HAWAII ARCHITECT

May 1994

- [illegible] communities
- Waterproofing

When plans call for contemporary grandeur to blend with kamaaina past

Allied Builders System can execute a community dream.

Case in point is the transformation of the Alice Cooke Spalding House, built in Makiki heights in 1925, into the beautiful new Contemporary Art Museum. The assignment called for a creative approach by CJS Group Architects Ltd. and sensitive craftsmanship by Allied Builders – to preserve the estate's historic spirit and charm.

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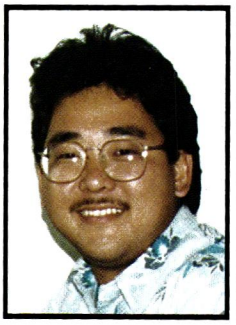
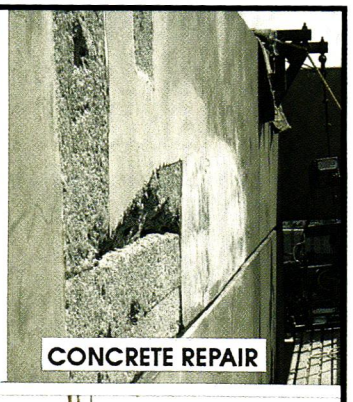
Heading a team of over 40 technicians are left to right: Alvin Nishikawa, Ken Matusumura, John Kobayashi, Al Gardner, Steve Kramer, and Jim Hiramatsu

Meet Alvin Nishikawa.

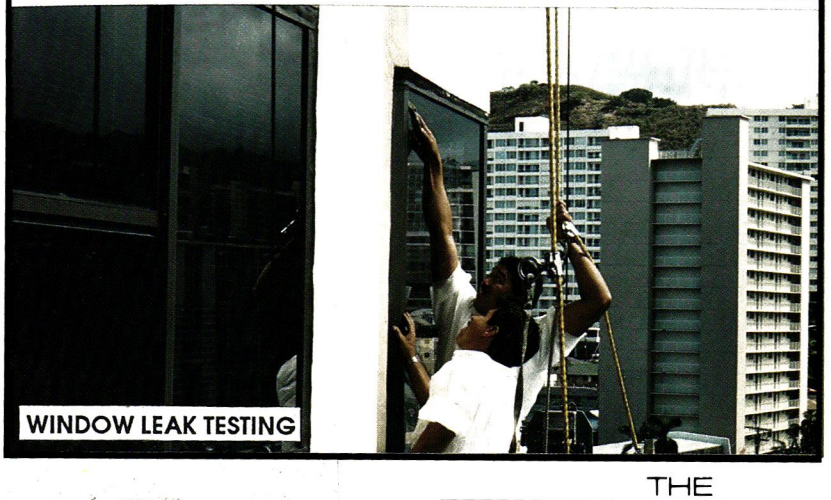


Alvin is Vice President of The American Coating Company. He is in charge of all field and estimating operations. Previously, Alvin was employed with an engineering firm in Chicago and Honolulu where he focused primarily on restoration and water infiltration problems. Alvin holds a M.S. and B.S. in Engineering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

DECK COATING



CONCRETE REPAIR



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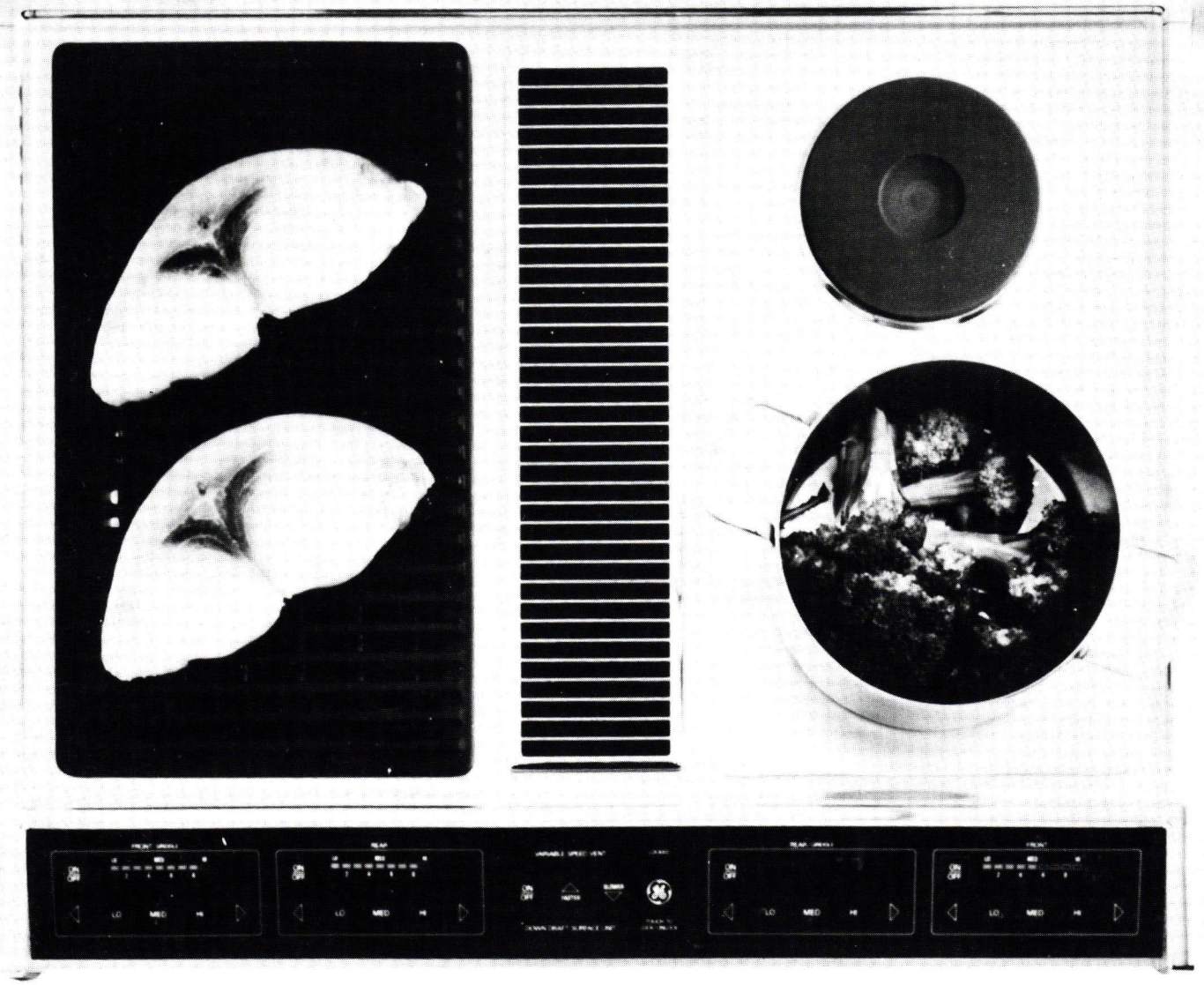

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May 1994 Volume 23, Number 5

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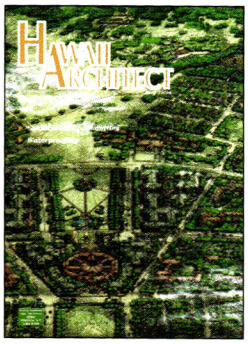

Green Architecture is the focus of this issue of Hawaii Architect. The cover depicts a model for a sustainable community. It was designed and produced by members of the AIA Honolulu's Committee for Sustainable Communities, which includes Christopher Belknap, Robert R. Bell, Francis L. Camacho, Greg Field, James G. Freeman, AIA, Red Mahan, Rex A. Maximilian, Alex Neuhold, Paul Ponthieux, Carlo Priska, AIA and Jo Paul Rognstad, AIA.

The concept of sustainable communities has evolved over the past decade in response to worldwide concern over runaway population growth, pollution of the environment and atmosphere, depletion of natural resources, earth warming trends, the loss of arable land to sprawling built environment and a host of social problems.

As they have done throughout civilization, architects can play a leading role in providing vision, direction and planning for innovative built environment that will curb the waste of limited natural resources while still providing a pleasant lifestyle not only for the current generation, but also for future generations.

The editor is indebted to members of the AIA Honolulu's Committee on Sustainable Communities who volunteered their time to help plan this issue of the magazine and who contributed the core of focus articles and supporting illustrations.

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A new paradigm for paradise

Sustainable Communities

by James G. Freeman

What is a sustainable community?

A sustainable community, in harmony with nature, meets the needs of the present without compromising the ability of future generations to meet their own needs. The sustainable community:

- Is more compact with housing, jobs, services and daily needs within walking distance from one another, stimulating the spirit of life and decreasing the consumption of fossil fuels.
- Defines growth boundaries such that significant open space is preserved between each community, with pedestrian ways and mass transit as the major transportation linkages.
- Incorporates a design process that empowers all citizens of a community who recognize interdependence requiring equity and balance among all parties.

Images courtesy of the Committee on Sustainable Communities

Common areas are part of the open space in a sustainable community ▼

Why do we need them?

Sustainable communities are needed in Hawaii to accommodate a growing population on a finite piece of land while preserving for future generations Hawaii's unique environment and spirit. The preamble to the city and county of Honolulu's General Plan states: "The natural environment of our island, next to our people, is our greatest asset." However, current planning practices are leading to a contiguous built environment of rooftops, driveways and asphalt highways, with little interconnectedness between each other or the natural environment.

Sustainable communities are needed because:

- World population has now outpaced nature's ability to replenish itself, and America consumes 75 percent of the world's raw materials although it has less than 25 percent of the world's population.
- About 90 percent of travel in Hawaii is by private automobiles. The automobile is the world's leading source of air pollution—the major contributor to global warming.
- Suburban sprawl and its planning that caters to the automobile have created communities where people are becoming more indifferent to one another, rarely escaping the private realm, contributing to the demise of the healthy role of the public realm.

Ingredients of sustainability

Many ingredients make up a sustainable community, none of which can stand alone. It is the interdependence between ingredients that creates the synergy which nourishes the spirit and defines a place as alive, whole and unique.

Taken separately, most of these ingredients are not new. What is different, however, is the inclusion of all the ingredients that make up *community* and placing them in proximity to each other.

Pedestrian as a catalyst

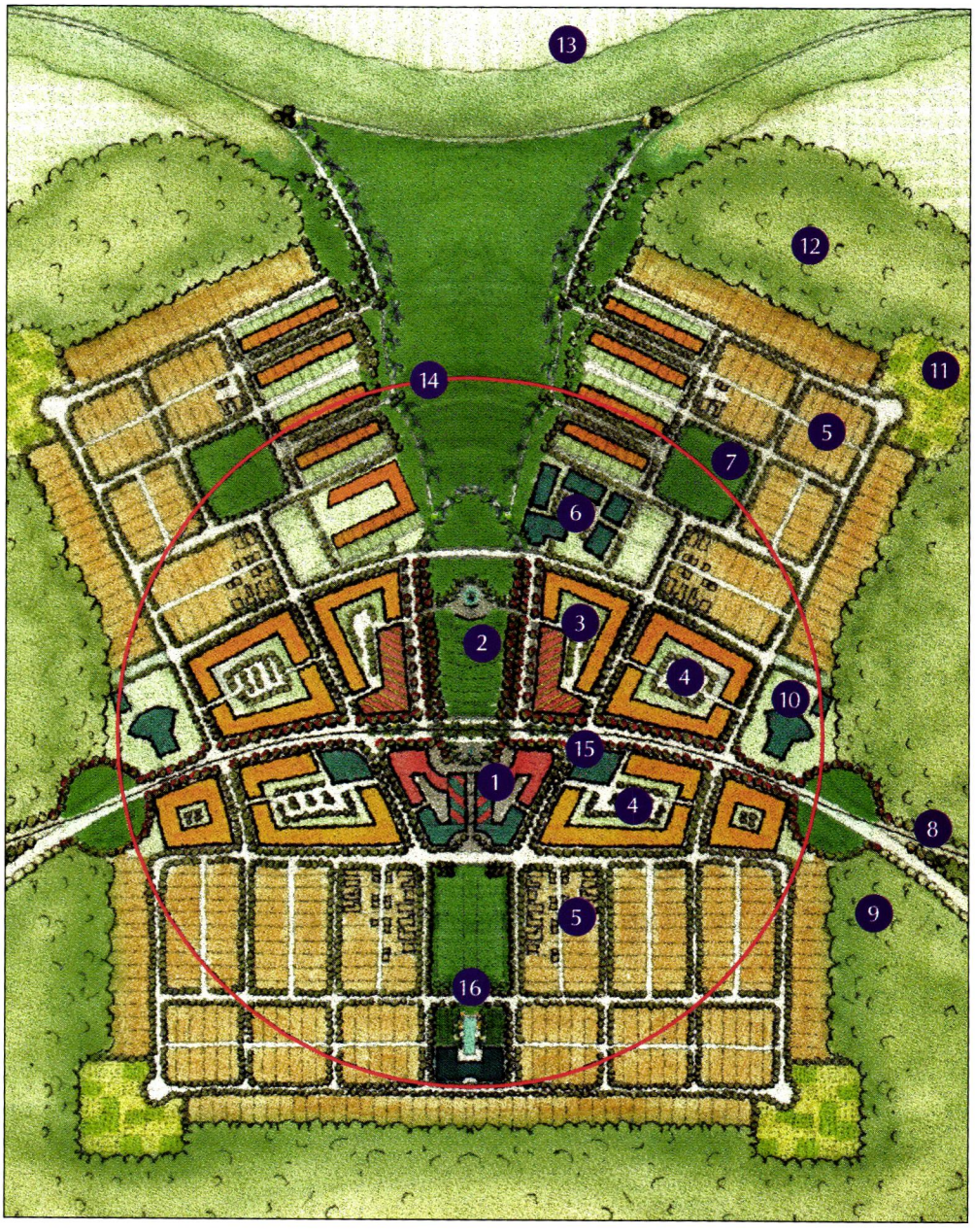
Present day suburbia creates a society in which people rarely escape the private realm. From the home garage to the office parking structure, people live in private bubbles. In a sustainable community, where all ingredients are close, the pedestrian is the catalyst that nourishes the spirit and life of a community through daily chance encounters.

Community core and vision center

Sustainable communities call for new zoning and development patterns that are influenced by planning which existed before the automobile. The community's core would be zoned mixed-use at a density that resembles a traditional small town with buildings three to four stories tall along a main street. This density would be sufficient to support mass transit. Mixed-use zoning would also help provide affordable housing as in multifamily units above ground floor retail.

Located at the center of the core would be the transit station. On the way home from the station, residents would begin a pleasant five-minute walk past the vision center, day care, retail, village green, elementary school and neighborhood parks. Surrounding the core would be apartment and condominium blocks, row houses and townhouses...a multitude of types to serve the growing market for smaller families, single parent families and the elderly. Furthest from the core and only five minutes away by foot would be the single family houses. Some single family residences would have ohana units at the back of the site where the vehicular access is provided.

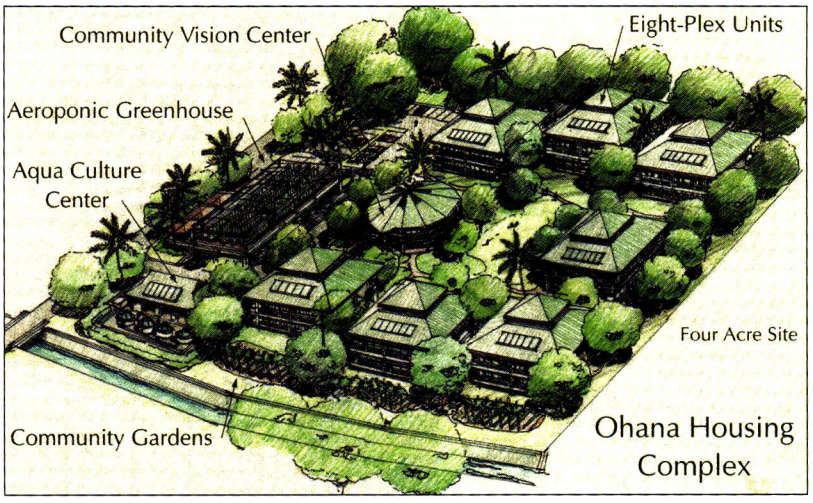
The vision center (town hall) would be the community anchor where citizens would have a place that was theirs to help them achieve their goals. The vision center would also be a meeting place where people learn from kupunas, listen to storytelling or plan the future with elected officials. Through video



LEGEND

1 Community Vision Center/Cultural Arts Center/Wellness Center/Extended Education Center/Rapid Transit Station
2 Village Green/Community Special Events
3 Commercial 3-4 Story/Shops/Restaurants/Offices/Townhouses/Country Inn
4 Apartments and Townhouses
5 Single-Family Housing/Mass Transit Line/Solar/Pedestrian Street Emphasis/Ohana Housing/Service Alleys
6 Village School/Super Learning Curriculum/Classes on Self-Empowerment & Self Esteem
7 Neighborhood Parks
8 Rapid Transit Line
9 Community Edge defined by Harvestable Hardwood Forest/Pedestrian & Bike Trails
10 Recycle/Energy Reclamation Center
11 Community Gardens
12 Permaculture/Farming/Eco-Tech Farming Center/Wind Turbines
13 Dedicated Open Space/Nature Trails/Taro/Hawaiian Cultural Learning
14 Quarter Mile Pedestrian Radius
15 Police/Fire Station
16 Recreation Center

conferencing these meetings could be simultaneously broadcast throughout the world. The vision center would incorporate the qualities of the traditional town hall and the technology required for tomorrow.



Regional planning and transportation

Growth would be concentrated in existing suburban neighborhoods and urban infill with new land development as a second priority. With a more compact community, much of the land would be open space primarily used for regional parks, sustainable forestry and agriculture unique to Hawaii.

Mass transit would connect communities of varying sizes depending whether a community is located on the trunk line, serves as regional center or is a smaller community feeding into the trunk line.

The automobile would still be accommodated, but pedestrian, bikeway and mass transit alternatives would drastically reduce the consumption of fossil fuels and provide opportunities for spending more time with family and friends. Land, infrastructure and cars are no longer inexpensive. Beyond the maintenance and insurance cost of the automobile, the real cost must consider road infrastructure, environmental degradation and the loss of human and economic resources when engaging in war for crude oil. Perhaps the love affair with the car and its symbol of American freedom and independence is now a myth as people realize its dependence for survival exposes a tragic irony that is killing people and squandering natural resources.

↔ *James G. Freeman, AIA, is a member of AIA Honolulu's Committee on Sustainable Communities and chair of the Urban Design and Transportation Committee.*

Architects' Responsibility—The shaping of new communities

by Carlo Priska

Architects have a moral obligation to create a built environment that will enhance and—ideally—transform the manner in which communities evolve. Architects initiate a process that ultimately invites people to draw much of their daily strength and inspiration from the quality of their personal vision...one which they integrate into their own lives. This then becomes the contribution of architects to the present and their legacy to the future.

During the past few months, I have had the pleasure of working with talented architects, consultants and other community leaders. Their common denominator is dedication to projects that will prove more socially and environmentally responsible than the sprawl of the last 40 years.

We like to stress that sustainability means more people-oriented and less auto-dependent neighborhoods. In sustainable communities, basic needs and services will be provided within a 5-10-minute walk radius. People will also live closer to the workplace, thanks to mixed-zoning residential opportunities and will commute easily between neighborhoods on clean and efficient rapid-transit systems. As in Holland, bicycles will become an equally important (and healthy) component of these systems.

More than 15 years ago, Sim Van Der Ryn wrote that the people whose decisions and visions (or lack of vision) shape our cities tend to come out of Schools of Law and Business, speaking a language different than ours. And yet, it is increasingly their decisions that determine our future.

As we enter the 21st century with no rapid-transit system in sight, many of us are wondering what it will take to effect a "paradigm shift" of mentalities—particularly those of some members of our government and legislature. For how many more decades will their absence of vision—indeed, their lack of foresight and civic pride—be permitted to determine our future...and the quality of our neighborhoods and communities?

The future of society depends on a shift in attitude from auto-induced isolation and disconnectedness to a growing sense of inclusiveness and cooperation. The first giant step in this direction will be accomplished when residents commit themselves to making quality transit and quality communities the priority that selfish interest groups and irresponsible officials can no longer be permitted to deny.

↔ *Carlo Priska, AIA, is chair of AIA Honolulu's Committee on Sustainable Communities.*

Combining economics and ecology

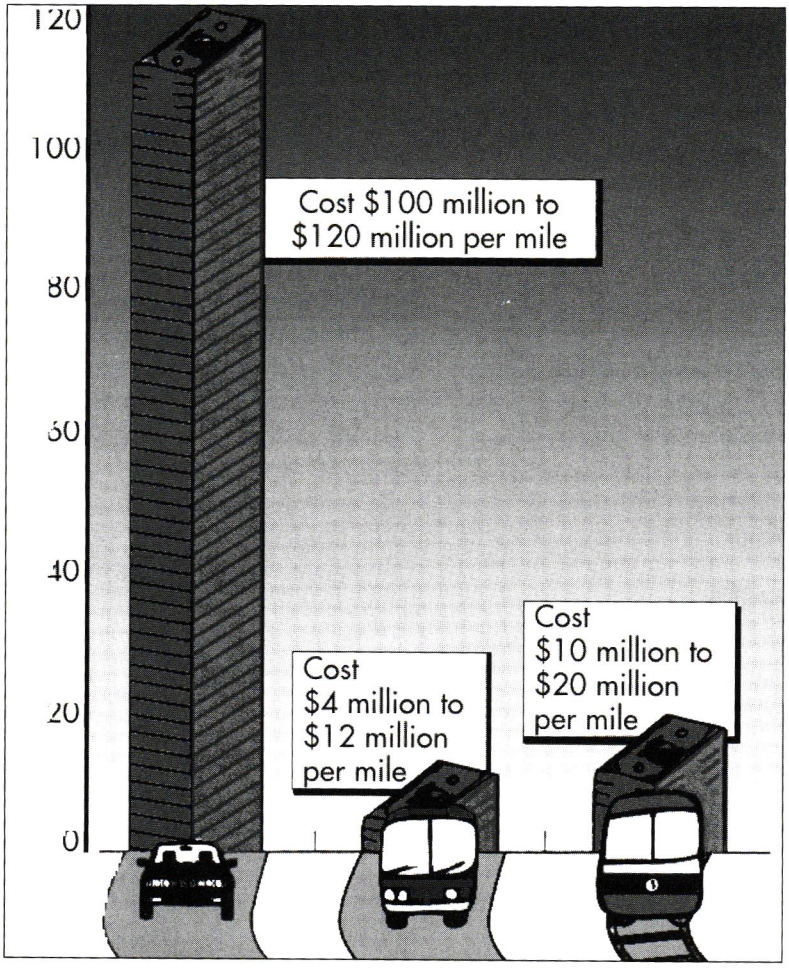
Sustainable Development

by Paul Ponthieux

Sustainability is generally defined as combining economics and ecology in such a manner that today's resources are used without jeopardizing the needs and resources of future generations. Architects have the social responsibility of guiding communities in this effort to preserve the environment for future generations. Just as society will have to learn to interact with nature in different ways, so must architects learn to design using criteria which address these new and pressing concerns.

The challenge is to provide a quality of life that is attractive to everyone, with all of the nurturing components necessary to sustain people both in body and spirit, while creating an economy which provides meaningful work for everyone.

The cost of 'getting there.' ▼



Population growth and food production

A key ingredient in this recipe for life is the issue of food production versus population size. As a species, we are notorious for ignoring evidence in the form of slow trends, and resisting that which threatens "business as usual." The benefits of conservation are often long term and may accrue to future as well as present generations. Many of the benefits (e.g., environmental quality) do not neatly fit in conventional cost-benefit economic calculations. Thus, conservation efforts nearly always run counter to the objectives of short-term economic gain.

However, given the exponential nature of population growth, we could be running out of time faster than we think. According to current statistics, if we started right now with cooperation from every government, allocating resources wisely and humanely, the best we could hope for is to stabilize the world population by the middle of the next century at somewhere between nine and 11 billion people—double what it is now.

Every year, farmers around the world are trying to feed 90 million more people with 24 billion fewer tons of topsoil. As population grows, and if sprawl continues, land for food production will become scarcer. The land area it takes to park a car is approximately 200 square feet; the land required to park 100 cars could easily produce one ton of grain a year. Designing with sustainability in mind can minimize dependence on the automobile and reduce one of the largest contributing factors to pollution and global warming, while preserving precious agricultural land. Cooperative farming utilizing

scientifically advanced aeroponics and permaculture techniques can greatly reduce a community's dependence on outside food sources while providing jobs and possible revenue sources for the communities who employ it.

Energy production

Until recently, two of the strongest arguments against utilizing solar energy were the cost-efficiency ratio and the land area required to power a community. With new technology, production of low cost, efficient silicone, photovoltaics has become a viable alternative to energy production. It is estimated that an additional 500 acres of land with arrays of solar panels would be necessary to power a moderate size community. This acreage exists now in the form of rooftops in every community in the world.

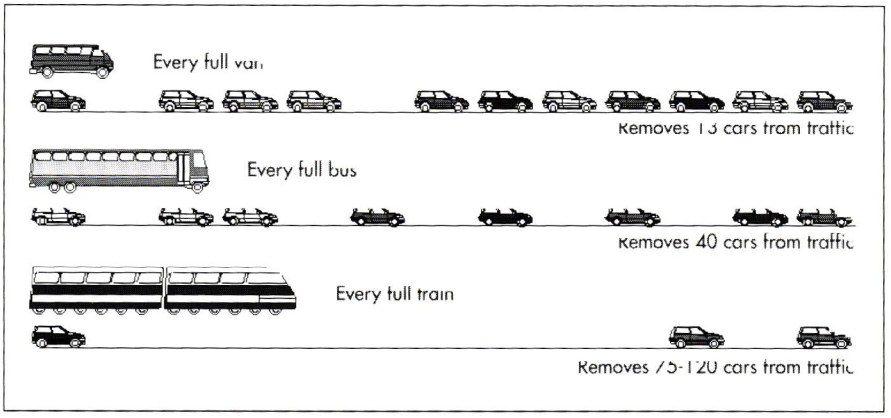
A new roofing shingle made from economical grades of silicone is being tested by one manufacturer to produce efficient, damage-resistant solar collectors. When connected back into the grid, customers could benefit from lower utility rates while taking some of the burden off power companies to meet the increasing demands for power production from rapidly expanding cities. Power companies could assume the role of leasing and maintaining these systems much like the phone company does with its subscribers. The reduction in pollution and the need for power companies to turn to potentially catastrophic sources of energy such as nuclear power would be a significant win for humanity and the environment.

Pollution

Humans also pollute the atmosphere on a global scale. Measurements in Hawaii suggest that the concentration of carbon dioxide in the atmosphere is increasing at a rate of about 0.2 percent every year. The effect of this increase may be to alter the earth's climate by increasing the average global temperature.

Certain pollutants decrease the concentration of ozone occurring naturally in the stratosphere, which in turn increases the amount of ultraviolet radiation reaching the earth's surface. Such radiation may damage vegetation and increase the incidence of skin cancer.

The economic consequences from such global damage are too overwhelming to imagine. We can no longer afford to let ignorance play a key role in the proliferation of this type of damage. One model of sustainable community design would incorporate community (or vision) centers with high tech communication equipment and computers linked to a network of communities around the world. Information on how other people are dealing with a particular issue could be accessed and shared. This immediate access to information could prove vital to the successful implementation of many of these new concepts.



Getting there—a comparison Images courtesy of the Committee on Sustainable Communities.

Transportation

The typical commuter spends an average of one hour per day in transit to and from the workplace. That's 240 hours a year. The need to locate and design communities along economical mass transit lines is necessary to ease the gridlock of today's and tomorrow's highways. For those who can't take advantage of mass transit, electric powered cars such as the Sunray from Big Island inventor Jonathan Tennyson may be the answer, doubling available parking space and significantly improving air quality.

As long as people have to commute, there will be the need for better means of transportation. With advancements in computer and telecommunication technologies, more people are finding it feasible to work out of their homes. Computer companies are addressing this with low cost cameras and software to make networking and teleconferencing as painless as an ordinary phone call. With the ability to transmit data and faxes over phone lines it is not much different from being on another floor in a large corporation.

This type of work scenario is becoming very desirable to many workers and their employers. For many, the time spent in traffic could be spent with family. The savings in transportation and parking costs to the employee, the reduction in traffic jams and accidents and the reduced overhead for employers makes this an attractive alternative to expanding offices.

Recycling

Community-based collection and recycling programs could greatly benefit the environment and provide an additional revenue source for the community. The energy used to reprocess waste materials may be far less than that required for

making virgin materials.

It takes only about five percent of the energy used to produce a ton of aluminum from ore to make usable aluminum from scrap; about 26 percent of the energy needed to make steel from iron ore to produce a ton of steel from scrap; and about 30 percent of the energy used to produce a ton of paper from trees if the paper is made instead from recycled paper. When energy costs rise, the incentive to recycle becomes economically attractive.

Business incentives

For a number of years various private agencies and public officials have proposed the creation of "enterprise zones" to encourage economic development in areas of economic dislocation. By incorporating the idea of sustainability into the enterprise zone concept, the idea becomes even better. A sustainable enterprise zone could be used to enhance the quality of life for people living in and near it. It makes much more sense to encourage innovative and sustainable economic development than to promote outmoded styles of development. A full array of city, county, state and eventually national incentives could be established to encourage businesses which follow the sustainability philosophy to locate or start up in designated sustainable enterprise zones.

The practice of sound economics dictates that a marriage take place between the word environment and the term sustainable, for an environment which is not sustainable is doomed along with the people who inhabit it. In regard to the economics of sustainability, it could be said that nature is calling for a balancing of the books, and the idea of sustainable development is one concept we can't afford not to buy.

•• Paul Ponthieux is a member of AIA Honolulu's Committee on Sustainable Communities.

Steel Styles

Project Profile: Aloha Tower Marketplace

Phase 1

The $125 million Aloha Tower Marketplace, scheduled for completion in October, is the first phase of the multi-million dollar 22-acre, 3.5-million-square-feet waterfront redevelopment project by Aloha Tower Associates (ATA) and Enterprise Development Company.

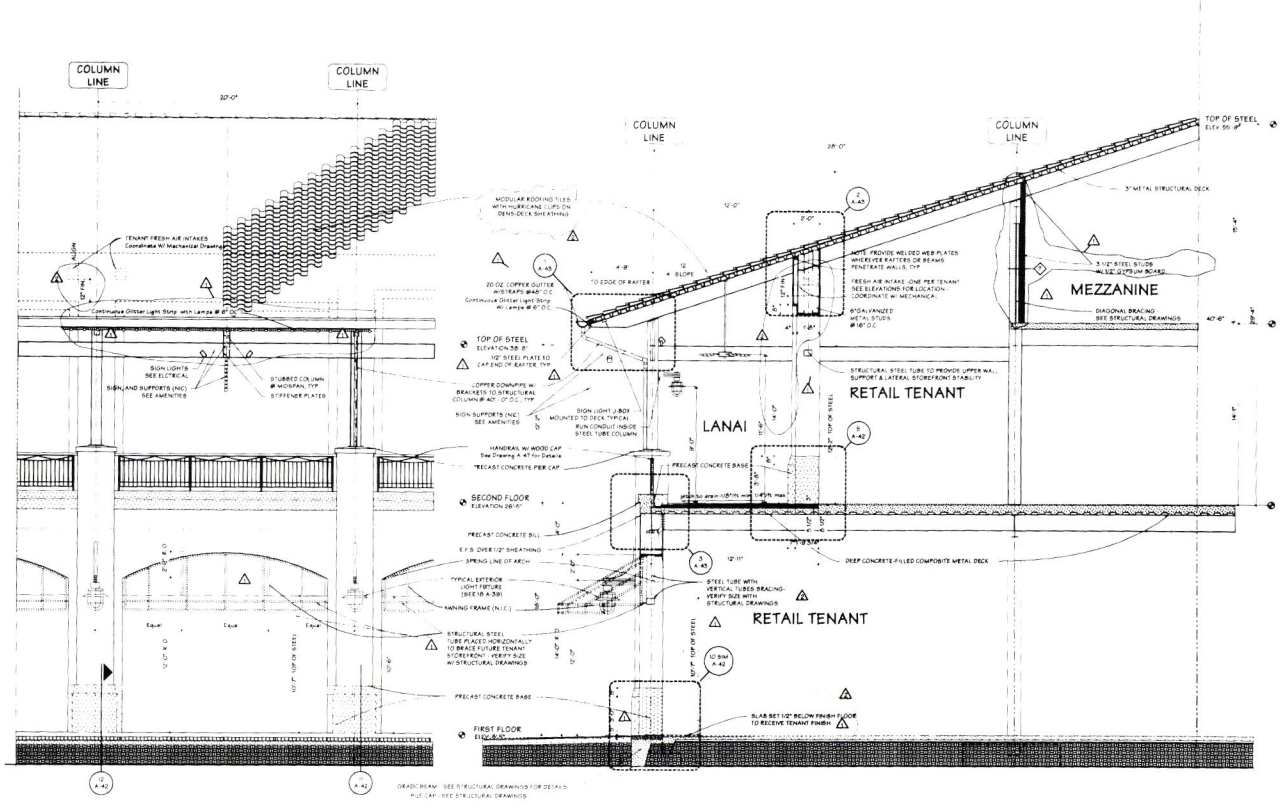
The Marketplace, the centerpiece of the Waterfront at Aloha Tower, will provide a relaxed and tropical setting for 200,000 square feet of retail shops and restaurants, which will extend Honolulu's central business district to Oahu's waterfront.

Two hundred shops, restaurants and vendors will be showcased, on two levels, in an old Honolulu territorial style, complete with green tiled roofs matching the dome of the historic Aloha Tower.

The project will feature various forms of entertainment—cultural events, waterside recreational activities and an amphitheater—to create a uniquely Hawaiian festival experience.

During the design of the Aloha Marketplace, the architects and structural engineers weighed for this project advantages of steel versus other building materials.

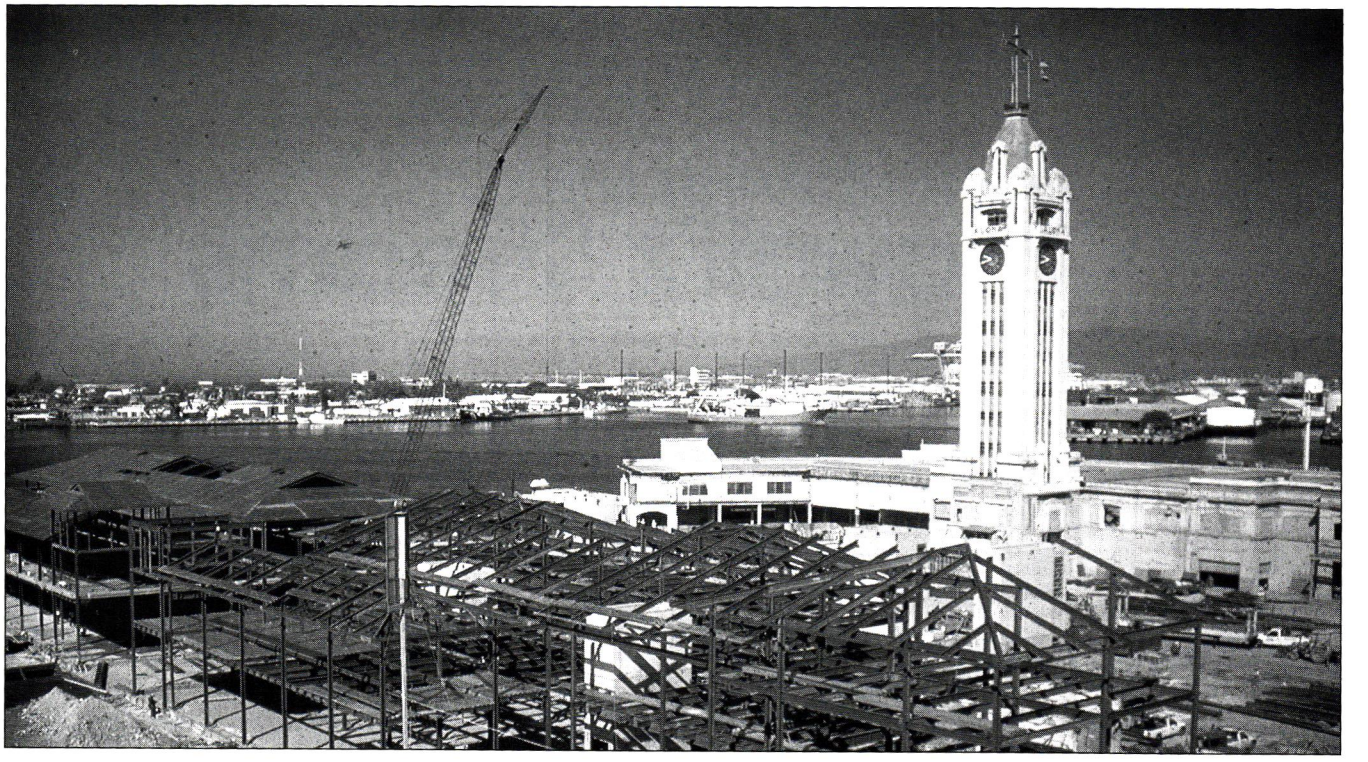
The Marketplace buildings use a structural steel frame with a composite deck/slab system and concrete shear boxes for lateral support. These combined systems allow for reduced framing member sizes and increase the structural efficiency, thereby reducing the overall cost of the building.



TYPICAL ARCADE ELEVATION

TYPICAL ARCADE SECTION

Typical Arcade Section- Aloha Tower Marketplace



Steel framing is being extensively used for construction of the Aloha Tower Marketplace at Honolulu's waterfront. The project – the first phase of a multi-phase redevelopment project – is scheduled for completion in October.

Engineering

According to Dimitrios Bratakos, president of American Structural Engineers, structural steel primed to prevent corrosion was designed as a composite structure consisting of steel beams and steel decking topped with concrete, supported by steel columns.

Bratakos said the steel structures sit partially on existing 70-year-old concrete deck designed for heavy loads. This base was left in place when the existing structures and terminal access ramps were removed to "free" the Aloha Tower from its surroundings.

"Although the base can support heavy loads," said Bratakos, " we wanted the structural system to be of lighter weight. Steel gave us this option."

Concrete shear walls are used to resist wind and earthquake loads.

Aloha Tower Marketplace

Phase I

Architects
D'Agostino Izzo Quirk Architects, Somerville, Massachusetts.
Bruno D'Agostino, principal-in-charge
Tom Martinez, project architect
Aotani & Associates Inc., Honolulu
Yvonne Vanoy, project architect

Structural Engineers
American Structural Engineers, Honolulu/Falls Church, Virginia.
Itzhak Tepper, PE, project manager
Ed Perez, project engineer

General Contractor
U.S. Pacific Builders, Inc., Honolulu
Bob Blaska, project manager

Subcontractor (materials/installation)
Steel Engineering & Erection Inc., Anchorage, Alaska

Steel Fabricator
Columbia Wire & Iron, Portland, Oregon.

Structural Steel
1,097 tons

Miscellaneous Steel
153 tons

Composite Floor Decking
138,113 square feet

Roof Metal Decking
110,828 square feet

The threatened lifelines

Hawaii's Streams

by Andrew Charles Yanoviak

Water—not oil or gold—is the most precious life-supporting commodity on earth. Yet, water resources are being constantly challenged by environmentally insensitive developments. In 1937, when Frank Lloyd Wright designed and constructed his Taliesen West studio in the Scottsdale, Ariz. desert and Fallingwater in rural Bear Run, Pa., he understood the importance of Nature, which he spelled with a capital N. He only selected building materials and created architectural forms that were compatible with nature.

Wright shunned the use of bulldozers. Nature and natural resources were enhanced, not destroyed. Streams and natural waterways were dramatically preserved, protected and conserved.

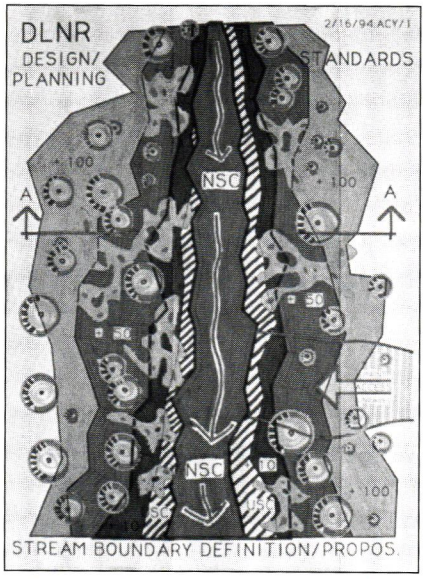
Architect-planner Eric Lloyd Wright, following in his grandfather's footsteps, has expressed similar concern over concrete drainage channels and sewers that have replaced natural streams in the Los Angeles basin.

Various exhibits, including one at the New Orleans Aquarium, are constant reminders that it took nature more than 60 million years to create Amazon rain forests. At current devastation rates, these rain forests will face total extinction within 60 years.

While testifying on behalf of the community before the state's Department of Land and Natural Resources (DLNR) Water Commission and Land Board hearings on the need to protect Hawaii's streams as "threatened vital lifelines," we invariably confront private and public developers and their consultants whose primary interest is to obtain stream diversion and stream alteration permits, regardless of environmental consequences. Perhaps viewing a videotape prepared by the DLNR's division of aquatic resources could be a prerequisite to filing permit applications.

As a member of the Citizens' Advisory Group to the DLNR Water Resource Management division, I prepared and submitted guideline graphics on stream boundary

Major alterations were made to the stream bed and banks during construction of a golf course on the slopes of Mount Olomana.▼



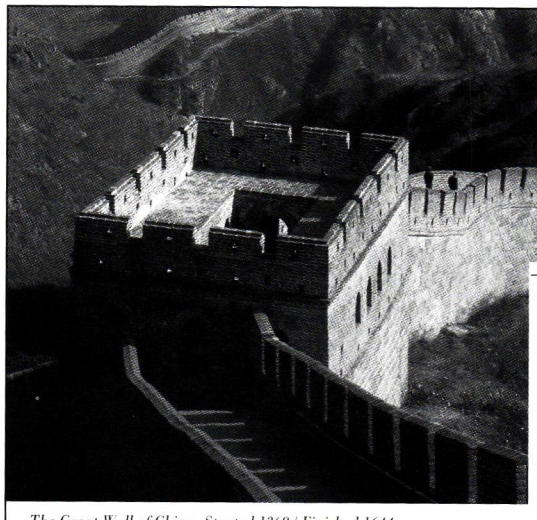
▲ Proposed standards make provisions for buffer zones along natural streams.

definition. These water and land use plans and sections illustrate the need for planned buffer zones on both sides of natural streams to accommodate flood plains and vital vegetation reservoirs during times of drought. These recommendations have been adopted and incorporated by the Office of State Planning in their five-year conservation boundary review proposal to the state Land Use Commission.

Meanwhile, county, state and federal governments continue to grant permits for building revetment walls and their foundations in stream beds. Bulldozers are allowed into streams and earth grading is allowed to the edge of stream banks.

Before promoting urbanization of Hawaii's precious and fragile environment, we have a collective responsibility to learn more about stream bed and stream bank ecology and preservation and learn to conserve our irretrievable natural resources.

•• *Andrew Charles Yanoviak, AIA, APA, CSI is immediate past chair and founder of AIA Honolulu's Environment Committee, chair of the Zoning Code Subcommittee and president of the Save Mount Olomana Association.*



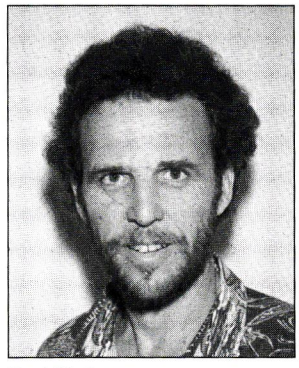
At the roots of sustainability

Natural Ecosystems

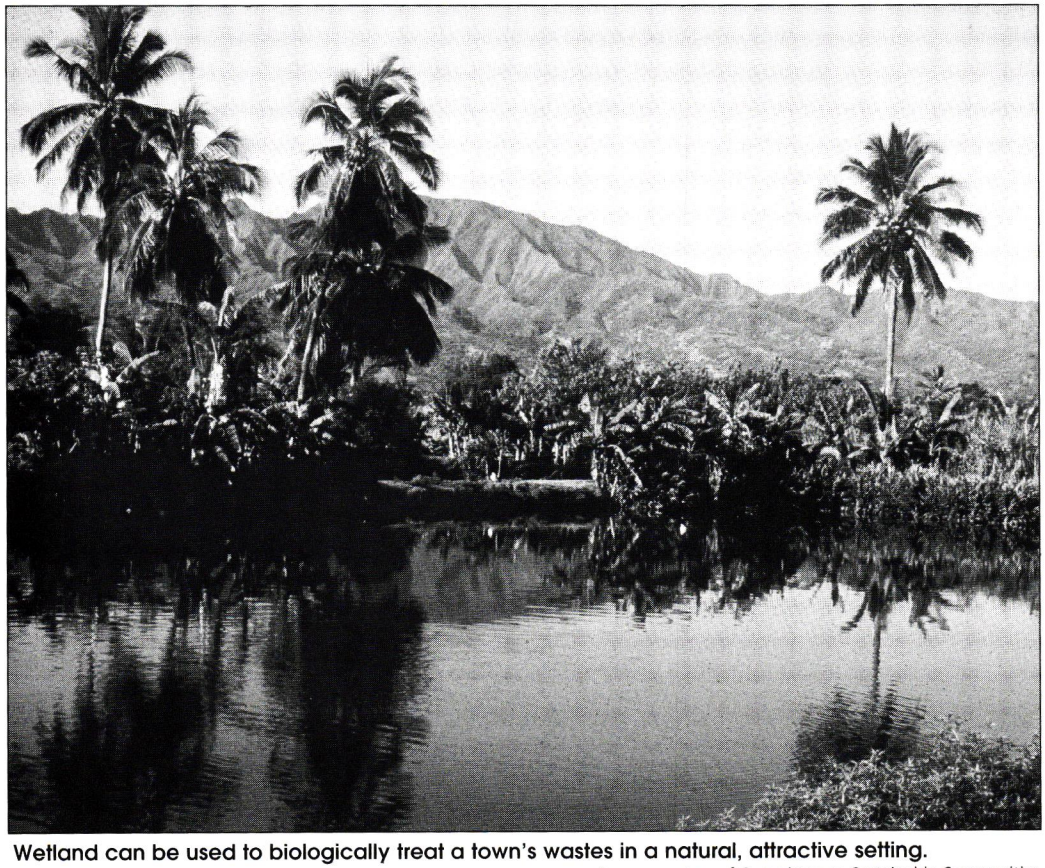
by Red Mahan

A tree's health and strength is determined largely by its root system. The solid home requires a good foundation. The very foundation of sustainability is rooted in the life-giving *quality* of our natural and built environments. My grandfather taught me how "the garden grows." He showed me how the plants will reach for the sunlight with their leaves and go for the nutrient and moisture with their roots and how to save the best seeds for the next crop.

This simple example of a plant can be applied to natural systems. The *governing principles* of natural ecosystems are that they are adaptive to a changing environment, evolving in a manner that will best utilize the resources at hand and regenerate nature. Therefore, our environment model of sustainability requires adaptation, evolution and regeneration to succeed. With every level of planning, design and implementation action we need to consider if plans, designs and actions truly fit within natural governing principles.



Red Mahan



Wetland can be used to biologically treat a town's wastes in a natural, attractive setting.
Image courtesy of Committee on Sustainable Communities

On the farm my grandfather made every effort to recapture nutrient sources for his crops and to work with existing materials at hand. The life of his family depended upon the life of the land. A community can be similar. To be truly sustainable we have to build more with locally available materials and we have to fully utilize potential resources including those within our waste stream. If we build more from locally available materials, we will be forced to consider the ecological consequences of our

building systems. If we have to utilize our wastes as a resource, we will also have to consider the environmental qualities of our wastes and our disposal methodologies.

In Hawaii, few local materials are used for construction purposes. Most local materials are used in their raw form only, with a limited number of locally manufactured building materials available.

Wood, used as a building material, is mainly from the Pacific Northwest forests and subject to damage by termites. Steel is brought in from outside sources. Locally-made roofing, flooring and wall covering materials are nonexistent.

Buildings create an ambiance, a look, a feel about Hawaii. Imported materials compromise the local aesthetics, the beauty and quality of the island experience. We lose a sense of being in a unique place. Our buildings and our communities need to say "you are here in Hawaii." When we build from imported materials and with inappropriate designs we degrade the significant tourism resources that we have. Sustainable construction systems could benefit us in a variety of ways.

Molokai, Maui and the Big Island have excellent sources of cinder for lightweight concrete construction. Clay containing soil is abundant for earth construction systems on all islands. The Big Island has forests planted specifically for use as construction lumber and we are exporting recycled materials that could be converted into building components and utilized locally. Opportunities exist for developing a more locally sustainable form of building.

Our wastes are either dumped in the ocean as sewage effluent, landfilled in the form of solid and green wastes or burned for H power. Very few of these resources are currently being recaptured. Our sewage could be used for methane gas production with a soil amendment as a byproduct. This is currently being done on a small scale in Waimanalo. In Alabama, a school's wastes are directed into a constructed wetland that biologically treats the wastes, produces clean water and provides a "natural learning classroom" for the students. In California, a town's wastes are directed into a wetland that now is a local "natural" attraction. These are only a few examples of how *recapturing resources* can improve the quality of the environment.

Compost made from wastes in California is currently sold in Hawaii. They recapture their resources and we pay for the product, the overhead and the shipping. What could we be doing here in Hawaii?

Our building wastes and demolition wastes compose approximately 20 percent of our landfill materials. We could sort and recycle these materials back into the building systems; 60 percent of building wastes are recyclable.

Germans sell a floor tile made from recycled plastic. In Alabama, a resilient flooring is made from tires. In South Carolina they produce a "cement" block containing 80 percent recycled wood fiber combined with cement that is resistant to decay and termites and which can be cut with a saw.

A plant in Nevada uses old newspapers to make cellulose insulation. In California, they take old drywall and make new drywall materials and recycle plastic to make nonstructural building components like decking, fencing and siding. The Japanese are combining building wastes with sewage sludge wastes and making an inert road paving material. If we recapture these resources we could reduce the waste stream and create building materials at the same time.

Like my grandfather's farm, opportunities live within responsibilities. As guardians of the *aina*, we need to foster a careful husbandry of our resources, develop a deeper respect, appreciation and conscious interplay with all natural systems.

We must realize that the qualities of our environments determine the qualities of our life. We can create beautiful, sustainable communities that work in harmony with the natural environment. We have the ability, the resources and the information.

Do we have the desire and willingness to consider not only ourselves, but future generations as we take care of this wonderful garden home?

•• Red Mahan is a member of AIA Honolulu's Committee on Sustainable Communities.

Thinking in Global Terms

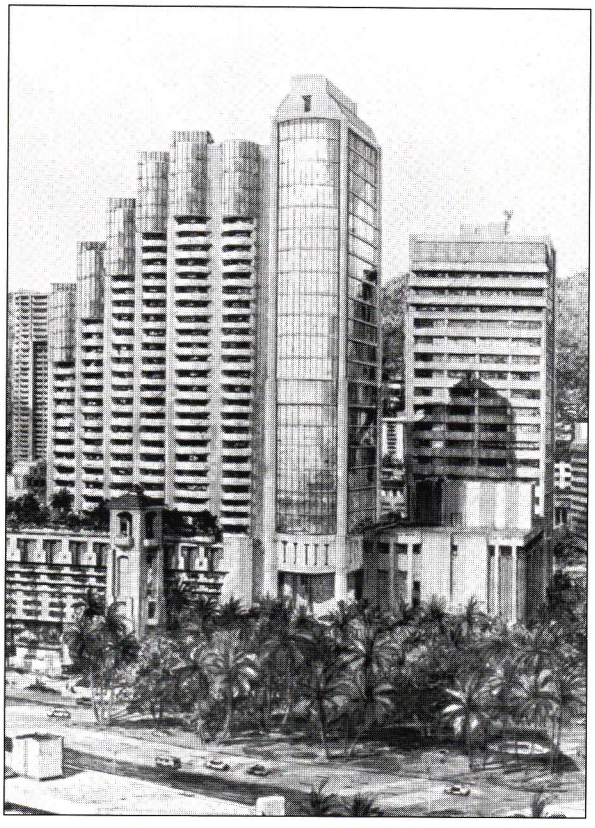
I believe that the real question is who are we and what are we here on earth in this lifetime for? And do we care about the legacies we leave for future generations of mankind? Are we striving to better our world or to use it solely for our own individual benefits and pleasures? If we are wise enough to recognize that our own personal well-being depends directly upon the quality of our environments—built and natural—then we must also recognize the need for both short- and long-term actions that will benefit the quality of our environments. In the short term our actions affect us individually; in the long term they affect future generations. It is within this perspective that we attempt to define and describe the environmental aspects of sustainability - ***Red Mahan.***

Getting it right
Waterproofing

by Michael B. Rolph

Because waterproofing is invisible and does not contribute to the glamour of a building facade, there is a tendency to downplay its importance in a building envelope. In most structures, when properly installed, this protective barrier is quickly forgotten. However, if critical decisions are not properly weighed during the design phase waterproofing can become a designer's nightmare.

In selecting products, a *conservative* posture is recommended because designers have only *one* shot at waterproofing before there is structural overlay and/or landscaping. And



Panelized sheet membrane was used for below-grade waterproofing at the Harbor Court. ▶

while it may represent a small fraction of the building's overall development cost, it can produce the lion's share of problems. Water intrusion can eventually *affect everything*, from structural integrity to finish work.

Hawaii's building complexes are pushing deeper and deeper below grade with 60 feet becoming the norm in near shore areas. Designers and developers of *Harbor Court*, *1100 Alakea* and the new *First Hawaiian Bank* building in downtown Honolulu wisely selected panelized sheet membrane. This full system waterproofing has an outstanding track record.

Panelized sheet membrane, with its resolute thickness and supreme durability, is not a costly material, but it requires a skilled applicator. Some roofing contractors purporting to install waterproofing as a "sideline." In these litigious times, it's not prudent to select an installer who looks at waterproofing casually.

Waterproofing is a *specialty occupation* in its own right. Professionals are licensed, bonded, insured and experienced in waterproofing installation. They are willing to consult in advance, with architects still working on shop drawings. Professionals can suggest what's most effective, for the long term, and show how to value engineer the proper selection and proper application for a particular project.

Current on the literature, waterproofing specialists meet regularly with manufacturer's technicians and keep a jaundiced eye on what's new. Some even run regular "field tests" to simulate real life waterproofing situations using so-called "cutting edge" products which don't necessarily pass muster. Tried and true are the watchwords here.

There may be a place for fluid membrane products, but not necessarily underground. A more costly material than sheet membrane (but less labor intensive), they are most suitable as deck coatings and in areas where there is heavy pedestrian and vehicular traffic, such as walkways and parking structures.

In the building construction picture, waterproofing pencils in quietly for a few weeks on the Gantt Chart. In ideal case scenarios, it's quickly forgotten about forever—as it should be.

Design professionals and spec writers are well advised, however, to give waterproofing a great deal more thought.

Michael B. Rolph is manager of roofing, waterproofing & special coatings at Honolulu Roofing Company, Ltd.

Challenging architectural firms

Economic Conditions

Current Hawaii and world economic conditions challenge local architectural firms. Respected economic publications report a world-wide saturation in resort projects. Hawaii's local economic conditions show a downturn in tourism and the uncertain future of local agricultural crops. Even government sector design and construction, which lags behind private sector activity, ultimately slows as the result of reduced tax collections.

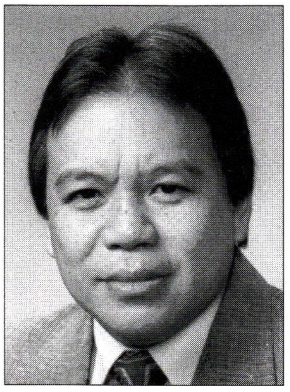
Having started with this message of gloom, let me suggest a brighter future for architects and the buyers of architecture. The economic slowdown can have benefits for both.

Growth in consumer choice of architects

At last count there were about 180 architectural firms in the state of Hawaii. Economic slowdown has historically resulted in the growth of the number of architectural firms as larger firms reduce their staffs. While reductions in staff are personally traumatic to both employer and employee, my experience and that of other architects is that this can be an opportunity.

Many architects operate their architectural firms in order to realize personal professional goals. Many architects wish to leave their personal stamp upon design projects. One sure way to do this is to own and manage an architectural practice. These challenging times can ultimately result in personal professional growth.

The increase in the number of architectural firms means more opportunities for clients to find an architect who will serve their specific needs. Let us consider an analogy with the automobile industry. Henry Ford commented that the public could have any color of his Model T so long as it was black. The proliferation of automobile manufacturers in the United States has caused trouble in Detroit but greatly increased consumer choice.



Daniel G. Chun, AIA

With the reduction in the magnitude of projects available, established Hawaii architectural firms are now more interested in serving more markets and types of projects. This again increases consumer choice.

AIA is good for architects and consumers

Past periods of slow economic conditions in Hawaii showed that membership in the American Institute of Architects did not significantly decrease. I believe that the value in membership is seen by both architects and consumers of architectural services.

There is some public confusion that the letters "AIA" stand for licensed architect. Architects are actually licensed under the separate jurisdiction of the individual 50 states. In truth, the letters stand for a special kind of architect. AIA members practice under a national code of ethics. Members of the American Institute of Architects have also committed themselves to a program of continuing professional education as a condition of membership. This means that the letters will represent architects who participate in continuous learning to serve an increasingly demanding clientele.

↦ *Daniel G. Chun, AIA, is president, Hawaii State Council/AIA.*

Market Place

Big Island expo scheduled

The Hawaii Island Contractors' Association will hold its fourth annual Building Expo at the Afook-Chinen Civic Auditorium in Hilo on Aug. 5 and 6.

Call 935-1316 for information.

Research library available to designers

The Cement & Concrete Products Industry (CCPI) of Hawaii wants to remind industry professionals that its research library services is available free to all who are in need of information on concrete or masonry topics.

The library maintains an inventory of guidelines, design information and accepted standards of all types of concrete and masonry work as an industry service.

Call 833-1882 for information.

Call for design entries issued

Paul Pollock, AIA, chair of the AIA 1994 Honolulu Design Award Program has issued a call for entries for this annual event.

Licensed architects who are AIA Honolulu members in good standing are invited to enter their projects for consideration in eight categories—single-family residential, multi-family residential, renovations and additions, historic preservation/adaptive reuse, office, commercial and institutional, interiors, hospitality/recreation, future work and 25-year award.

Pollock said letters of intent and entry fees should be submitted to the AIA Honolulu office no later than 5 p.m., May 3.

For additional information call 545-4242.

Parade of Homes scheduled

The 1994 BIA Parade of Homes will be held weekends, Saturday, Sept. 10, through Sunday, Sept. 25.

Co-sponsored by the Building Industry Association of Hawaii (BIA) and the Hawaii Association of Realtors®, the 38th annual BIA Parade of Homes will showcase the latest trends and developments in homebuilding, remodeling, interior design and landscaping.

For additional information contact Kim Mitsunaga, BIA, 847-4666, ext. 207.

EXPO set for May 6-7

The BIA Big Island Building Products EXPO, co-sponsored by the Building Industry Association of Hawaii and GECC Financial, will be held at the Kona Surf Resort Convention Center on May 6, from 3 to 9 p.m. and on May 7, from 9 to 5 p.m.

Laws available on disks

The Law Book Store will issue up-to-date computer-disk editions of the Hawaii Revised Statutes (HRS) and the codes and ordinances of all four counties this month. Annual updates of these will be available.

The disks include a key-word-search feature that gives virtually instantaneous access to all relevant sections of Hawaii's laws. They also include a cut-and-paste capability that makes it possible to import text of the law from the statutes or county codes into briefs and other documents.

Call 422-6322 for more information.

Firm opens second office

Kober/Hanssen/Mitchell Architects recently opened a second office located in the new Kapolei Building in the City of Kapolei.

ASLA honors specialist

Dr. Fred Rauch, horticulture specialist at the University of Hawaii's Horticulture Department and a leader in the establishment of the Landscape Industry Council (LICH), was presented with the 1994 Malama Aina Award by the Hawaii Chapter of the American Society of Landscape Architects (ASLA). Rauch has been instrumental in leading the green industry in its efforts to achieve proper recognition of its important role in Hawaii.

Letter to the Editor

Dear Editor:

What prompted you to place One Waterfront Towers on the cover of the April issue? Was it because you felt that these two buildings "reflect a Hawaiian sense of place" or was it just advertisement for Skylights of Hawaii? On page 22 of the same issue Daniel Chun tells us that the AIA, Hawaii Council is opposed to House Bill No. 2940 under which an architectural oversight commission (perish the thought) is to be established as a kind of design police to make sure that the buildings we design "demonstrate an exterior, including landscaping, that reflect a Hawaiian sense of place." Are architects and developers so much out of touch with the public that a law like this is thought to be necessary?

Hans Riecke, FAIA

Editor's Note: *Cover art selection is based on photo quality, composition and relation to topic. Advertising plays no part in the selection.*

Environmentally sensitive architecture

City of Kapolei

by Henry Eng

The concept of green architecture, which we interpret to mean architecture which is environmentally sensitive, has been incorporated into the design of buildings within the City of Kapolei. Campbell Square, which includes the James Campbell Building and the Kapolei Building, was designed by Kober/Hanssen/Mitchell Architects with interiors by Ferraro Choi and Associates, Ltd. Both architects and interior designers played key roles in providing many of the environmentally sensitive features in—water conservation, energy conservation, recycling and material selection.

The building was designed to incorporate the use of non-potable water for irrigation when a dual water system is implemented in Kapolei. Plumbing fixtures were selected to use less water. An air-cooled air conditioning system was selected instead of a water-cooled system thereby saving up to 30,000 gallons per day—enough to serve 60 homes.

All office buildings in Kapolei will use xeriscaping principles. This is done by specifying landscape materials and practices which promote the most efficient use of water.

Energy conservation features abound in the building design. Fluted glass panels are used in offices to allow natural light to permeate to the building interior while providing privacy. Lighting systems automatically adjust to complement natural light and are part of the building's overall energy management system. Heat mirrored glass, used on the building's exterior, provides added insulation from external heat which reduces the load on an already energy efficient air-cooled air conditioning system.

The building's design is characterized by arcades, balconies, overhangs, awnings, and recessed fenestration which are designed to reduce the energy load on the building. The integrated energy management system was computerized for zoning, while timing controls for lighting and air conditioning enhance energy efficiency.

The building was designed with provisions for the collection and transfer of recyclable materials including office paper, newspaper and aluminum cans. The Palailai Mall, which adjoins Campbell Square, has incorporated the use of recycled plastic tree grates instead of conventional cast iron grates. These recycled plastic tree grates are lighter, less expensive, easier to install and will not rust.

Material selection was carefully coordinated by the architect and interior designer with emphasis placed on the use of non-endangered species.

This computerized nerve center not only controls Campbell Square's lighting, air conditioning, security and safety systems but also the sprinkler systems serving the entire City of Kapolei.
HEDRICH BLESSING PHOTO
Courtesy of Ferraro Choi and Associates Inc.
▼

Henry Eng, AICP, is manager of Land Planning, the Estate of James Campbell.

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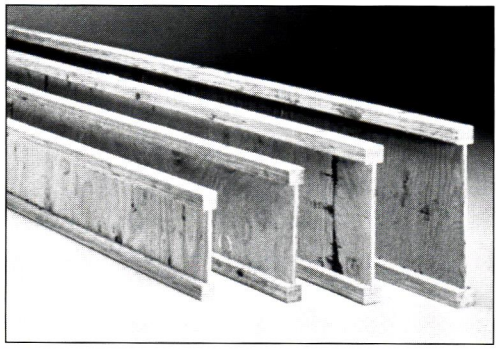

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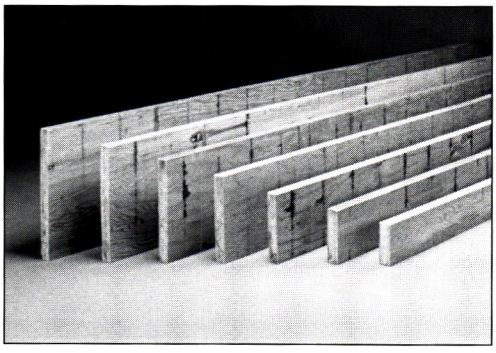
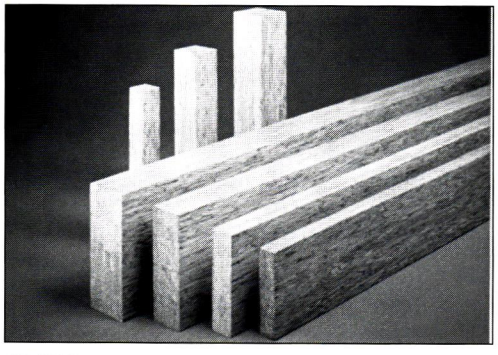


Parallam® parallel strand lumber (PSL), available in widths of 2 11/16", 3 1/2", 5 1/4", and 7", and in depths of 9 1/2", 11 7/8", 14", 16", 18". Parallam® PSL beams are stronger than equivalent-sized glulam beams. Additionally, Parallam® PSL beams won't check, split or twist like solid-sawn timbers.



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1993 Design Awards
Honolulu Chapter AIA

Award of Merit

Single Family Residential

Urban Works
Residence for the Umeno Family

The oblique fronted elevation expresses a central circulation spine with saddlebag volumetric attachments.

Jury's Comments

"Responds well to the mixed use/residential neighborhood...Good use of ordinary, humble materials...Excellent results from a modest budget...Skillful manipulation of space and form...Good cross ventilation."

In 1991 Urban Works was asked to design a relatively modest urban residence in Liliha for a family of four on a 5,000-square-foot lot. Basic requirements for the 2,900-square-foot dwelling included a small living room to house Roberta Umeno's koto, a small family room, master bedroom suite cum bridge and balcony, a generous studio for Morris Umeno and bedrooms for the owners' teenage daughter and mother. Morris Umeno, a school teacher and mixed media artist, required space for displaying his personal pieces and works of fellow artists.

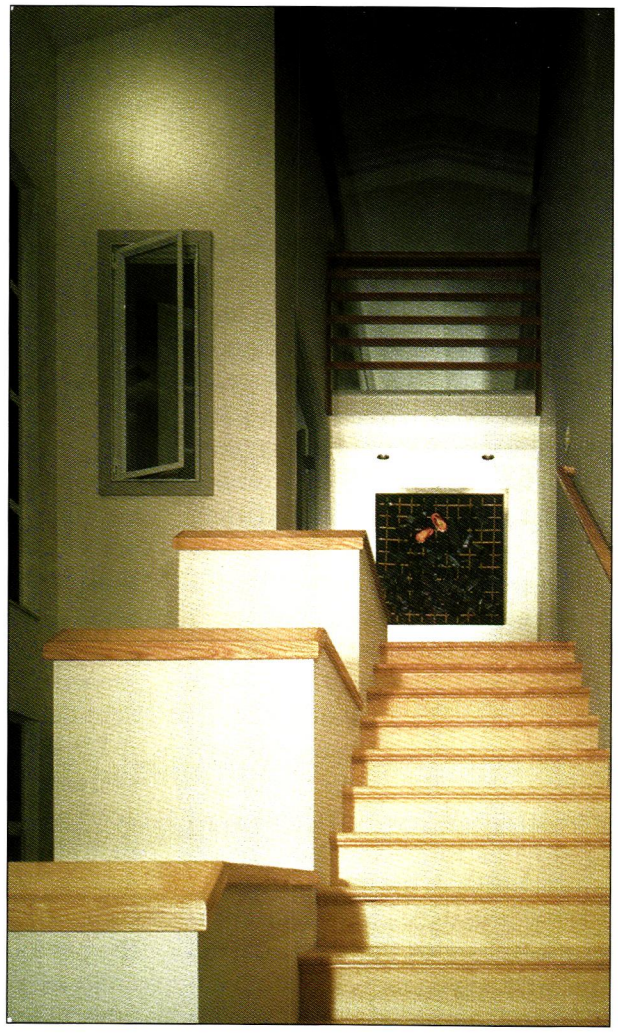
The two-story house is linear in nature, responding to busy Liliha Street on the makai side and a private alley on the mauka side. The main public entry is along Liliha Street, while family access is from the private alley. The design parti is a central circulation spine with various spaces and rooms attached along it in "saddlebag" fashion.

In several instances, double height spaces such as the living room and stair/hall connect the lower floor to the upper floor. The parti is formally expressed as a long two-story element, punctured by operable awning windows to bring natural light and breezes to the dwellings interior, and terminating in small second floor viewing balconies at both ends of the house.

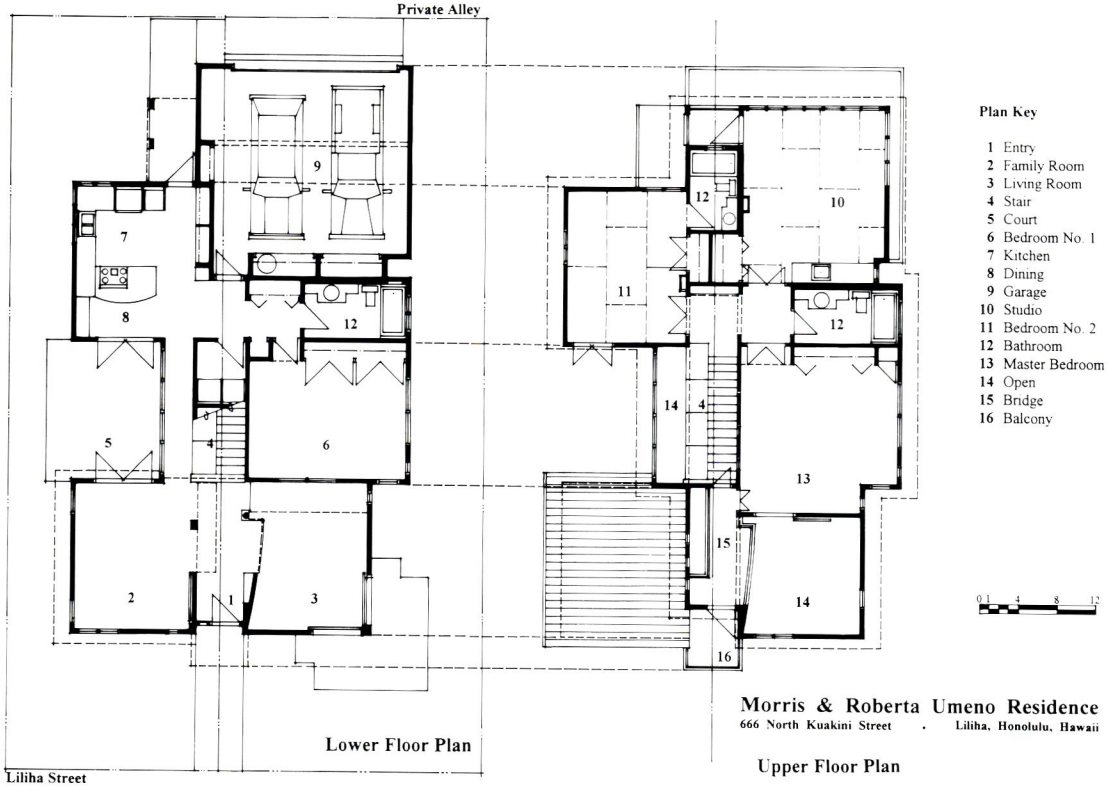
A construction budget of $100 per square foot was achieved through careful planning and utilization of space, moderately priced materials and finishes, including T1-11 plywood, aluminum windows and asphalt shingles on the exterior, and gypsum board, cork tiles, plastic laminate cabinets, sisal mats, carpet and polished concrete floors. Maple was utilized for the stair and adjacent display ledges.

Credits

Owner
Morris and Roberta Umeno
Architect
Urban Works
Principal-in-charge
Lorrin Matsunaga, AIA
Project designer
Deborah Rosenblum
Production
Todd Balicki
Structural engineer
Michael Kasamoto
General contractor
City Construction
(David Asato, President/Leslie Look, project coordinator).



View upward along the spine to the Tokonoma and loft. Glazed elevation opens to the courtyard.
FRANK PARK PHOTOS



Sema4 software responding to architectural needs

Architecture is not strictly about design and creativity. To remain in business, architectural firms also need to keep close tabs on the "bottom line." Computers can take the drudgery out of "number crunching" activities. But, finding the right software package can be time consuming.

Architects Hawaii did, and switched to an accounting package—Sema4—designed specifically for architects and engineers.

The package integrates financial accounting with project management, handles simultaneous cash and accrual accounting and allows the creation of useful reports.

The firm used outside accounting services to handle financial record keeping for complex architectural projects. The service bureau had difficulties in providing the accounting information that satisfied company reporting requirements. For instance, Architects Hawaii utilizes both cash and accrual accounting methods and the service bureau could not accommodate this requirement without doubling the processing of the input. The architectural firm had to provide entries twice—once for the cash and another for the accrual record keeping. This practice added to workload and processing costs.

"Packages I reviewed didn't have the features needed to handle simultaneous cash and accrual accounting, which we use for income tax and book purposes," said Charles Hinsdale, vice president of Finance, Architects Hawaii Ltd.

The firm acquired Sema4's version 6.0 now running on a Novell light network.

Hinsdale indicated that with this system simultaneous cash and accrual accounting is handled easily and the firm does not have to double data input. Further, the company has taken advantage of the package's ability to generate customized reports and the flexibility to handle unique job costing methods.

A major advantage of the program according to Hinsdale is its ability to track invoices and accounts receivable on a current basis, thereby allowing constant monitoring of aging of accounts outstanding.

Sema4 is a product of Sema4, Inc., New York.

New patented invention keeps rain gutters flowing

Homeowners today can keep rain gutters flowing freely without having to climb ladders to remove leaves and debris, thanks to a clever new product called the Hinkley gutter flooder.

Its inventor, Robert A. Hinkley, said the object of this patented device is to provide back flushing that uses water from a conventional garden hose as its flushing agent.

Hinkley added that the time to clean gutters is not during torrential rains, but whenever a person feels like it—and frequently—from the ground, without risking falls and potential injuries. This practice not only prevents debris buildup, but also potential damage to eave lines, ceilings and walls when gutters hold standing water.

For information call 734-5695.

History and mythology meet in artist Yvonne Cheng's interpretive glass mosaic mural for the State Office Tower lobby (Leiopapa A Kamehameha Building). Jigsaw-shaped segments created from 43,000 pieces of hand-blown glass matching the artist's watercolor, travelled from Italy to Hawaii for assembly. Hawaii's heritage, translated by an artist, many artisans, and the magic of mosaic.

Phone 526-0467

"Leiopapa A Kamehameha", by Yvonne Cheng. Glass Mosaic Mural, 12' 4" x 34'. Commissioned by The State Foundation on Culture and the Arts.

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