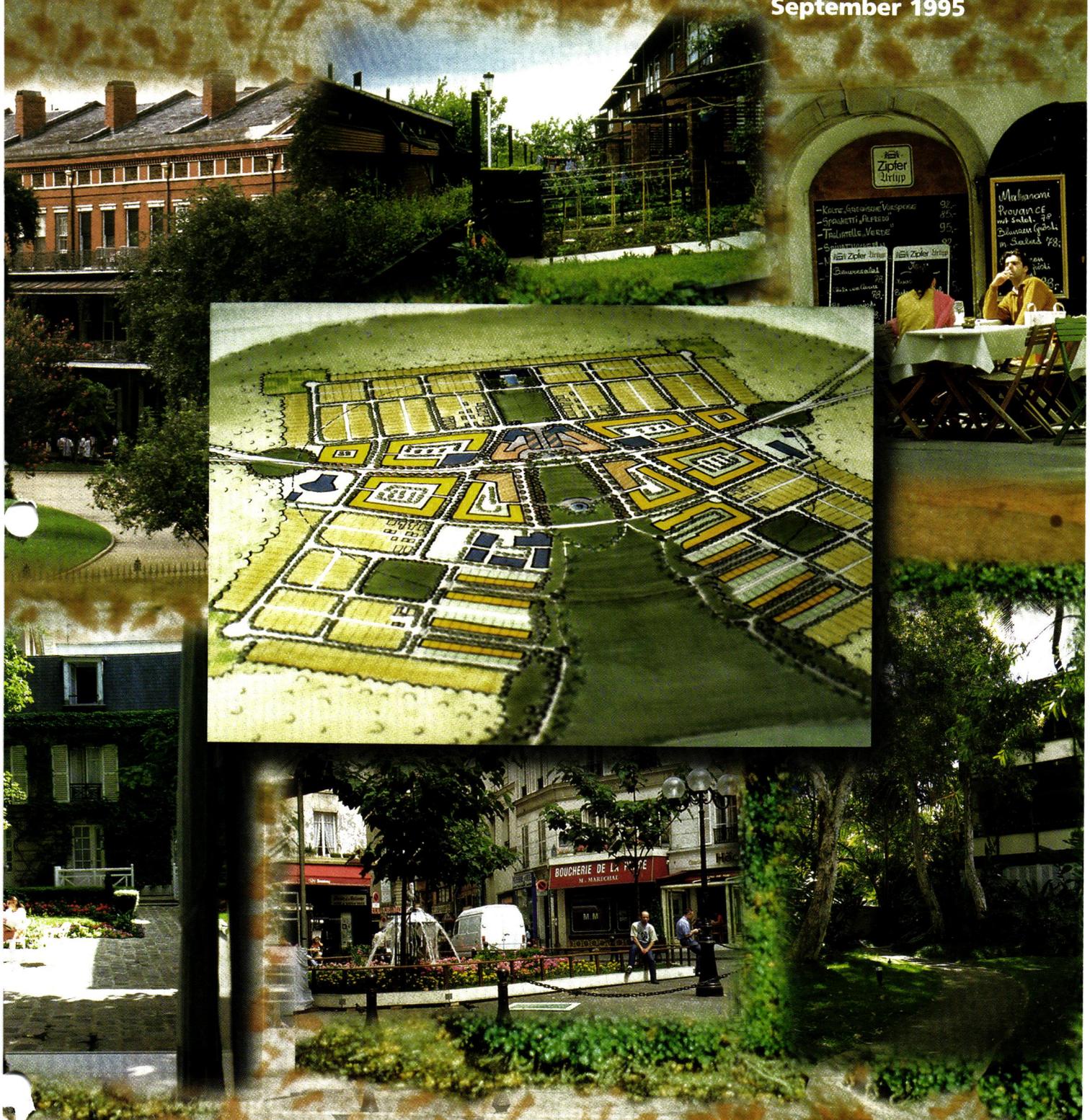


Hawaii Pacific Architecture

September 1995



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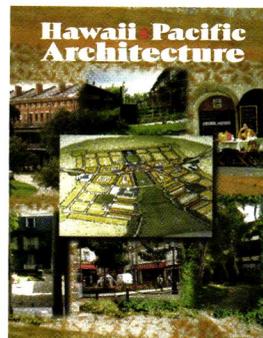
Hawaii Pacific Architecture focuses on alternative housing. James G. Freeman, AIA, discusses housing options which may be more suitable to today's family structure than the typical single-family suburban residence. Audrey Suga-Nakagawa, MPH, talks about the Maluhia Elderly Housing Project, an assisted-living residence for the frail elderly. James M. Severson Jr., AIA, provides information on Kauai Habitat for Humanity's quest to assist low-income residents in obtaining financing and building homes for their families. Severson also discusses adobe block construction, an alternative building system being considered for future Habitat houses. This month's cover features various housing types surrounding a mixed-use core that creates a walkable community. The Hawaiian Tapa used on the cover and throughout the magazine is courtesy of the Bishop Museum.



6 The American Dream



26 Housing Hawaii's Families



Photos by James G. Freeman, AIA
Digital collage by Maria Bracho

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BIA to Host National Builders Conference

The Building Industry Association of Hawaii will host the National Association of Home Builders Board of Directors Fall Conference Sept. 13-17 at the Hilton Hawaiian Village in Honolulu.

The BIA is a local affiliate of NAHB, the largest construction trades organization in the nation with more than 185,000 members.

According to Danny Graham, BIA Chairperson responsible for hosting the NAHB Fall Conference, all interested members of Hawaii's building industry are welcome to attend the NAHB Directors Reception and Luau at Paradise Cove on Sept. 16. Tickets, priced at \$15 for registered NAHB members and families and \$30 for non-registered guests, can be obtained by contacting the BIA at 847-4666, Ext. 203.

Building Alternatives Conference Sept. 23

"Building Alternatives, construction+design+community," a conference for building professionals, community leaders and the public, will be held 9 a.m. to 4:30 p.m., Sept. 23 at the ninth floor auditorium, Tokai University, 2241 Kapiolani Ave. Registration will be at 8:30 a.m.

The conference, sponsored by the AIA Committee on the Environment and the Department of Health—Environmental Programs, will feature panel presentations ranging from community planning to specific building design. Panelists will include mainland and Hawaii-based experts.

For information contact Jeanne Denker or Sara Russell at the Department of Health, 586-4337.

Design Charrette

The National American Institute of Architects Committee on the Environment has chosen 18 sites throughout the U.S. for its Environmental Design Charrette program to be held Oct. 6-8. The AIA Honolulu will be sponsoring one of the charrettes in Kaneohe.

The Kaneohe charrette will offer professional assistance to an ongoing grass roots effort in the community. The general focus of the charrette will be environmental issues in the community and identifying and establishing a sense of place for Kaneohe.

If interested in participating in the charrette contact the AIA Honolulu office, 545-4242.

Building Efficiently Workshop Oct. 10

"Building Efficiently: Reducing Material Use and Waste in Design and Construction," a roll-up-your-sleeves workshop for architects and design professionals, will be held 6 to 9 p.m., Oct. 10 at the fifth floor conference room, Department of Health Building, 919 Ala Moana Blvd. Registration will be held at 5:30 p.m.

The workshop, sponsored by AIA Honolulu and the Department of Health, Pollution Prevention Program, will cover the principles of resource-efficient design and construction and the roles design professionals can play in making it happen.

Attendees will learn specific steps to save time, money and improve the environment. Those in attendance also will receive a copy of the guide book, "Resource Efficient Building—Reducing Material Use,

Toxicity and Waste in Design and Construction," WRITAR, 1995.

AIA continuing education credits may be available for the workshop. For information contact Jeanne Denker or Sara Russell at the Department of Health, 586-4337.

Conference on Community Planning Oct. 28

"From the Ground Up: Community-based Planning in Hawaii" conference will be held Oct. 28, from 9 a.m. to 4:30 p.m. at the East-West Center, University of Hawaii Manoa campus.

Conference leaders will share resources and experiences in community-based planning and development in Hawaii. Participants will have an opportunity to explore and advocate for a framework for community-based planning and development that would support planning at the community/neighborhood level; promote a collaborative partnership of government, community groups and design professionals; and recognize and legitimize community-based planning efforts in Hawaii.

The conference is co-sponsored by Hawaii Chapter of the American Planning Association, American Institute of Architects Honolulu, Hawaii Main Street, the Hawaii Alliance for Community-based Economic Development and the Department of Urban and Regional Planning, University of Hawaii at Manoa.

The conference fee is \$25 for members of community organizations and \$30 for all others. For more information contact Alex Neuhold 263-0671 or Ramona Mullahey 533-0777.

Form should follow family

The American Dream

by James G. Freeman, AIA

The town square is surrounded by mixed-use buildings—retail space on the ground floor and office or residential units on the upper floors. Note: photo depicts an urban design concept, not necessarily an architectural design suited to Hawaii.

In the last 50 years nothing has epitomized the American Dream more than the three-bedroom, two-bath, single-family house with a two-car garage and ornamental front and side yards for bucolic effect. Inseparable from this dream is the automobile, the wonder of 20th century technology that sweeps us out of the congestion of inner city life and into the cradle of the private world. To have one is to have “made” it, or does the automobile have us?

Fewer Americans can afford the dream. According to the 1991 State of Hawaii Data Book, only 43 percent of the homes in Hawaii are owner occupied. Even more astonishing, less than 8 percent of Hawaii’s households earn enough to afford the \$350,000 median-priced home, a sharp decline from the na-

tional average of 50 percent in 1970. Married couples with children, the traditional definition of family for which the three-bedroom, two-bath house was defined, now make up only one out of four households, as single-parent families and the elderly have grown into the majority according to the U.S. Census Bureau.

Currently, there are 2.99 people in the average Hawaii household, and 17 percent of their budget supports the cars we have grown so dependent upon. Nationwide vehicle miles per household increased 82 percent between 1969 and 1990 while the population only increased 21 percent. Within the same time frame, the number of trips per household also increased by 50 percent, from eight to 12.

The three-bedroom, two-bath house out-of-



The village green, which includes the town square, is also surrounded by mixed-use buildings and provides a gathering place for the community.



walking-distance from schools, jobs, retail and services, which evolved in an age when land was cheap and abundant, car purchase, maintenance and gasoline relatively inexpensive, households had a single bread winner and families were generally larger, seems out of sync with today's needs.

The American dream no longer fits within the family frame. As it turns out, the frame was never entirely designed by the market. The shape of the suburban "community" has had more to do with the methods and valuations of home building trades, real estate agents, mortgage bankers and government agencies than with town making, which was historically a public activity.

This shift is rooted with the Federal Housing Administration. Started in 1934 with the authorization to insure loans for residential construction, its guidelines standardized solutions for houses and developments. The more development approached a single standard, the easier it became to value consistently against the risk of mortgage default.

Most pervasive was the favoring of the single-family detached house and the discouragement of lot sales with homes designed to suit a family's specific needs and site conditions. This lowest-common-denominator evaluation system was grounded on a prevalent theory of the day that diversity spelled resale trouble. A homogenous approach was used that encouraged segregation of uses and people.

In post World War II, the G.I. Bill coupled with the emergence of the automobile and the Federal Aid Highway Act of 1956, land development increased at an unprecedented pace. Suburbs exploded and sprawl was on its way; suburbia now defines America.

No longer are towns built within the public arena which creates the social diversity that has always defined a healthy society. Instead, sterile "planned communities," steeped in exclusiveness to protect investment interest largely based on fear, are constructed. Fictitious marketing names like "ranch," "creek" and "village" become the norm from which to define "community."

Typical suburban development is not about place making but traffic engineering. From the size of the interstate highway to the turning radius of the driveway, traffic engineering calibrates the suburban landscape. Pedestrian safety, the "walkability" of a community and the environment on a human scale is secondary, even threatened by the

speedy pace of the private automobile pulling into the house facade—the two-car garage.

Transportation alternatives are de-emphasized or eliminated, and along with them the prospect of human encounter. Children and the elderly become prisoners within the home and parents the chauffeurs because schools, services and commerce are too far away to walk or safely bicycle.

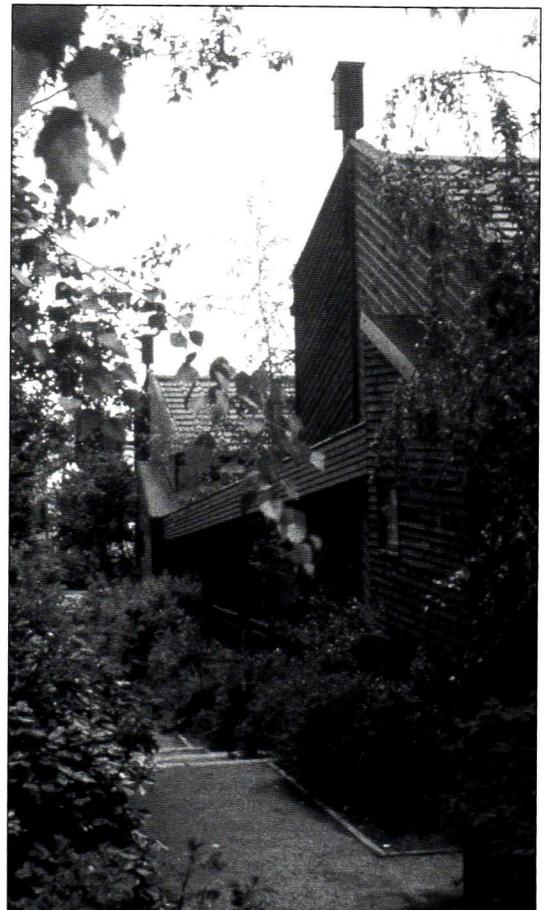
Why consider planning distances around the foot when a "modern" world is defined by technology? The irony is that our freedom has been compromised as we are now dependent upon the icon of American independence and individualism—the automobile.

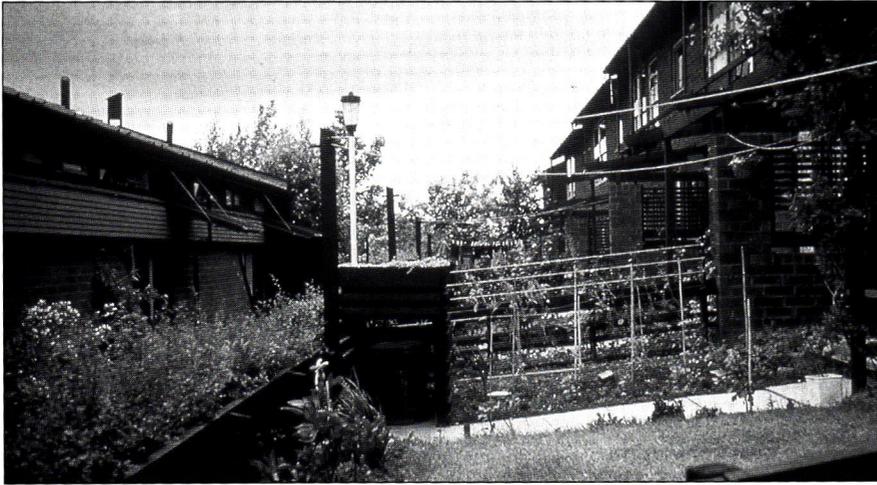
There are a few architects and developers who think this dependence is not necessary. Henry Turley, developer of Harbor Town in Memphis, Tenn., that includes medium-density housing and retail around a village green, says, "Democracy assumes—demands—that we know, understand and respect our fellow citizens...How can we appreciate them if we never seen them?"

Architect Peter Calthorpe takes the idea a step further. In addition to his pedestrian pockets and transit-oriented development concepts described in his books "Pedestrian Pockets," and "The Next American Metropolis," Calthorpe promotes sustainable communities. Steps were made in the right direction at the Laguna West project just outside Sacramento, Calif., with the implementation of on-site storm water treatment, a 30 percent reduction of landscape irrigation through plant selection and a contribution to the county's water reclamation infrastructure.

The credit for this project's shift goes to developer Phil Angelides who says, "Neo-traditional development should

This public pedestrian way, which runs through a low-rise, multi-family complex, leads to the village green.





Each unit of this low-rise multi-family complex features a "green space" for residents' enjoyment.
 Photos by Jim Freeman, AIA

not be thought about as radical but rather as a thoughtful analysis of today's challenges of building real communities and providing opportunities...it's more about a thought process than a set of guidelines and policies."

It is imperative that Hawaii's citizens decide what kind of place they want to live: Shall the current track that is replacing the green horizons with a contiguous built environment of single-use, low-density buildings set back from wide parking lots be maintained? Uses segregated from one another, connected only by cars and a not-frequent-enough bus service all funneling into one big traffic jam of a central business district or two (Honolulu and Kapolei, Oahu). Or can the landscape be dotted with more compact mixed-use communities, limited by growth boundaries, allowing preservation of significant open space.

In this type of environment, place making is the imperative and the pedestrian the design catalyst, not traffic engineering. Communities are measured by an approximate five-minute walking distance to the center of town (1/4 mile).

Following this design, cars would still be accommodated but a significant public transportation system and a greenbelt hike and bike network provide alternative linkages between communities, giving us the freedom of choice while enhancing

our quality of life. Open space is not a remnant afterthought but a pivotal starting point, from which a multitude of housing types better serving the evolving American family surrounds a mixed-use core.

The mixed-use core with a density of buildings four to six stories tall is the key for providing diversity and supporting commerce. Imagine the opportunity for you and/or your spouse to walk to work or children to school. Or if you work downtown or in a neighboring community the opportunity, upon returning home, to step off the transit station in the center of town and buy groceries that are delivered as easy as pizzas so that your hands are free to pick up your child at the day-care center.

The pleasant walk home first takes you through the village green where Gramps and Tutu are telling stories to a small group under a tree.

You might choose to live in one of the courtyard apartments or row houses adjacent to the village green. Or, you might live in one of the single-family houses with an ohana unit above a two-car garage located off the service alley, providing the small house lot optimum porch frontage for your welcoming entrance. Or, maybe you live the full five-minute walk from the transit stop and continue down the tree-shaded sidewalks to the neighborhood park, where this daily adventure ultimately leads to a brief swing and perhaps a memorable

moment before arriving in one of the traditional market, single-family homes.

Imagine further, the opportunity for alternative economics through infrastructure systems that direct sewage into compost factories instead of the ocean; recapture storm run-off into the ground water table; provide photo voltaic roof systems on every house that run electricity meters in reverse when excess power is generated; allow co-op farming on some community-owned open space to offset maintenance fees; transfer development rights of the perimeter lands to the four to six community core mixed-use districts, allowing the open space between the communities to be preserved and owned by the community for such uses as leased farms with diversified agriculture and forestry or for recreation.

Some say this is nothing more than a sentimental journey into the past, a sort of reversionary modern living. A knock attributed when the architecture falls into the trap of mimicking past styles and not from the planning principles. This type of planning is about absorbing yesterday's lessons and reinventing them for today's needs...sometimes the future lies within the past.

These principles of sustainability also are not a utopia with illusions of everyone employed within their self-contained community, but instead about providing opportunities and nurturing the quality of life. It is about creating nodes of urbanity more livable and friendlier than typical suburbia and more harmonious with the environment...place making for today's diverse family types and lifestyles and saving Hawaii for our children's children.

♦♦ James G. Freeman, AIA, is an architect and an associate with the Honolulu firm Johnson Tsushima Luersen Lowery Inc. Because of his interest in urban design, housing and sustainable communities, Freeman has authored numerous articles and given lectures on the subject matter. He also has taken on leadership roles on AIA committees and community task forces.



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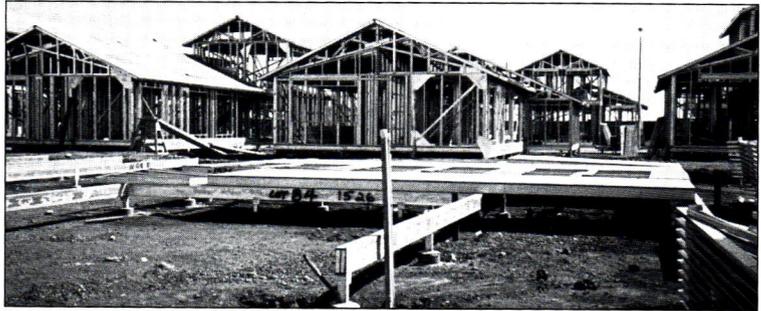
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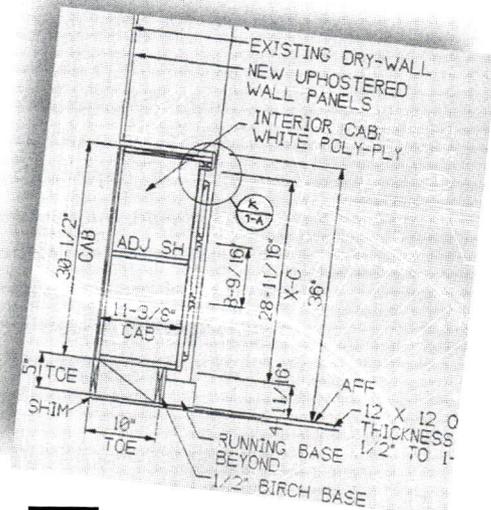
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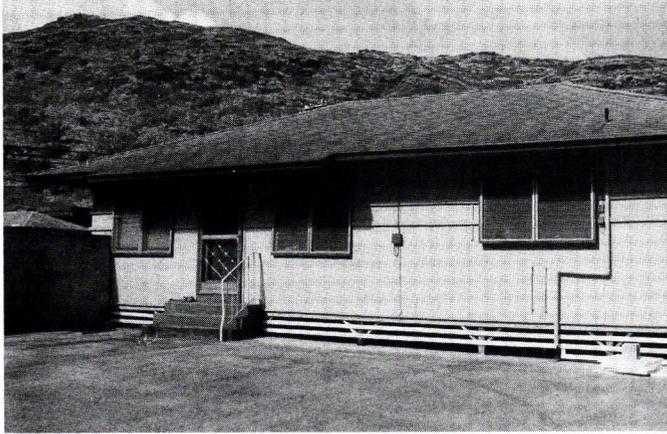
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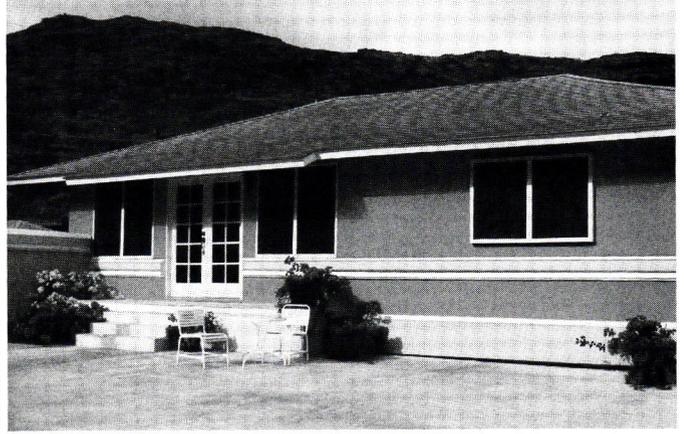
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Housing for Single-parent Families

by Mike Mullahey

“Part II, Housing for Single-parent Households, New Households New Housing,” edited by Karen A. Franck and Sherry Ahrentzen. Van Nostrand Reinhold: New York. 1991, 343 pages.

Single-parent households have become entrenched as a traditional family form in the United States and Western Europe. Single-parent households now represent 21 percent of the families with dependent children at home or a total of 6.8 million families in the United States, according to the 1985 U.S. Census.

The demographics of this new family form has some daunting features. Gender is a significant economic determinant. More than 45 percent of single-parent families headed by females live below poverty level. Median family income for single-mother families is \$7,608, in comparison to \$20,024 for single-father families and \$29,730 for the nuclear family—families with both parents and children. The housing plight of low-income, single-mother households is the most critical in today’s housing market.

Issues central to providing housing for the single-parent market include the need for on-site child care, access to services, shared spaces and incorporating a sense of community living in the physical design.

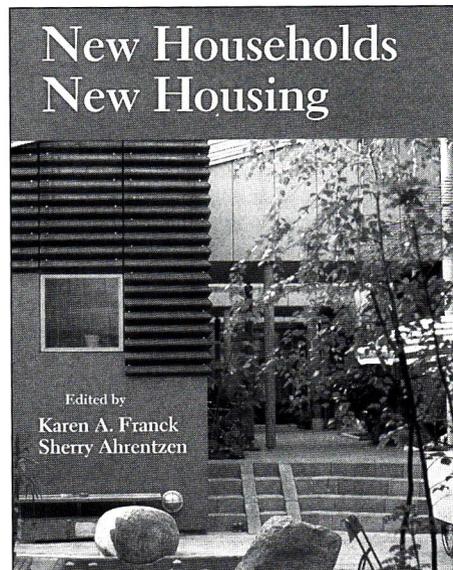
Problems are compounded for single parents in today’s housing market. Traditional forms of housing available may be unaffordable. What is affordable may not be in safe neighborhoods and lack ready access to services such as public transit, day-care centers, shopping, medical and social services.

Further, planning departments through zoning ordinances do not encourage the development of housing options such as home sharing for nontraditional families. All too often the attitude of government is to treat the special needs of single parenthood as transitory in nature through the provision of transitional or emergency shelters where the tenants have a tenure of less than 30 days.

As a society, we need to create opportunities to develop new living arrangements that ease the burdens of single-parent families. This book outlines development solutions implemented in areas across the United States and Europe. Development site plans, elevations and floor plans are used extensively throughout the publication to illustrate design solutions for many of the developments described.

A notable example is the “Mothers Home” in Amsterdam created out of a renovated 19th century building with the addition of a new wing on an infill site. This government-sponsored Mothers Home is patterned along the lines of an Israeli kibbutz where parents and children have separate living quarters. Common areas, available to all residents, include the kitchen, dining room and counseling room.

Services offered include social, financial, medical, counseling and child care. The Home is run by an association comprised of clients,



staff and representatives from the community. Financial support comes primarily from what would be Hawaii's Family Court and Department of Human Services. Tenants with incomes are encouraged to donate to the operation of the Home.

In Great Britain, activist and single parent Nina West has developed several complexes to serve single parents. Fiona House was built in London in 1972 as one of West's complexes with the financial support coming from the government. Designed by Sylvester Bone, Fiona House occupies a three-story building with four separate dwelling units on each floor, designed around a common interior corridor. The corridor doubles as the children's play space so parents can easily observe them playing from their apartments.

An intercom system connects all of the spaces within the building, allowing parents to stay in contact with their children and with other parents. A child-care facility is housed in a separate one-story building next door. An on-site day-care facility is absolutely necessary to allow parents the opportunity to earn an income.

Warren Village, started in 1974 in Denver, is the first and currently the largest housing development for single-parent families in North America. At this writing two villages have been completed. Originally sponsored by the Methodist Church, the Villages are now operated by two separate nonsectarian, nonprofit groups. Single parents must be at least 18 years of age and children may not be older than 11 years old when admitted. Living units are one-, two- and three-bedroom residences which range in size from 520 to 965 square feet.

At Warren Village, parents must earn an income and pay some rent in conjunction with a government rent-subsidy program. Parents must set tangible goals and have a strong desire to improve themselves and are assisted by on-site counsel-

ing and child-care facilities. Average length of stay is two years. A recent survey points out the success of the concept.

A survey of residents conducted at the time of enrollment and again after leaving Warren Village showed that 47 percent of the parents were unemployed upon entry while 94 percent were employed after the two-year stay. Sixty-five percent of the parents were receiving public assistance upon enrollment with only six percent doing so two years later.

Two major lessons can be learned in this process of redefining the American Home: first, it is very difficult to introduce innovative ideas into housing development; second, many of the nontraditional households may never be able to afford innovative housing either as buyers or renters. Subsidies from "skewed" rents, housing trust funds or other types of government (or private foundation) sources continue to be necessary for a large por-

tion of single-parent families.

Hawaii has a very traditional as well as one of the most expensive, housing development delivery systems. Our ability to innovate is severely limited by in-place governmental restrictions, lack of traditional financial support, the challenge of nurturing private/public partnerships and community attitudes. At the same time, we have cultures that are predisposed to communal living arrangements.

Leadership to advocate new housing alternatives is necessary to create a context amenable to addressing the problems of changing demographics and societal conditions. We need to rethink our traditional housing assumptions; reinvent the form of the delivery system; and forge an effective agenda of action.

♦♦ *Mike Mullahey is a principal in the planning firm Mullahey & Mullahey, a building contractor and founding director of the Center for Better Communities.*

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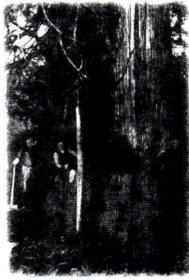


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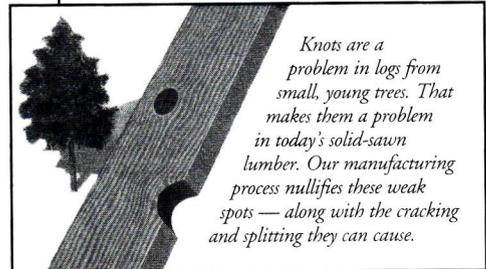
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WALTER IBERTI, 4 p.m. "Natural Stone As Influenced by Architectural Style" Walter is president of Walker & Zanger (West Coast), Ltd. His presentation will cover stone market trends, applications and the art of combining stone with ceramic or terra cotta.

ROBERT YOUNG, 4:30 p.m. "Evolution of Setting Tile & Stone" His career has ranged from hands-on contracting to sales and marketing. He serves as a technical representative for MAPEI Corporation where he fields inquiries on product specifications, applications, and installation on a daily basis.

BUDD NEWCOMB, CTC 5 p.m. "American Disabilities Act (ADA) & It's Impact Upon Tiling"

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Group Housing for Quality Living

by Allan Chung and David Fredrickson, AIA

“Cohousing: A Contemporary Approach to Housing Ourselves,” by Kathryn McCamant and Charles Durrett. Second Edition with Ellen Hertzman. Ten Speed Press: Berkeley, California. 1994, 288 pages.

Burdened with the pressures of hectic lifestyles led by most working couples, Kathryn McCamant and Charles Durrett, looked for an alternative solution to solve their need for housing. They were looking for an affordable living situation that was rich with neighborhood activity and suitable for rearing children. The options they found available on the market proved frustrating.

Then, they remembered new community developments they had visited earlier while studying architecture in Denmark. This sparked an effort that resulted in their book titled “Cohousing: A contemporary Approach to Housing Ourselves,” which describes a new housing movement that provides a viable option to people who want a real alternative to conventional high-rise and subdivision housing.

The Danish developments were called “liv-

ing communities,” as directly translated into English from Danish. McCamant and Durrett renamed these developments, coining the English term “cohousing” to describe the phenomenon. Cohousing developments can be distinguished from other intentional communities and communes by offering, as noted in the book, “a new approach to housing rather than a new way of life. Based on democratic principles, cohousing developments espouse no ideology other than the desire for a more practical and social home environment.”

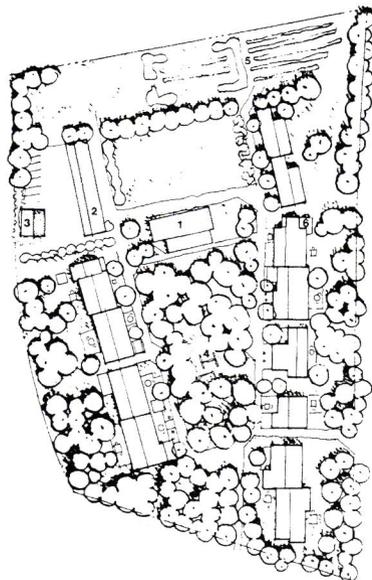
Intrigued by what these Danish housing communities offered, McCamant and Durrett spent 1984 and 1985 studying cohousing communities in Denmark, the Netherlands and Sweden. Through their research, McCamant and Durrett found four common characteristics of cohousing developments: participatory process for planning and design; intentional neighborhood design; extensive common facilities; and complete management by residents.

What are the benefits of this new approach to housing? Through sharing common resources and getting involved in planning and building, residents can enjoy features that they can't afford living in a single-family house. A good example of cohousing from the

The Mejdal development in Holstebro, Denmark, is featured in the book as a good example of cohousing.

Mejdal Two site plan

1. Common house.
2. Carport.
3. Play area.



Mejdal One site plan

1. Common house.
2. Carport.
3. Bicycle shed.
4. Play area.
5. Vegetable garden.
6. Green house addition.

These plans can be found on Pages 91 and 84 of the book.

book is the Mejdal development in Holstebro, Denmark. This project was completed in 1979 from a design by architect Niels Christian Andersen. The residents chose to fit 26 units on a property initially planned for 22 single-family houses at the edge of a single-family house subdivision. Using a cohousing approach reduced the amount of acreage devoted to public streets, sidewalks and utility infrastructure, freeing up more land for housing.

Such a density bonus with little loss of amenities would seem to offer a big plus, especially from the viewpoint of land-scarce Hawaii. However, the greatest benefit of cohousing seems to be the sense of community and the rich social life such developments provide for both adults and children. Andersen, who also was the initiator of Mejdal, said, "It's not the practical advantages of living in cohousing that are most important to me. It's the sense of belonging, a real home; I need the community as a safe harbor to come home to after a trying day..."

"Cohousing: A Contemporary Approach to Housing Ourselves" is very easy to read. It is good social architecture, written by architects, for anyone who is interested in learning about this alternative housing form. While the first edition focused on Danish cohousing, the 1994 update edition includes substantial new material covering recent cohousing communities built in the United States.

Maybe the idea of sharing a common place and getting together each day for meals with a group of friends drawn from six to 35 or more households echoes Hawaii's old practice of "ohana." Can cohousing be considered a viable alternative form of housing for Hawaii?

♦♦ *Allan Chung is senior associate, Facility Technics/Hawaii, and is actively involved with the Center for Better Communities. David Fredrickson, AIA, is a Honolulu architect interested in alternative housing.*

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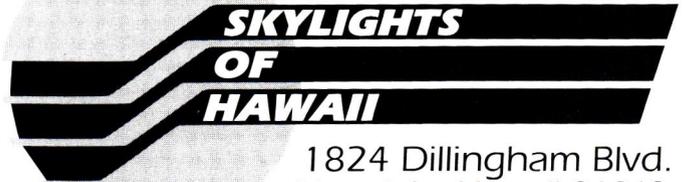
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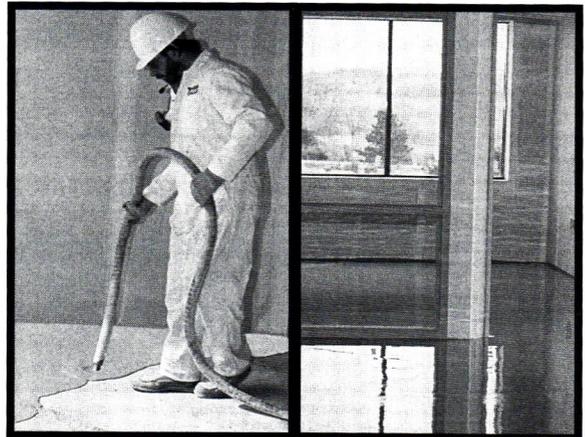
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Providing a housing alternative for the frail elderly

The Maluhia Elderly Housing Project

by Audrey Suga-Nakagawa, MPH

Hawaii has one of the most rapidly aging populations. It is projected that people age 60 years and older will make up 20 percent of Hawaii's total population by the year 2010, according to a report done by the Executive Office on Aging, Office of the Governor, 1992. In addition, the old-old segment of the elderly, people age 80 years and older, is expected to increase by 68 percent.

Because the risk of illness and disabilities increases with age, this age group is more likely to become medically frail. Physical ailments make it difficult for elderly people to continue living in their own residences without some assistance and place them at risk of being institutionalized in nursing home facilities which is often an undesired option.

Unfortunately, nursing homes in Hawaii already are in great demand. There is an acute shortage of nursing home beds in the state and the situation is projected to get worse as the population ages. Also, the cost of nursing homes is astronomical, causing a tremendous financial burden on private-pay-

ing families and the state Medicaid program for those individuals with low incomes.

All these factors are driving the housing and health care markets to look at affordable alternatives that can meet the consumers' desire to continue to live as independently as possible in an environment that will support their functional limitations and medical conditions.

Assisted-living residences, a long-term care model which incorporates a residential setting with supportive services, are one of the alternatives. Services include personal care and grooming, chore services and meals for residents. Assisted-living facilities are usually private studio, one- or two-bedroom apartment units.

Assisted-living residences fill a market niche between independent living and nursing home care. An example of an assisted-living residence for the elderly in Hawaii is the Maluhia Elderly Housing project, a unique private-public venture.

The Maluhia Elderly Housing Project is an innovative housing project that is designed for

The 40-unit, four-story Maluhia Elderly Housing Project, designed by Johnson Tsushima Luersen & Lowery Inc., is being constructed in the Alewa Heights area.



individuals who are frail, disabled, very low-income and need some medical and personal supportive care. It is a 40-unit, four-story apartment complex that is being constructed on the lower campus of Maluhia—a 158-bed long-term care facility, located in Alewa Heights, Honolulu, owned and operated by the state Department of Health under the Community Hospitals Division.

The project broke ground in early 1995 and is scheduled for occupancy in Spring 1996.

The \$7.3 million project is primarily funded by the U.S. Department of Housing and Urban Development, with a \$4.3 million grant, under Section 202, the Elderly Housing Program. Other sources of financing include a \$2.6 million loan from the state Rental Housing Trust Fund and a \$390,000 grant from the Federal Home Loan Bank of Seattle. The land is owned by the state of Hawaii and is being leased to Pacific Housing Assistance Corporation for the housing project.

The building has 39 accessible living units that include a kitchen, living space, one bathroom, one bedroom and a walk-in closet. There also is a community room at the main entrance and a common lounge space and laundry facilities on each floor. A two-bedroom apart-

ment and office space are reserved for the resident manager and the staff who will be providing the personal supportive services for residents.

Johnson, Tsushima, Luersen, Lowrey Inc., the project architect, paid special attention in the unit design to have features that are accessible to the disabled resident.

**The project broke ground
in early 1995 and is
scheduled for occupancy
in Spring 1996.**

For example, the bathroom is wheelchair-accessible and has a roll-in shower area. The kitchen counters and shelving are lower, and the walk-in closet is spacious enough for an individual in a wheelchair to maneuver.

In the Maluhia Elderly Housing Project, residents will receive their medical and personal supportive services from Maluhia's PACE (Program of All-inclusive Care for the Elderly) Hawaii Program, an outpatient program which currently serves the frail elderly in Honolulu.

PACE is staffed by a team of physicians, nurses, social workers,

physical and occupational therapists, dietitians, health aides and other geriatric specialists who assess, coordinate and deliver services to the frail elderly who are at risk of being institutionalized.

The cost for PACE services is charged separately from the apartment rental fees. Because the Maluhia Housing Project targets elderly people with low incomes, residents will be charged no more than 30 percent of their monthly income for the monthly rent. Through a contractual agreement with the state Medicaid Program, PACE receives a fixed amount of money per person/per month for all the medical and supportive care services.

Assisted living will not replace nursing homes. The homes are still needed to care for people with unstable medical conditions. However, assisted-living facilities such as the Maluhia Project can meet the growing demand for economical housing with supportive services that will allow many seniors to age-in-place with dignity.

♦♦ *Audrey Suga-Nakagawa, who has a master's of public health degree, is currently the director of PACE Hawaii at Maluhia and the lead project director/liaison from Maluhia for the Maluhia Elderly Housing Project. She has been directly involved in the past five years of planning and development of the housing project.*



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Suppliers' innovative products make renovations, new construction safer, better

Building Industry Advances

by Dean Ontai

To paraphrase the Olympic Games motto, "swifter, higher, stronger," innovative building industry suppliers continue to aim for the winning edge with "newer, better, cheaper" products. Strataflex, a waterproofing flooring product, is ideal for renovation or new construction, said Michael Ferguson, general manager of Central Pacific Supply.

Consisting of a rubberized asphalt base laminated to a reinforced fiber sheet, Strataflex is 1/16-inch thick and allows up to 1/4-inch lateral shifting in surface movement without cracking, Ferguson said.

Like epoxy or bubble gum, Strataflex can be applied to just about any surface, including concrete slabs, wood, stone, metal, marble, terrazzo, ceramic tile and asphalt.

A "revolution" in tile technology also has arrived with Cross-Plus tiles, Ferguson proclaimed. "Cross-Plus is glazed porcelain, with a nice texture on it, but still really cleanable," he said. Available in eight-inch or 12-inch squares and 33 colors, the tiles also are 30

percent harder than granite.

For condominium or town house dwellers, sound-proofing materials filter out intrusive noise and allow more privacy between living units. One popular sound-proofing material is cork, harvested from the outer bark of Mediterranean trees. Cork is naturally acoustic, with 200 million air cells per square inch.

An economical cork product offered by Central Pacific is WECU (Wicander Enterprises Cork Underlayment), used in condos or town houses to stop sound transmission under hard-surface flooring like marble, ceramic tile and wood.

Available in 1/4- and 1/2-inch thicknesses, WECU (pronounced "we see you") is suitable for sound control as well as stress crack suppression for hard surface flooring, Ferguson said.

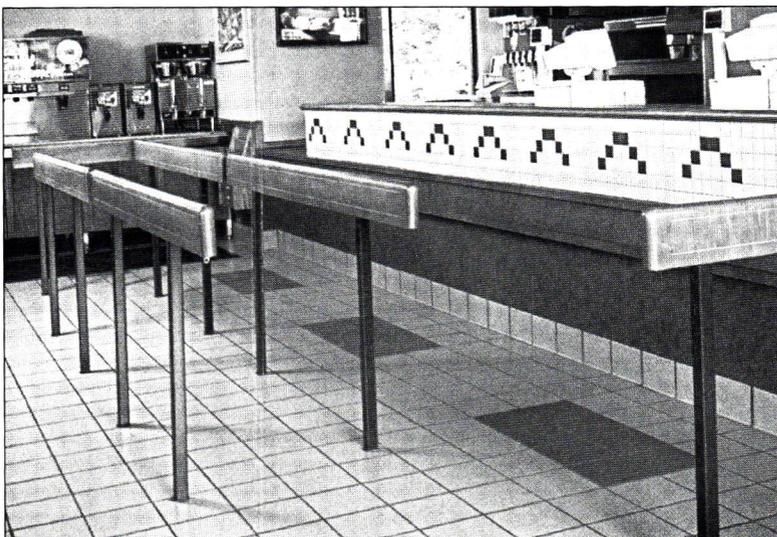
For traditional wooden structures, squeaky floors are a thing of the past with introduction of the "Silent Floor" system devised by Trus Joist MacMillan, said Hap Person of Honolulu Wood Treating Co.

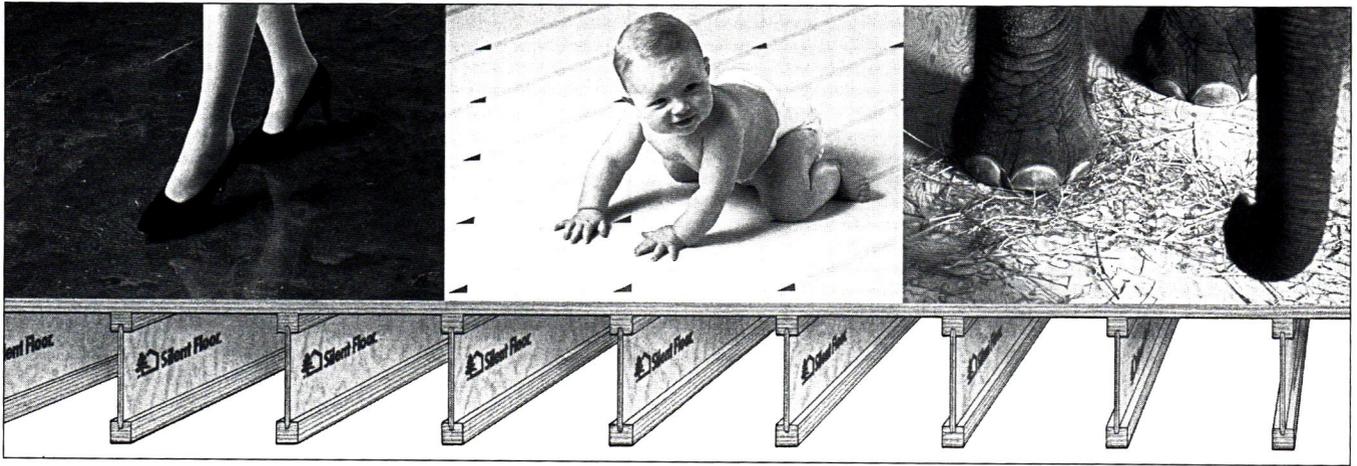
Instead of ordinary 2 inch by 10 inch lumber standing on edge, wooden "I"-shaped beams support the floor boards. The I-beams are made by rearranging and compressing wood fiber into a dense, rigid material that does not warp, shrink or split like ordinary wooden beams.

Like a steel I-beam, the composite beam carries a lot of weight without adding a lot of bulk.

Framing contractor Greg Minor said I-beams are "actually stronger than a floor system of 2 by 12s because all the natural weak spots in wood are engineered out of it. It's all so much more stable; it does not fluctuate with weather conditions the way ordi-

No sealer, waxes or any other surface treatments are required for Cross-Plus tiles.





I-shaped beams are used in the Silent Floor system by Tru Joist MacMillan to support the floor boards.

nary floor systems do.”

For more Herculean tasks, “Microllam” and “Parallam” beams are able to span longer distances—up to 66 feet—and support heavier loads compared to ordinary lumber.

The beams are made from long, thin strands of wood bonded together in a patented microwave curing process, which creates a uniform look pleasing to the eye. Tru Joist beams also help save the planet by using far less wood than traditional cutting and sawing methods, Per-son said.

In the aftermath of Hurricane Iniki, a new Honolulu city ordinance was enacted which requires the use of 18-gauge steel rafter ties to supplement the conventional toe nailing of rafters to keep roofs from blowing away.

To help anchor the homestead during howling winds, one option is to use Simpson Strong Tie steel connectors, which are metal plates or strips that are screwed, bolted or nailed to connect beams from every conceivable angle.

With such innovations as hurricane-resistant steel connectors and “silent floor” systems, many tools are available to make renovations and new construction projects safer, stronger and more user-friendly for building occupants.

♦♦ *Dean Ontai is a contributing writer for Hawaii Pacific Architecture.*

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Know Your Rights

by Michael D. Tom, J.D.



Michael D. Tom

In today's economic climate, professional providers of design services may find themselves, in the best of cases, waiting to be paid, or, in some instances, not paid at all. A number of steps can be taken to ensure compensation for services rendered.

Understand the agreement

While there are examples of transactions successfully completed

with just a handshake, these are few and far between. A written agreement is the primary tool for ensuring payment for services. Regardless of whether a standard form agreement or a customized agreement is to be used, understand what rights and risks are being allocated in the agreement. The best time to review the agreement is before it is signed, not after a dispute has arisen.

While the contract should define all rights and obligations a design professional has, and should be reviewed with that in mind, the following are items to analyze regarding compensation:

- Are the compensation terms accurately set forth?
- Are the payment terms accurately set forth?
- Have provisions been made for interest?
- What remedies are available if payment is not made on a timely basis?

Do not surrender lien rights

Sophisticated owners (and their counsel) have developed a practice of conditioning final payment under construction contracts upon the expiration of the period within which liens can be filed. They have been less successful with design contracts, probably because the concept of retention does not apply. However, design professionals should be extremely cautious not to waive, either expressly or by action, their statutory lien rights. Often it is the threat of a lien that produces payment.

While the suggestions contained herein may seem simplistic and self-evident, attention to them at the outset of any new retention will increase the likelihood of being paid for the services rendered.

♦♦ *Michael D. Tom, J.D., is a partner in the law firm Tom & Petrus. Educated as a civil and structural engineer, his practice focuses on the construction industry.*

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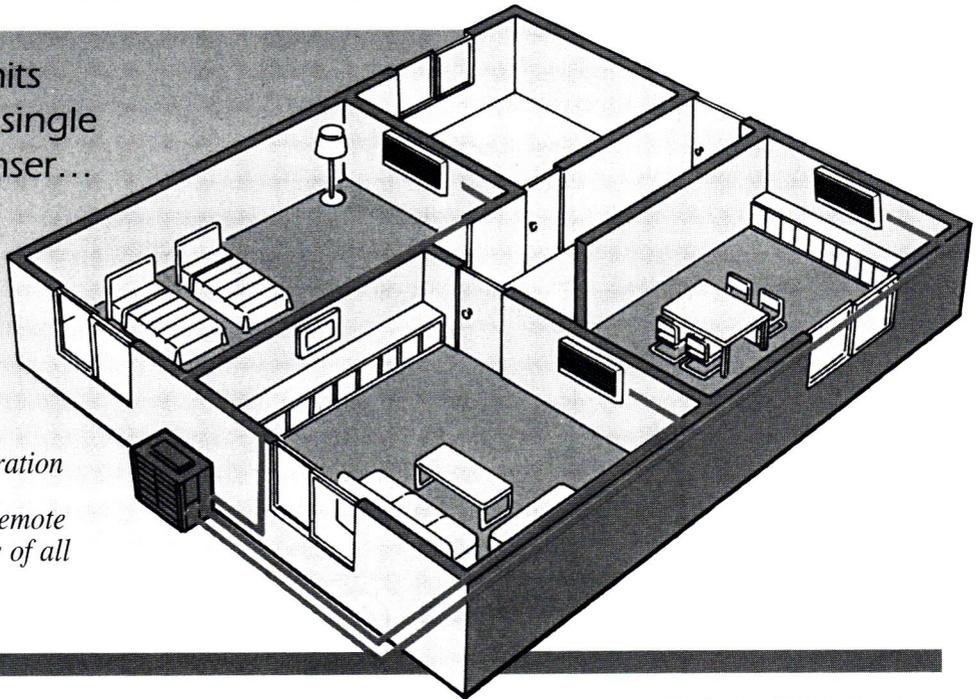
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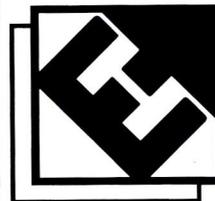
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Habitat for Humanity offers economical solutions

Housing Hawaii's Families

by James M. Severson Jr., AIA

As pointed out in other articles in this issue, there is a critical need for a variety of housing topologies in Hawaii that can meet the diverse social, economic and cultural needs of the islands' population. The typical single-family house subdivision takes up too much land; ends up costing too much money for the majority of island families; and doesn't meet the personal and social support needs of a large percentage of the population.

One way to develop "affordable" housing is through nonprofit corporations. One successful example of how a nonprofit can help develop such housing was born out of the hurricane Iniki disaster on Kauai. Usually, most

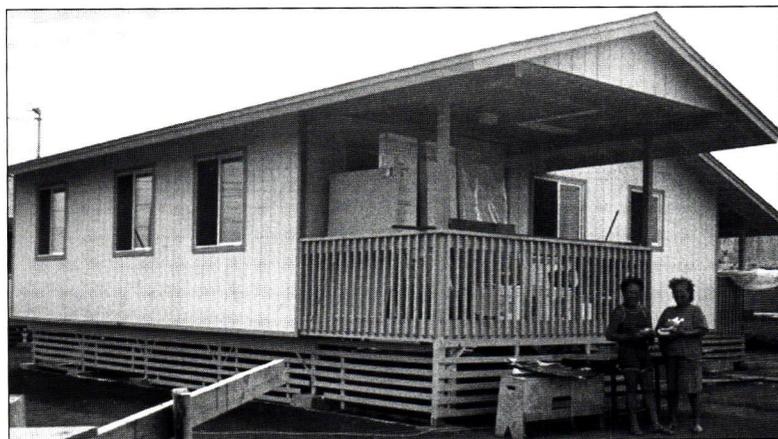
insurance benefits and federal disaster aid go to people who already own a home, but for families who rent, little or no financial help is available to replace lost belongings or find new homes. However, one month after Iniki struck, Habitat for Humanity International sent a team of volunteers along with approximately \$500,000 in start-up funds to help low-income families, who were left homeless on Kauai, rebuild their lives.

Through this Habitat effort, a new affiliate was born, Kauai Habitat for Humanity. This affiliate with the cooperation of local businesses, individuals and government has been able to help 28 very-low income families, who earn less than 50 percent of the median family income on Kauai, to build houses of their own.

By getting community volunteers and businesses to work side by side with the families in building these homes, Kauai Habitat helps build communities as well as houses. In this process positive long-term relationships are established along with mutual trust and respect.

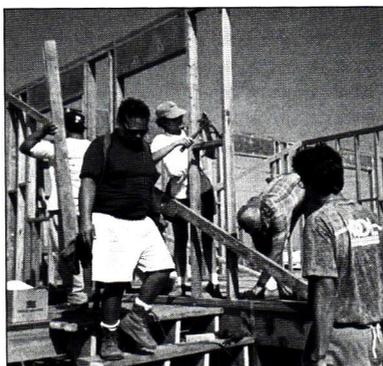
The Kauai Habitat program has been particularly successful in the Hawaiian community of Anahola. Here many families, who had been awarded lots but could not afford the cost of financing and constructing a house and were subject to losing their awards if they didn't build within a certain time frame, have been able to build their own houses with the assistance of Kauai Habitat and community volunteers. These families are now experiencing a certain pride of ownership and sense of self-reliance that comes from participating in the building of their own homes.

Important elements to the success of the Habitat program are that families are required to attend budgeting and home owner-



Above, Hilario and Jacqueline Leanio are the proud owners of a two-bedroom Habitat house in the Kamika subdivision located in Anahola.

Right, Families eligible for Habitat for Humanity houses must first work at least 200 hours helping to build other homes before working on their own home.



ship classes and they must work at least 200 hours helping to build other homes before working on their own. This construction experience provides them with training and a first-hand knowledge of what to expect when building their own home.

Habitat also provides the families with a 10-year, 0 percent interest mortgage, which saves them tens of thousands of dollars over conventional financing programs. A typical two-bedroom Kauai Habitat house costs \$43,000; a three-bedroom costs about \$48,500; and a four-bedroom house costs \$52,500.

Kauai Habitat has plans to build 100 homes for very-low income families during the next three years. So far more than \$4.1 million in grants and loans has been committed to help achieve this goal, about \$1.5 million short of what will ultimately be needed. However, since Kauai is such a small community, it will be difficult to sustain the volunteer effort needed to build these homes through traditional wood framing construction.

Kauai Habitat has explored several alternative construction techniques to minimize labor requirements, including pre-panelized and pre-fabricated house packages, but the problem ends up being one of cost. These systems cannot compete with the less than \$20 per square foot construction material cost which Habitat has been able to obtain.

There is however a wall construction system that will actually reduce both the cost of materials and the amount of construction labor required. This system is adapted from one of the oldest and most widely used construction materials around the world—earth itself or adobe blocks.

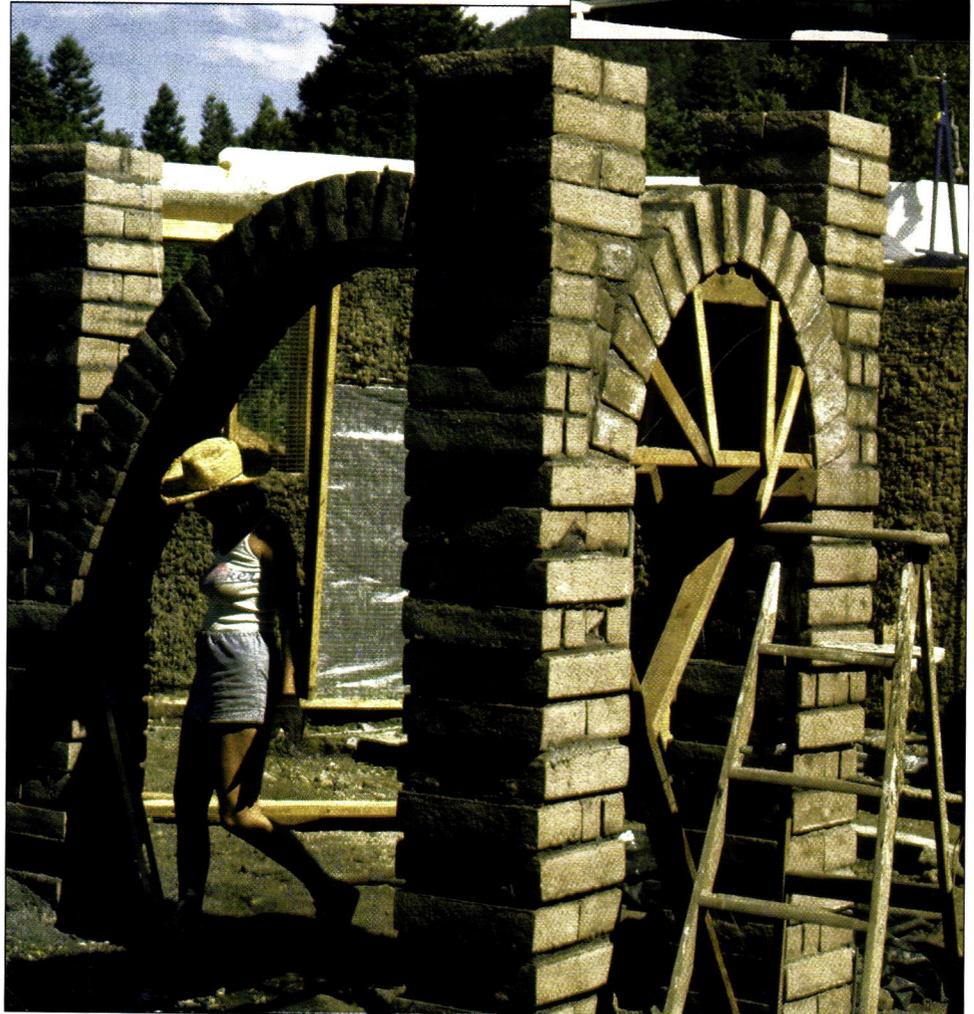
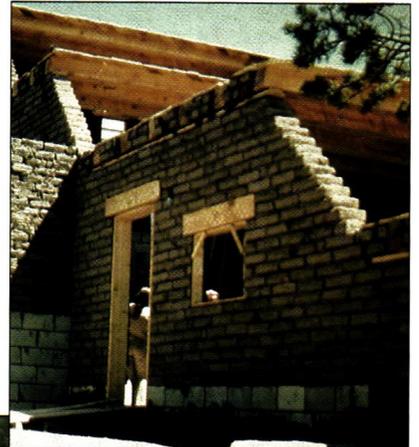
Adobe construction has been used for thousands of years in all corners of the world; throughout China, Africa, the Americas, the Middle East and Australia. Even today in most rural areas of the world, people depend on locally-available materials to build their homes. According to Frank Purvis, director of

appropriate technology for Habitat for Humanity International, 90 percent of all rural dwellings in the world are constructed of clay, wattle and thatch. Adobe structures will last hundreds of years when properly constructed and maintained.

The making of adobe blocks or rammed earth construction has historically been a labor-intensive process. However, a new application of adobe technology, which hydraulically compresses soil into uniform building blocks called Terra blocks, overcomes this disadvantage. Terra blocks allow adobe construction to be priced competitively with timber, steel stud, cement block and pre-panelized construction systems. These blocks

Although most often chosen for economic reasons, adobe blocks can be used to create interesting designs. Inset, Once an adobe block wall has been built, a fast-drying, nontoxic, nonflammable, water-based sealant is applied.

Photos by Arius Hopman



are fireproof, termiteproof, provide excellent insulation from outside noises and temperature variations, extremely strong, durable, inexpensive and conducive to self-help labor.

The blocks are produced utilizing a diesel-powered, computer-controlled hydraulic press which can be trucked to a building site where it can produce 500 blocks per hour. Any compatible soil with a clay content of between 10 percent and 90 percent can be used.

The soil should be relatively dry; have a moisture content of between 4 percent and 14 percent; and be free of organic material such as roots and vegetation. Soil at or near the building site can normally be used, reducing transportation costs and manufacturing energy to virtually nothing and eliminating costly delays.

The soil is fed (either by people with shovels or a front end loader) into a screened vibrating hopper which holds enough soil for ten minutes of continual operation. The soil falls into two block molds where up to 530,000 pounds per square foot of pressure is exerted on the soil, producing 12 inch-by-8 inch (variable) by 3½-inch blocks which come out on rollers, ready to be stacked as a wall or stockpiled on site.

No curing or drying is required. These blocks are dimensionally stable and uniform with a perfectly flat bedding surface, allowing the blocks to be dry-stacked into 12-inch-thick walls without mortared joints. A cubic yard of soil will yield approximately 100 blocks.

Each block weighs approximately 26 pounds and has a compressive strength of at least 600 psi, up to 1200 psi, depending on soil composition. The minimum UBC requirement for unfired clay masonry units is 300 psi. At 600 psi, a 12-inch-thick wall has a bearing capacity of more than 86,000 pounds per linear foot. When a small percentage of lime or cement is mixed in the soil, compressive strengths as high as 3,000 psi are achieved which is double that of concrete blocks.

Once a wall has been built, a fast-drying, nontoxic, nonflammable water-based sealant is easily applied by brush, roller or sprayer. The corners of the building are left void except for a single rebar, where concrete columns are poured along with a reinforced concrete bond beam along the top of the wall, which ties the whole structure together giving exceptionally strong resistance to lateral forces. The walls are then ready for a coat of plaster or stucco which can be finished in the desired texture and color.

***This construction system
is particularly ideal for
Hawaii for a number
of reasons.***

The sealant keeps moisture from seeping into the blocks and forms a surface that allows a chemical bond attachment of the stucco. In a recent wind test performed in Florida, a 220-mph (120 pounds per square foot) wind load was applied to this wall system without even cracking the exterior stucco which was in tension. Any roof (or additional floor) can be used with this wall system because it far exceeds normal engineered wall design load requirements.

The blocks can be easily drilled, routed or chiseled and readily accept nails or screws without pre-drilling.

Electrical wiring can be surface mounted in conduit or placed in routed out channels in the block then covered in mesh and plaster. Plumbing pipes and vents can be co-cealed in the walls in a similar fashion.

This construction system is particularly ideal for Hawaii for a number of reasons. First, it is resistant to ground termites; termites will not eat or destroy it.

Second is the abundance of a va-

riety of silty-clay soil types throughout the islands, which are ideal for making high-quality adobe blocks. The blocks can be produced as initial grading work is done, saving time, material and transportation costs by using on-site materials.

Third, since this system is totally fireproof, it reduces fire-fighting requirements and also will reduce fire insurance costs.

Fourth, because of the massiveness and insulative quality of the walls a much cooler, quieter and more comfortable interior ambiance can be more readily achieved compared to other wall systems.

Finally, a potential for new local design vocabularies and styles could result from this construction system through the use of rustic and elegant finishes, reveals and deep shadow lines around windows and doors, designs from carving or projecting blocks and structural arches. Due to its fireproof and insulative qualities, this material lends itself well to the design of sustainable communities, including clustered and row housing, fire stations, schools and community centers.

As the world gets "smaller" with increased communications capabilities and from increasing environmental impacts, which threaten both local and global ecosystems, it becomes more incumbent on architects to consider not only the on-site environmental impacts which a particular project will produce, but also the environmental impacts that result elsewhere. This becomes not only an issue of cost to the client, but one of cost to and impact on the global environment.

There also is an issue of island economics which is often overlooked. Designers and builders should support local industries which will help keep local economies strong, produce jobs and reduce dependence on imports. A review of the local construction industry would show that currently almost all of the materials used are imported.

There is tremendous potential to

create new local building industries through both agricultural and industrial techniques.

The recent conference on recycled materials held at Tokai University in Honolulu presented a number of exciting material alternatives which use local products. These range from locally recycled glass products, soil, turf and roadway resurfacing amendment products made from recycled tires to lumber, furniture and fencing made from recycled plastic. Terra blocks will soon be a viable alternative building material for use in low-cost as well as upscale residential and commercial projects in Hawaii.

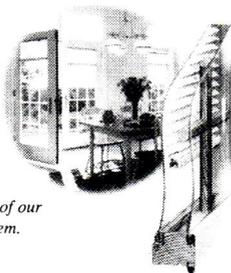
♦ James M. Severson Jr., AIA, has been a consultant to Kauai Habitat for Humanity since June 1994. Prior to that he was a consultant for the Office of Hawaiian Affairs on its statewide housing and community development plan, Pihana Kauhale Hou.

Severson is an architect in private practice and is president of Aina Block Corp., a company which will be bringing the adobe block technology to the islands.

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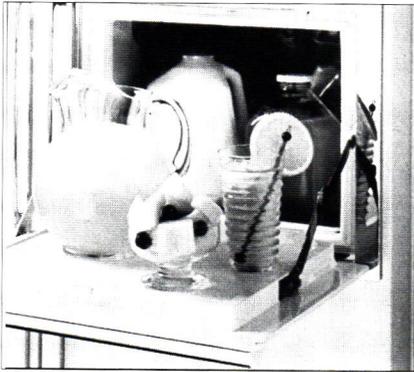
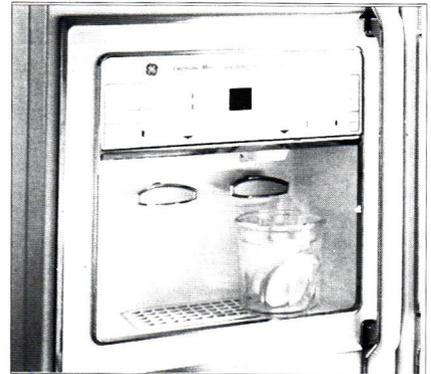
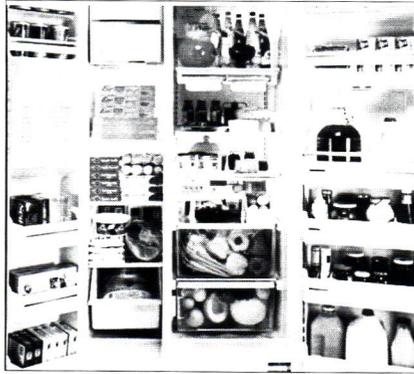
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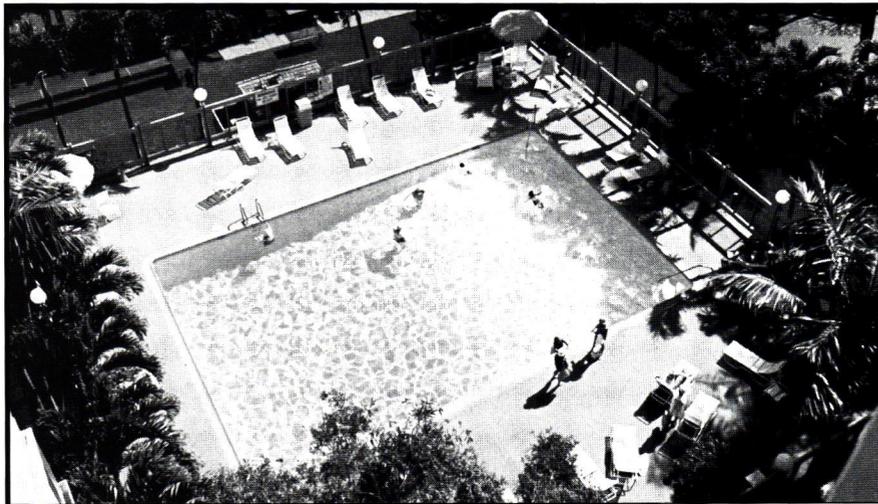
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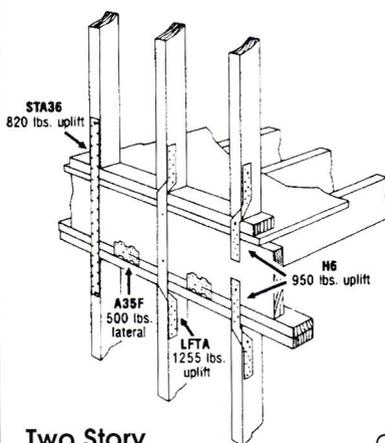
New Products

GE Profile Maxus Washers Now Available

Servco Pacific Inc. recently announced that the GE Profile Maxus, a new GE washer which features up to 16 cycle selections, five fabric care selections and an expansive 3.2-cubic feet load capacity, is now available.

The GE Profile Maxus is quiet by design. The models feature deluxe sound insulation packages that work more effectively to keep noise inside.

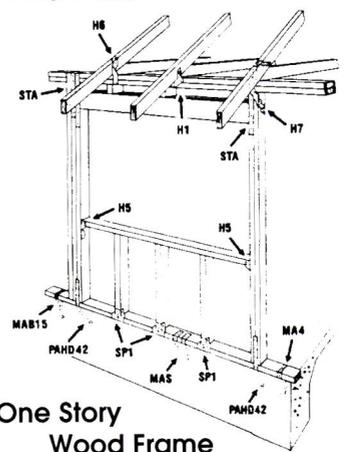
These new washers have steel drive transmissions and PermaTuf II baskets, which carry a lifetime warranty. The focus on durability also includes the use of 40 percent fewer parts than in previous GE washers. This more efficient design leaves less to go wrong or to be replaced. *For more information about this new product contact Servco Pacific Inc. at 848-2411.*



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