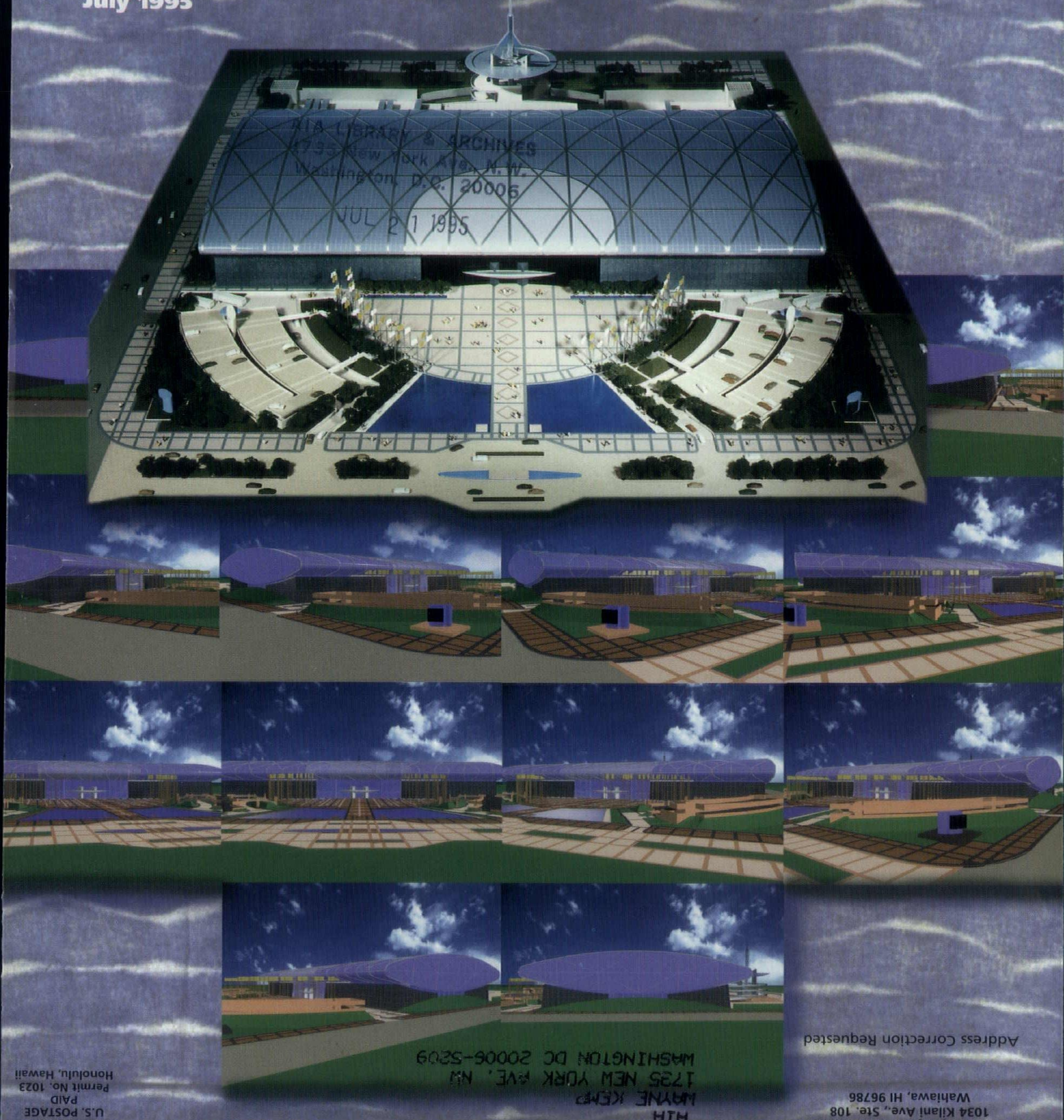
Hawaii Pacific Architecture

July 1995



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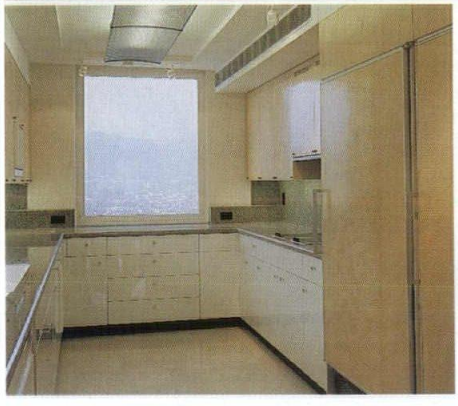

Building Castles in the Sky...

Allied Builders System was pleased to be asked to execute the grand scale remodeling of businessman Robert Taira's 36th story 3,800 sf Waikiki penthouse. Architect Bruce Newell's unique design solution called for demolishing the aging interior and creating a stunning tribute to the *kamaaina* bakery king's many accomplishments.

Today, multi-function cabinetry showcases Taira's extensive art collection, triples home storage and hides infrastructure upgrades. A theater-quality entertainment system and new central air-conditioning, hidden under three-inch ceiling panels also helped pave the way for truly palatial living.

"With the children gone, we opted to have everything light, airy, free-flowing toward the panoramic ocean view," said Taira. "We were thrilled with the plans and even more thrilled with the results..."

Adds Newell: "Allied's reputation for professional organization, quality workmanship and client caring preceded our introduction. They performed as advertised. We look forward to doing business with them again."

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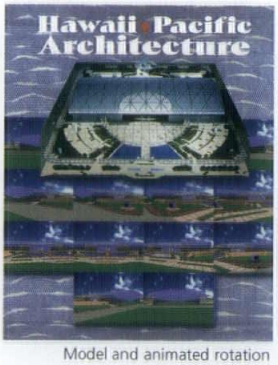
This month *Hawaii Pacific Architecture* focuses on the changing design profession. Hale I. Takazawa addresses how technology advancements have changed the business environment in which architects operate, and Stanley S. Gima, AIA, talks about how the general public can obtain design services. Gary Y.K. Chock, S.E., provides insight on the structural story behind the First Hawaiian Center, which when completed will be downtown Honolulu's tallest building. A Makiki Heights residential renovation, designed by Ossipoff, Snyder & Rowland Architects Inc., and the Yajima Service Station, designed by Projects International Hawaii, are presented as 1994 AIA Honolulu Design Award winners. This month's cover features the Shanghai Convention Center and an animated rotation of the Center. The project was designed by the Honolulu firm AM Partners Inc. The Hawaiian Tapa used on the cover and throughout the magazine is courtesy of the Bishop Museum.



Model and animated rotation by AM Partners Inc.

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News Briefs

Gentry Names Three Senior Vice Presidents


Jeff Brown


Tosh Hosoda


Randolph Ouye

Gentry Homes Ltd. is promoting three longtime Gentry executives to the newly-created level of senior vice president. Under the company's consolidation, Jeff Brown is promoted to senior vice president of construction management; Tosh Hosoda becomes senior vice president of planning; and Randolph Ouye becomes senior vice president of site development.

Brown is responsible for residential operations. He holds a general contractors license, is a director of the Building Industry Association of Hawaii, a member of the Building Systems Council, National Association of Home Builders and is active with Hale O Ulu, a Child & Family Service program.

Hosoda is responsible for community and government relations, which includes interacting with neighborhood boards and community associations, obtaining project entitlements, other approvals and permits from the city and state for Gentry Homes Ltd. as well as overseeing project management for Ewa and Waiawa.

He is president of the Land Use Research Foundation, past president of the Leeward Oahu Transportation Management Association, on the board of directors of Mid-Pacific Country Club and a member of the Urban Land Institute.

Ouye is responsible for the administration of all engineering and architectural consultant work and the construction of infrastructure improvements. He holds a civil engineering professional license and a general contractors license. He is active in the American Society of Civil Engineers, Structural Engineering Association of Hawaii, American Public Works Association, Urban Land Institute and National Association of Home Builders.

Access Committee Announces Changes

The Architectural Access Committee recently announced it has a new program director, two new members and a new address.

Dean Aoki, AIA, replaces Susan Taylor Beury as program director. Aoki is responsible for planning, coordinating, researching and implementing AAC requests, decisions and operations.

Two architects have been appointed to the AAC, increasing its size to seven members. New members include Penny Hamilton Posedly, AIA, staff architect for The Queen's Medical Center, and John Marko, AIA, CSI, co-chair of the AIA Honolulu Codes Committee.

The Commission on Persons with Disabilities and the AAC offices now are located at the old AAFES building just west of Fisherman's Wharf restaurant. The new address is 919 Ala Moana Blvd., Suite 101; Honolulu, Hawaii 96814. To reach the AAC, call 586-8128 V/TTY or fax 586-8129.

HFA Biennial Trade Show

The Hawaii Flooring Association Biennial Trade Show will be held Sept. 15 at the Ala Moana Hotel in Honolulu. The show will be from 10:30 a.m. to 3 p.m. and will feature locally available floor covering materials, services and interior finishings. Admission is free.

New Belt Collins President Named

Anne Li Mapes has been named president of the Belt Collins Hawaii corporation. She succeeds Tom Papandrew, who has been named chairman.

Mapes has been a senior planner for Belt Collins since 1984 and was responsible for preparing environmental impact analyses as well as seeking government permits and approvals for private- and public-sector clients.


Anne Li Mapes

She recently served on the Conservation District Review Advisory Committee of the State Department of Land and Natural Resources and is a former board member of the YWCA of Oahu where she currently chairs the Nominating Committee.

Martin & Bravo Appoints New Vice President

Gary Y. K. Chock, S.E., has been named vice president of Martin & Bravo Inc. Chock joined the company in 1986 as project manager.

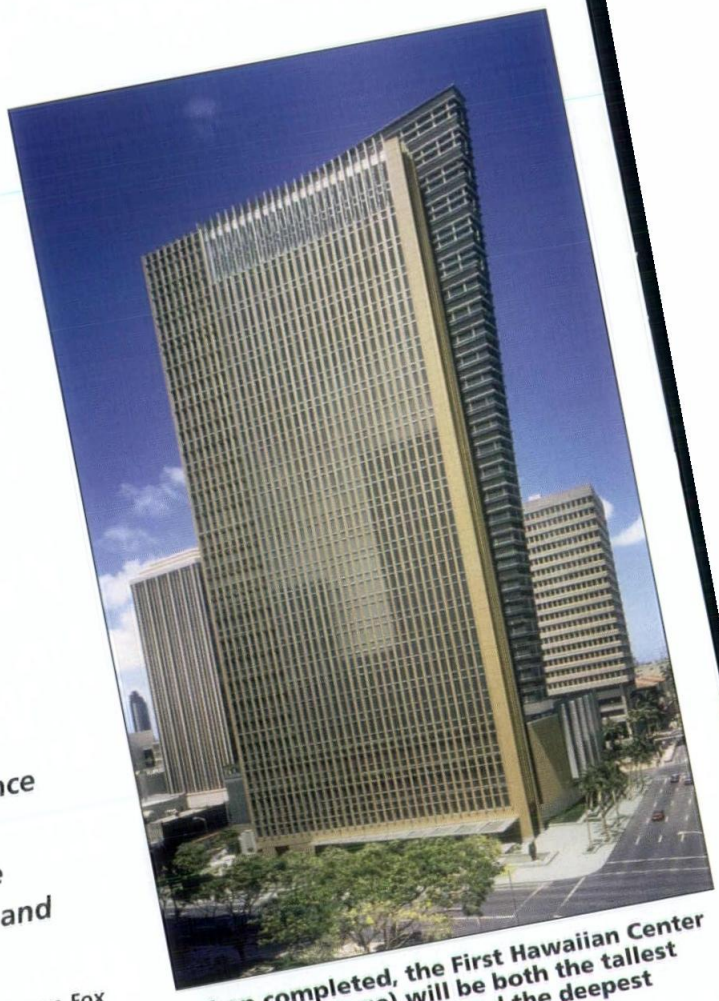
Chock is director of the Structural Engineers Association of Hawaii and a member of the Consulting Engineers Council. He chairs the Hawaii State Earthquake Advisory Board at State Civil Defense and was Hawaii's Young Engineer of the Year in 1990.

ctural story behind First Hawaiian Center

wntown Honolulu's llest Building

Y. K. Chock, S.E.

> **"We sought to represent the dialogue between the mountains and the sea with the two-part composition of the tower. The somewhat prismatic geometry is intended to heighten the juxtaposition while surface texture recedes to accentuate the dominance of form. Nature, through landscape, negotiates the interaction of the public and private realms."**
>
> —William Pedersen, AIA, Kohn Pedersen Fox



When completed, the First Hawaiian Center (photo montage) will be both the tallest building above grade and the deepest below sea level in Hawaii's history.

When First Hawaiian Center formally opens late next year, it will have the distinction of being downtown Honolulu's tallest building, rising 430 feet, roughly four times as high as Aloha Tower, Oahu's very first skyscraper.

While its profile will be visible for miles, the new 30-story corporate headquarters office tower, designed by the internationally prominent architectual firm Kohn Pedersen Fox, has a very significant below grade feature: general contractor Fletcher Pacific Construction excavated about 96,000 cubic yards of earth to anchor its five-story basement structure to an eight-foot-thick concrete mat foundation 55 feet below grade. It will be both the tallest building above grade and the deepest below sea level in Hawaii's history.

Principal factors which impacted the structural design of First Hawaiian Bank's new headquarters, which is intriguingly comprised of nestled triangles, were precedent-setting height and depth, provisions for hurricane force winds (and possible earthquakes) and the varied subsurface soil composition and foundation considerations.

A probabilistic hurricane hazard analysis, using a data base from 1949 through the early '90s, was developed to independently verify the design bases for wind. (Hurricane Iniki, which arrived in the middle of the schematic design, was included.) The model included these parameters: historic rates of tropical storm occurrence rates in Hawaii's vicinity, projected maximum wind speeds of

The First Hawaiian Center (shown as a photo montage), scheduled to open in late 1996, will be roughly four times as tall as Aloha Tower, Oahu's very first skyscraper.

Photo montage by David Franzen

future hurricanes (Hurricane Iniki reached about a 145 mph maximum), random storm tracking, plus a mathematical profile of wind velocity as a functon of distance from the storm's center.

In the pursuit of a high-efficiency structural solution complementary to the project's architectural objectives, Martin & Bravo, project engineers, investigated many framing schemes in both steel and concrete, assessing the vertical and lateral-load-resisting performance of each against the project goals.

Because of the building's unique sail plan, its elevator core "mast" location and high wind load environment, there was concern with minimizing structural twist or "helm" (the tendency to head up or bear away from the wind) in high winds and secondarily with earthquake-induced stresses, in seeking solutions compatible with Kohn Pedersen Fox's energetic architectural expression.

Extensive wind-tunnel tests were conducted to provide feedback on the dynamic motion characteristic of each major "generation" of structural evolution, seeking to optimize every aspect of its behavior, rather than simply analyzing stress. Improving end-user comfort on a day-to-day basis was a prime rating factor as was building economy and speed of construction, once absolute safety was assured.

The tests enabled analytical calculation of upper floor movements during episodes of wind gustiness. Looking at the comfort of building occupants during puffs of moderate to fresh winds was possible by simulating top-floor acceleration for various recurrence intervals. The building then was desensitized to dynamic liveliness in the wind by tuning the structural natural frequencies to maintain a more stable pointing ability when facing upwind, thus reducing yaw tendencies at the "prow" of the building.

Once this was completed, the superstructure fell within standard acceptability levels for the framing which was finally selected—a mixed construction system starting with a concrete basement and all-steel framed super structure, comprised of a hybrid system of an eccentric brace core coupled with forward and aft rigid frames. Interestingly, a structural system designed under the usual Uniform Building Code procedure would not have met the floor motion acceptance criteria.

The braced core with rigid space frames offers the best combination of lateral stiffness and robust strength which is consistent with the architectural parameters. Because First Hawaiian Center is located in an area that's at risk (albeit relatively low) for earthquakes, its structural design conforms to the UBC's seismic zone 2A.

At the basement levels, the elevator core is formed with cast-in-place concrete bearing walls, where concrete structural walls act both as bearing elements and lateral-load-resisting shear walls. The entire structure is supported by a concrete mat foundation at the very bottom, where a large hydrostatic buoyant force is opposed by mat anchor devices acting in tension. The remaining tower columns also are supported by concrete.

First Hawaiian Center will become the working platform for some 1,500 people. It will not only house the bank's executive offices and main branch facilities, but will become home to the Contemporary Art Museum's downtown gallery. Set back dramatically from Bishop and King streets, First Hawaiian Center will offer nearly 25,000 square feet of plaza space featuring landscaped expanses, water features and more—adding support to the public environment by providing a gathering place for downtown Honolulu's professionals at the center of the city's historic financial district.

↔ *Gary Y.K. Chock, S.E., is vice president, Martin and Bravo Inc., project engineers for the First Hawaiian Center.*

Hawaii State Council

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Editor's Note:

In the June issue of *Hawaii Pacific Architecture* Edward Sullam, FAIA, who originally designed the Manoa Valley Theater, was not mentioned in the article on community theaters. We apologize for this oversight.

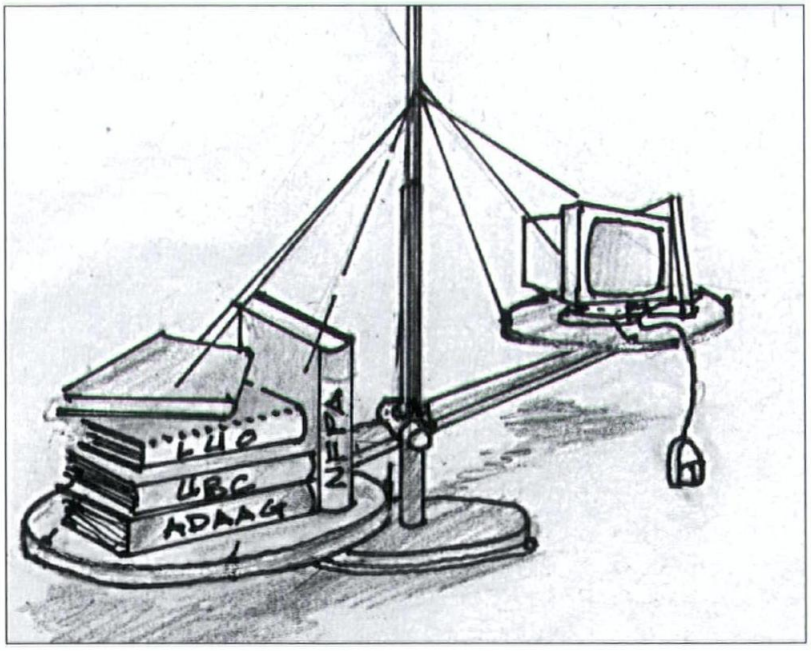
Changes in technology, law, affect the design process

Where Does the Money Go?

by Hale I. Takazawa

One of the most resounding questions clients ask architects is "WHERE DOES THE MONEY GO?" Part of the answer lies embedded in change. The changing design profession is linked by changes in technology, law, the economy and professionals' sensitivity to and control of the built and natural environment. Most changes have resulted in shifting an architect's time and attention to new issues that constantly arise in architecture.

Technology has affected the design profession in a dramatic way, and other factors such as strict regulations, liability and heavy competition have changed the profession from simply designing a building to juggling complex issues in a number of arenas. Technology can be defined as technical advancement. In some cases it has helped make architect's work easier, and in others technology has aided in the understanding of preserving human safety. The bottom line of all these changes means money is spent doing a variety of things that often are only distantly related to the actual design of a place.



Computers in architecture also have dramatically changed the face of the profession. Aside from word processing and data bases that have changed all businesses, the most striking change is the advent of CAD or computer-aided design. The computerized graphic drawing methods in CAD allow designers to rapidly draw, and more importantly revise drawings, resulting in large time and resource savings.

With CAD, a designer may present modifications faster, leading to more opportunity for revision and refining. CAD is basically divided into two categories, computer drafting and computer modeling. Computer drafting is very similar to hand drafting, but it allows faster revisions and eliminates repetitive tasks. Drawings are simply separate plan elevations, details and schedules one would see in a basic drawing set.

An example of CAD power comes with detailing projects. With slight modifications, a window sill detail may be drawn once, then used on subsequent projects. Architecture firms have created entire libraries of these types of details allowing easy insertion into the drawings of a current project.

In contrast, computer modeling bases itself on the development of a fully-detailed 3-D model. This model may be rendered, studied in-the-round, or cut open to see plans and sections. In some programs, the model is linked to a data base that gives information on the type of material, size and cost of each element within the model. Although computer modeling is commonly used for concept de-

sign and presentations like walk-throughs, fly-throughs and animation, the trend of CAD development leans toward a combination of modeling, production of working drawings and cost estimating.

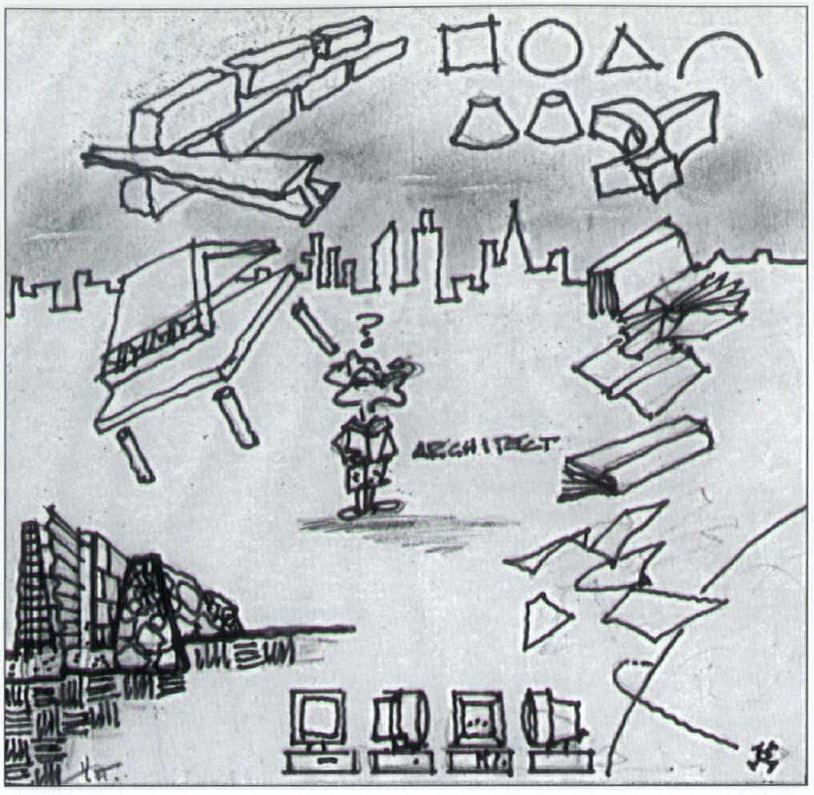
In addition to CAD, the birth of the information super highway and the use of network systems in computing has dramatically improved target markets for Hawaii's architects. Now these computer drawings can be wired throughout the globe in seconds. Global communication has opened the door for architects to market and conduct business worldwide.

Computers have made life easier for architects, however, other advances in technology have made the architect's job more arduous. The ever-increasing knowledge of the physical world and its properties leads to constant changes in the levels of building performance and how special hazards are treated in building. Earthquake research is a good example of this concept. As better instrumentation to record earthquakes and their effects on buildings are studied, new technologies also are being developed to strengthen buildings and preserve life in an earthquake.

These types of advances translate into regulations adopted into law by local governments to maintain a specific level of safety and building quality. Due to ever-improving fire, life safety, engineering, materials testing and basic humanitarian issues, regulatory agencies have piled on codes, standards, ordinances, laws and guidelines that could make any designer decide to go to law school.

In Hawaii, the basic bibles of building are the Land Use Ordinance and the Uniform Series of Codes. These documents have developed into a quagmire of rules and regulations to standardize building quality in terms of safety and in defining the community.

The Land Use Ordinance defines the overall limits of building on a property based on what type of zoning district the parcel is located in, and imparts other regulations if the project is in a special design district. Design for these requirements continually increases in difficulty, and time is further drawn out by the reviewing agencies who enforce these regulations. The City and County of Honolulu has made significant strides in streamlining this review process, but there are still cases where architects create special documents for a specific agency only to have projects held in review for more than six months.



Computers have made life easier for architects, however, other advances in technology have made the architect's job more arduous.

Other extremely important issues that consume the design professional's time are laws involving asbestos, hazardous materials, toxic cleanup and other environmental regulations. Although time-staking, these regulations are imposed by the government for the public's well-being.

Besides regulations concerned with life safety and urban planning, there are others that protect humanitarian issues. The American Disabilities Act and its related guidelines push designers to find creative solutions to accommodate the physically-challenged. The act also has pushed building owners to undergo some serious changes in public facilities, and have led architects to conduct in-depth research on existing buildings to check for conformance to the ADA and its guidelines.

Compounded with the compliance of laws,

regulations and other rules are liability issues that have touched every profession in recent years. While regulations are important in ensuring quality buildings, the door is also opened for liability and litigation.

The ever-increasing risk of liability leads architects to spend large amounts of time protecting themselves by documenting every decision, conversation and action taken during the design process. Some of this work is encouraged by insurance companies which provide business insurance for design professionals.

In spite of all the regulation, liability and technology given to architects in recent years, the question of money remains an issue. Architects face more challenges than ever trying to save money for clients. The range of solutions runs the gamut from energy cost savings to savings in building construction. Combined with the necessity to save money for clients is the increasingly competitive field of architecture.

Architecture schools are continuously full, and "flood" the market with more architects than an economy can handle. This high level of competition has led architects and clients to resort to competitive bidding of services, often ignoring the special talents that each individual architect has. To remain competitive within a very tight building market, architects must look within the process of building to save time, open communication and improve effectiveness.

One of the highest costs of doing business in Hawaii is leasing office space. Computer networking has allowed smaller architectural firms to remain competitive with larger firms because this technology allows employees to work at home and send work electronically to the home office or any other location.

Architects face more challenges than ever trying to save money for clients.

Architectural offices in Hong Kong already envision that computers will lead to the "paperless" or perhaps "reduced paper" office where employees work at home on networked computers allowing firms to dramatically decrease the amount of leased space.

Using the power of CAD programs, seemingly small design firms are capable of producing work of equal or better quality than large, well-staffed firms. The capability of handling large projects will no longer be related to a firm's size.

Currently, the "paperless" office is a goal offset by other changes in the design profession. Technology has improved the capability of an architect to produce models, renderings and drawings. Computers also have increased the architect's circle of influence to a global scale and allowed for almost instant communication with clients and employees in any part of the world.

Most of the added complexity within the design profession translates to added dollars for the client. Architects can no longer be simply good designers or builders, they must also be highly self-educated, conscious of their current surroundings, aware of laws and well-versed in the occurrences of the increasingly complex society.

With all the changes the design profession has gone through, an architect—once stereotyped as a "Renaissance man"—must still be just that.

Hale I. Takazawa is an intern architect with Ferraro Choi & Associates. He has a bachelor's degree in civil engineering and a master's degree in architecture.

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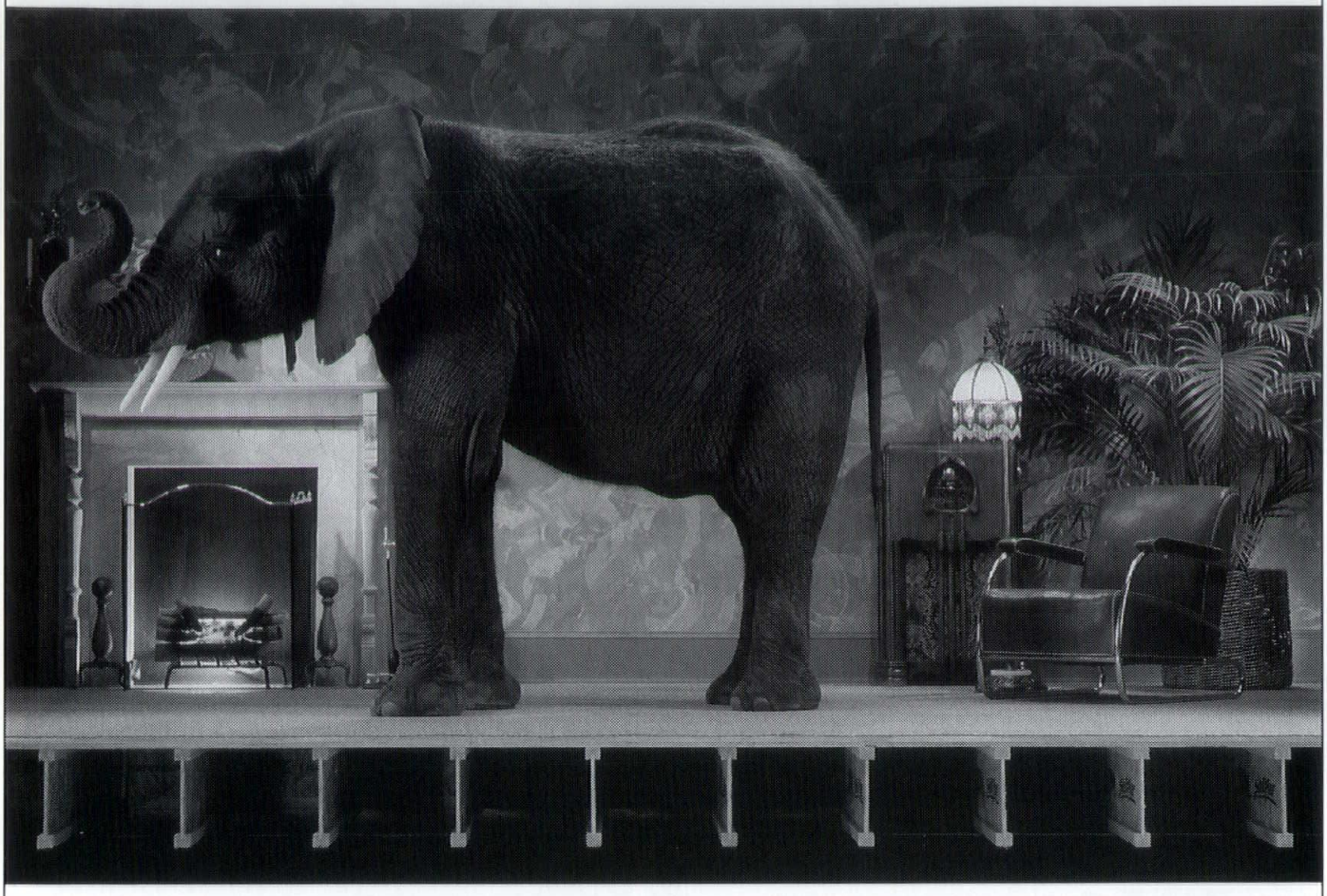

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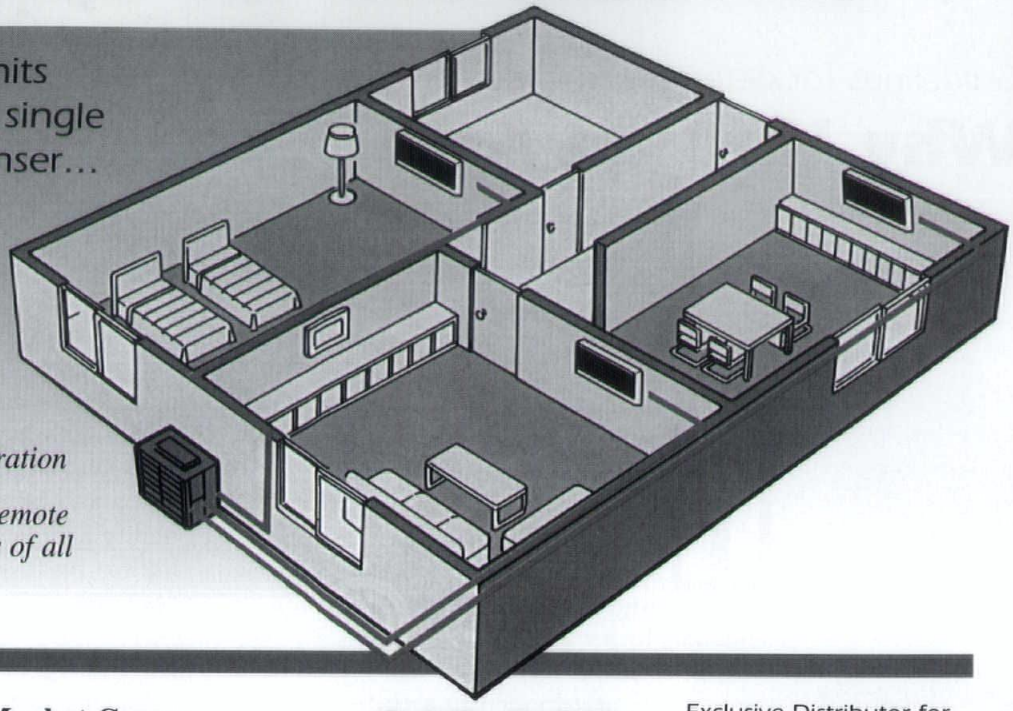

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Guidelines for determining which professional is 'right' for a project

Why Hire an Architect?

by Stanley S. Gima, AIA

Hawaii Pacific Architecture is mailed to nearly 6,000 business professionals each month and available at Borders Books & Music. Since less than 1,000 readers are members of the American Institute of Architects, a large majority of readers are non-architects.

This article is directed to non-architects to provide an introduction to architectural services, and point out the benefits of engaging an architect to plan a new home or construct an office building. The principles also can be useful to an experienced developer who wants to review and prepare to build a better project.

Why hire an architect?

Architects are trained to help clients achieve their building goals efficiently and economically, while avoiding common design and construction pitfalls and applying experience and knowledge of the construction process. An architect can sketch clients' rough ideas to help them visualize the ideas, decide on revisions or start over if the design does not suit the clients' taste. By "building on paper" (or on the computer), it's much cheaper to make changes or restart, rather than constructing from original layouts and discovering that the building is not what the clients had envisioned.

When should an architect be hired? It's never too early...

When should an architect be hired? It's never too early, even before purchasing a site for the project. An architect can counsel clients on the merits and demerits of proposed sites. He or she also can "see" many factors of the site which are invisible to a layman, including drainage, accessibility and topographic problems or constraints. Architects also can quickly check into potential problems such as sewage and water availability and connections, street-widening setbacks and zoning or legal restrictive covenants.

Selecting an Architect

In choosing the right architect, it would be wise to read some introductory literature such as "You and Your Architect," a 16-page booklet published by the AIA. Another good reference is the 1995 edition of the "Resource Book for Design Professionals," published by the AIA Hawaii State Council. Both publications are available through the local AIA offices (listed at the end of this article).

Start the search early. Owners often mistakenly assume that they should figure out their exact project requirements before consulting an architect. In most cases, architects can be a tremendous help in determining project requirements. They are trained to ask pertinent questions, observe an owner's existing facilities and operations and arrive independently at alternatives and recommendations for the owner to choose from.

It is difficult to zero in on the perfect architect even after asking friends and business associates and consulting reference material. There are many factors to consider, especially for a large or complex project. Make a list of architectual firms from which to request brochures and other information. After digesting preliminary information, the potentials will begin to become evident, resulting in a short list of architects to call for an interview.

The interview-selection process is actually a two-way selection procedure. Architects are interested in producing a successful project, and they want to be selective, too, to be certain that a fruitful collaboration can exist between themselves and prospective clients.

After the interviews, the choice for the "right" architect should become more discernible. An essential element should be the personal confidence one has about the architect's technical and moral strengths, as well as the professional's creative design abilities. The creation of a good project requires weeks and months (or years!) of collaboration between architect and client, so the selection must be thoroughly researched to ensure the relationship will withstand the difficult situations that occasionally arise during the life of a project.

Basic Architectural Services

For most projects, basic design services involve schematic design, (B-3), design development, (B-4), and construction documents, (B-5), which are the exact plans and specifications that guide the builder to construct the project as envisioned by the architect. Using the construction documents, the owner invites building contractors to bid for the project, (B-6). Negotiations follow with the low bidder, and usually culminate in a construction contract signed by the owner and contractor.

After signing the contract, the construction contract administration phase, (B-7), begins. Being the author of the construction documents, the architect is most qualified to interpret plans and specifications and to observe work being done by the contractor's team of subcontractors and suppliers. In this phase, the architect has to distance himself from the owner and act more like a "referee."

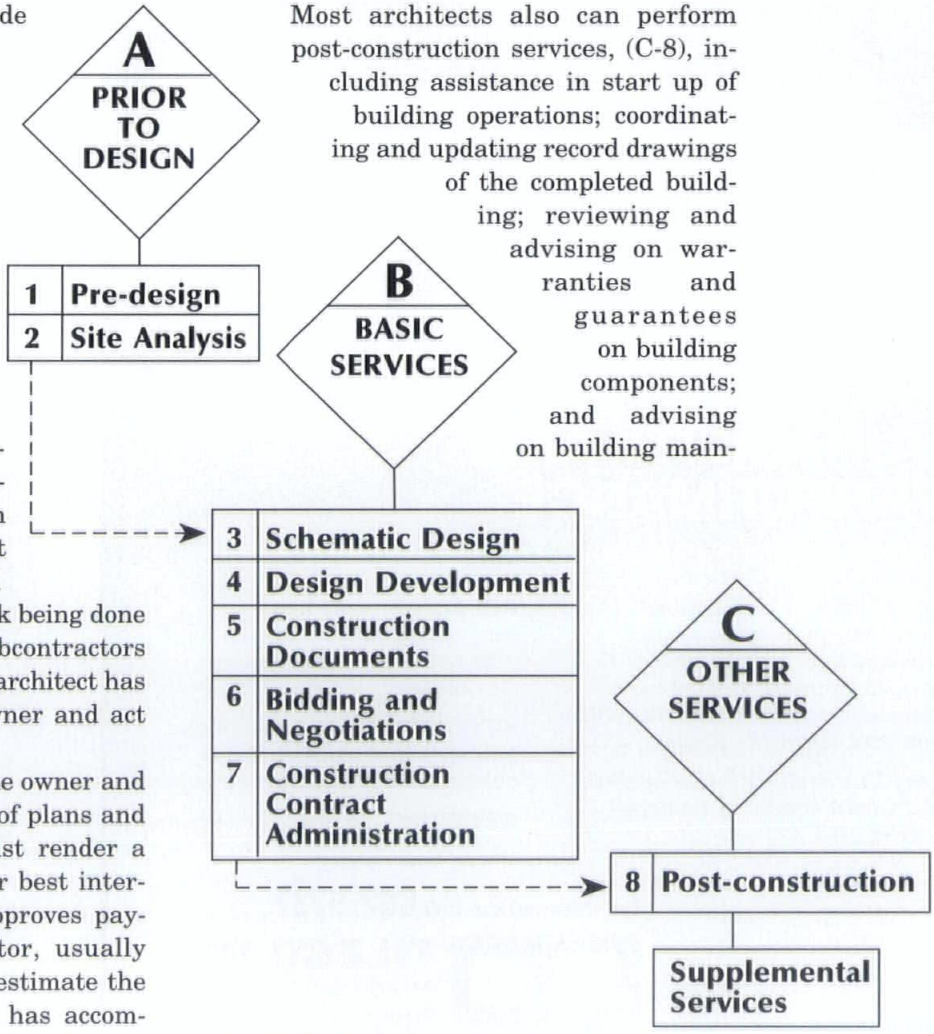
If differences arise between the owner and contractor in the interpretation of plans and specifications, the architect must render a fair decision based on his or her best interpretation. The architect also approves payment requests by the contractor, usually monthly, and, therefore, has to estimate the amount of work the contractor has accomplished. At the end of construction, the architect makes inspections of the project, denotes the follow-up corrective work required and, upon faithful completion of all work, authorizes final payments and issues the certificate of occupancy which signifies completion of the construction contract.

Pre-design and Site Analysis

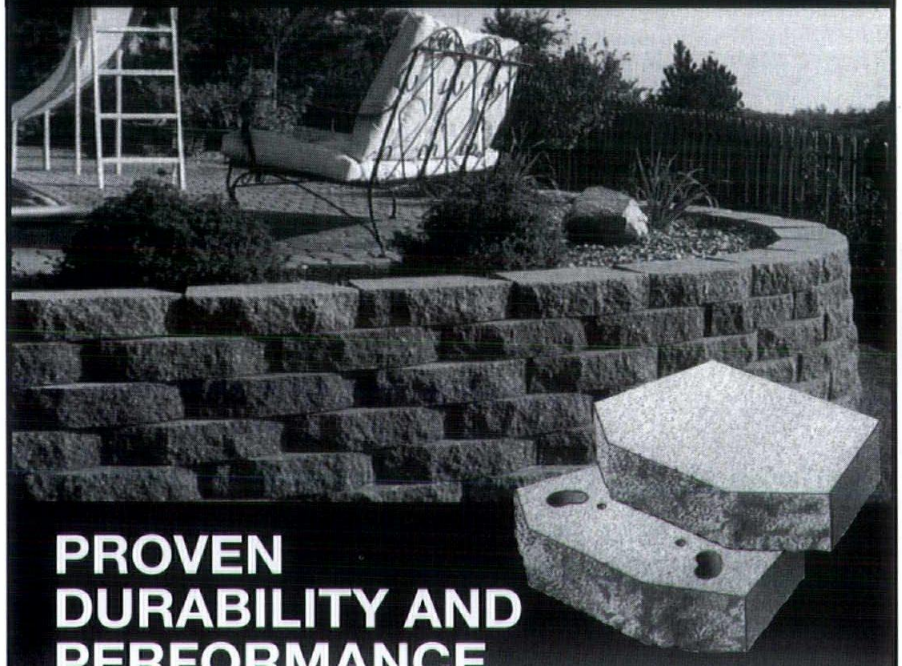
For small and ordinary projects, these early services are usually absorbed into the schematic design phase, (B-3). However, for large or complex projects, pre-design, (A-1), and site-analysis, (A-2), services may entail many additional hours of an architect's and engineer's time. For instance, a site located in a special design district may require conformance with many detailed design requirements. Substantial research and additional drawings may be needed. Other pre-design and site-analysis examples include zoning assistance, shoreline (SMA) applications and presentations, programming and budgeting assistance and economic feasibility studies.

Other Services

Most architects also can perform post-construction services, (C-8), including assistance in start up of building operations; coordinating and updating record drawings of the completed building; reviewing and advising on warranties and guarantees on building components; and advising on building main-



Phases of the design process.



tenance procedures. These occur after the completion of the construction contract administration phase.

Supplementary services also can be arranged and coordinated by the architect as the project proceeds from inception through completion. Some of these services require other consultants, who are often selected and recommended to the owner by the architect. Examples include artists' renderings, sales' models, environmental-impact statements, life-cycle cost analysis, value-engineering studies, tenant interiors, graphic design and promotional brochure production.

This article presents only basic information about the range of services possible. Very little discussion was included about the schematic design, (B-3), and design development, (B-4), phases. This work represents the "heart" of the architect's creative contribution to a project, and involves a great deal of time and effort by the architect. To describe these phases and the interaction needed between the owner and architect would require another article.

Stanley S. Gima, AIA, is past president, AIA Hawaii State Council, a former principal of Architects Hawaii Ltd. and is currently chairman emeritus of GYA Architects Inc.

Publications to help in the search for architectural services are available at the local offices of the American Institute of Architects. In Honolulu, the AIA Hawaii State Council and AIA Honolulu Chapter are located at 1128 Nuuanu Ave., 545-4244. The AIA Maui Chapter can be reached at 808-244-9574.

Ask for the following publications:

1. "You and Your Architect," published by the American Institute of Architects, a 16-page booklet full of useful information ($3).

2. "1995 Resource Book for Design Professionals," published by AIA Hawaii State Council, a 90-page reference listing architects, engineers and other design professionals practicing in Hawaii. (No cost to individuals).

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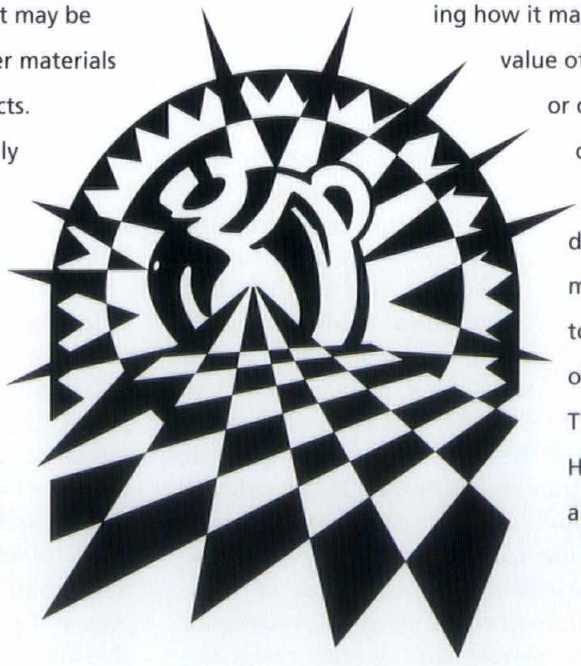
If you have not yet enjoyed the beautiful and practical design qualities of ceramic tile, there's a new world of possibilities in store for you. You'll discover that this versatile product is much more durable, for example, than many other materials, including fabrics. It may be smooth or polished, patterned or not, and is available in virtually any color or nuance of shade. It may be broken into pieces and reassembled in whimsical and artful designs. It may be combined with other materials for a variety of effects. Ceramic tile is equally at home indoors or out. It's perfect for interior walls, floors, counter tops and accents; highlights a terrace, tiptoes through the garden and takes to water like a duck. It's come a long way since its name origin as a term covering natural earth products that had been exposed to high temperature. Ceramic tile today is synonymous with beauty, variety, and practicality. It is a favorite with many pace-setting Hawaii architects and interior designers and graces many island homes and landmark buildings.

To find out more about ceramic tile, including how it may help increase the value of your home, office or commercial project, contact your architect or interior designer. You also may phone 591-8466 to receive a listing of Union Ceramic Tile Contractors in Hawaii who will be able to assist you.



HAWAII CERAMIC TILE, MARBLE & TERRAZZO PROMOTION PROGRAM

U.S. law stipulates that it's illegal

Software Piracy a Major Issue

by Norman Plummer

When a substantial shipment of software arrived at Tim Mann's Hawaii computer dealership along with a correspondingly substantial bill for his client, he resisted the urge to say, "I told you so."

Months earlier, Mann, a partner in Hawaii-based Island CAD Services, had tactfully let the client know that he was aware the company was using more of Autodesk's computer-aided design software (AutoCAD) and more Softdesk office programs than it had purchased licenses for. He offered to negotiate a long-term purchase plan and volume discounts, but the client, a civil engineering firm, turned him down. "We can't afford it, and the software should not cost so much anyway," was the response.

"People wouldn't steal an architect's drawings, an engineer's designs or a builder's plans..."

In the end, a disgruntled employee of the firm turned his boss in, and the firm had to purchase additional software licenses. "They ended up paying about $10,000 to $12,000 more for the software than they would have if they had gone legal on their own and gotten my discount," Mann said.

Illegal copying of software has become a major issue for software companies who see years of hard work and hundreds of thousands of dollars in research and development being lost to people who cannot resist the temptation of getting something for nothing.

U.S. law stipulates that it is illegal to make or distribute copies of copyrighted material, including computer software, without authorization. The only exception is the user's right to make a single backup copy for archival purposes. People who break the law risk civil penalties as high as $100,000 per copyrighted work. Unauthorized reproduction or distribution of 10 or more copies of software with a total retail value exceeding $2,500 can lead to criminal penalties, including up to five years in jail and fines up to $250,000.

So why do people do it? Because they can.

"It's just so easy that people ignore their morals," Mann said. "If my client operated a limo service that grew to the point where he needed five more Chevys, he wouldn't just go steal them from a GM lot. Obviously, it would be morally wrong, and more to the point, he probably would get caught. So instead, he would bargain for the best price and purchase the cars. Too often, that's not what happens with software."

Software companies are trying to stem the tide of theft, and with some success. Autodesk, for example, has recovered more than $17 million during the past few years from architectural firms, engineering firms and others who have been caught using more software than they bought, according to Sandra Boulton, director of the company's anti-piracy department. The company usually receives its tips through its anti-piracy hotline, 1-800-NO-COPIES.

"An average software application might have 100,000 lines of code, but AutoCAD has more than a million. As you can imagine, the cost of creating such software is enormous," Boulton said. "People wouldn't steal an architect's drawings, an engineer's designs or a builder's plans, and the rights of software developers are no different."

Despite the progress of companies like Autodesk, the job of fighting software theft remains daunting. In the United States, about 35 percent of software in use is illegal, ac-

cording to the Business Software Alliance, a group of companies, including Autodesk, who have joined forces to fight the problem. The BSA has estimated that worldwide revenue losses to piracy amounted to a staggering $15.2 billion last year.

"We call it the home shoplifting network," said Bob Kruger, director of enforcement for the BSA.

"Despite the fact that it now requires hundreds of thousands of dollars and hours to design, code and bring to market today's leading software programs, they remain ridiculously easy to copy," Kruger said. "In just a few minutes, with little technical expertise and no more equipment than your personal computer, you can make a duplicate that is every bit as good as the original—all in the privacy of your home or office, saving hundreds if not thousands of dollars over what it would have cost retail."

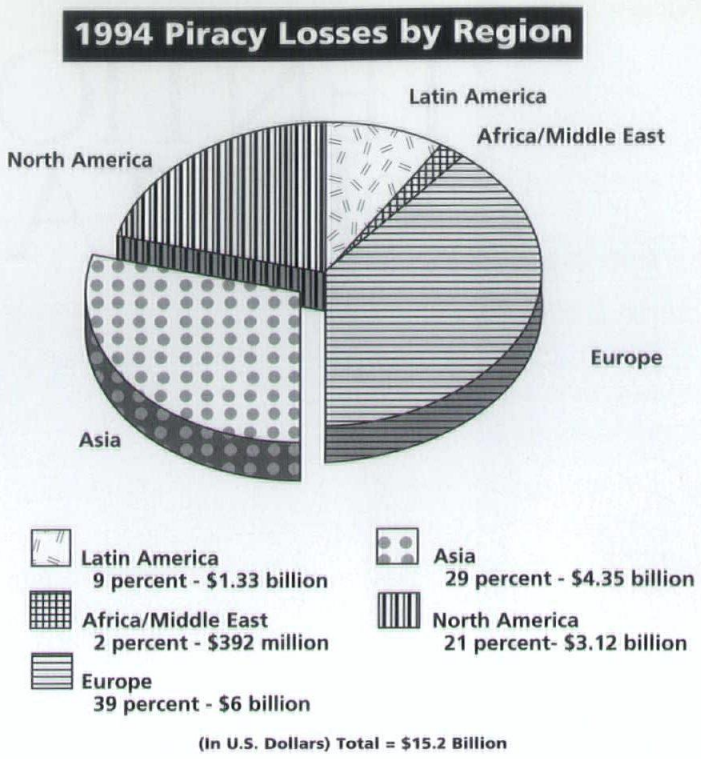
But the BSA and individual companies like Autodesk, Microsoft and Lotus are continuing to take a strong stance. Usually the cases are settled out of court. One recent settlement involved an international civil engineering and architectural consulting firm based in East Orange, N.J. The firm, Louis Berger International Inc., agreed to pay the BSA $200,000 after an audit revealed unlicensed copies of software published by Autodesk, Intergraph, Lotus, Microsoft, Novell and the WordPerfect Applications Group—all BSA member companies.

Jim Hogerty, a partner in Honcad, a Honolulu systems integration firm, said that often principals of an architectural or civil engineering firm may be unaware that they are promoting piracy. "Often they've turned over the reins to a young CAD manager just out of college, where the 'share and share alike' mentality still prevails. That young manager needs to learn that in the business world the consequences can be serious."

Hogerty also said that in the last 12 to 18 months he has noticed a slight shift in the situation. "I think people are beginning to get the message," he said. "More people are coming to me voluntarily to procure the proper number of software licenses for their site."

Hogerty and Mann both said they will not take the role of whistle-blower, but they will make it as attractive as possible for clients to "go legal."

One of Hogerty's clients recently admitted they needed seven licenses to be legitimate, but said purchasing them all at once would



dramatically impact their cash flow. "We respected their decision," Hogerty said, "so we set up a program where they will purchase a license every other month for 14 months. That way they preserve their cash flow and get their volume discount, and we can maintain goodwill."

One answer for some firms may be the network licensing scheme, which provides a "floating" license for a set number of users,who check the software out each time they use it. If a company has a floating license for six users, for example, and all copies are in use, a seventh user would not be able to access the software until one of the others checked it back in.

"This provides internal monitoring, is cost effective, and lets you know when you need more licenses," Hogerty said. "And the partner can breathe easier because the system is self-auditing."

In addition, Hogerty said, using software legitimately gives users a greater chance of getting the level of support they need. "We are a value-added computer reseller, which means we provide top-notch support to our clients—but only if they are using licensed copies of software," he said. "Our goal is for users to have a successful CAD operation. Not having the proper number of licenses interferes with our ability to meet that goal."

Bob Kruger of the BSA agrees. "If you use unlicensed software, you deprive yourself of

access to technical support, product literature, manuals and product upgrades. You also increase your risk of contracting a software virus," he said. Software copying is the number one cause for the spread of computer viruses, according to the BSA.

In addition to the personal risks, copying software has a negative overall impact on the software industry. "People who might otherwise be willing to invest the effort to develop software are discouraged by piracy, because it slows the rate of software industry growth and stifles innovation," said Boulton of Autodesk. "The software industry is one of the United States' most successful competitors in the global marketplace. Whether you are copying AutoCAD or word processing software, you may unwittingly undermine an important component of the U.S. economy."

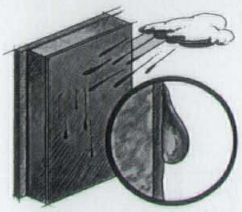
↔ *Norman Plummer is a San Francisco-based free-lance writer who specializes in technology issues.*

The high-tech superiority of StoSilco® silicone coatings.

WATER REPELLENT

The micropores in StoSilco®'s structure (see left) are too small for water to pass through. And because silicone is extremely hydrophobic, StoSilco® repels any water that touches it—its surface dries quickly, because water beads up and rolls off.

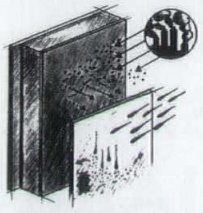
Compared to ordinary coatings, there's far less water penetration, and the surface stays drier—which means less dirt pickup, mold and mildew growth, and discoloration.



StoSilco on an EIFS system

NON-THERMOPLASTIC

Ordinary thermoplastic coatings soften and become tacky in the heat. But StoSilco® is non-thermoplastic, so dirt, mold, mildew, and airborne pollutants aren't likely to stick to it. They might rest on the surface—but rain washes them away. This combination of non-thermoplasticity and water repellency makes StoSilco® coatings virtually self cleaning, and drastically reduces the presence of mold and mildew.



StoSilco washes clean in the rain

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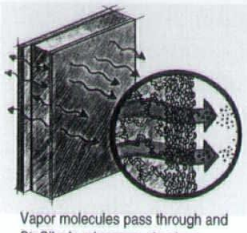
To prevent damage from built-up hydrostatic pressure, a building must "breathe", and allow water vapor to pass through. With its multitude of densely packed micropores, StoSilco® is much more vapor permeable than ordinary acrylics. It prevents hydrostatic pressure buildup and reduces the likelihood of blistering, cracking, and peeling—all while successfully repelling water!



Vapor molecules pass through and StoSilco's micropore structure

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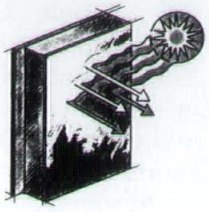

Highly hydrophobic.
Water spreads out and stays on ordinary acrylic coatings; but on StoSilco®, it beads up and rolls off—taking loose dirt, particles with it. StoSilco® coatings stay both cleaner and drier—which reduces surface degradation and the need for constant maintenance.

water on StoSilco® | Water on ordinary acrylic

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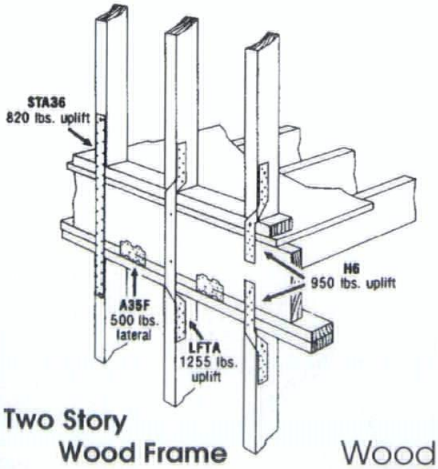

Two Story
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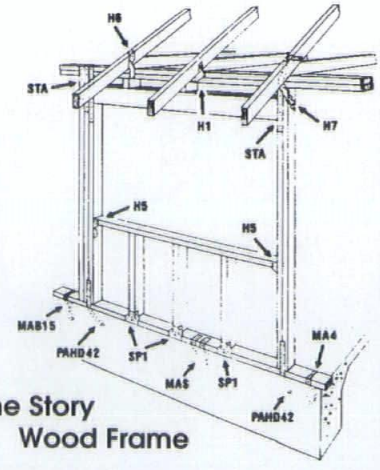
Wood buildings fail at connection joints under highwind loads. By designing a continuous load path from rafters to foundation, Simpson Strong-Tie Connectors can minimize damage from high wind loads.



One Story
Wood Frame

Check with you local construction material supplier.

F.K.S. Rentals & Sales
663 Kakoi Street
Honolulu, HI 96819
836-2961

Hawaii Pacific Lumber
91-255A Kalaeloa Blvd.
Kapolei, HI 96707
682-4414

Honsador Inc.
91-151 Malakole Street
Kapolei, Hawaii 96707
682-2011

Rinell Wood Systems
429 Waiakamilo Road, Room 1
Honolulu, Hawaii 96817
841-7688

Project Profile:

BANCORP HALE 'O KAPOLEI

Steven M. Baldridge, P.E., S.E.

The Bank of Hawaii's Hale 'O Kapolei has become the city of Kapolei's largest commercial resident with the completion this year of its 248,000 square foot operations center. The bank expects to move between nine and thirteen departments to its new Kapolei facility from downtown. That will involve between 1100 and 1200 employees or about 20 to 25 percent of its total workforce.

The sophisticated demands of the client have resulted in the design of an "intelligent" building with completely integrated and state of the art computer facilities, environmental control and energy conservation systems. Architect, Wimberly, Allison, Tong and Goo beautifully packaged the modern requirements of the facility into a building that reflects on the Kamaaina architecture of the past.

When you look at the exterior of this building you might imagine the use of building materials such as wood, masonry or concrete to support such a traditional facade. The structural system for the building however, had to be intelligent as well, providing not only the required supporting skeleton but also the flexibility to modify the building for future space and use requirements as the client might require.

For the projects structural engineer, Martin & Bravo. Inc., the material best used to meet these requirements was structural steel. The major advantage to structural steel is the opportunity it allows for if the use requirements change. Not only is it easier to create new openings but members can be strengthened as well to meet new load requirements.

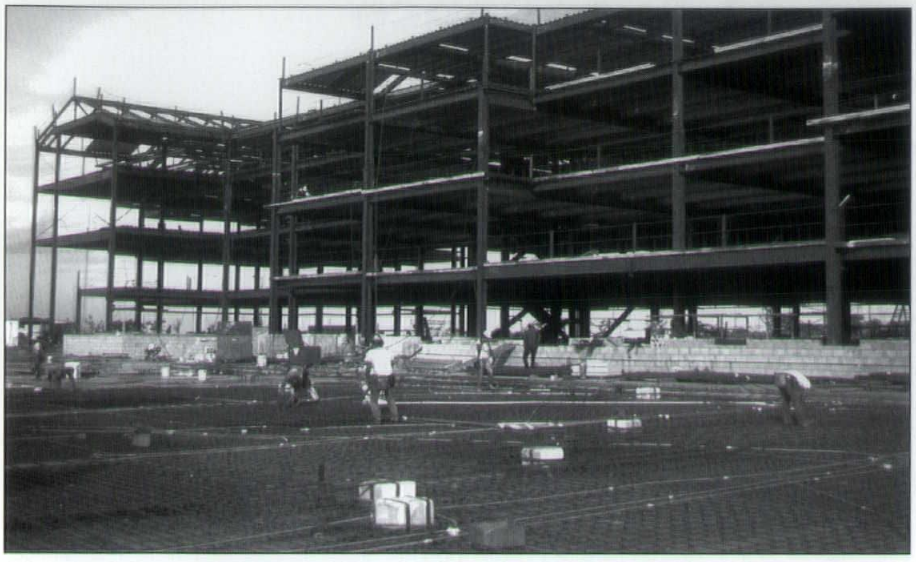
New developments in design methods and material production have made structural steel better performing and more economical as well. Specially designed Eccentric Braced Frames provide the building with both stiffness and ductility under wind and seismic loading. Steel requirements could be reduced by approximately 20% through the use of the recently code accepted LRFD design method and by taking advantage of the higher strength multi grade steels being produced now.

In addition to economic advantages, LRFD design method provides a structure with a more uniform factor of safety and multi grade steel production utilizes a larger percentage of recycled steel materials. The use of recycled steel in particular is consistent with the Bank of Hawaii's sensitivity to the environment. The equivalent of 600 cars worth of recycled materials were used to make the multi grade steel for this structure.

Fletcher Pacific Construction the general contractor for the project

Placement of the topping slab completes the construction of the floor structure.

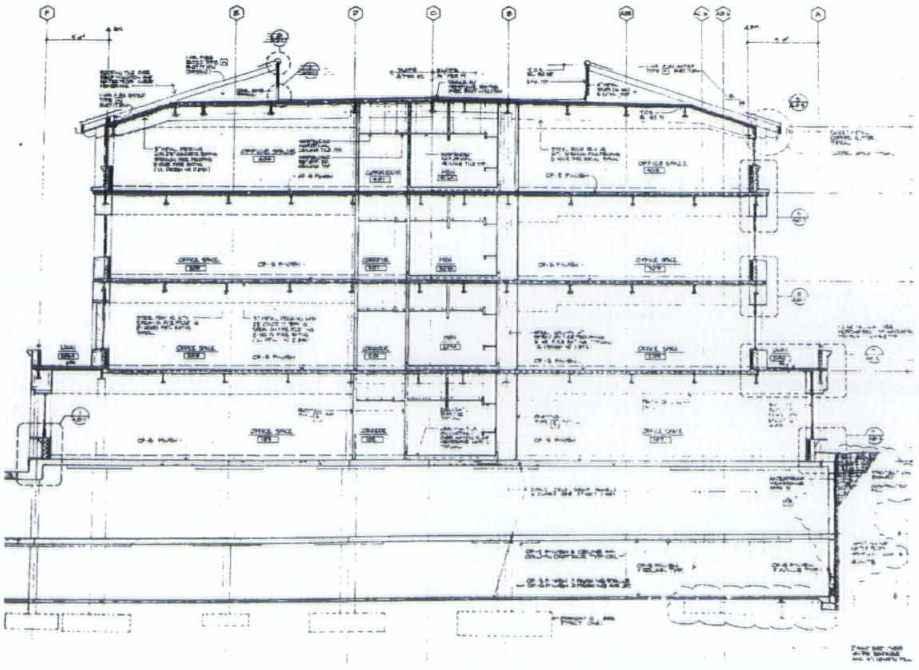
Steel Styles



The erection of structural steel for the north wing of the complex was completed in less than two weeks.

agrees with Martin & Bravo, Inc. selection of structural steel. David Ash, director of business development,notes that "In regards to the Bank of Hawaii project the use of steel was cost competitive and in this instance, shortened the overall project time. Properly planned and programmed into the overall development, steel in Hawaii can be a time saver. Shortly behind erection, other trades can start work clear of shoring or cure times as experienced with concrete."

Mr. Ash also seconded the advantage of structural steels flexibility, "Steel allows more end user flexibility that might not be realized during initial construction and planning. For example in Office and Medical buildings catering to future space commitment and arrangements, steel allows more flexibility with regards to mechanical, electrical and plumbing after the building is completed."



Bancorp Hale 'O Kapolei

Credits

Architects:
Wimberly, Allison, Tong & Goo
2222 Kalakaua
Honolulu

Structural Engineers:
Martin & Bravo
1001 Bishop St., Ste. 2660
Honolulu

General Contractor:
Fletcher Pacific
707 Richard St. 4th Floor
Honolulu

Steel Erector
Herrick Corp.
Pleasanton, CA

Number of Erection Pieces
3,388
Tonage-1,400
Mansard Roof Support

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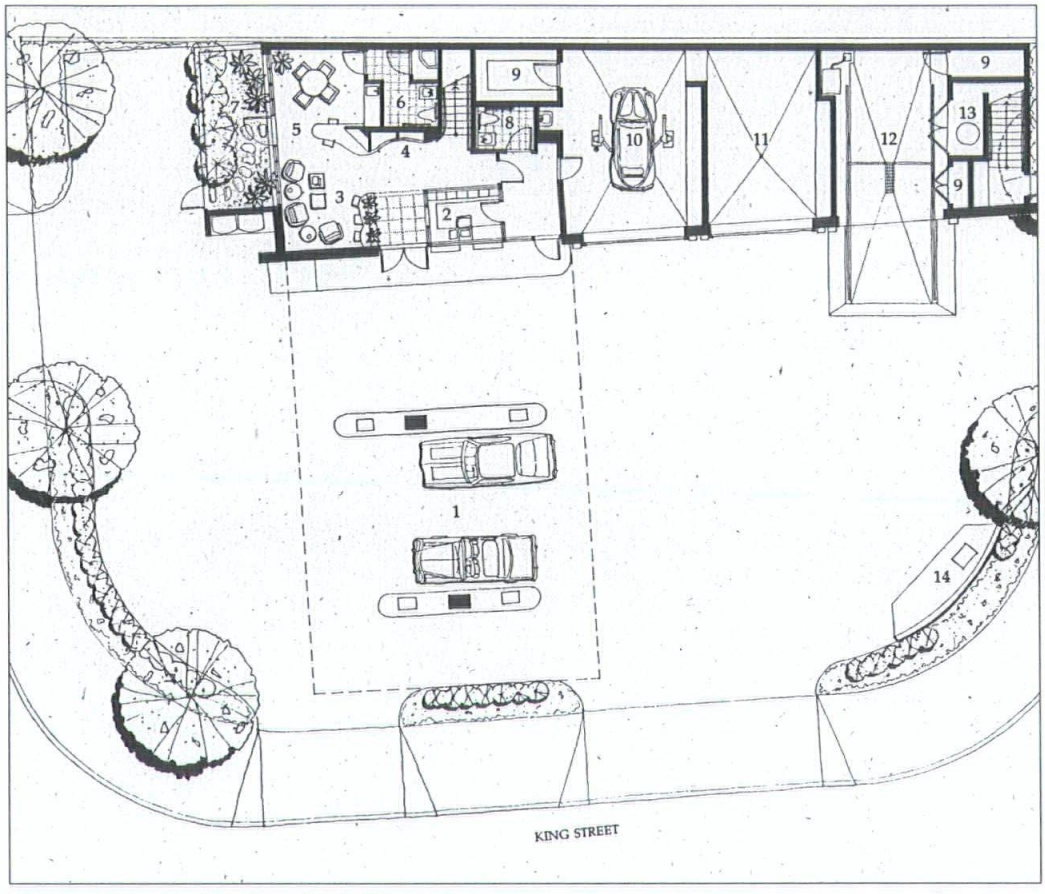
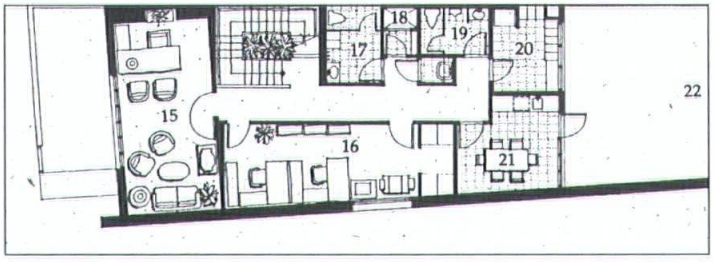
Yajima Service Station



Yajima Service Station, first-floor plan.



Second-floor plan.

1 Gas Pumps
2 Cashier
3 Lounge
4 Retail Display
5 Coffee Bar
6 Restroom
7 Garden
8 Restroom
9 Storage
10 Service Bay
11 Parking
12 Car Wash
13 Air Compressor
14 Vacuum
15 Executive Office
16 Office
17 Women's Locker/Restroom
18 Shower
19 Men's Restroom
20 Men's Locker
21 Staff Lunch Room
22 Deck

The plan was to demolish the existing service station and construct a two-story service station with a bold expression of simple geometric forms and contrasting bright colors to establish a strong visual identity.

Facilities now provide for the operation of a service station, including gas dispensing, auto servicing and car washing. In addition, an executive office and general office were created to house corporate staff. Employee facilities include a lounge/ kitchen, locker room and shower.

Public facilities include a well-appointed lounge area with coffee service, retail display and rest rooms.

A simple vertical planar form establishes the main facade of the building that is backed by a neutral gridded box. A strong, brightly-colored canopy pierces the front wall carrying the grid language on the underside through from the exterior to the interior.

Free-standing, gridded doors and frames contrast with the building to highlight the function of the service bays.

Jury's Comments

"A bold composition in form and color at street scale. Beautifully appointed waiting room."

A view of Yajima Service Station from Keeaumoku Street shows its strong colors and high auto bays.

The customer lounge provides an airy, well-lit atmosphere with a coffee service area.

Photos by Kyle Rothenborg

Credits

Owner/Client
Yajima Oil of U. S. A. Inc.

Architect
Projects International Hawaii

Geotechnical Consultants
Soils International

Civil Engineers
Hida, Okamoto & Associates Inc.

Structural Engineers
Consulting Structural Hawaii Inc.

Mechanical Engineers
Benjamin S. Notkin/Hawaii

Electrical Engineers
Toft Moss Farrow Inc.

Contractor
Pan-Pacific Construction Inc.

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Additions and Alterations

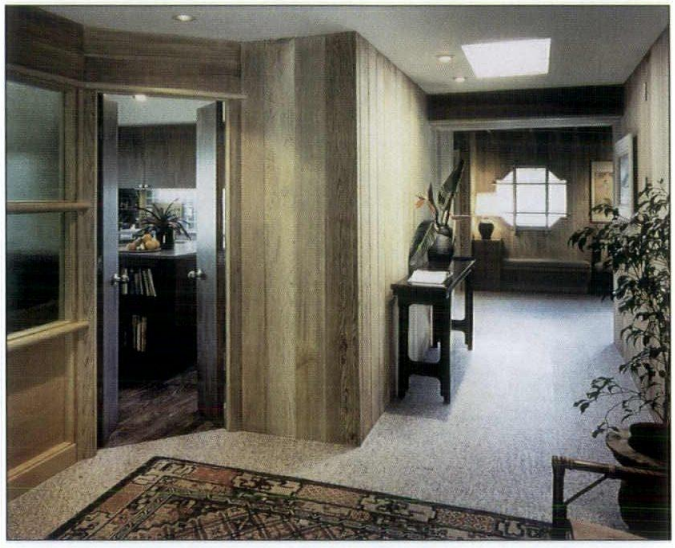
Ossipoff, Snyder & Rowland Architects Inc.

Makiki Heights Residence

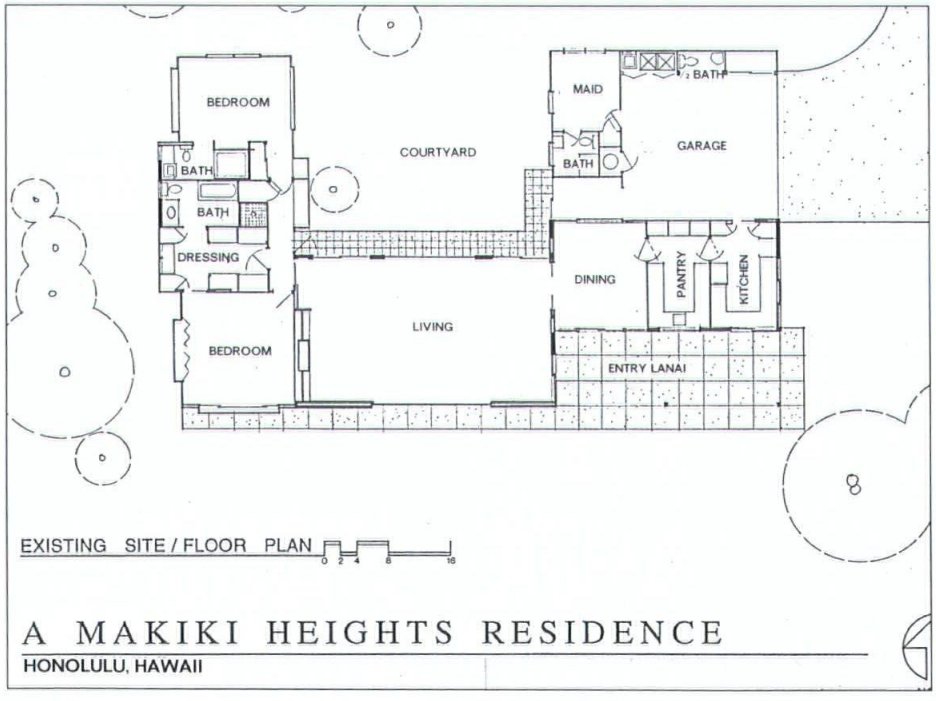
The new owners of this 40-year-old Makiki residence wanted to modernize but protect the elements of 1964 alterations done by architect Albert Ives. Shortcomings included an old electrical system, no formal entry (nearly everyone entered through the kitchen), an out-of-date kitchen and pantry, a small, dark dining room and general deterioration of the wood-frame structure.

A new entry from the driveway was built to connect all principal living spaces—the master suite, laundry, kitchen, dining room and living room. Skylights were used for light and ventilation. A new garage was placed at minimum side yard distance, so the entry foyer is a generous room. The master suite is elevated 2.5 feet above the adjacent slab on grade to achieve privacy from a neighbor, a better view and security.

The new dining room can accommodate the original dining room table which is expandable with six or eight leaves. It also has a wall of buffet, drawers and two cabinets behind blind doors. It faces the original courtyard, which was redesigned using paving slabs, wood decks, rocks and new plantings.



The new entry foyer leads to the kitchen and family room (left) and the dining room to the right, past the bench and decorative ventilating window.



One bathroom in the bedroom wing was removed to allow for a spacious guest bedroom. A revised bath was created using the existing tub, shower and windows, while adding a long vanity and separate toilet compartment.

To increase the floor paving on the lanai, existing granite ballast blocks were rounded up and set to add on to the existing floor level and to contrast with the concrete texture.

The owners report that this house of few rooms is spacious and easy to live and entertain in. It is open, light, flows to the outside and is "Hawaiian."

Jury's Comments

"Seamless addition that demonstrates respect for the original building and architect."

A cantilevered flat roof adds the necessary depth and shade to the lanai area while providing a wood-finished soffit for an eyebrow. This element unites the south facade as well. From left are the study, living room and kitchen.

The living room was originally built with a trayed ceiling, which was maintained. New, wide, sliding wood and glass doors open the kitchen and living room to the lanai, and the dining room and guest bedrooms to the courtyard.

Photos by Augie Salbosa

Credits

Owner/Client
Mr. and Mrs. H. D. Williamson

Architect
Ossipoff, Snyder & Rowland Architects Inc.

Structural Engineer
Richard M. Libbey

Landscape Architect
Jim Hubbard

Contractor
Ching Construction

Promotional Seminar

August 10, 1995

Honolulu Country Club

Technical Speakers:

Metal Framing:

Michael A. Gardner, Technical Director
Association of Walls & Ceiling Industries-International

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Jim Reicherts, *Product Manager Exterior Systems*
United States Gypsum Company

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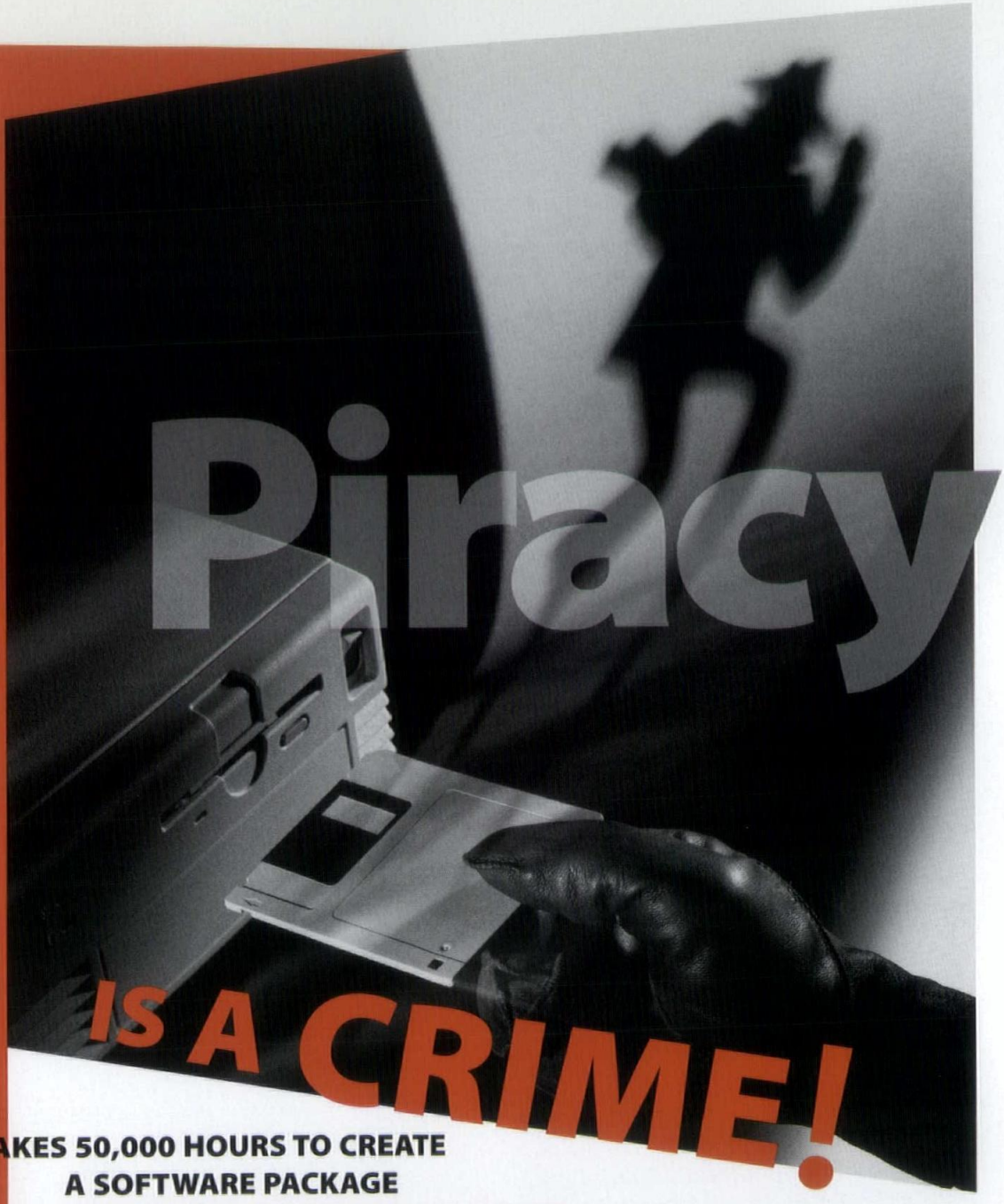

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MASONRY

HIEHIE

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