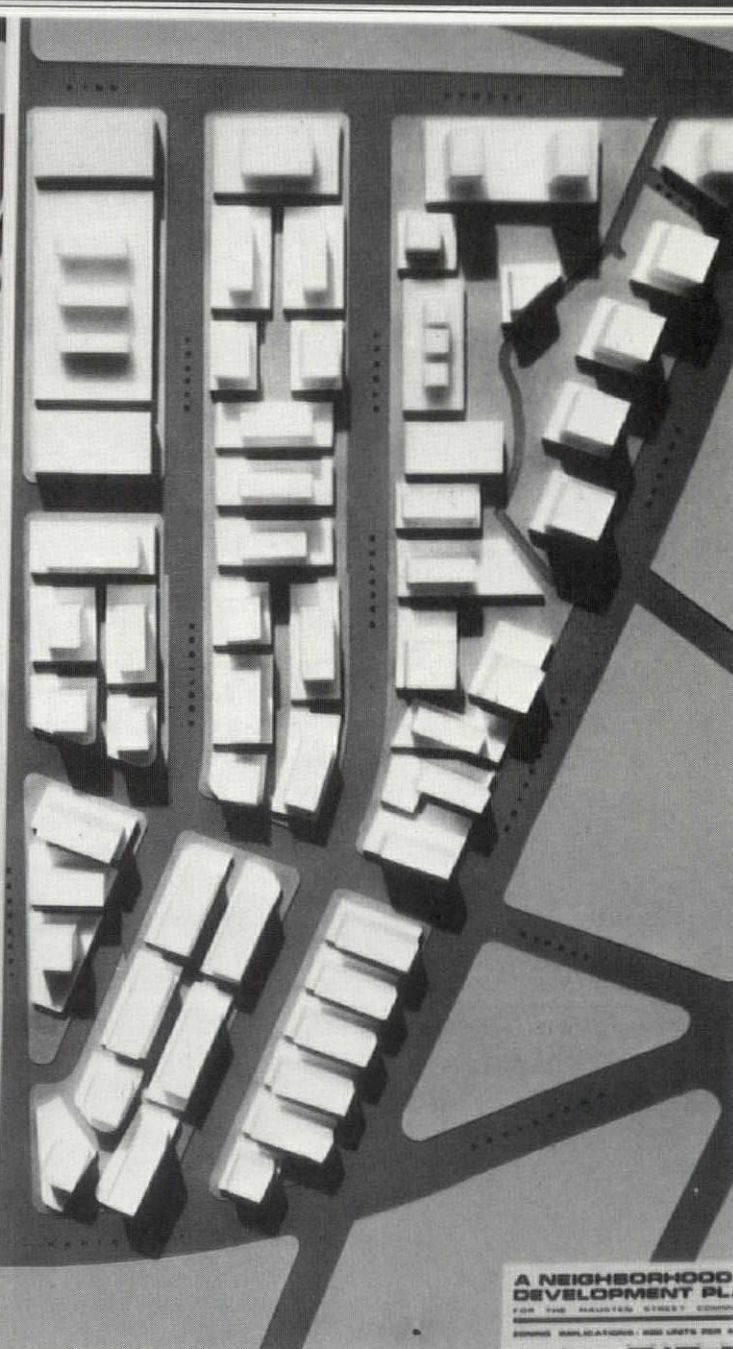
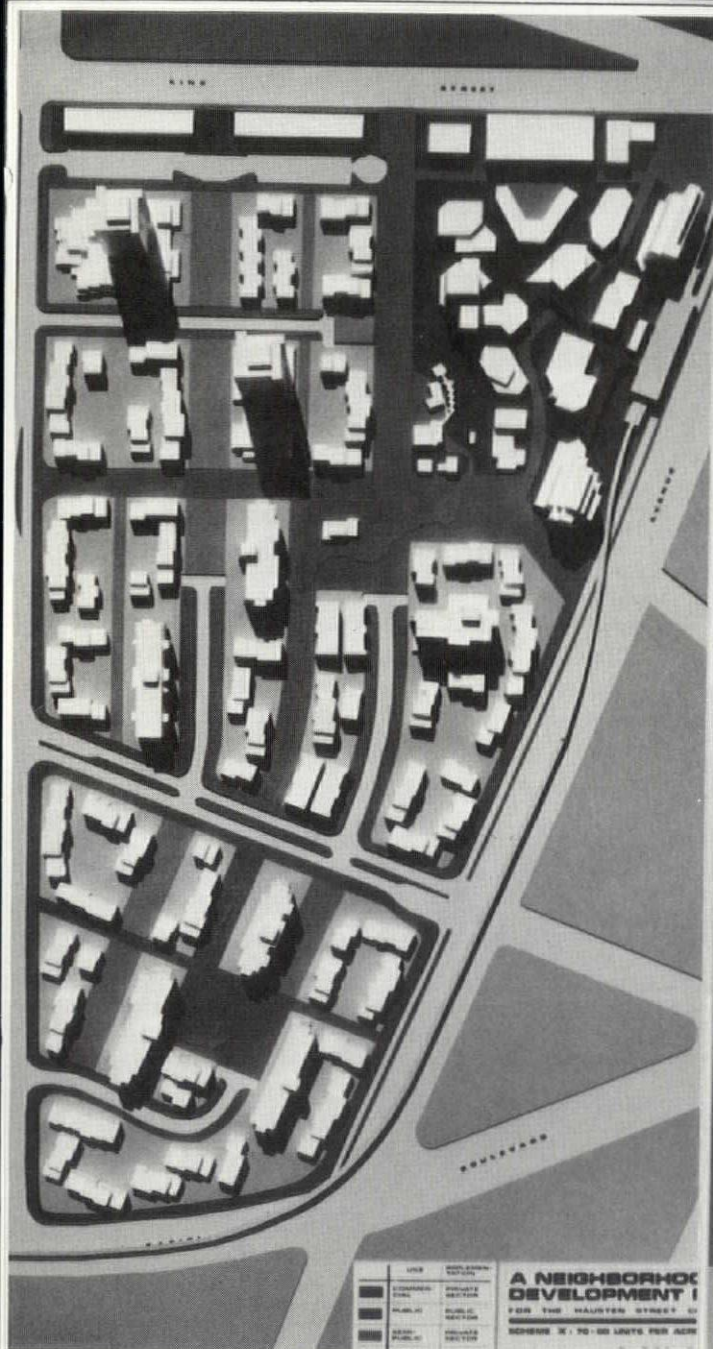


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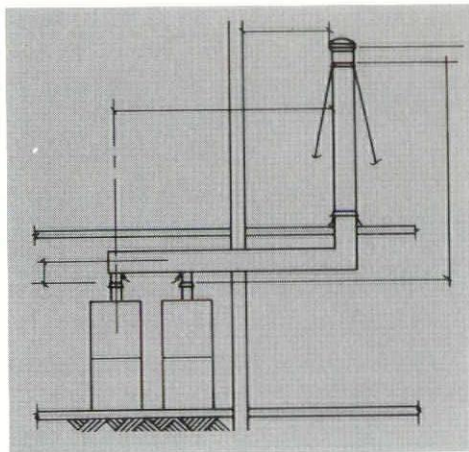
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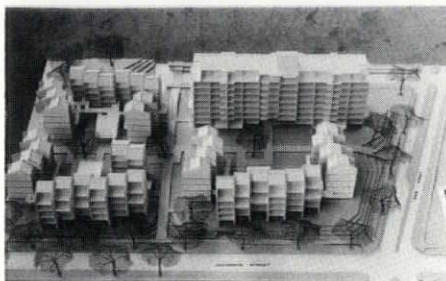
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Moiliili Community



5

Cartoon

11

Hawaii Capital District

12

Wailea Tennis Center

14



Architectural Notes

17

Specification Language

19

George S. Walters, FASLA

22

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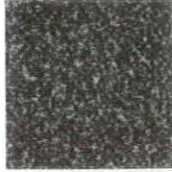
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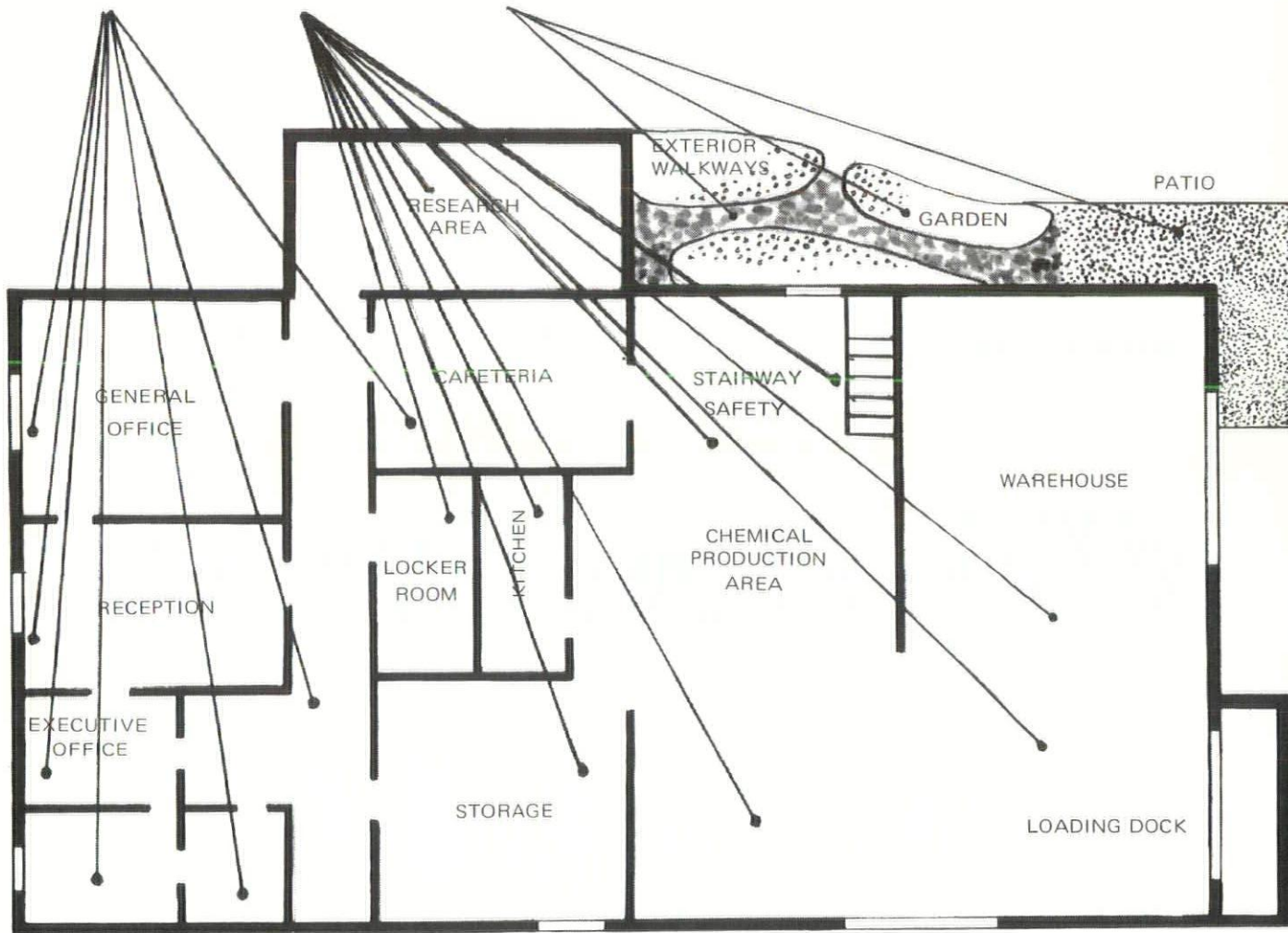
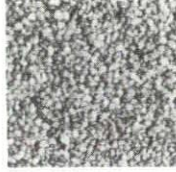
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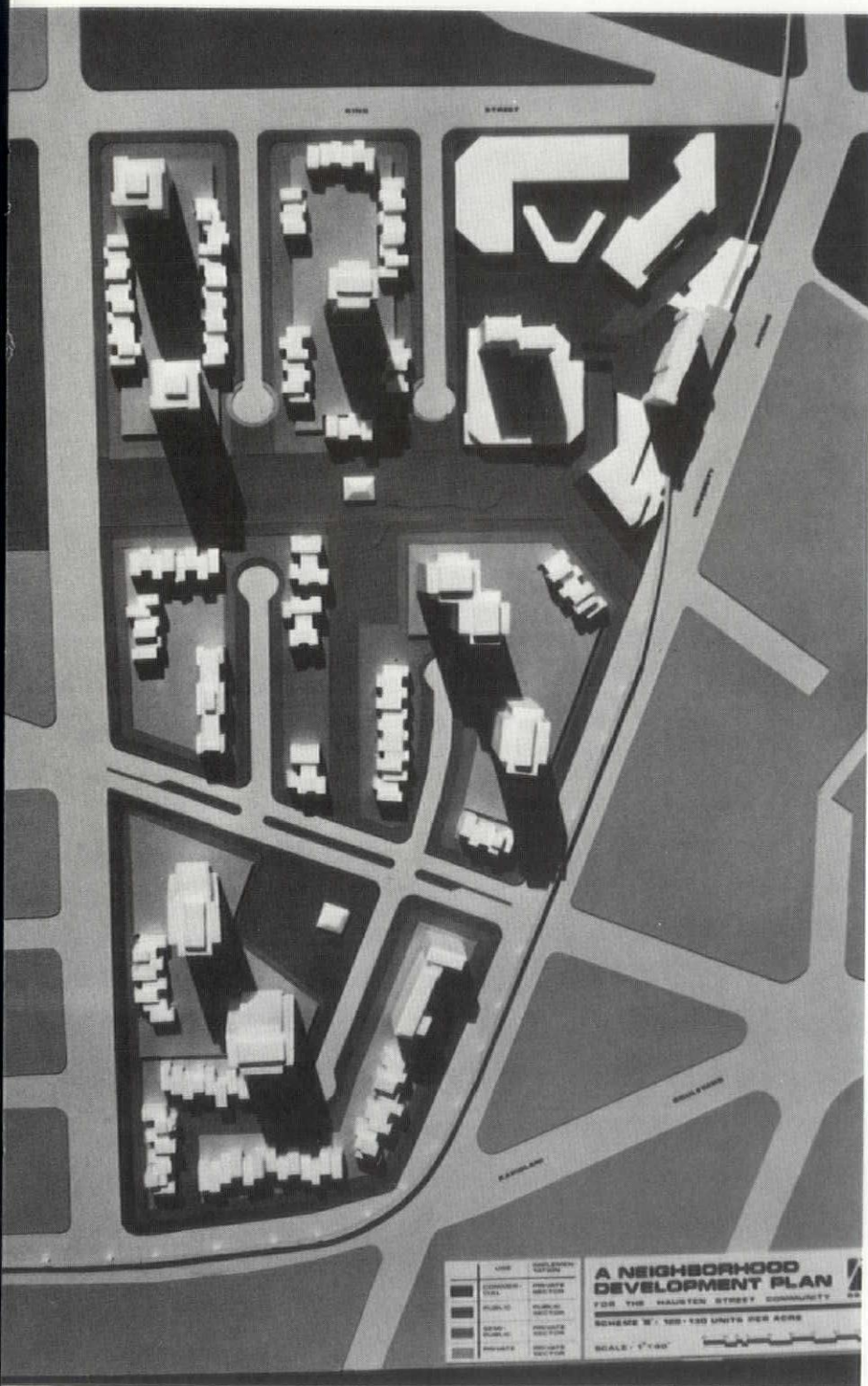


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Moiliili Community

University of Hawaii, Urban Design Team, Arch. 398



In fall 1975, the 3-M Community Council, acting on behalf of the Husten Street Property Owners' Association, requested the assistance of the University of Hawaii, Department of Architecture, to formulate a Neighborhood Development Plan for the Husten Street Community. The project area encompasses approximately 40 acres of land in the heart of Moiliili bounded by King Street, University Avenue, Kapiolani Boulevard, and Isenberg Street.

The area is General Planned and zoned for high density housing and commercial uses, permitting densities of approximately 120-150 dwelling units per acre.

The overall area is a stable and cohesive neighborhood consisting of single-family residences and low density two- and three-story walk-up apartments providing adequate open space for recreation, access to work, and services such as shopping and medical facilities.

Most of the properties are in small, single ownerships ranging in size from 5,000 square foot lots to 7,500 square feet.

Based on the anticipated impact of the City and County planning policies, the community identified a number of concerns. These include the fear that:

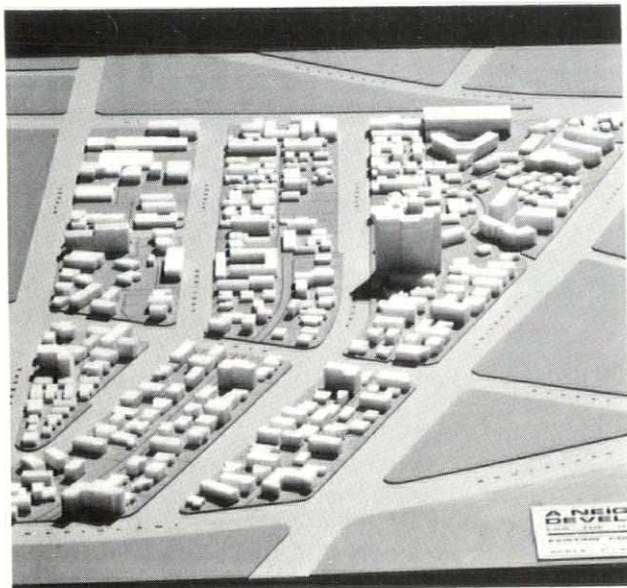
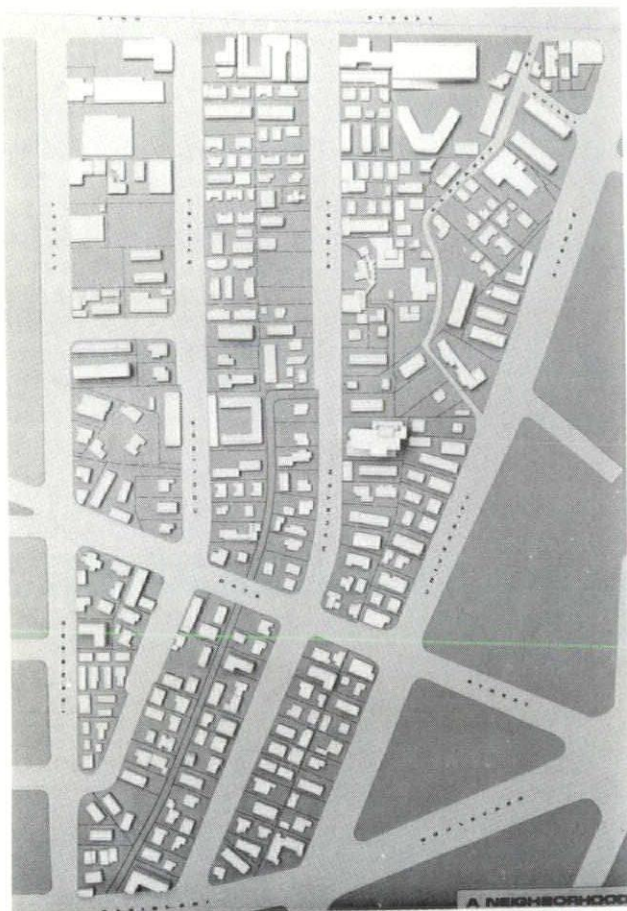
1—Increasing tax burdens and pressures to share in the improvement costs for widening Husten Street to accommodate high density uses will force residents to sell their properties to enterprising developers.

Design scheme showing 125 dwelling units per acre.

Continued on page 6

Moiliili Community

from 5



Existing community.

2—The area will ultimately develop in a haphazard disorderly manner with no urban support facilities.

3—Severe dislocations will be inflicted on the neighborhood's families and elderly by destroying the sense of neighborhood.

Fundamentally, residents feel that present General Plan and zoning designations in the Hausten Street area will result in the problems of over-urbanization which typify Makiki and Waikiki. In response to these concerns, the landowners formed the Hausten Street Property Owners' Association.

The fundamental assumption of the organization is that residents prefer to stay in the Hausten Street area and would be willing to explore the possibilities of organizing a program for jointly developing their community. The first step toward realizing their objective is to prepare a Neighborhood Development Plan.

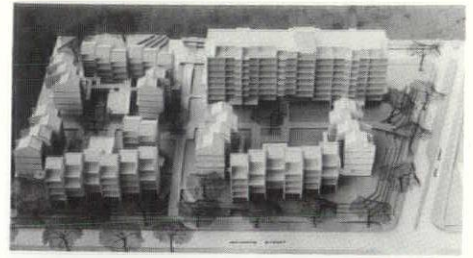
In response to the 3-M Community Council request the project to formulate a Neighborhood Development Plan was assigned to my urban design class (Arch 398). Realization of the inherent difficulties of implementing a project of this type was an initial and underlying assumption of the project.

The goal of the project was to demonstrate through the use of plans and scale models the role of urban design as an integral component of the planning process. The emphasis of the project was not on a definite end product but rather on the evolution of an urban design effort within the context of the comprehensive planning process.

As in any planning process, the Urban Design function for the Hausten Street Neighborhood Development Plan is responsive to the community's needs and decision-making mechanisms. A principal task, then, was to establish a design approach which addressed the client community's needs and explicitly translated the community's objectives into three dimensional terms.

This required an on-going process, whereby alternative plans were prepared and presented to the community. In response to their recommendations, the alternatives were subjected to successive stages of refinement while community objectives were being explored or refined.

The Hausten Street demonstration project included models depicting existing conditions, the three-dimensional



sional implications of current zoning (A-4 and B-2), and two alternative design concepts for the area.

The first alternative accepts the densities implicit in current zoning (approximately 120 units per acre), and attempts to demonstrate that high density areas can be organized to function effectively by accommodating such basic neighborhood requirements as creating community gathering spaces.

The second alternative assumes somewhat lower densities (70-80 units per acre), to show residential development in better relation to local family lifestyle amenity needs and conditions.

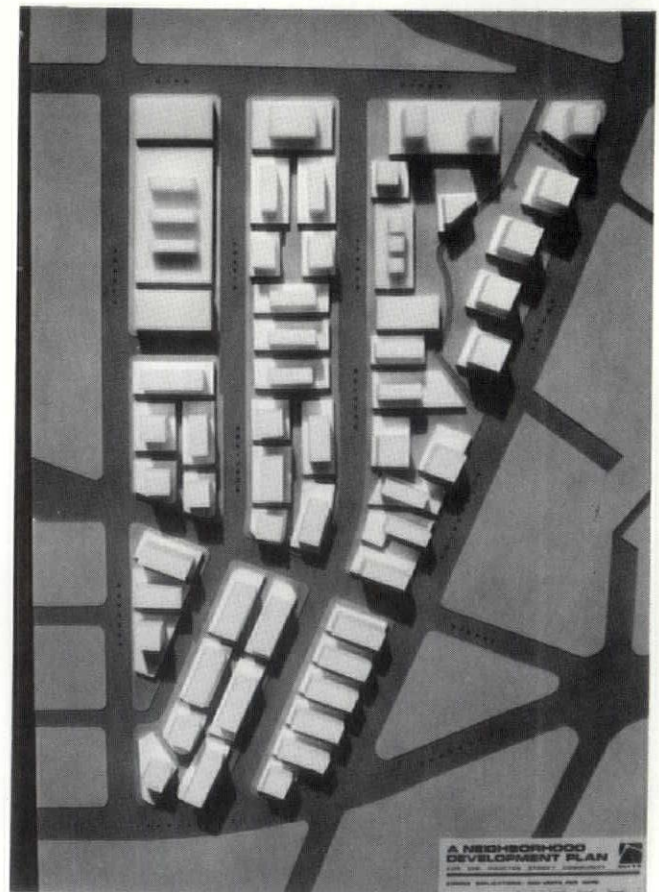
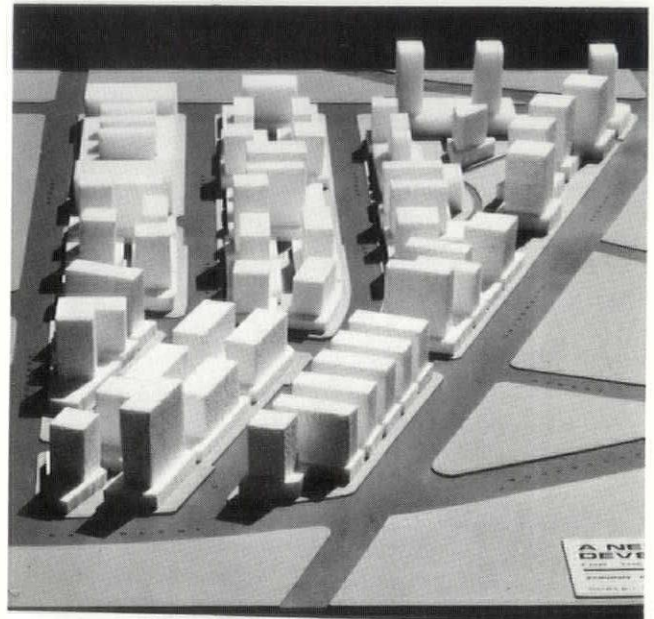
Both schemes take advantage of the proposed park on the "Old Honolulu Stadium Site" and the rapid transit corridor with a station located on University Avenue. Each scheme provides sufficient open space, pedestrian-vehicular separation and residential areas designed for family living.

All areas are interconnected with pedestrian walkways, open spaces, and passive and active recreation areas to give the overall area a "sense of place" and/or neighborhood.

It should be noted that the first scheme consisting of 120 units per acre is assumed to be economically feasible, whereas the second scheme of 70 to 80 units per acre may require government subsidies.

The success of a project of this type requires that a mandatory design-development framework be established within which there is ample opportunity for flexibility and discretion. The mandatory requirements for both schemes consist of a circulation, utility, and open space plan which will serve as the basis for shaping the inner city high density neighborhoods.

Since the City and County has traditionally been responsible for these "key" elements, the public sector plays an important role in structuring the form and pattern of the City. Existing street patterns and high density building relationships are determined by zoning and subdivision regulations; accordingly, to implement either scheme, the City will have to restructure the existing street pattern within the study area by realigning certain streets or providing street closures, extensions and medial strips where necessary.



Continued on page 9

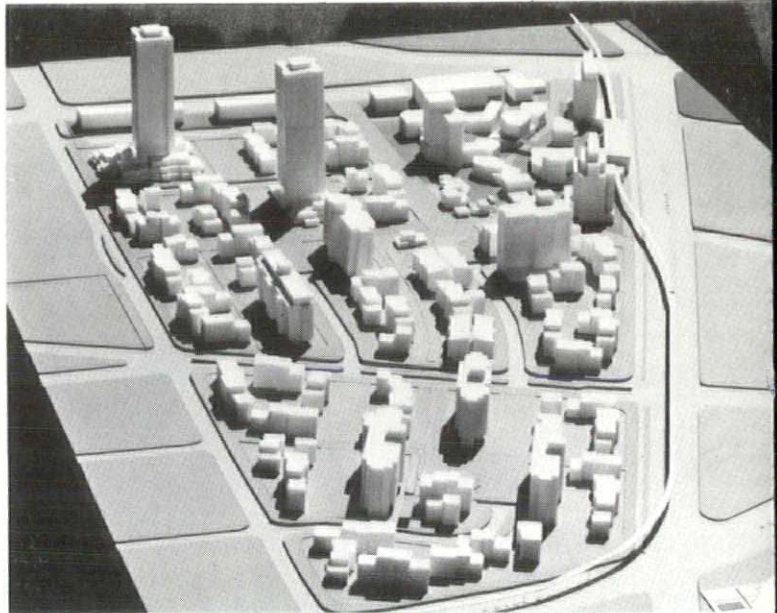
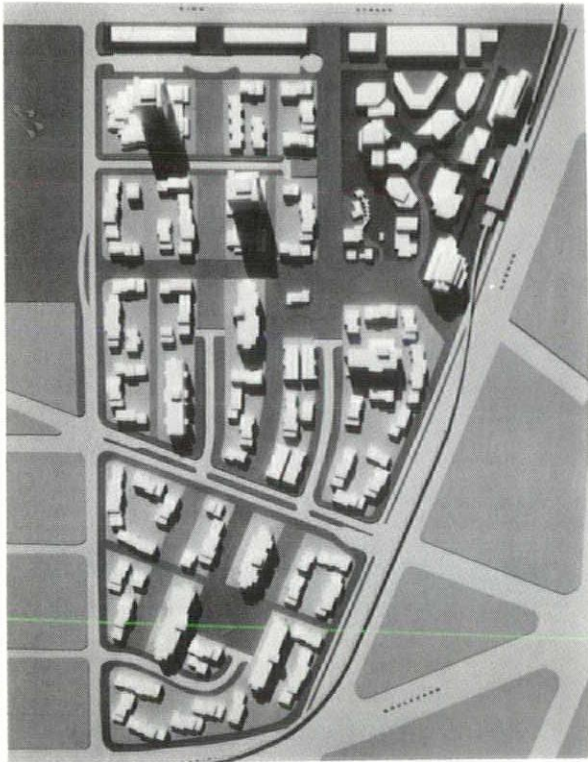
Moiliili Community

from 7

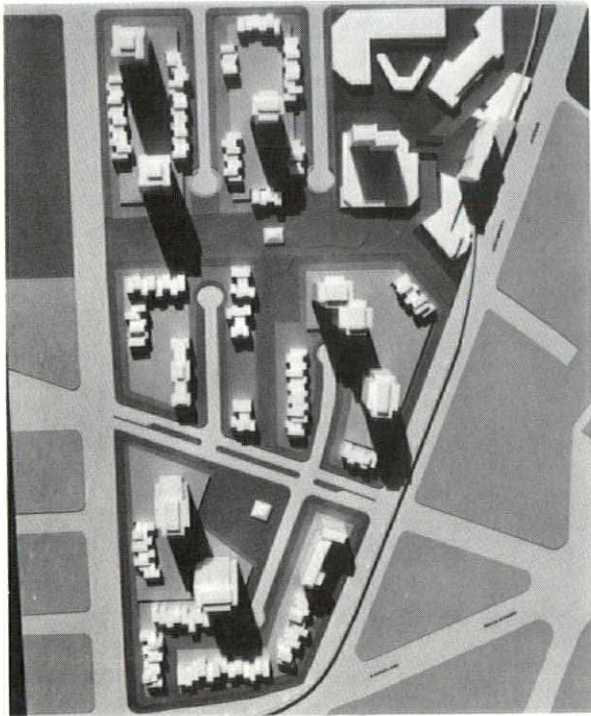
PARTICIPANTS:

Urban design team, University of Hawaii Dept. of Architecture; Rolf Preuss and students of Arch 398:

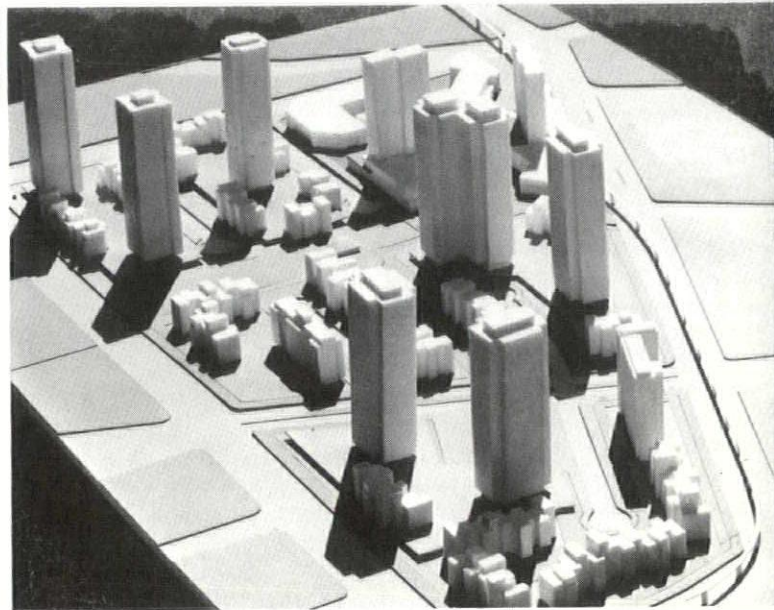
Mike Hoefer, Rodney Lee, Charles Nishimoto, Sudarshan Tiwari, Jesse Wang, Wayne Yamagata.



Top: Design scheme at 75 dwelling units per acre.



Bottom: Design scheme at 125 dwelling units per acre.



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In addition, the City will have to provide and/or mandate creation of an interconnected park and pedestrian open space system, either through a park dedication ordinance or a special zoning district. If the City does nothing other than consciously plan and implement these key circulation and open space features, a highly livable inner-City area will be created.

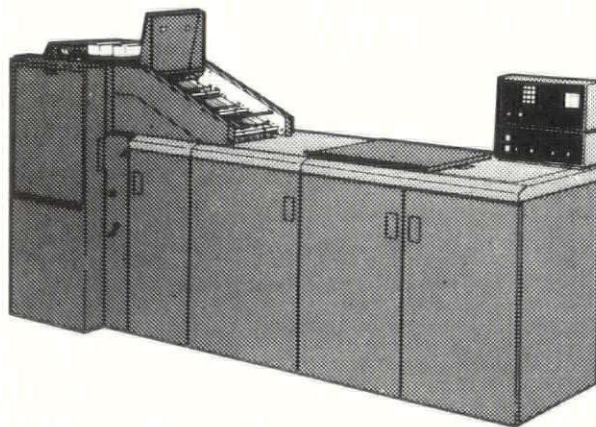
The remaining private property (building) areas should be controlled in a flexible manner through City/County design and performance guidelines to permit some neighborhood commercial uses intermixed with the residences, coupled with an incentive mechanism (bonus system) to encourage developers to follow the intent of either scheme.

Although implementation is always difficult in a project area with many small landowners and diverse interest groups, it is not impossible. The ingredient necessary to success is a willingness on the part of government and the private sector to cooperate and act in a positive and equitable manner. Public tools such as Special Design Districts, Transfer of Development Rights, Tax Increment Financing, Land Readjustment, zoning, and such, are available.

The role of the private sector might be to organize a joint development effort. This could be accomplished by, for example, consolidating small parcels of land and to form feasible development parcels (normally a minimum of 20,000 square feet of land area is required for a reasonable economic return on investment), or to work with the City or State to form an urban development type of corporation.

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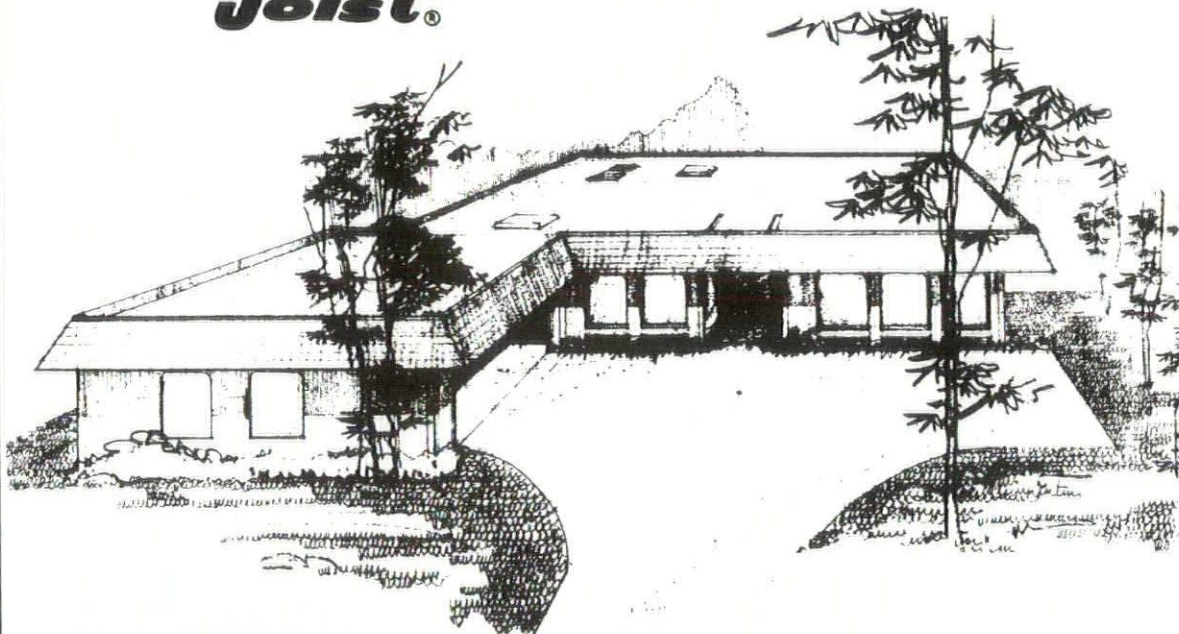
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GROVE FARM

Fox 7/16

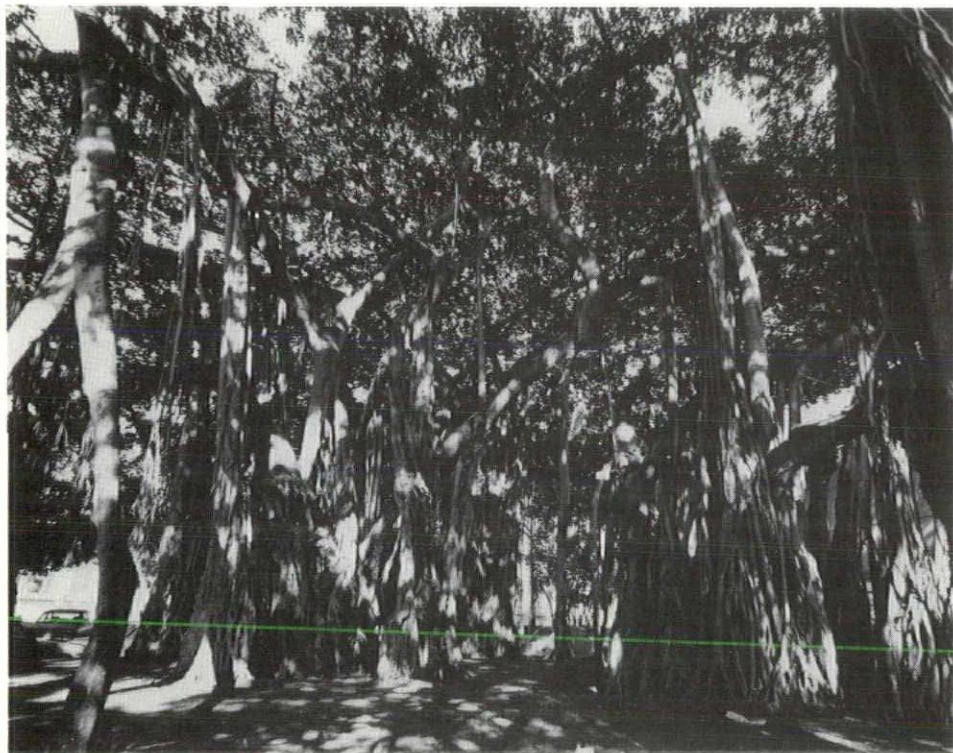


The architect rests uneasily on his professional bed. The great vacuum between what he says he does and what he actually accomplishes continually punctures his swollen ego and undermines his confidence.

H/A FEATURE ARTICLE:

HAWAII CAPITAL DISTRICT

by Michael Leineweber



BANYAN TREE

The majestic banyan tree is believed to have been planted between 1882 and 1887. Early plans of the grounds indicate that the banyan is actually two trees which have grown together.



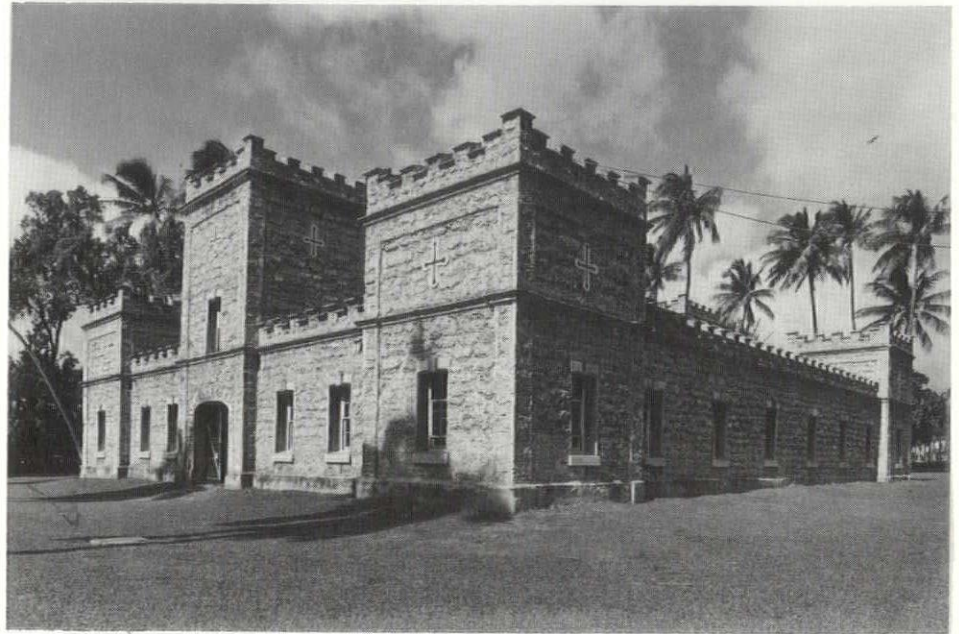
U.S. POST OFFICE (FEDERAL BUILDING)

The post office building represents architecture of the period when Hawaii was a territory, and is an interesting contrast to the Aliiolani Hale and Iolani Palace, which were both constructed during the monarchy. The post office was designed by New York architects York and Sawyer, who adapted the Spanish Colonial style and designed a structure with an open courtyard and spacious porticoes in harmony with the Hawaiian environment. The building was completed in 1922 and continues to be used by the U.S. Postal Service as well as by a variety of other federal agencies including the Courts, Customs offices, and the U.S. Attorney.

Michael Leineweber is an architect/urban designer with Urban 9, a planning and research oriented group associated with Group Architects Collaborative, Inc.

IOLANI BARRACKS

On the site of the former wooden bungalow where Kalauaka retreated from palace protocol, stands the rebuilt Iolani Barracks. The barracks was designed in 1866 by the German Architect Theodore Heuck and was constructed in 1870-71. The structure was originally constructed on Hotel Street opposite Likelike Street and was moved in 1965 when the new capitol was started. The barracks housed the Royal Household Guard until the end of the monarchy, and was later used by the Hawaii National Guard and the U.S. Army. Future use of the barracks is still at issue.



ROYAL BURIAL GROUND AND FENCE

The Royal Burial Ground was used for the alii and members of their families until 1865, when most of the remains were moved to the present Royal Mausoleum in Nuuanu Valley. A mound in the Waikiki-Makai corner of the grounds marks the location of the first royal mausoleum, which was a coral house erected in 1825 to house the coffins of King Kamehameha II and Queen Kamamalu. The fence surrounding the ground was erected in 1931.



Continued on page 18

AIA HONOR AWARD:

Wailea Tennis Center

Hogan, Chapman, Cobeen, Weitz, and Associates, Inc.

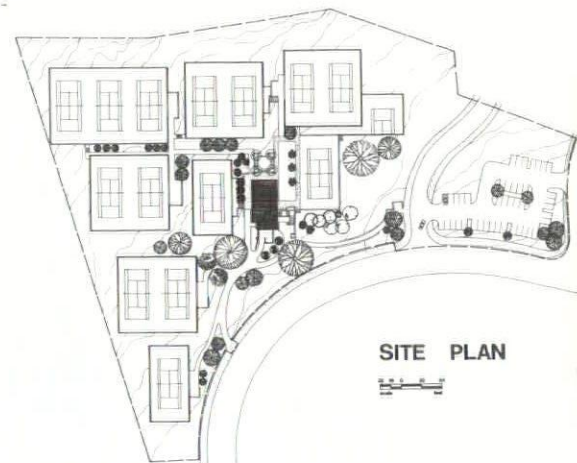
The recently completed Wailea Tennis Club on the Island of Maui has won for its architects a design award from the Hawaii Society, American Institute of Architects at its 1975 honors award banquet in November. The award was for architectural design excellence in the commercial buildings category.

Wailea, a resort community on the southern shore of Maui, ultimately will contain two hotels, a village shopping and recreation center, and single-family, apartment, and townhouse residences. The area is endowed, like much of Hawaii, with crystal clear ocean water, a tropical climate, and excellent wide sandy beaches.

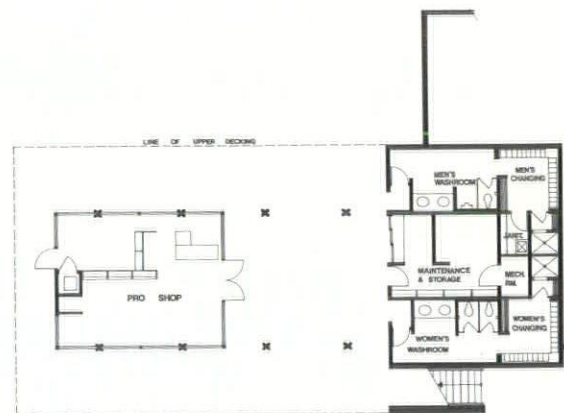
Wailea's developers, Grosvenor International, have constructed the other amenities—a golf course and the tennis club—before building any of the hotels or housing facilities. In doing so, they have transformed an arid, sparse, and rocky countryside, the site of ancient volcanic lava flows, into a well-planned green oasis overlooking the Pacific.

The tennis center is situated on one side of a dry canyon, overlooking and adjoining the 10th and 11th fairways of the Wailea Golf Course. The club house, a two-story wooden structure, overlooks the 11 playing courts which descend in pairs down the canyon, with each pair of courts five to six feet below the one above. Because of this terracing down of the courts, one does not experience the usual closed-in feeling of most tennis facilities, usually surrounded by their 10-foot-high fences for a view of endless fencing.

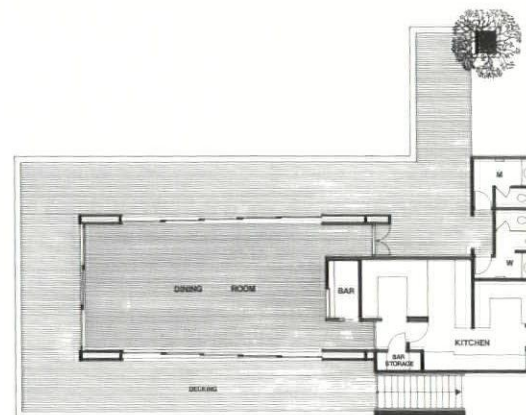
Provision has been made, and the site pregraded for three additional courts when future



SITE PLAN



LOWER FLOOR PLAN



UPPER FLOOR PLAN

Project: Wailea Tennis Center
 Location: Wailea, Maui
 Completion Date: June 1975
 Architects: Hogan, Chapman, Cobeen,
 Weitz and Associates, Inc.
 Principal-In-Charge: George Hogan
 Architect-In-Charge: Richard McEvoy
 Owner: Wailea Development Co.
 General Contractor: F&M Contractors, Inc.
 Site Contractor: Fong Construction

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community demands warrant. The existing court nearest the clubhouse, because of its position and the terraced seating configurations adjoining it, is the "stadium" court for competition matches and exhibitions.

Excellent views of this court may be enjoyed from the broad upper-level lanai of the clubhouse, and bleacher seating for major matches may be set up on the adjoining grassy plot. Nearby, also, is a five-alley practice court, with ball serving machines.

The Wailea Tennis Club "pro" in residence is the celebrated

Australian player Owen Davidson.

The ground level of the clubhouse building consists of two separate blocks, one side containing the glass-enclosed pro shop and Owen Davidson's office. The opposite, masonry-enclosed block cut into the hillside, and separated from the pro shop by a broad aggregate paved breezeway, contains locker rooms, washrooms, and the maintenance, supply issue, and storage rooms. Equal facilities are provided for both men and women for lockers, bathing, and dressing.

The upper level provides a commodious lounge area, dining room with bar, commercial kitchen facilities, and men's and women's restrooms. Ten-foot-wide lanais, shaded from the tropical Hawaiian sun by the full width cantilevered roof, surround three sides of the dining room and lounge, and offer excellent vantage points for tennis viewing. A paved ramp cut into the hillside leads to the parking level on the hill above, and offers an excellent overview of the courts and the spectacular

Continued on page 16

AIA HONOR AWARD:

Tennis Center

from 15

Construction Cost: Sitework, parking areas, tennis courts and fencing, and clubhouse: \$1,100,000.

vistas beyond. Broad exterior masonry provides access from the end of the ramp to the lower level pro shop and locker rooms. There is also an interior open-tread wood stairway connecting the two levels, in the event of one of Maui's infrequent showers.

CONSTRUCTION OUTLINE:

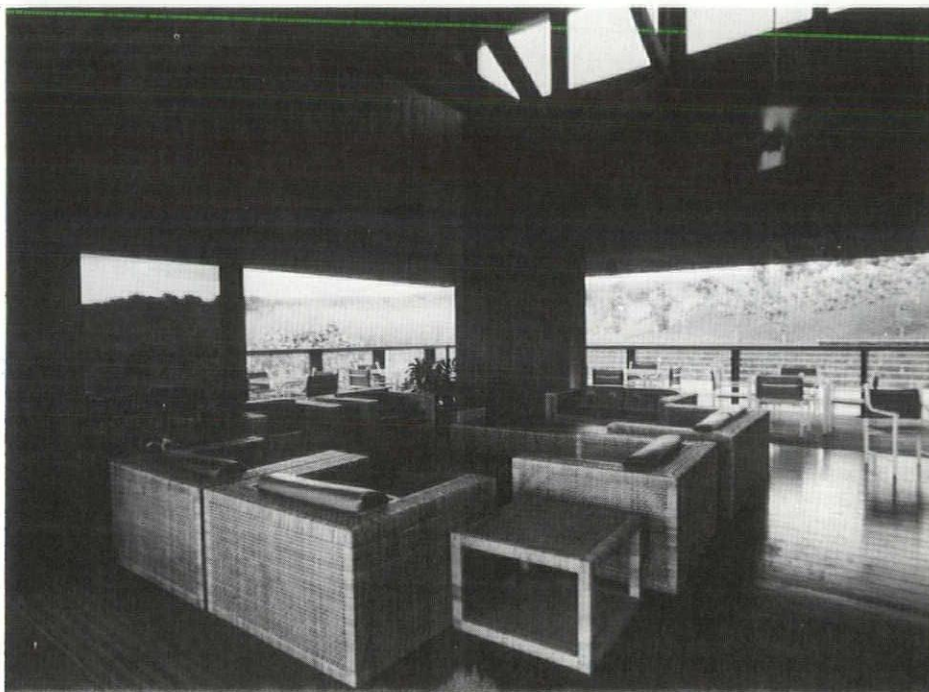
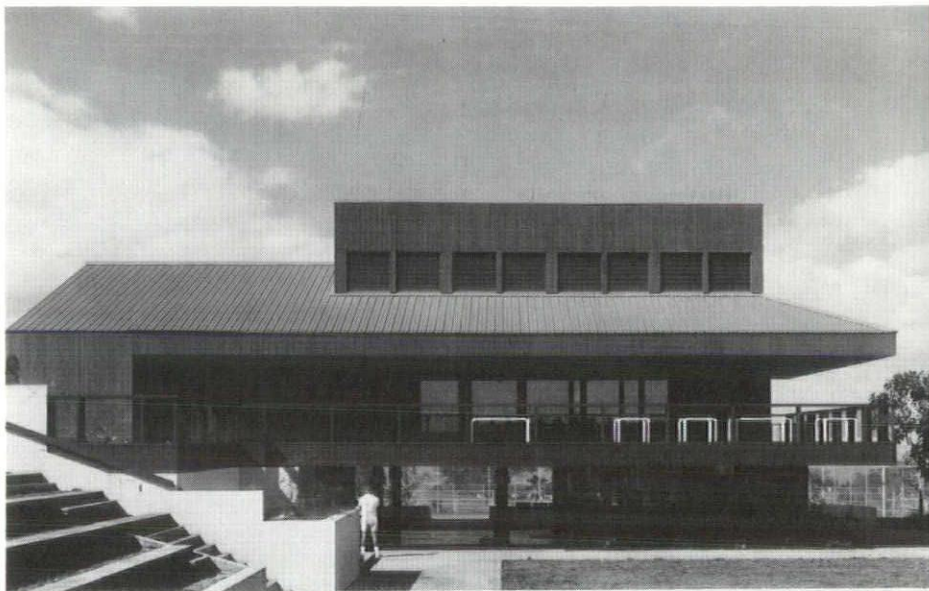
Ground Floor: Poured concrete foundations and floor slabs, and exterior paving. Concrete block retaining walls and planters. Rough-sawn Douglas Fir mullions and frames at the pro shop, glazed with bronze tempered glass.

At the locker rooms and storage block: concrete block exterior walls and gypsum drywall interior partitions and ceilings. Exterior paving and breezeway: tinted, exposed aggregate paving, sandblasted. Interior floors: carpeting in pro shop, vinyl-asbestos tile in maintenance and storage areas, ceramic tile walls and floors in washrooms and locker rooms.

Upper Floor: Glue-laminated beams and heavy timber framing, including exposed trusses in dining room and lounge. Three-by-four construction-grade Douglas Fir floor decking, T&G at interior areas, spaced one-eighth-inch apart at exterior lanais. Lanai railings: two-by-ten rough-sawn Douglas Fir, with tempered clear glass panels.

Exterior and interior exposed wood siding: one-by-six T&G Western Red Cedar; exposed interior ceiling sheathing: Pope & Talbot "Ruff-Cut 44" ply siding, three-eighths-inch thick, with random pattern 3½-inch Western Red Cedar facing.

All timber bolts and fastenings exposed. Sliding wood and glass wall panels, glazed with bronze tempered glass, slide into wood-



faced wall pockets at long side walls. Kitchen, bar and restroom interior partitions and ceilings: gypsum drywall, epoxy painted. Quarry tile floor and base in kitchen and bar; ceramic tile walls and floors in restrooms.

Roof: Standing-rib sheet metal,

field painted with DuPont flat alkyd enamel metal-protective finish. The breeze-catching ventilation dormer is faced with continuous-blade extruded aluminum louvers, bronze anodized finish, set in rough-sawn wood mullions.

Chapter Notes

Congratulations on your fine May issue; all the articles had general interest and quality comment. I am most pleased that the "graffiti" and juvenile smart alec attempt at attention getting has phased out of this professional journal.

The Beaux Arts article gratified me since my generation of architects has been able to span from the Beaux Arts schooling days of "elegant fun" to today's practice of more practical responsibility and community harmony.

The Beaux Art School was highly competitive and it pressured the student to search for many varied solutions in a limited time—planning with imagination was the basic ingredient and ornamentation was very secondary in importance—it still is.

George W. McLaughlin
President, A&E Corp.

An architect is said to be a man who knows a very little about a great deal and keeps knowing less and less about more and more until he knows practically nothing about everything, whereas on the other hand, an engineer is a man who knows a great deal about very little and who goes along knowing more and more about less and less until finally he knows practically everything about nothing. A contractor starts out knowing practically everything about everything, but ends up by knowing nothing about anything, due to his association with architects and engineers.

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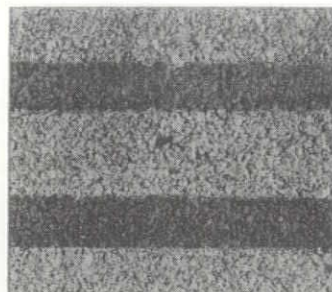
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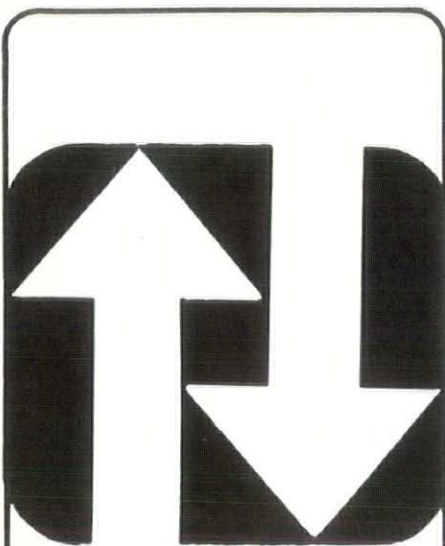
CONCRETE BLOCK

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H/A FEATURE ARTICLE:

Hawaii Capital District

from 13



CAPTAIN COOK MEMORIAL TABLET

This memorial in front of the former Archives Building was dedicated during the Captain Cook Sesquicentennial Celebration in 1928. It was designed by Boston artist Theodore Pitman, who was a descendant of a high chief-ess of Hilo and a Boston merchant.

The long lava stone in front of the Cook Tablet is believed to be the sacred threshold rock of Liloa, ancient King of Hawaii. King Kalakaua brought the stone to Honolulu, and it was placed here by the widow of Prince Kuhio. The tablet is the only memorial to Captain Cook on Oahu.

Specification Language King James Version

by: Del Doty, CSI Colorado Springs

Someone has said: "How do you write a specification?"

"Complex," was the answer.

A spec has to be complete but not complex. Where we get into trouble is the manner in which we describe the conditions of the contract, who the project is for, who is constructing it, what materials to use and who shall be responsible for what and to whom.

In specs we too have problems with communications. We find it hard to put in writing just exactly what we would say in person.

There was a tailor who decided to order a "gizmo" that's used to press sleeves. It is called a "tailor's goose." He sat down to write his letter and suddenly realized that he needed two of them. So his letter was as follows:

"Dear Sir: Please send me two tailor's geese."

That just didn't sound right, so he tore it up and began all over again.

"Dear Sir: Please send me two tailor's geese."

That didn't sound right either, so he tore it up and wrote:

"Dear Sir: Please send me one tailor's goose. P.S. Please send me another one too."

That boy was a master of language and some of us are very much like him when it comes to specs. It is hard to put down exactly what you are trying to describe. In the book, "The Art of Readable Writing," Dr. Rudolph Flesch states:

"When we yield to the temptations of pompousness, we get downright monstrous and write sentences no man has ever said aloud."

Jack Lewis says that specs must be CLEAR, CORRECT AND CONCISE.

Because specs are legal docu-

ments, some spec writers immediately take on the role of a Philadelphia lawyer. Or better still they are better described as from the school of Professor Irwin J. Corey. With your indulgence, Prof. Corey would write a spec as follows:

The work, if you might call it that and who am I to doubt the veracity of the said inference, under this section, which follows the preceding section and is ahead of the following section and could possibly include the furnishing of all labor, which does not by the utmost imply any form of hanky panky or the consummation of an accidental pregnancy using materials, if available at the time of the aforementioned contract and also of the type or whatever may be available as you pass the nearest outlet for that which you went after in the first place, using all the equipment necessary, which is left up to your ungarbled discretion, taking into account the energy shortage, the ecological infiltration of any foreign particles or even if they might be dear friends who could supply the same to complete that which was commenced in the first place of which I am trying to write about but don't recall just exactly what it was but anyway do as I say whatever that is and don't do as I do or as may reasonably be implied hereafter by the drawing, still lifes, sculptures, oil painting or etchings that you may refer diligently to and as outlined heretofore and from henceforth, forever and ever . . . Amen.

I have seen these Philadelphia specs with their legal airs but I really do not know what was said when I finished. The use of such words as: aforementioned, heretofore, whomsoever, henceforth

or previously indicated.

The language is flowery but it most likely means that the spec writer really didn't know just what to say.

With all of their wordy color they remind me of what I call the King James version of specs. Don't get me wrong, I think the King James version of the Bible is one of the most beautiful of all of our writings—but there are places where I get lost with words. I don't know what they mean. I have to go to other translations for a clear explanation.

For example, Proverbs 21:9, The King James version says: **"It is better to dwell in a corner of the house top, than with a brawling woman in a wide house."**

The Living Bible translates it as: **"It is better to live in a corner of the attic than with a crabby woman in a lovely house."**

Proverbs 27:15-16, The King James version says: **"A continual dropping in a very rainy day and a contentious woman are alike. Whosoever hideth her hideth the wind and the ointment of his right hand which betrayeth itself."**

The Living Bible states it as: **"A constant dripping on a rainy day and a cranky woman are much alike! You can no more stop her complaints than you can stop the wind or hold onto anything with oil slick hands."**

The simpler the language the easier it is to understand. If you get nothing more from these few words than that, you will have learned a lot. One of the most controversial words in specs is the word "SHALL." It is a command which tells the contractor

Continued on page 20

Specification Language

from 19

and that takes work so don't be afraid to tell him what to do.

Rather than to use the word "shall" some spec writers use the words "will" or "to be." These are vague terms allowing the reader a freedom to do or not to do if it is convenient to him. A lot of our specs are written in the passive voice or the indicative mood using the word "shall." This leads to the production of longer sentences.

The imperative mood uses fewer words but it may be confusing if the "who does it" is not mentioned. In the indicative mood we say: "The contractor shall set screw with a screwdriver." This sentence tells 'who' and 'with what,' but it requires 9 words. Using the imperative mood we shorten it to read: "Set all screws with a screwdriver." This saves 3 words; not many perhaps, but the requirement hasn't changed, and a saving of 3 words in each of several hundred sentences, without a loss of meaning, will cut the typing time, reduce the thickness of the spec and cost less to produce.

Many have used the indicative mood for specifying cement: "Portland cement shall conform to ASTM-C-150, type 1." In imperative mood it can be shortened to read: "Portland cement: ASTM-C-150, type 1." The first thing then is to look at your specs and see if the imperative wording can be used for less verbiage.

In construction documents there are legally only two parties to a construction contract, the owner and the contractor. We know the job can't get done without the subs and the suppliers, but the prime contractor is the only one officially recognized, and he is responsible for all work of every kind in conformance

with the requirements of the specs.

Therefore it is never proper to refer to workmen such as: "The carpenter shall set all cabinets level," or "The plastering contractor shall provide cornerbeads at all corners." Neither of these subs has a contractual relation with the owner. It is the opinion of the spec writer that they will do the work. The prime contractor may have other thoughts.

This type of spec creates some ground for disputes between trades and circumvents the direct authority and responsibility of the prime contractor and may make the A/E responsible for the faulty work done in accordance with the words in the specs. If you would substitute the word contractor in the sentence, it does not violate the contract but it becomes lengthy and unnecessary, for example: "The contractor shall install all accessories."

You see the entire spec is directed toward the contractor so the words, "The contractor shall..." is repetitious and superfluous and should be avoided. So our spec should correctly read: "Install all accessories." This saves 4 words too.

When a construction contract is segregated into various parts, such as General Construction, Elevators, Mechanical Work and Electrical Work, as is often found in some publicly financed projects, there must be a clear-cut indication of who does what. In this case there would be 4 prime contractors.

In cases of this type it is correct to say: "Final line voltage connection to motors, supplied and installed by the elevator contractor, shall be made a part of the work of the electrical con-

tractor.

Let me call your attention to some escape clauses which are used and may be classed as non-definable, a bane to the contractor using the specs. They are often inserted to provide an out for the A/E when a definite statement is not easy to make or perhaps he hasn't pinned down the solution at the time the spec is printed:

"As selected by the architect," or "In the opinion of the architect," or "As the architect may direct," or "to the satisfaction of the architect."

There are other similar phrases which say practically nothing. If the spec writer can't say what he means he should not expect the contractor to second-guess him correctly.

Let me call attention to some words that crop up in our specs. The words ANY and ALL have two different meanings. Do your specs say "Repair any cracks," or do they say: "Repair all cracks." You see there is a difference. The word ANY implies a limited number selected at the discretion of the reader.

The word "EITHER" is also a take-your-choice word, for example: "Provide glass sidelights on either side of the door." The question immediately arises, "The right side or the left side?" A better wording would be, "Provide sidelights on both sides of the door." The word "ETC." means that "I'm not quite sure but I'll think of something more if it comes up." Think of the additional information before the specs are printed and say it.

How many have said, "The contractor shall inspect the work and repair any damage to same." It can be more positively stated, "Repair all damaged

work," and look at the words we saved. When you put the word "INTENT" in your specs the contractor is not much interested in what was intended if some definite information isn't given. If the INTENT is not spelled out there may be a great difference in interpretation.

Do you use this in your specs? "Remove and replace all windows." Do you really mean that? What you have said is to remove the windows and then you say to put the same windows back.

The correct way of stating it would be: "Remove all existing windows and replace with new ones." Here we use more words but we get what we want done.

Do you give the thickness of

sheet metal by its G*A*U*G*E or by G*A*G*E? Either word is correct but remember one thing, use the same spelling all the way through your spec.

Do you use the words INFLAMMABLE and FLAMMABLE? Some think that they are directly opposite, but they aren't because they mean the same thing. To be correct use FLAMMABLE and NON-FLAMMABLE.

The words BALANCE and REMAINDER are not synonymous. A balance is a device for weighing a mass or for measuring and comparing values. The word REMAINDER means "That which is left."

In summary I would like to say

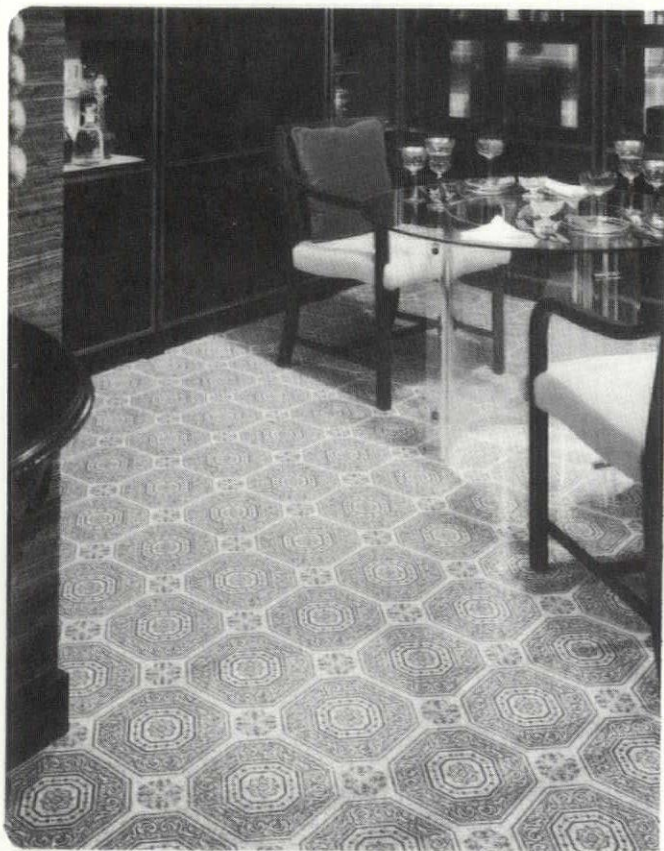
that your specs should:

BE CLEAR. Where ambiguities exist, the contractor may misunderstand; courts will interpret ambiguities in favor of the contractor's interpretation.

BE LOGICAL. Organize your thoughts. Then give directions.

BE NATURAL. Say it in your own words and in the words of the construction industry omitting, of course, all of the four letter ones. The purpose of the specification is to define the materials to be used and to direct the installation of these materials. Keep the language simple and understandable.

BE BRIEF. Say what you have to say, then stop. That's exactly what I intend to do.



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Aloha State Sales	21
Amelco Elevator	22
Colorprints	17
Gasco	2
Honolulu Blueprint & Supply	18
Multi Products	4
Pacific Bureau of Lathing & Plastering	18
Postal Instant Press	9
R. D. Massengale	17
Trus Joist	10

George S. Walters Landscape Architect Dies



Landscape architect George S. Walters, who was to be invested in San Diego, Calif., as a fellow of the American Society of Landscape Architects—his profession's highest honor—died in Honolulu this month. He was 49.

He was the president of Walters, Kimura & Associates and the winner of numerous awards for local and international projects. His works include the landscape design of the Hawaii State Office Building, Blaisdell Center, Hilo State Office Building, the East-West Center, Queen Emma Gardens, Yacht Harbor Towers, and the Hawaiian Regent Hotel.

Born in Honolulu and a graduate of Roosevelt High School, Mr. Walters attended the University of California, Berkeley, where he received undergraduate and graduate degrees in architecture and landscape architecture.

He then established one of the first landscape architecture practices in the Islands.

An early advocate for the environmental movement, his 24-year career was devoted to exploring the potentials of designing with nature.

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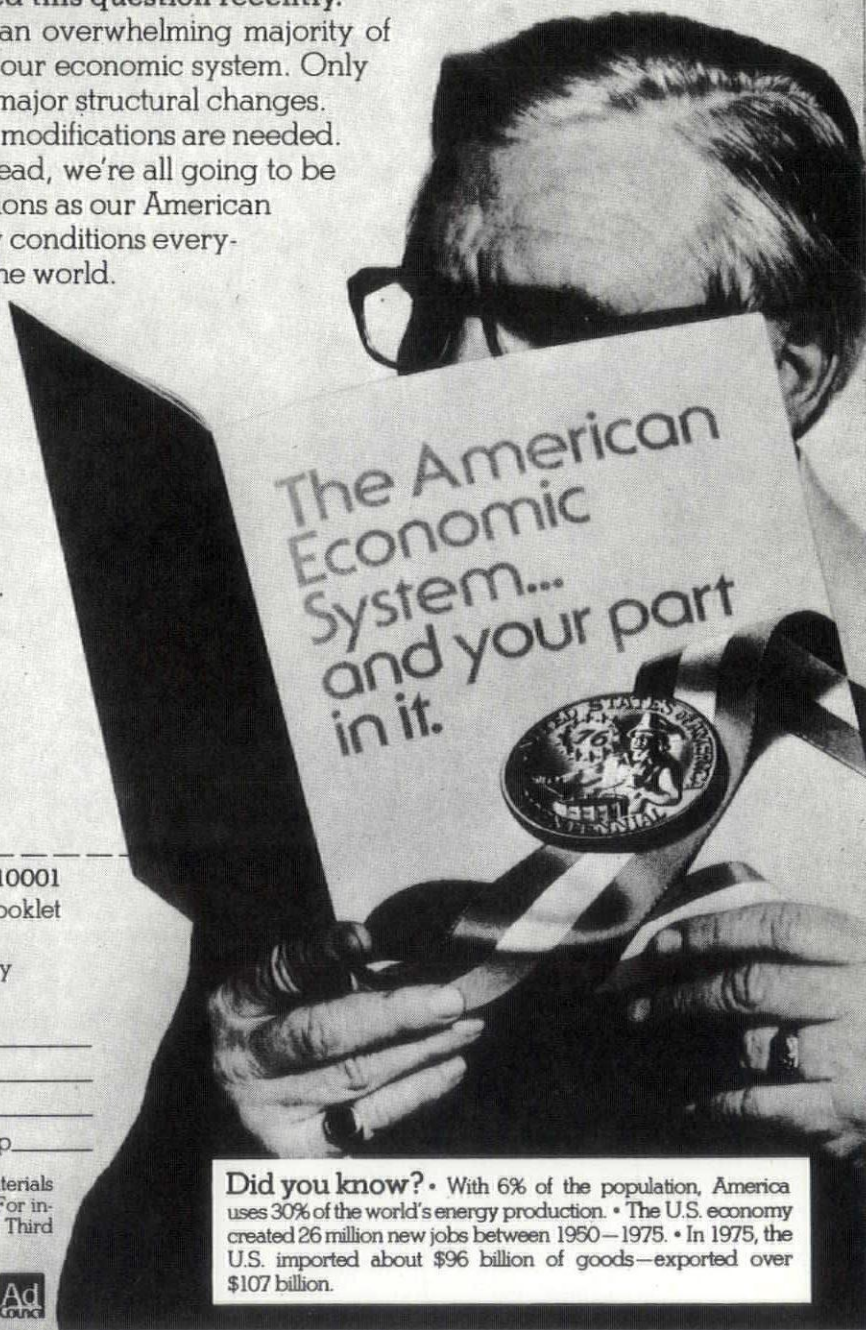
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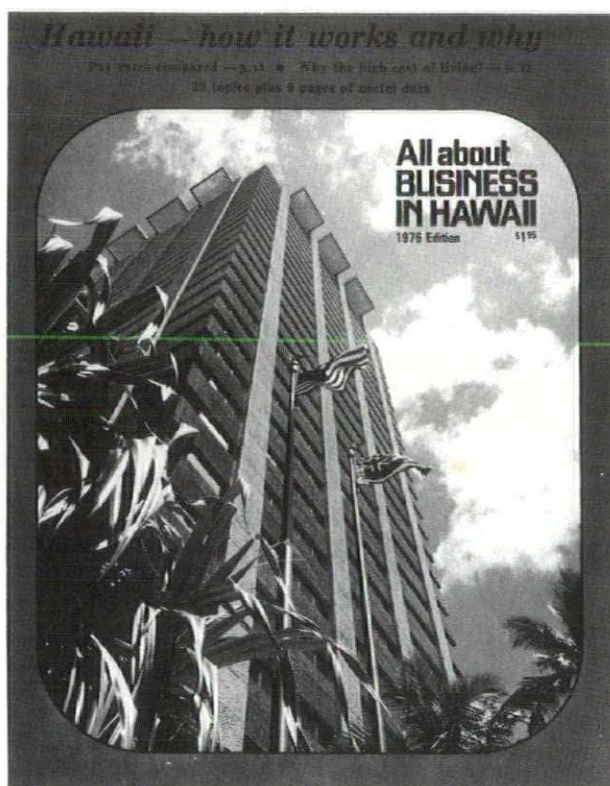


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