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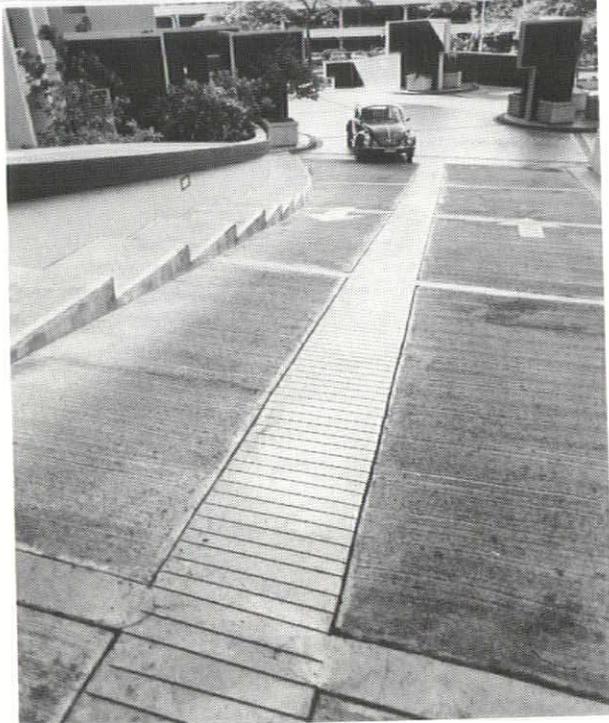
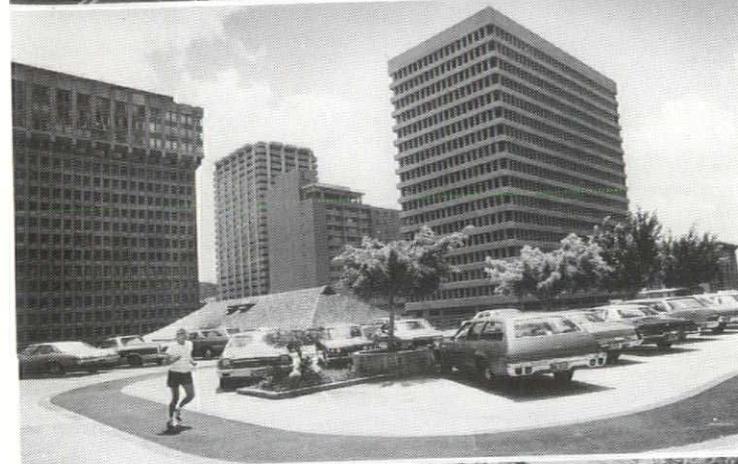
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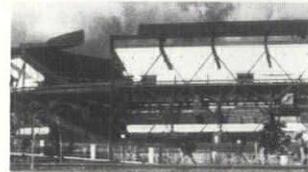
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Private Restoration on Maui

by TOM HORTON, The Honolulu Advertiser



On a windswept Mokolau peninsula at Kaupo, Maui, stands Hualoha Congregational Church. Built in 1859 to serve a portion of the thousands of Hawaiians who once lived in Kaupo, the church has suffered the dual ravages of time and a diminishing population, and is now the subject of a major restoration project.

Spearheaded by Kaupo Ranch Manager "Soot" Bredhoff and Carl Lindquist of Trade Publishing Co., the restoration will include a new roof structure, belfry and windows, and will

reopen a side door which was sealed over many years ago.

An interesting sidelight to the project is the unconfirmed rumor that a glass bottle containing historical documents relating to Hualoha's past was sealed into the wall when the door was closed. It is hoped that these records when recovered will offer further restoration guidelines.

In addition to Bredhoff and Lindquist, others assisting in the project are Ted Jacobsen AIA, and engineers Al Soon and Brian Hughes.

KAUPO, Maui—The road to Kaupo from Hana is a narrow, jarring, treacherous, hard-rock, cliff-hanging cousin to a mountain goat trail that is nevertheless officially proclaimed a highway, named Piilani Highway after one of Maui's great kings. This approach to an old church in need of attention is ideal since the visitor catching his first sight of the steeple by the sea is likely to pay attention and thank God for letting him survive the last 10 miles.

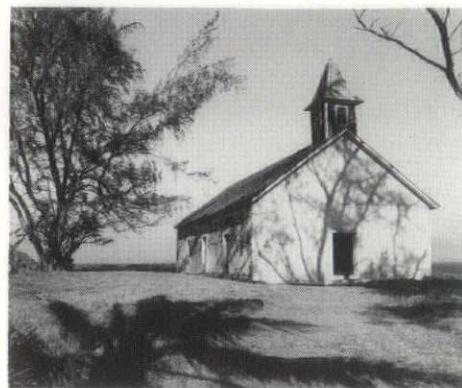
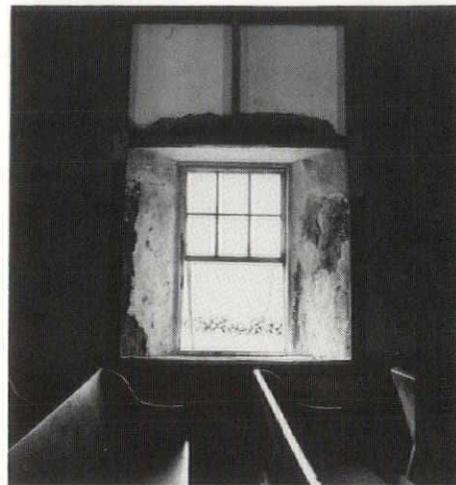
Thanks to Carl Lindquist and Carl Bredhoff, Hualoha Congregational Church of Kaupo, one of the most remote churches in Hawaii, is becoming well-known to a lot of people in Honolulu who have only passing awareness of the many beautiful churches within convenient view on Oahu. But distant Hualoha Congregational Church is known to many who have never seen it, and aren't that likely to ever see it, because it is the object of one of those passionate rescue and restoration projects. Give to a determined man with a sense of history an authentic survivor of historic days that is in danger of perishing and he'll cover great distances to see that the piece of history is saved.

Lindquist and Bredhoff have no problem finding enthusiastic supporters of their rescue mission among the people who have seen Hualoha Church. But not many people get to Kaupo and the Hualoha Church is never seen on postcards or the cover of Sunset Magazine's guide to Hawaii. So Lindquist, as the Honolulu half of the restoration leadership, is re-

stricted to showing pictures of the church and trying to describe the spiritual strength that can be felt in and around Hualoha Church. This isn't easy.

The view from the church is every bit as inspiring as the view of the church. The view of the church from the road above it is brilliant because it sits alone out on a lava point, flanked by coconut and ironwood trees, with a strong surf washing over lava rock outcroppings and banging against the point that provides a durable foundation for the simply constructed church. The church has sat there like that, the wooden steeple projecting toward a sky usually clear, for 116 years. At the time it was built it was part of one of the earliest and one of the largest Hawaiian villages in the Islands. The church has outlived the village and only a handful of people still reside in the rugged beauty of Kaupo.

Walking the church grounds and sitting inside Hualoha Church are necessary to fully appreciate the good feelings it gives. The church is made of stones that the Hawaiians carried up from the beach. They burned coral to make the lime for the mortar that still holds the stones together. The 1859 structure is sound enough to be unbothered by the small earthquakes that sometimes shake Kaupo. The coconut trees are on the makai side of the church and the ironwood trees on the mauka side. There's a low rock wall that more or less defines the church grounds.



Continued on Page 6

Restoration on Maui from 5

Soon, who is director of planning and development with Hawaiian Dredging & Construction, was born in Kaupo, and is the son of Nick Soon, recently retired proprietor of Kaupo Store.

Money for the project has been raised through several musical benefits held on all Islands, augmented by a recently awarded Bicentennial grant. Much of the work will be accomplished with volunteer labor, and it is anticipated that most of the materials needed will be provided on a cost basis by local suppliers.



From this peaceful site you get two spectacular views. Looking approximately 27 miles across the water you can see the Big Island and, wrapped in clouds, the magnificent sight of Mauna Kea, Mauna Loa and Hualalai. In the opposite direction you look up at green hills covered with mango and waiwi trees, rising to misty Manawainui Gulch and Kaupo Gap that lead to the deep crater of Haleakala. The church has three windows on each side (although one of the windows on the mauka side was originally the main door and will be so restored) and entering the church for the first time you can easily imagine the dilemma of parishioners on a clear day: A seat on the makai side with a view of Mauna Kea and Mauna Loa (in winter, snowcapped even), or a seat on the mauka side to look out at the clouds playing tag in Kaupo Gap? At Hualaloha one might be able to avoid becoming a

back-sliding Christian just by alternating his choice of seating every Sunday.

It's impossible to avoid the presence of history at Hualaloha. Behind the church, surprisingly close to the water's edge, are the stone ruins of an early Hawaiian school. There, too, is a tiny graveyard with some of the tombstones displaying remarkably clear pictures of people who were buried there 40 or 50 years ago. Apart from the graveyard of recent times there are older examples of tombs that were built above the ground because there was no penetrating the lava for a grave.

All of this remains: The 116-year-old church, the wooden steeple, the rock wall, the coconut and ironwood trees, the inspiring view of sea and the mountains of two Islands. "It's such an inspirational setting, a preacher is almost superfluous," says Bredhoff. In fact, Bredhoff, who manages the

Kaupo Ranch, serves as a lay minister at Hualaloha, where services are held once a month. Bredhoff and other Kaupo cowboys keep the grass around the church cut and clean up the debris left by hikers and campers. But too many people think the church abandoned and fail to pay it the respect it deserves.

So Bredhoff and Lindquist (Carl became interested in the church as a frequent Hana visitor) have been busy raising restoration money with concerts and such and are now planning volunteer work parties to begin the restoration. A new roof is the first goal. Eventually they hope to have the church restored to its original condition so it can be used more regularly and, they hope, given more respect by visitors. And regardless of any visitor's personal point of view, he would have to go a great distance to find a church matching Hualaloha Church.



TONG SOCIETY HOUSE - 1900

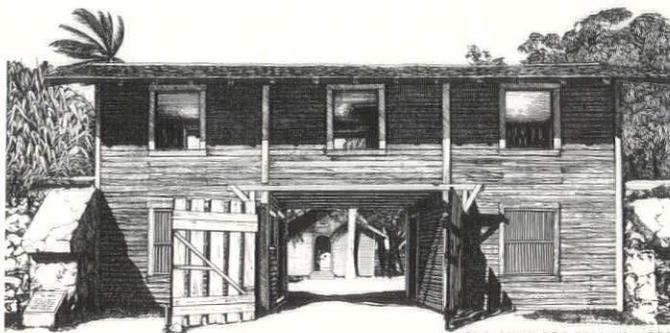
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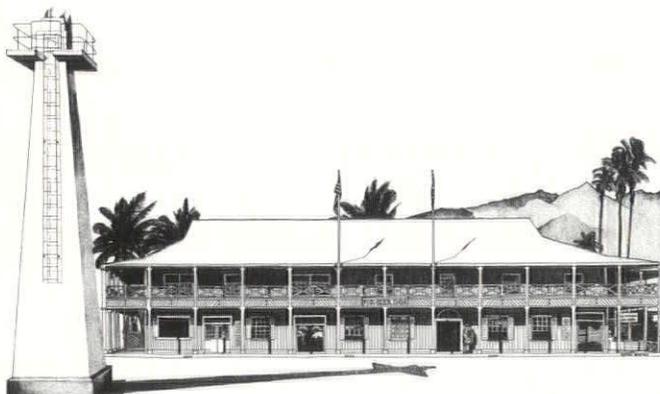
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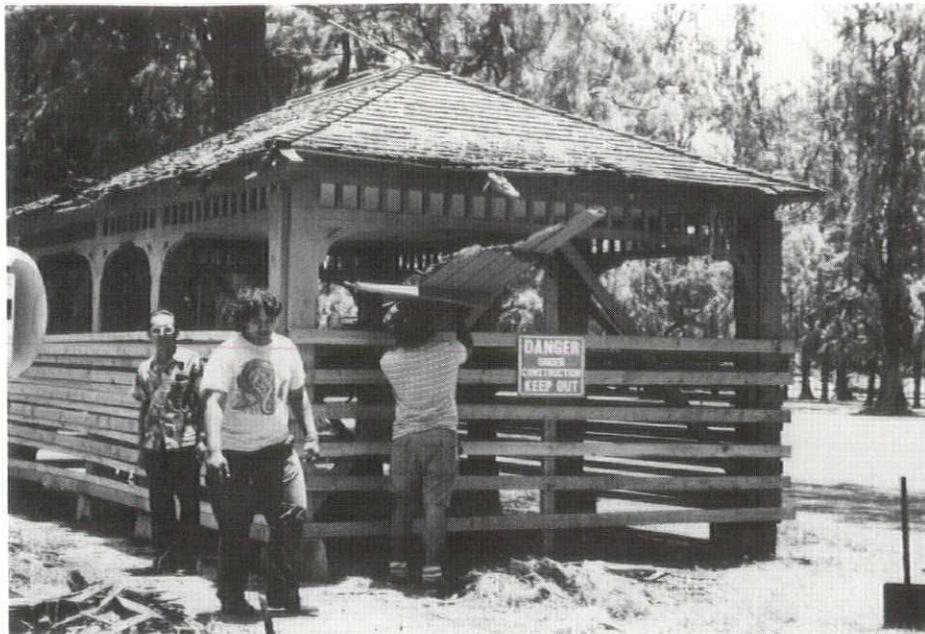
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BALDWIN MISSIONARY HOME - 1854

On September 17, what is perhaps Hawaii's smallest landmark . . . the little Victorian trolley stop shelter along Kalakaua Avenue in Kapiolani Park, now rebuilt as a "Jogger's Rest," was dedicated in a ceremony which included a Japanese mochi blessing as well as the customary breaking of a lei.

This project goes back some seven years to when DeLos A. Seeley, then Deputy Director of the City's Department of Parks and Recreation, told me as chairman of the Historic Buildings Task Force, that the little shelter at this bus stop was one of the last remaining of those built for Honolulu's old streetcar line, and that without intervening action, the City would likely demolish it because with bus re-routing it would



AS IT WAS . . .

Kapiolani Trolley Stop

A grassroots restoration project

text and photos by NANCY BANNICK, Historic Hawaii News

no longer be on a main line and it was in bad condition.

The Task Force managed to convince enough people in two City administrations of the struc-

ture's historical importance, architectural charm, and contribution of "Old Honolulu" character to Kapiolani Park that it was allowed to stand while ways were sought

to restore it.

Fixed-rail trolleys were in service in Honolulu from 1888 until 1927 when electrified buses took their place. This shelter dates from the early 1900s and has been in transit-stop use all its life. It has graceful proportions, a handsome hip roof, decorative brackets, eave rafters, and railings, and exhibits fine carpentry that nowadays would not be put into something so modest as a bus stop shelter. The Task Force suggested it be restored and turned into a joggers' stopping place, as it lies near the joggers' trail laid out in the park.

The historic buildings committee of the Hawaii Chapter, American Institute of Architects, thought it could handle the restoration. A couple of members—who were in the Task Force—did some architectural and historical investigation and worked with the Parks Department's architect to get



. . . AND IS NOW

measured drawings completed. Then the architects got too busy with their own work and liaison between them and some other would-be volunteers broke down.

Finally, the Parks Department rode herd on the Task Force: the building was decrepit and unsafe and would have to be torn down unless citizens could organize and accomplish most of its rebuilding; but though the Department did not consider the structure necessary for its operations and had not budgeted for its renewal, it would cooperate and assist with citizen efforts.



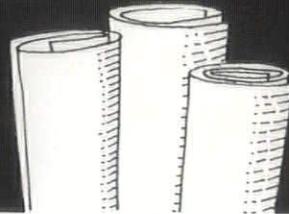
Members of the Kaimuki Senior Club at the dedication.

So the Task Force (a committee of the Hawaiian Historical Society) agreed to sponsor a final campaign. DeLos Seeley, now retired, volunteered to be project coordinator. Geoffrey Fairfax, then (in 1974) the AIAs historic buildings chairman, and the architect for the restoration of Iolani Palace, volunteered his firm's services for the architectural supervision. Parks Director Young Suk Ko and Deputy Director Ramon Duran were not only sympathetic but offered the help of several members of their staff, and in the end found City funds for all materials not donated.

The Task Force solicited individual donations. Peacock Roofing

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Trolley Stop from 9

Some of the participating members of the Kaimuki Senior Club at the dedication.

& Termite Co., Ltd. offered the shingles and a roofer, a sizable contribution. An Army Reserve unit that had long been willing found itself so committed to other good works it could not begin for almost a year. It was Chris Nakama, Consultant on Senior Affairs for the Parks Department, who came to the rescue. After several months of searching, he came up with a group from the Kaimuki Senior Club. Then several more months went by while the volunteer carpenters, whose ages range from 68 to 91, went on holiday trips to Japan, conquered illnesses, and made on-site inspections to be sure they were equal to the job.

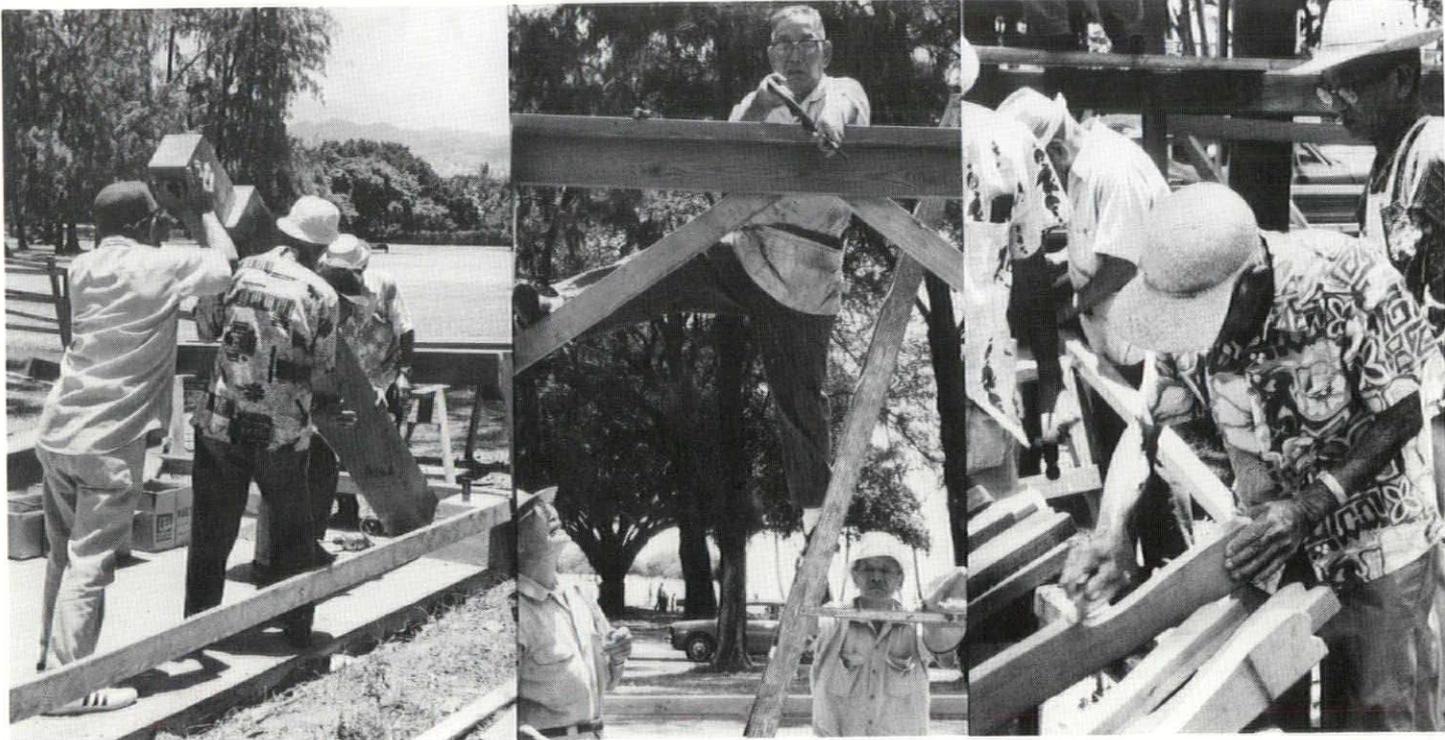
Takeo Isoshima, general chair-

man of the Kaimuki Senior Club, is no carpenter, but very much an organizer, as he describes himself. He's the semi-retired president of K. Isoshima Co., Ltd., a general merchandising and importing firm started by his father in 1891. His wife and son still run the two Isoshima's stores. David Ichioka, the Club's program coordinator, used to be a dry goods importer. All others of the work force of about 20 were also just Sunday carpenters except for Sadaichi Kawamura and Edward J. Mizokami, who are both retired contractors now in their late 80's. Benji Fujishige, a retired mechanic, was a skilled wood craftsman also.

The club which Mr. Isoshima

founded four years ago has 1,000 members and thus this work force was involved in so many activities it could only devote one day a week to this project. But Wednesday became its most popular outing day all summer. The men would break for an hour or so around noon to feast on a sumptuous Japanese lunch prepared by Mrs. Isoshima, who took half a day off (she once taught cooking at the YWCA and Moiliili Community Center).

The little gazebo had to be almost totally rebuilt, as its posts and beams were well termite-eaten and decayed. But the men saved all parts for careful duplication. In the end, the City provided all the

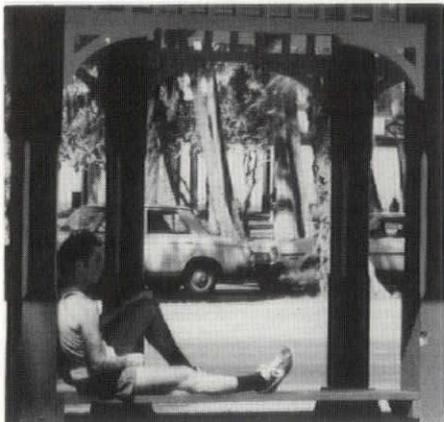


Members of the Kaimuki Senior Club at work . . .

lumber and it was pre-cut and stored in the Zoo yard under the supervision of Hiroshi Saito, the Parks Department's District 1 Superintendent. About midway in the rebuilding, a kind of momentum was sparked. Frank Woolley's Sinclair Paint Company donated all the paint. Mrs. Francis S. Haines carved in wood the two Jogger's Rest signs that now sit on the shingles that Bud Dell spent two days laying.

On the last day, September 6, young architects and draftsmen from Geoff Fairfax's office, led by Geoff and restoration consultant John Hecker, who supervised much of the work, did the final painting. They had examined samples of the old paint under a binocular microscope to determine the original colors and now again the posts are dark green but with chamfers painted trolley car yellow; the ceiling is white; and rafters of the eaves, the brackets, and the wood grill are yellow.

Individual donations covered incidentals and the bronze plaque being made that will denote the history of the shelter. The charming Victorian building should now grace Kapiolani Park for many more decades, and for some more time even as a bus stop shelter for riders of Number 14 small bus that serves St. Louis Heights, Maunalani Heights, and Kahala. Mrs. Helen Yoshimura of Hawaiian Telephone Co., had the modernistic plastic-enclosed pay phone that once stood in front removed and when another takes its place it will be some 30 feet away.



... and the real dedication.



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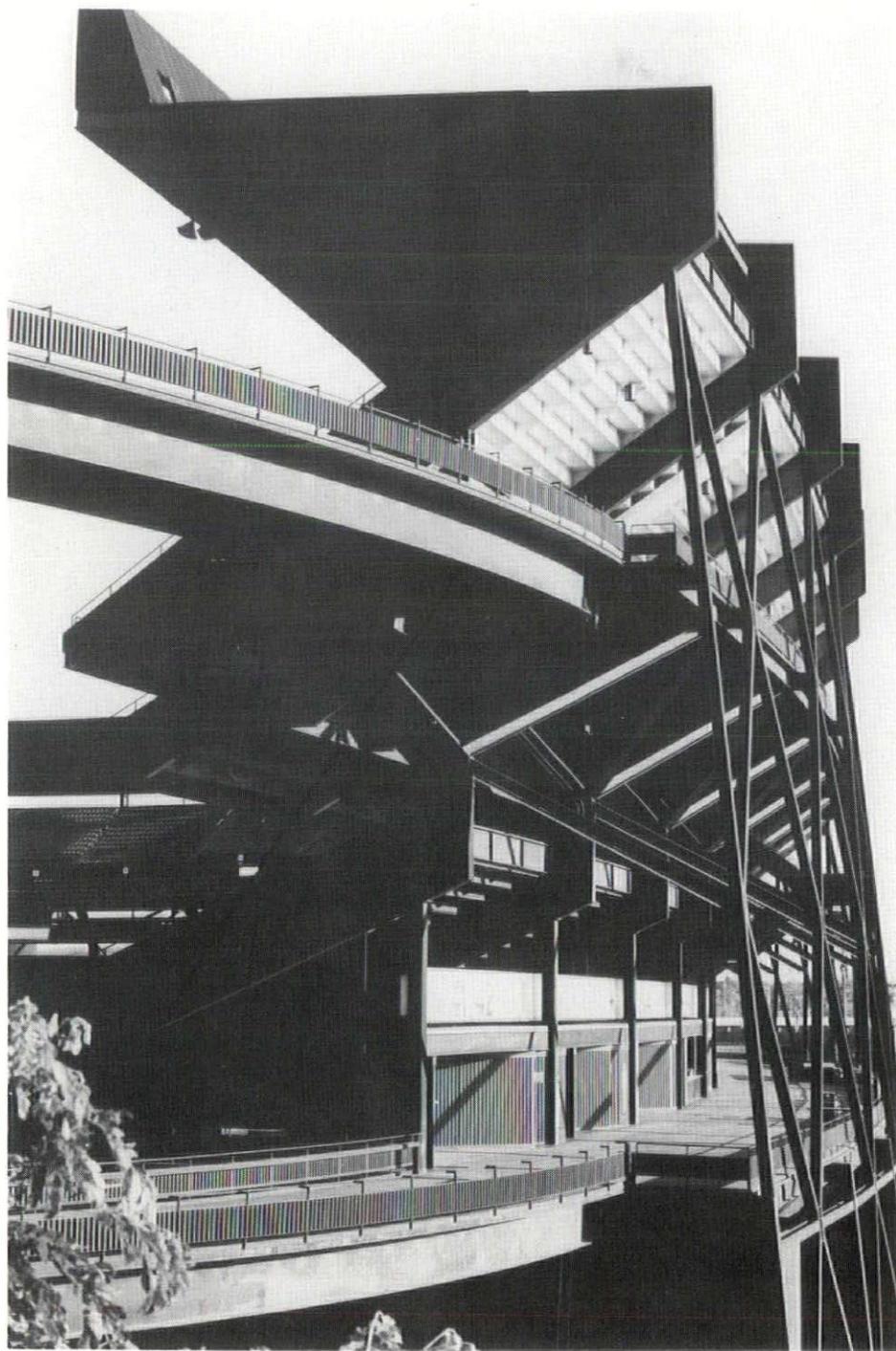
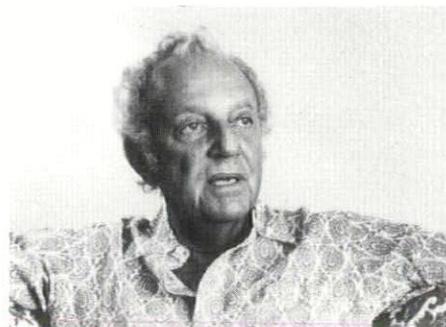
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The Aloha Stadium

text by ISABEL McCLENDON
photos by JIM REINHARDT



The words most often repeated during the past two years by architect, designer, engineer, businessman Charles Luckman have been, "They will move. It will work," referring to the movable stands at the Aloha Stadium in Honolulu.

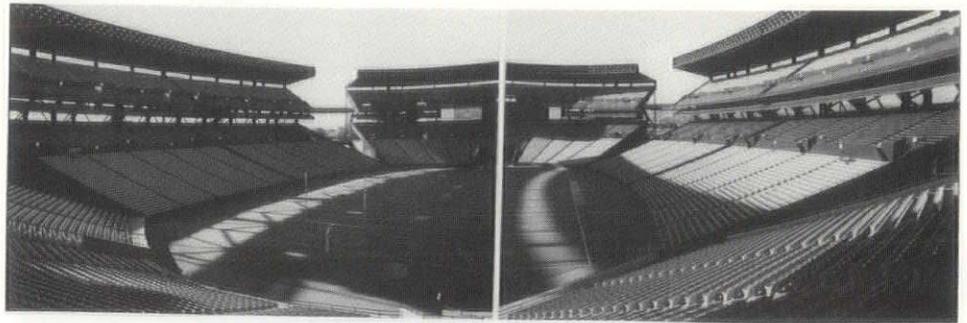
They did move when the time came, easily, perfectly and with assurance. Now the Aloha Stadium has had its opening games and has moved into one of the "firsts" in history, the "first movable grandstands," the first such engineering feat in the world.

"No one has ever tried to move a 14-story building weighing 3.5 million pounds, a distance of 180 feet," Charles Luckman said recently while in Honolulu for the opening games at the stadium. "The principle is not new but the application is. It was used on a small scale in the final assembly of the Boeing 747 and for the San Francisco BART turntables."

The movable stands have four positions, two of which have been proved already, the football and baseball. The others, one for playing soccer and one for general entertainment events can be used when needed.

"I don't think people in Hawaii grasp yet what they have," Luckman said. "All of us in architecture and construction know the delays and problems are normal. Nothing has ever been built without problems. But the people of Hawaii have something basically and totally new and different.

"The seating is ideal for both baseball and football. When I think what they have done on the



Mainland I shudder. And they're still doing it, building baseball stadiums and football stadiums."

Luckman thinks the people in Hawaii will realize what they have after six months.

"They'll have been through a season then and will see how great it is. And the cost of \$27 million is a fraction of what the stadiums are costing on the Mainland. This figure includes the finished product, the parking area, landscaping, everything," Luckman said.

Kansas City did its own research and built two stadiums side by side, one for baseball and one for football at a cost of \$64 million. The Superdome in New Orleans cost \$200 million and is only for football.

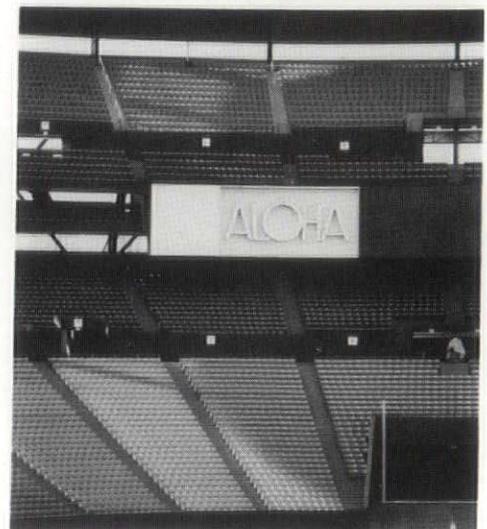
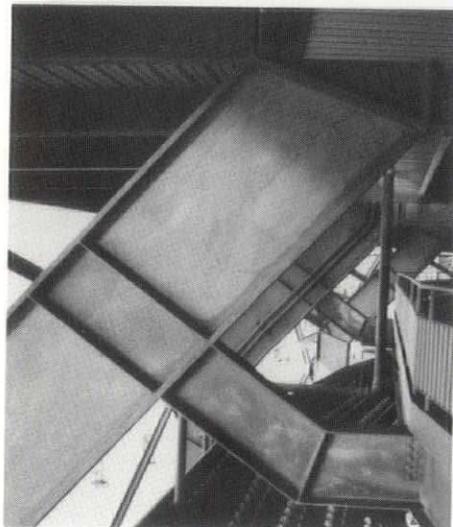
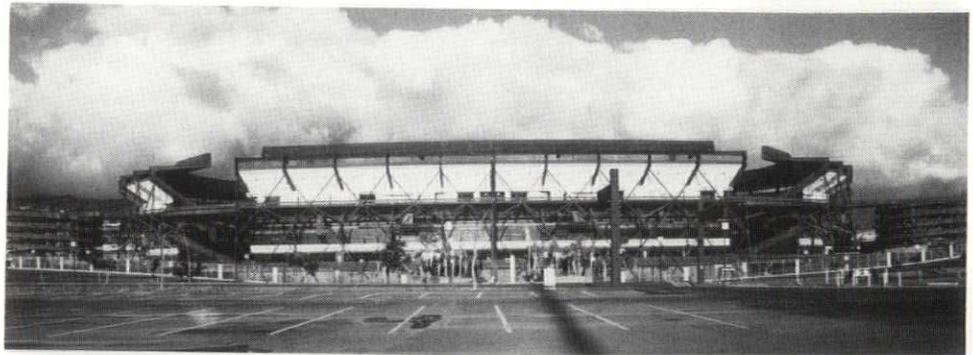
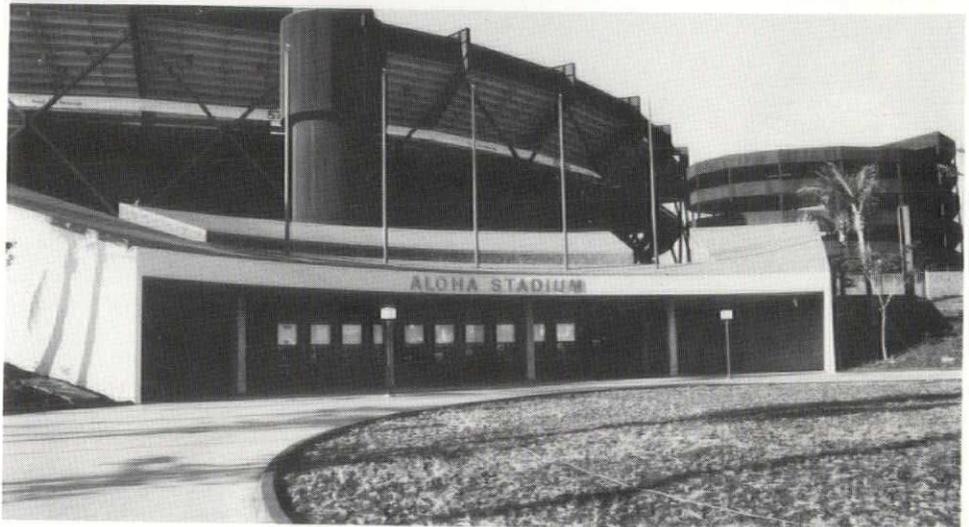
"The Superdome cost \$3,000 a seat," Luckman said. "The Aloha stadium seats cost about \$600 a seat."

Luckman said the cost of maintenance will be minimal too because of the simplicity of the stadium.

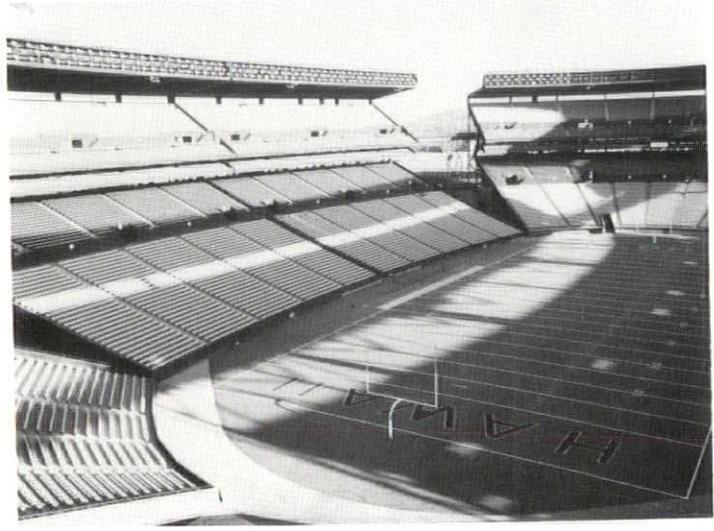
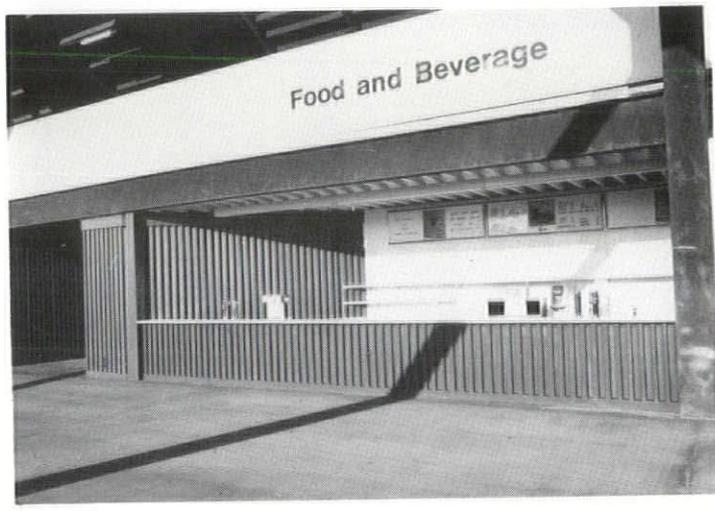
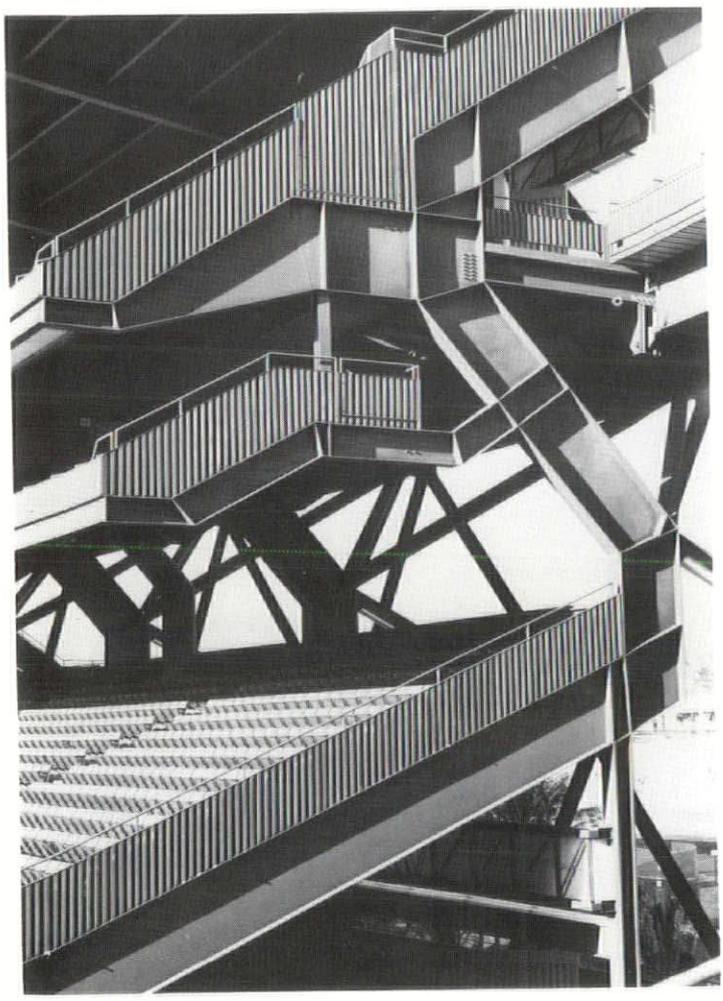
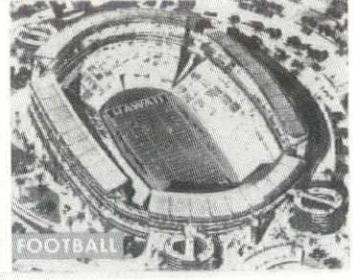
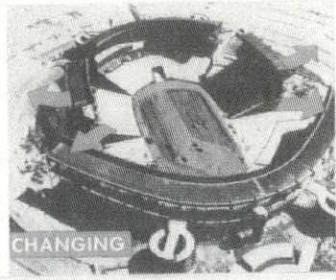
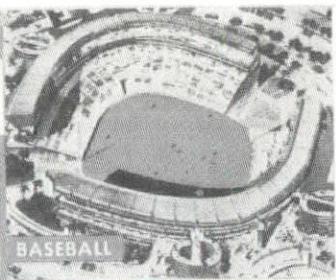
"No design features have been added to the stadium," he said. "It's beautiful because everything there is necessary to the finished product. Everything is exposed too, the steel girders, the Inland-Ryerson decking underside, everything is functional. This keeps the weight down for the movable stands. It's a prize example of the architect's creed, 'form should follow function.'"

Luckman told a story about Governor Burns who was a friend of his of long standing, who, as governor of the State had signed

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ALOHA STADIUM



Aloha Stadium from 13

the contract for the stadium.

"One night we were in Los Angeles dressing to go out to dinner and the phone rang," he said. "My wife answered and said, 'The governor wants to speak to you.'"

"Which governor?" I asked.

"The governor of Hawaii," she answered.

"So I went to the phone and said, 'Hello, Jack.'"

"I had known him for 25 years, since he was in Washington, D. C., in Congress."

"When he answered he began to chitchat. After a few minutes of this I said, 'What's the matter, Jack?'. And he answered, 'How do you know something's the matter?'. "

"Because you're chitchatting and you don't ever do that," I said.

"Well, there is something," he said. "I want an answer from Chuck to Jack, not anything about the million-dollar bond, nothing about your company, just from you to me: Will it work?"

"And I said, 'Yes, it will work.'"

"There was never any other question about the movable stands," Luckman said.

In this contract Luckman employed 23 consultants. Normally he employs five, sometimes as many as 10 or 11 on a big complicated job. But never 23. In highly technical engineering problems he might bring in 12 or 14 consultants. On the Aloha Stadium half the architect's fee went to the consultants.

Luckman said HD&C had done a good job on the remedial work and it was very close to specifications. All the dire predictions didn't come true.

"The tests surprised everybody," he said. "In the eight moves only three or four bearings were blown. And that didn't stop the process of moving. Another thing: There was a maximum wind load set at 25 knots. If the wind increased beyond that while a

move was taking place everything should be stopped. However, during one of the moves the wind came up and exceeded 25 knots, getting to 27 or 28 on the gauge. The moving wasn't stopped and it wasn't affected. Although there is a built-in safety factor the wind load evidently transferred itself."

There are eight bridges that connect the stands when they are in the football position so the fans can walk completely around the stands without having to go outside to get from one section to another.

We had special consulting engineers for those bridges," Luckman said. "When the bridges are not in use the same air film technology that is used to move the stands gets the bridges out of the way into storage under the stands. All this equipment can be seen."

During one of the test moves Steve Burton, Luckman's representative on the job, went into a restroom where some of the painters were working.

"When Burton told them they were moving they didn't believe him," Luckman said. "They ran outside to see. But we wouldn't move the stands with people on them because of the added weight."

"I wonder how many people realize we used flexible hoses for the plumbing which has to move with the stands," he said. "A swivel joint takes the big pressure out of the plumbing, one of the biggest technical problems we encountered."

"And the electrical wiring is also flexible and moves when the grandstands are changed from one position to another. We got the idea for the flexible wires and tubing from the SAC as they use it for refueling planes in the air."

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DEAN WITTER

Hawaii 2176: The Quadricentennial City

by ANDREW CHARLES YANOVIK, AIA, BRI, SAH

Since Part I of this particular series appeared in the Hawaii Architect, an introductory presentation was made before the Interprofessional Conference on Environmental Design (ICED), chaired by Chapter Vice-president and President-elect Edward R. Aotani AIA.

In addition, the Hawaii Bicentennial Commission has recently approved the design and construction of a temporary 200-foot-high, towering "tree-city" model, as its major exposition and ceremonial structure for Hawaii during 1976. An appropriation of \$25,000 in "seed money" to construct models of optional structures on all the Islands of Hawaii was proposed by the author and approved by the Commission.¹

A subsequent Hawaii Architect article in this series, will elaborate on the full extent of the proposed plans for Oahu and each of the Neighbor Islands.

With this major intermediate grant from the Hawaii Bicentennial Commission, more immediate funding is being sought from the local Community to initiate further modeling studies and testing procedures for the structural matrix.

Eventually, a major funding campaign will be launched to raise \$250,000 to \$300,000 for construction materials and the cost of displays, exhibits, and visiting lectures." Contributions are again being solicited and may be made on a tax-deductible basis to the Hawaii Chapter AIA, c/o Dennis Toyomura AIA, treasurer, for the "Hawaii 2176 Fund" — as a non-profit organization.

Past support for the efforts of the Environmental Systems Planning and Design Institute Group (ESP/DIG:2000) under the directorship of Andrew Yanovik AIA, has come from the East-West Center, the University of Hawaii, the State Foundation on Culture and the Arts, the Hawaii Chapter AIA, the Honolulu Junior Chamber of Commerce, and many individuals in the Community.

COMMUNITY INVOLVEMENT

Precedent structures for futuristic cities and their components include the "UNIVERSE:CITY 2000" series of symbolic models, photographs, and films displayed throughout Honolulu, in Hilo, and on Maui in illustrated lectures, exhibitions, and on several HETV programs.

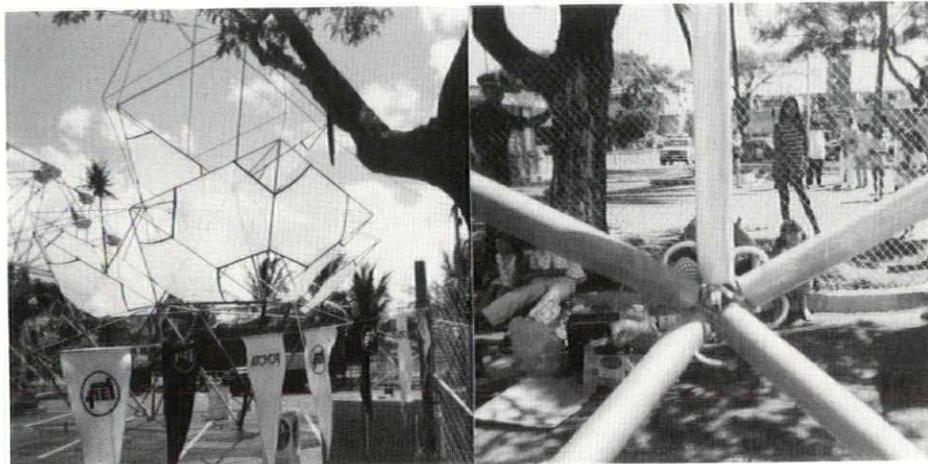
The most notable of these visionary structures was erected for the Governor's Conference on Hawaii in the Year 2000 and the East-West Center's Second International Conference on the Problems of Modernization in Asia and

the Pacific in 1970.²

Subsequent exhibition structures, lectures, and displays including urban simulation gaming seminars, were conducted for the Great Hawaiian Jubilees, the 50th State Fairs, the Ala Moana Shopping Center lanai exhibit area, the UH Interim Sessions, and various public and private schools and libraries in the community.

"If you have recently tripped over or bumped into one of the many structures now occupying Cooke Library, do not be alarmed.³ Everything has been planted there on purpose. In fact, you may be surprised to learn that these sculptures are actually representations of futuristic cities...

"Miss Oda, a sixth grade teacher, took her class to see Yanovik's exhibit at the University of Hawaii. Impressed, she arranged to have the display set up at Punahou for three weeks. The exhibit has previously been displayed at Radford High School." (And subsequently at Kailua High School and the Kailua



branch of the Hawaii State Library.)

"If anyone is interested in learning more about the display, Mr. Yanoviak will present a lecture with slides on March 25 in MacNeil Auditorium for Art History Class. It is suggested that one learn the definitions of octahedron, tetrahedron, hexahedron, dodecahedron, and icosahedron beforehand." 4

"Students and Faculty are invited to the Library⁵ to see 'Universe 2000' display constructed by Andrew Yanoviak, visiting professor of architecture at the University of Hawaii... It is a concept of aerial living in highly adaptable units floating above our now overpopulated world. These units will have their own force-fields and motion capability... Mr. Yanoviak will be available to lecture on our campus."

"The lecture (introduced by Alfred Preis FAIA) will be given in conjunction with an exhibit at the East-West Center's Jefferson Hall. It will deal with the morphological and ecological implications of this work on the designed and planned environments of possible cities for the future." 6

"...As we repeatedly grow larger and larger 'Tetrahedral-forms', we begin to arrive at a hierarchical ordering of the tetrahedral and octahedral spaces. This morphological (form-giving) is related to environmental systems-in-nature principles... such as, the ecological (relationship of an organism to its environment) hierarchal decomposition of dissipated structural forces; for example, so naturally and gorgeously... in the Grand Canyon, U.S.A. Such hierarchal ordering of areas and volumes is sociologically reflective of most practical building programs, including those for whole cities... here again, is another distinction over other pyramidal city-forms proposed for the future." 6

"As man enters the world com-

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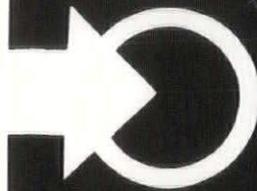
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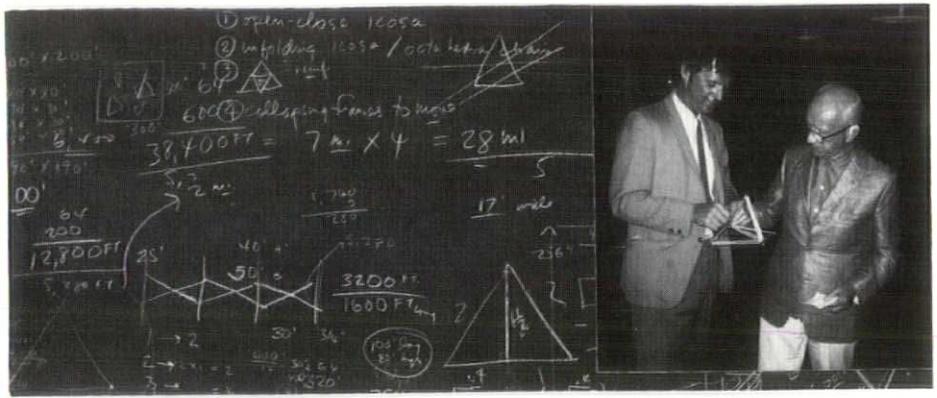
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BUCKMINSTER FULLER

"... meeting with Dr. R. Buckminster Fuller in Los Angeles to discuss the earthquake resistance potential of his proposed structures for the future. Dr. Fuller ... was most inspired by the professor's patent-pending inventions and offered support to obtain patronage on a global scale."⁷

"In many ways, my innovative inventions are nothing more than an extension of the structurally-famous 'Phoenix Column', with

which I grew up... This led to the Eiffel Tower. Dr. Fuller recognizes the importance and potential of the upcoming Bicentennial Expositions in Philadelphia, Boston, and Hawaii."⁸

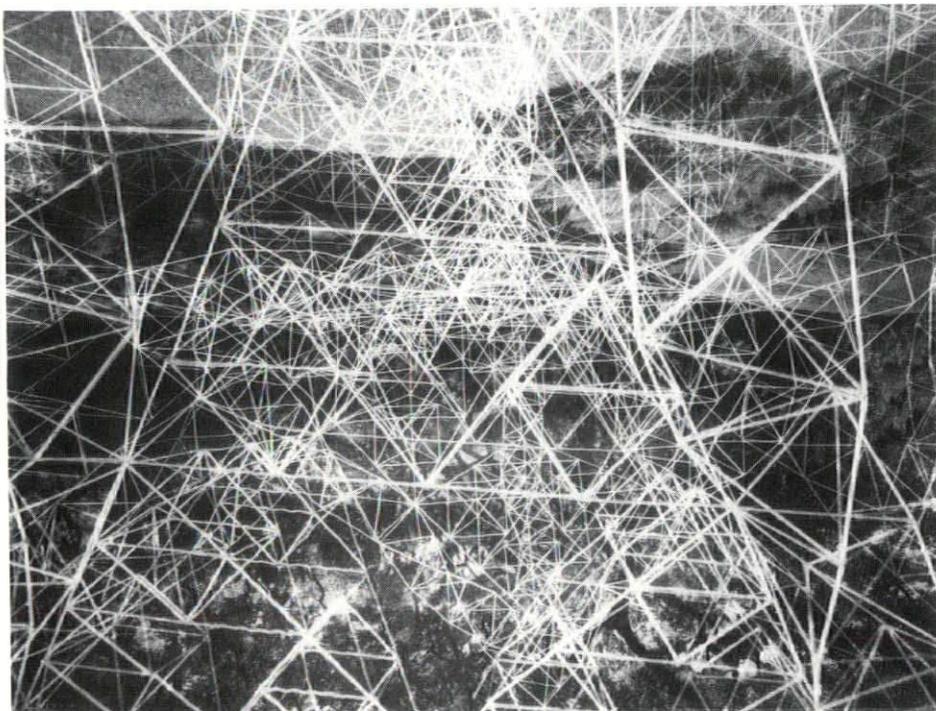
Discussions were held with official representatives, civic leaders, and architects of the American Revolution Bicentennial Commission in Philadelphia and Boston, while the two rivaling colonial cities were competing for primary designations as **the** Bicentennial City. It was soon very obvious that the political ramifications of the policy manifestations issued from the Nation's Capitol were far too frustrated and confused to be of any significant value to innovators. In 1969, '70, and '71 when these contacts

were made, the major thrust was historically inclined toward rejuvenating the stylistic mannerisms of the past. Supposed leaders were already embedded in "Heritage" type project proposals, and only tokenly looking into the future... the immediate future... with proposals for floating concrete slabs, post-and-lintel exposition structures reminiscent of our Neo-Classical Grecian and Egyptian "heritage"... no less! These were most discouraging scenes... and, the only remaining hope in our entire Nation seemed to be Hawaii... the 50th and "newest" State. However, initial contacts made through our University Futures Studies Programs, the HC/AIA, and the local Bicentennial Horizon's Committee, proved of no real value... until recently, as another article in Hawaii Architect in this series will reveal.

"During the summer (1971) 'Bucky' never said anything that contradicted any of my experiences (at Moiliili Plaza laboratory) - I only found that there were things that he said that I didn't understand."⁹

"The seven degrees and twenty minutes in the tetrahedron spiral are well accounted for - that is the amount that the spirals are 'sprung' together. When 'Bucky' went back and asked the geneticists if this might be, they said that it was."⁹

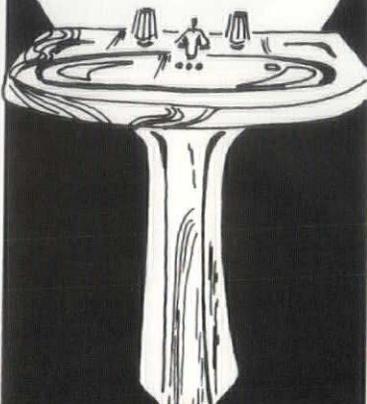
"Let me jump to my present work.¹⁰ In working with communication, we got to work with communities. And what are the major components of a com-



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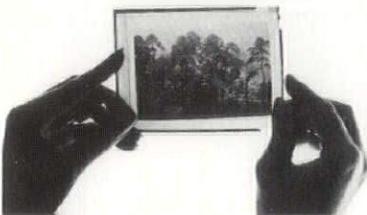
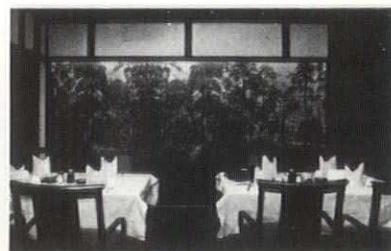
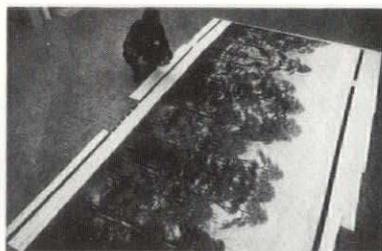
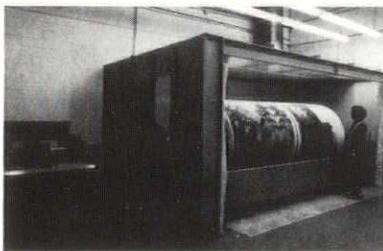
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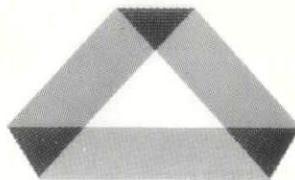


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Yanoviak from 18

munity that come together? Now we had to start some place in a community. We began with the University. What are the major functions of a University? This University? One is research. Another is education. Another is service.

"Then, we found that we could no longer study just the University, but we are now going out into the community, the larger community. We had to determine the major components we thought existed within Honolulu. We found these major components were Government, and Industry, as well as University. These are the major components for formulating a community.

"We began to interrelate these elements to knowledge, information, experience, other communication modes, and to find out how people were, in fact, communicating in the community.

"We found that we not only had research, education, and service in the University, we found we also had faculty, students, and administrators. We tried to see where and how they fit together.

"In terms of our community, we also related the classical ideals of man: truth, goodness, and beauty. Goodness linked up with Government (pre-Watergate, of course). Truth with the University (deception-free). And, Beauty with Industry (imagine!). That linkage told us what we wanted to know.

"It told us that in terms of our environment, we are upside down. I know you can say which way is up. The point is we got the notion of building huge figures, huge tetrahedrons, huge tetrahedron cities. We found the tetrahedrons were linked to growth (systems) in nature. Now, how do you communicate this (conceptual) point?

"We got into a system of growth whereby the tetrahedrons were coming together and formulating cities for the future. We found we were building an eagle's wing, an expanded structure, a

hollow structure . . . This gave us cities many miles high.

"In the process, we put more tetrahedrons together, and we came up with tetrahelical spirals. We put those tetrahelical spirals together, and we formulated the 'DNA'. Then, we realized we were doing some of the things that Buckminster Fuller was interested in. What we were doing was trial and error, just fumbling around.

We found that five tetrahelical spirals come together to make a DNA. Fuller said there were three. He insisted there were three: I said there were five. We both think we're right. Last May, Dr. Kornberg was here from Stanford . . . He said they found it fluctuates. There are three and five. There are neither just three nor five. He was talking about pulsation and movement.

"We tried to find out how to make another (kind of non-tetrahedral) DNA. Some of the structures we have found are between the rocks and us. We thought we would get a 'linear' chain. It didn't happen like that at all . . . A very beautiful thing did happen — we came back to an exponential curve: population, communication, transportation, etc. What happens at the extremities of the curves? Catastrophe for man? Some sort of calamity?

"We then went further to see what happens with a 'vertical' DNA and a 'horizontal' DNA. When you look down on such a model . . . Somehow or another, a kind of pulsation comes into play now. The characteristic of life is movement, change, dynamics. These are all parts of life.

"The latest speculation is that the DNA is a sphere as well as a non-sphere. (Since "proven" by several theoretical microbiologists in medical research.)

"When we were drawing our models, we weren't talking about Universities being in a fixed position for an enduring portion of time. We were talking about movement, about dynamic rather than static models. Instead things

Continued on Page 22

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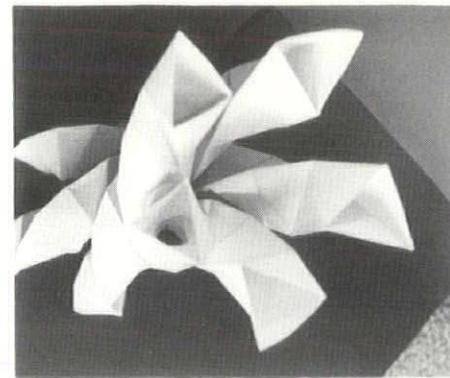
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would be much more in motion. This room (EWC Pacific Room) could be on its way to Tokyo — another 'easy way' of going.

"People now question civilization. What happens when man comes together? We can ask questions about what happened earlier in Honolulu; we may earlier have had as many people here as we have now at one time. But they did not leave a Waikiki or an Ala Moana Shopping Center. Some of what we are doing may not be necessary. There may be other ways to communicate, to get along, to live.

"In terms of communication, going back into architectural history, we at first thought that what Egyptians were doing with their ornamentations on those columns, was writing hieroglyphic 'words.' Then we found that they weren't words. Hieroglyphics, in fact, are drawn; they were 'pictures.' Only now, with our way of looking at things in terms of the whole world, do we realize in fact, that they are symbolic models. Now what are symbolic models?

"In terms of symbolic modeling, we see almost nothing in our newspapers and magazines. It is not a part of our language. The wise old Chinese said a picture is worth a thousand words. The mathematician says a symbolic model is worth a thousand pictures. We're all concerned with these breakthroughs in communication. But we haven't found enough ways to improve these means of communication.

"Some of our work goes from the microbiological to the astrophysical. We also worked on a

solar series as part of this work. It is even more difficult to communicate how a sphere is made . . . like our earth — and in terms of our planetary system . . . how it was formulated.

"In terms of where we are and where we are going, I care terribly about how our planetary system works, and how our solar system fits in the galaxy. I feel very strongly that these relationships have a lot to do with communication. Taken together, we don't know which way we are going: in or out, up or down."

CONCLUSION

"Our sparsely funded UNIVERSE:CITY 2000 work is progressing fairly well in this community environment . . . I must show you some inspired drawings I made in Los Angeles since Delos . . . Hopefully, the patron you mentioned in Florida will soon be able to help finance our visionary efforts which are leading toward a collapsible, transportable, dynamic "Fuller" tower, as a modelable explanation for innovative DNA and solar-system generating theories being developed."¹¹

"Your 'UNIVERSE:CITY 2000' was really exciting. I hope I can get to Hawaii to see it some day. Also, I would like very much to see some of the other kinds of things you are doing. (Reference to University of Hawaii Systems modeling studies and other City Planning consultation work.) . . . It is really great to have contact with you and your peers in such a setting. (Mykonos, Greece.) . . . Now, I hope you guys go out and do something about it!"¹²

FOOTNOTES

1. The Honolulu Advertiser: Section A (Page A-11); "'Tree-City' Planned for Bicentennial" by Bob Krauss; May 21, 1975.

2. Hawaii Architect: Journal of the Hawaii Chapter, American Institute of Architects; "Hawaii 2176: The Quadricentennial City" Part I by: A. C. Yanoviak; June 1975.

3. Ka Punahou: Punahou School Newspaper; "2000 Hedrons" March 12, 1971.

4. Ibid.

5. Kailua High School Daily Bulletin: "Universe 2000" by Grace Hess; April 1971.

6. University of Hawaii, Department of Architecture: Lecture Announcement; September 29, 1970.

7. The Daily Republican: "Great Changes Forseen In Set-Up of Universe" by John V. Norris; April 27, 1971. Valley Forge, Penna.

8. The Daily Republican: Phoenix Column Rated Far Ahead of Its Time" by John V. Norris; May 4, 1971. Valley Forge, Penna.

9. Excerpts from letter to A. Yanoviak by astrophysicist Hans Meyer; Hawaii Architect "Hawaii 2176: The Quadricentennial City" by A. C. Yanoviak; May 1975.

10. World Communication by J. Richstad and L. S. Harms: Honolulu; Chapter IV: Communication in the Future; "From the Microbiological to the Astrophysical in Human Communication" by A. C. Yanoviak AIA, Assistant Professor, New College, University of Hawaii 1971.

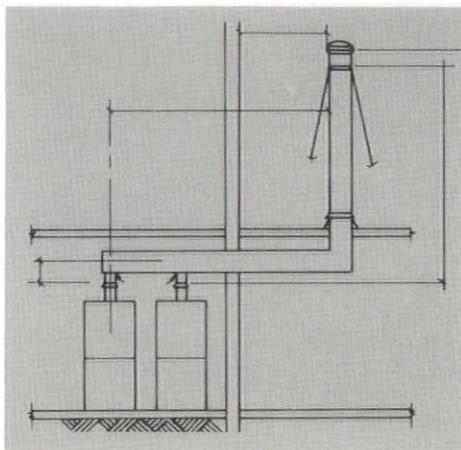
11. Telegram Postscript (excerpt) to Dr. R. Buckminster Fuller from A. C. Yanoviak; October 20, 1971. Honolulu to Carbondale, Ill.

12. Letter (excerpts) from Edmund Bacon, author of Design of Cities, and former City Planning Director of Philadelphia, Penna. — to A. C. Yanoviak; July 21, 1971.

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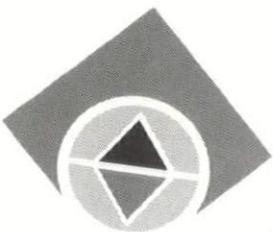


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