

Hawaii Pacific Architecture



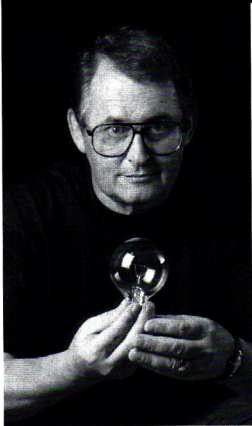
Computer Technology and the Spirit of Architecture

BULK RATE
U.S. POSTAGE
PAID
Permit No. 1235
Honolulu, Hawaii

ALAN H. NEWMAN
1465 MOKUNA PLACE
HONOLULU HI 96816-2715
*****5-DIGIT 96816

PMP Company, Ltd., Publishers
1034 Kiliani Ave., Ste. 108
Wahiawa, HI 96786

Brighten Your Project With On-Site Insight



Nick Kaars Associates

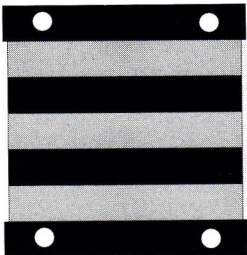
**ARCHITECTURAL
SIGNAGE
AND ENTERTAINMENT
GRAPHICS**

Nick Kaars
adds insight to projects
through creative signage and
entertainment graphics that
create energy on site.

For on-sight in sight, call

Nick Kaars
522•1366

Signage Concept

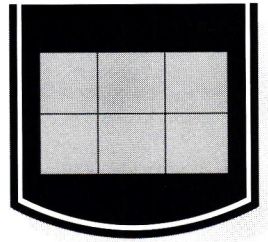


King Kalakaua Plaza

DEVELOPER

Honu Group, Inc.

Color Theme
and Signage Concept

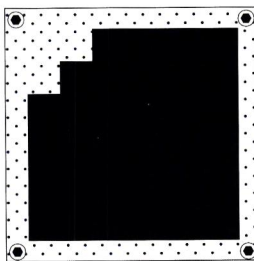


The Shops at Wailea

ARCHITECTS

Architects Hawaii, Ltd.

Entertainment
Graphics
Exhibits
and Sculpture



**PELE AWARD
AIA AWARD OF MERIT**

The Dole Cannery

DEVELOPER

Horizon Group, Inc.

OTHER SIGNIFICANT PROJECTS

Bishop Square
Chaney Brooks & Co.

Grosvenor Center
Harbor Court Residential

Hawaiki Tower

KHON TV Broadcast Center

Koko Marina Shopping Center

Outrigger Hotels & Resorts

Zippy's Restaurants

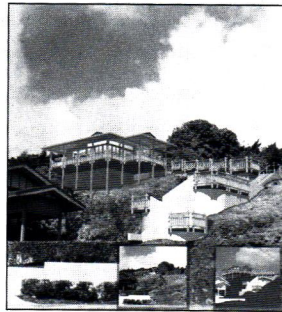
Nick Kaars Associates

Consultants : Signage,
Exhibits, Packaging, Branding
Store Front Design,
and Sculpture

CONTENTS

COMPUTER TECHNOLOGY AND THE SPIRIT OF ARCHITECTURE

- 5 **Practice for the New Millennium**
Computer technology in today's architecture office
By Bettina Mehnert, AIA
- 10 **A Willing Student**
Technology enhances the training of architects
by Jeffrey R. Matsuki
- 13 **From Academy to Practice**
UH program focuses on technology, internship
by Joyce M. Noe, AIA
- 15 **Professional Practice, Personal Service**
Technology in the one-man office
by Wayson Chong, AIA
- 18 **Simplicity Requires Sophistication**
Lighting controls for luxury residences
by Richard Moss, P.E.



10 A Willing Student

CONCRETE AND MASONRY

- 22 **Sealing Against Spalling**
Concrete penetrating sealers can fight concrete spalling
By Richard Malmgren
- 25 **Concrete Housing Made Affordable**
Lightweight forming systems



28 AIA Honolulu 1998 Design Award

ENVIRONMENTAL CONCERNS IN DESIGN AND CONSTRUCTION

- 26 **Old Buildings Bring New Challenges**
Environmental aspects of building restoration
By Greg Mescan

DEPARTMENTS

- 28 **AIA Honolulu 1998 Design Award**
Mason Architects, Inc.

IN THIS ISSUE...

Today's technology allows architects to do more than ever in service to their clients. From Computer Aided Design to Internet communications, architects in both large and small firms enjoy the benefits of technology while still providing the human interaction necessary to a successful practice.

COVER: An anchor store at The Shops at Wailea is realistically represented using a variety of CAD software packages, scanned photographs and manual rendering. Rendering courtesy of Architects Hawaii.

Hawaii Pacific Architecture is the bi-monthly journal of the AIA Hawaii State Council. Subscriptions are \$24 per year. Foreign subscriptions: \$48. Opinions expressed by authors do not necessarily reflect those of either the AIA Hawaii State Council or the publisher. The appearance of advertisements or new products and service information does not constitute an endorsement of the items featured.



A Council of the American
Institute of Architects

1998-1999 Officers

President: Daniel G. Chun, AIA

Vice President, President-elect:

Marie E. Kimmey, AIA

Secretary/Treasurer:

N. Robert Hale, AIA

Directors:

Eugene E. Leucht, AIA;

Douglas P. Luna, AIA;

Lorin Matsunaga, AIA;

Kurt H. Mitchell, AIA;

Jeffrey Y. Nishi, AIA;

Frank Skowronski, AIA

AIA Hawaii State Council and AIA Honolulu

1128 Nuuanu Avenue, Honolulu,

Hawaii 96817 (808) 545-4242

AIA Hawaii Island

P.O. Box 491, Hilo, Hawaii 96721

(808) 961-0374

AIA Maui

P.O. Box 929, Wailuku, Hawaii 96793

(808) 244-9574

HPA Editorial Board

Andrew Yanoviak, AIA, chair;

Nick H. Huddleston, AIA;

Lorin Matsunaga, AIA;

Puanani Maunu, Assoc. AIA;

David Miller, AIA;

Brian Shimomura, AIA;

A. Kimbal Thompson, AIA;

Gordon Tyau, AIA;

Philip White, AIA

Editorial Advisor

Spencer Leineweber, FAIA

PMP
Publishing
Company, Ltd.

Publisher

Peggy Marshall Murchison

Associate Publisher/

Executive Editor

Jamie Kemp

Assistant Editor

Christopher Aguinaldo

Art & Production Director

Laurie Whitfield

General Sales Manager

Mark Zanetti

Account Executive

Ginger Marable

Sales Coordinator

Patty Guillermo

Production

Cheryl Ruddach, Randy Langsi &

Rudy Tietjen

Copyright©1999 PMP Company, Ltd.,
1034 Kilani Avenue, Wahiawa, Hawaii 96786.
Phone 621-8200. Fax 622-3025. E-mail:
pmpco1@aol.com All rights reserved. Reproduction of
the whole or any part of the contents of *Hawaii
Pacific Architecture* without written permission is
prohibited. Postmaster: Send change of addresses to
Hawaii Pacific Architecture (ISSN 1089-4470), 1034
Kilani Ave., Suite 108, Wahiawa, Hawaii 96786.



AIA Hawaii State Council

The American Institute of Architects

April 1999

Dear Readers of *Hawaii Pacific Architecture*:

This April/May issue is the last issue of *Hawaii Pacific Architecture* to be published under the contract between PMP Publishing and the American Institute of Architects Hawaii State Council. Changing times require evolving ideas for informing the public about architecture and its clientele.

When PMP Publishing took over this responsibility some 14 years ago, the magazine was a black-and-white publication with a subscriber list of about 1,000 architects and their close associates. The subscriber list has grown to over 5,000 people consisting of elected officials, developers, financiers, community leaders, professionals, and other important citizens in our community.

The magazine has won awards from the publishing industry. In its pages can be seen the result of enlightened patronage harnessed with the architect's dreams and the builder's well-crafted object. Not only new designs were featured, but articles on Hawaiian thatched houses and historic military architecture have appeared. These magazines form an invaluable record of design issues and accomplishments over a significant period in Hawaii's history.

The American Institute of Architects thanks PMP and its employees for their years of dedication to architecture and to this magazine. Gratitude is also expressed to the past and present *Hawaii Pacific Architecture* Editorial Board, the numerous contributors of articles and photographs, and our loyal advertisers.

Aloha and Mahalo,

Daniel Chun, AIA
President

Computer technology in today's architecture office

Practice for the New Millennium

by Bettina Mehnert, AIA

As the clock ticks towards the next century, architects can't help but wonder what the new millennium holds in store for architectural design. Once an esoteric and expensive tool used only by the largest firms, the CAD (Computer Aided Design) workstation has now become an essential element of any architectural office.

While some architects fight the notion that CAD is an unpleasant necessity for doing business which is relegated to other people if possible, others believe it is the best thing that has happened to the building design profession, providing a boost in profitability and the ability to offer new services. Depending on how CAD is implemented in the office, either of these statements could be true.

For many architects, making the transition

from manual drafting to drafting software to 3D supporting architectural software hinges in part on the philosophical approach a firm

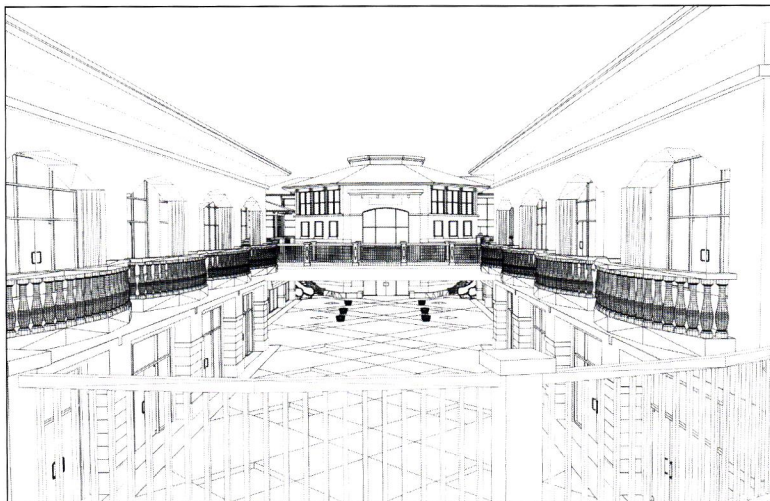


A computer-generated wireframe and hand rendering are combined to provide an attractive representation of The Queen's Medical Center Emergency Room.

follows, the types of building design it does, and how it develops the design. In most cases, the smartest path is to add a station or two devoted to 3D visualization. More clients are starting to ask for, and even expect, perspec-



A computer-based color elevation study of The Shops at Wailea gives clients a good idea of the design intent.



A single wireframe model provides multiple views of different parts of the project.

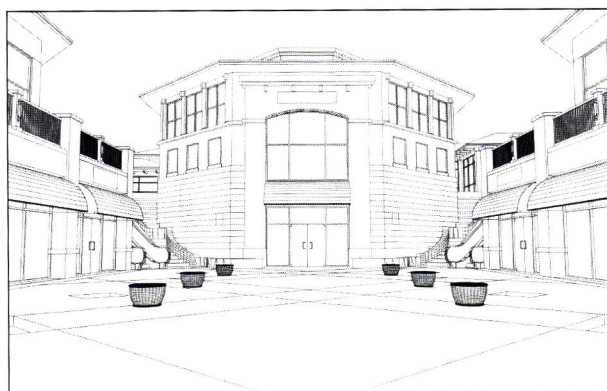
tives and rendered walk-through animations, turning the competitive advantage gained through leading-edge implementation of technology into an increasingly short-lived event. The Internet is a good example of this phenomenon. Touted as the future of networking and collaboration, it has been the focus of incredible media attention both within the public and the profession. At our firm as at many other architectural firms, an increasing number of clients began to ask if we could communicate with them directly using e-mail systems, FTP (File Transfer Protocol) or other tools of the information super-highway. At the same time, we needed better tools to communicate and share information with our consultants. Today, as a direct response to these external market forces and our internal functional needs, we have implemented a leased fiber optics line to our office, and every employee in our company has direct access to the Internet.

New Techniques

The architectural fields in which CAD programs have made the most progress are in their design capabilities and perspective rendering. In the area of 3D renderings, walk-throughs, fly-throughs and lighting, studies can be very effective in showing a client how the finished product will look — to the point of showing how the light will shine through the

different windows in the building at different times of the day and year.

Easing the transfer into three-dimensional computer rendering can be accomplished by developing wireframe models that are then manually rendered. This is a viable solution bridging the distance between different approaches. For example, for The Shops at Wailea we enabled our clients to preview the design months before the ground was broken using a large library of finish surfaces and the ability to merge proposed designs with actual photographs. Using a variety of different software packages, the base wireframe model was generated in AutoCAD, while sunlight, materials, water features and the sky were rendered with AutoArchitect and 3D Studio Viz, as envisioned by Alain Geronimo, a designer with Architects Hawaii. We worked closely with Nick Kaars, Designer on the color system using a custom-designed viewable color chart to obtain the subtle desired color variations on the computer screen as well as on prints. To add photorealism, Earl Ma, also a designer, created a digital "entourage" image library with scanned photos of people and trees using Adobe's Photoshop and Illustrator. By digital-



The wireframe of a boutique at The Shops at Wailea is shown prior to full rendering (see cover).

ly separating each entity, we manipulated scale, location, and sharpness individually without affecting the others. Finally, we sketched in cast shadows for these figures free-hand using a graphics tablet and digital pen.

The current development of ar-

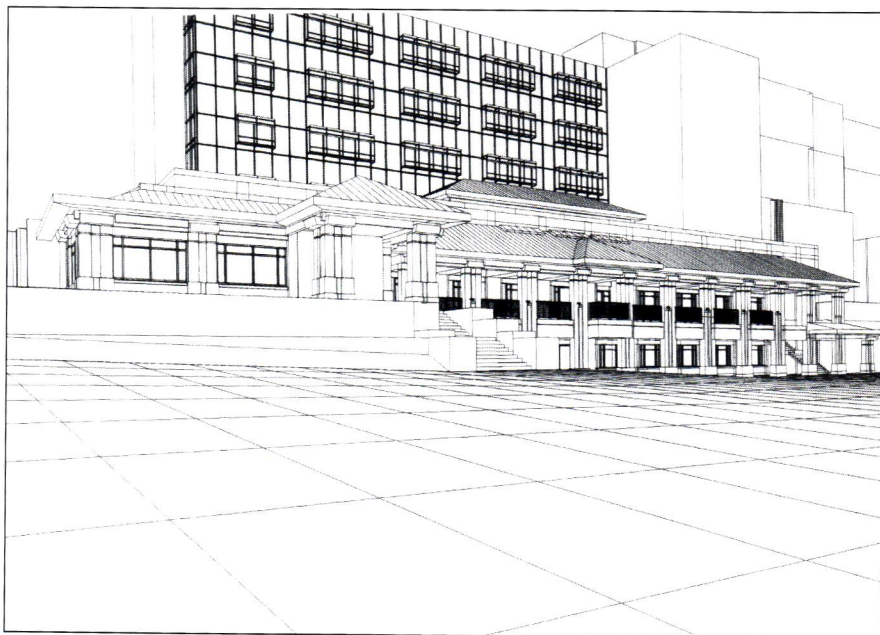
chitectural software demonstrates a major trend toward building comprehensive 3D CAD models. From CAD models, all the plans, sections, elevations and even details can be automatically generated. Drawing coordination also will be automatic, as changes to the model are reflected in all the relevant drawings and details. Until recently, however, it was too difficult and time-consuming to actually attempt this with real building projects. However, due to the massive increases in inexpensive micro-computing power, better operating systems and architecturally specialized programs with vastly improved artificial intelligence, this idealized way of de-

signing buildings is now moving toward realistic professional practice. The 3D visualizations are a side benefit, since comprehensive models must work in 3D.

The Creative Process

Has computer technology changed the way architects think, the way we design and express creativity? The answer is a definite yes and no. I don't believe technology has any influence on the actual design creativity or the development of design solutions. It is a tool aiding the professional. As such, it has added to the traditional way architects present their ideas. Technology can add excitement. It can help designers express themselves in a variety of stimulating ways, using a diversity of media.

Does all of this mean we have reached the end of this technology curve? No, the future continues to look very exciting and the accelerated speed of technological advances shows no signs of slowing down. The

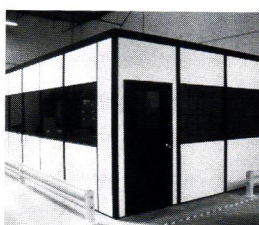
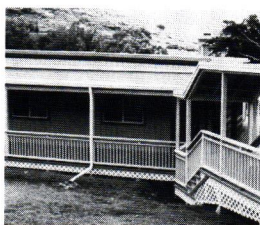
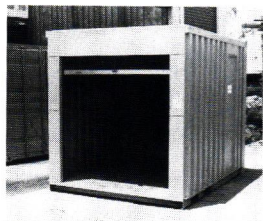


The computerized drawing provides the technical base for the manual rendering of The Queen's Medical Center ER.

constant struggle of our relatively slow-moving industry trying to keep up with fast-paced technology on which we increasingly depend, will not cease. For those architects still waiting for a more intuitive interface, aiding in implementing design

ideas without having to fight the often disliked "technology beast," there is a shimmer of hope on the horizon based on the development of the following new tools:

- The Digital Cocktail Napkin, for sketch and gesture recognition,



Room For Rent.

If you need extra space, we've got it -
from mobile trailers to storage containers to inplant offices.

All affordably priced to rent, lease or purchase.

On Oahu, call 677-8900. Neighbor Islands,
call 1-800-362-0510.



GE Capital Modular Space Hawaii, Inc.

Our Business Is Helping Yours®

Modular Space Sales & Leasing

Residential & Business Financing

Strategic Capital

Commercial Financing & Leasing

Commercial Real Estate Financing

Oahu: 677-8900

Neighbor Islands: 1-800-362-0510

www.ge.com/capital/hawaii



Of course it leaves you speechless. It's designed for

visual

thinkers.

For people whose world revolves around images not words, the new Silicon Graphics® visual workstations offer the ultimate in graphics performance on Windows NT.® Featuring our Integrated Visual Computing (IVC) architecture with the Cobalt™ graphics chipset, these breakthrough machines move graphics data six times faster than other AGP 2X-based workstations*—a massive 3.2GB per second. Plus, I/O bandwidth is up to 12 times greater than other PC workstations.** So you can now get the outrageous 2D, 3D and digital media performance you expect from Silicon Graphics—for about the price of a mere clone. The Silicon Graphics 320™ workstation. Or choose the Silicon Graphics 540™ workstation: and supporting up to four



Intel® Pentium® II Xeon™ processors, it's the most scalable Windows NT workstation around. But enough words. After all, a picture is worth so much more.

HONCAD
Corporation

1000 Bishop Street Suite 702
Honolulu Hawaii 9813

Telephone 808 537 9607
Facsimile 808 537 1280
website <http://www.honcad.com>



Silicon Graphics 320 Visual Workstation

- Silicon Graphics Integrated Visual Computing architecture with Cobalt graphics chipset
- Supports up to two Intel® Pentium® II processors (up to 450MHz)
- Integrated 10/100 Ethernet, IEEE-1394†, USB and professional video I/O
- Ultra ATA or optional Ultra2 SCSI drives up to 28GB total capacity
- Microsoft® Windows NT® Workstation 4.0
- Add the SuperWide™ 17.3" Silicon Graphics 1600SW™ digital flat panel monitor (shown)



SiliconGraphics

*Bandwidth based on graphics to main memory. **I/O bandwidth as compared to 32-bit PCI. †For information on the 1999 availability of the Silicon Graphics 540 workstation, please call your local representative. ‡Requires additional software under Windows NT 4.0. Prices quoted are for U.S. only.
© 1999 Silicon Graphics, Inc. All rights reserved. Silicon Graphics is a registered trademark, and the Silicon Graphics logo, Silicon Graphics 320, Silicon Graphics 540, SuperWide, Cobalt and Silicon Graphics 1600SW are trademarks, of Silicon Graphics, Inc. Intel, the Intel Inside logo and Pentium are registered trademarks, and Pentium II Xeon is a trademark, of Intel Corporation. Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective owners.

Right Tool/Right Time, a context-hypersensitive tool palette; and "Digital Clay," a design-research system for deriving computer-generated 3D models from hand-drawn sketches.

- The replacement of the mouse and keyboard with a stylus and voice recognition system. This will change the whole way we think about the software and the way we integrate it into our work.

- A 3D digital image capture system to input video which picks up 3D large-scale environments, and converts them into fully textured

In the area of 3D renderings, walk-throughs, fly-throughs and lighting, studies can be very effective in showing a client how the finished product will look — to the point of showing how the light will shine through the different windows in the building at different times of the day and year.

3D models. Since most works of architecture share a physical environment with other buildings, input technologies will capture not only the designer's intentions, but the urban design context as well. User-generated CAD models, such as those proposed for new buildings or alterations, can be matched and tracked into the contextual scene for an affordable level of photorealistic environmental simulation.

- Some input technology, such as the "traditional" goggles-and-glove mode of virtual reality (VR), melds the input and display environments. Multiple participants can take a virtual walk through proposed designs while interacting with each other inside a virtual space.

As reported at the 1998 Micro-processor Forum, the typical AEC

workstation of 2002-2004 will have a stable operating system, 100 times faster than the current best. Your company's power users will run 1 GB of RAM or better in their machines. The ideal CAD station of 2004 will combine low cost and ease of use, easily navigable documents, intuitive solid modeling with seamless 2D/3D integration, lightning speed, integrated 3D input/output, photo realism, every conceivable mode of fly-by, drive-through and walk-about plus universal communications ca-

pability over any type of medium imaginable. Considered leading-edge today, those technologies will be part of the AEC mainstream before 2004.

Bettina Mehnert, AIA, is a senior associate and director of information systems at Architects Hawaii Ltd. Mehnert is a board member of AIA/Honolulu Chapter and serves on the advisory board of Honolulu Community College. A member of the Association of Computer Aided Design in Architecture, she lectures on CAD production techniques, operations and procedures, and has authored and edited computer publications.

FLOORING SYSTEMS Compass

Specializing in bringing to market only the best flooring the world has to offer, Compass carries a full inventory for distribution, merchandising aids, and offers architectural representation as well as technical support and training.

Consultation

Our sales staff works directly with architects and contractors to find the best flooring material for any commercial or industrial application.

Installation Expertise

Compass holds clinics to train installers on various flooring systems, as well as providing technical support during the time of installation.

Service

Our staff is committed to supplying the highest quality commercial flooring and related systems to meet today's and tomorrow's needs while providing superior service and technical support to ensure customer satisfaction.

The Industries Finest Floorcoverings

- Altro Safety Flooring
- LG Chem Commercial Sheet Vinyl
- Forbo Marmoleum Products
- Forbo Colorex ESD Products
- Forbo Sheet Vinyl Products
- Toli Luxury Tile & Sheet Vinyl
- Statiflor ESD Sheet Vinyl
- Tarkett Homogeneous Sheet Vinyl

Hawaii-Helen Lutu • 800-356-7464

Compass Concepts, Inc.

ALASKA, ARIZONA, CALIFORNIA, HAWAII,
NEVADA, OREGON AND WASHINGTON

Forbo products are not available through Compass in Oregon, Washington or Alaska.

Corporate Headquarters www.compass-concepts.com
467 Forbes Boulevard, South San Francisco, California 94080
650 583-4244 FAX 650 583-9564 800 356-7464

Distribution Center www.compass-concepts.com
2200 East Artesia Boulevard, Long Beach, California 90805
562 422-6992 FAX 562 428-2361 800 543-6033

Technology enhances the training of architects

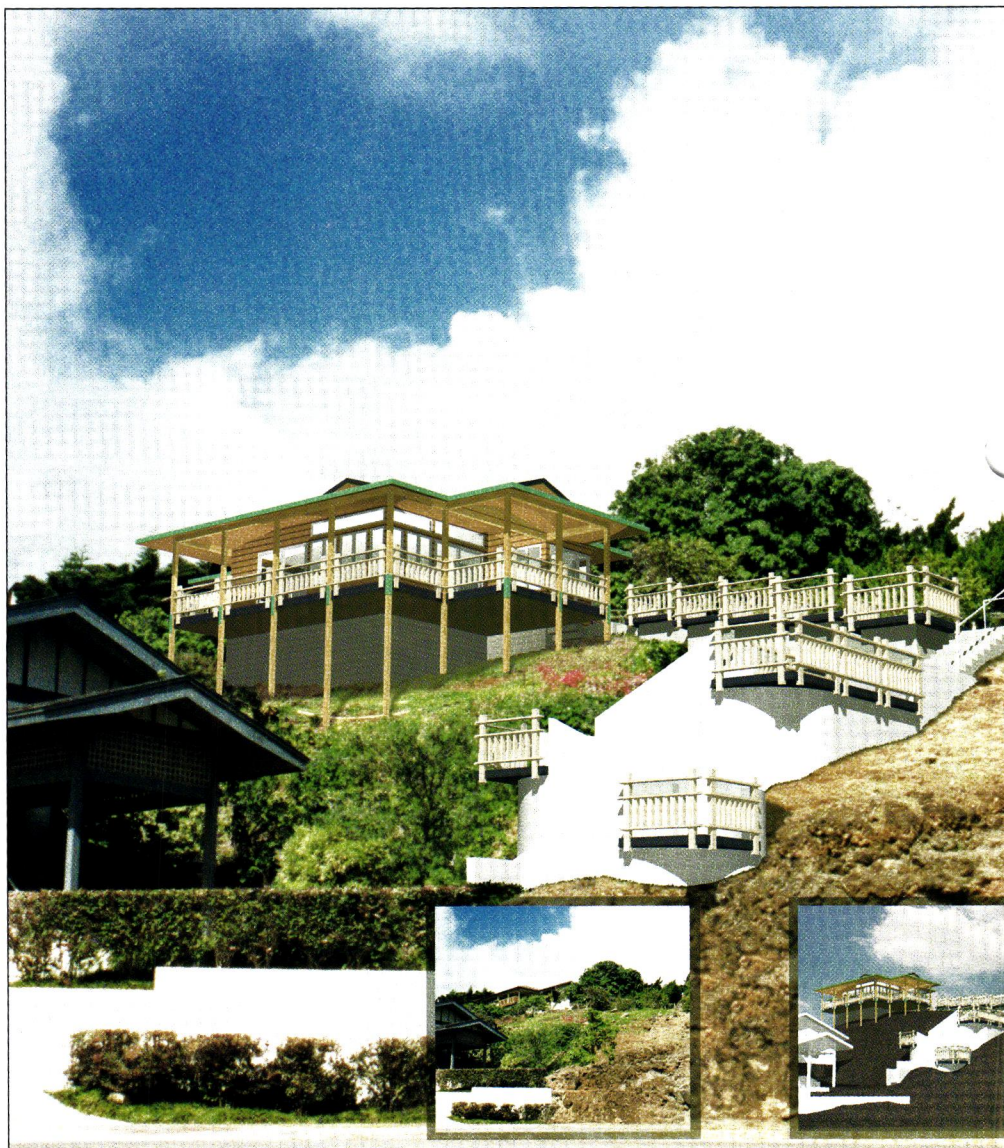
A Willing Student

by Jeffrey R. Matsuki

What is the purpose of examining the use of computer technology in architecture? Is it to make architectural methods more efficient, or to push the boundaries of the architect's creative spirit? I graduated from the University of Hawaii School of Architecture in the spring of 1997 and represent the first generation of computer-savvy students to come out of the school. I believe technology has greatly enriched my design experience.

During my 100-level studio year, I was hired by an architect who operated his firm exclusively with computers. This firm, Entheos, introduced me to an architectural software package that focused on the 3D model. I was so excited about the software that I purchased the fastest computer I could afford. During this time at the firm, the manual drafting boards were replaced with computers and I received the opportunity to train under an architect while using the latest in digital tools.

In my 100-level studio course, a few students were using the computer but mostly for CAD drafting or word processing. I had the opportunity to collaborate with fellow student Brian Fujiwara



This photo-montage image combines the existing site with the proposed addition. This composition illustrates the concept of visual reality which allowed the client to visualize the project. The firm was awarded the project based on this conceptual image.

and Associate Professor Spencer Leineweber, FAIA on the completely digital international design competition called Mas Alla De Fron-

tera. We were instructed to submit computer-generated renderings and animations with no physical drawings. It wasn't so much the design



recipe for success

Brew Moon found the right ingredients in union contractor J. Kadowaki, Inc. for a sensational new restaurant and micro-brewery at Ward Centre.



"With our unique design standards, we were concerned about finding the qualified general contractor, cutting red tape and staying on time and within budget. Winton Saito (Kadowaki project manager) and his team did whatever it took to get the job done, and made this our smoothest project to date!"

*Frank Miller, Director of Design & Construction
Brew Moon Enterprises, Boston, Mass.*

If you're brewing up a local construction project, call Bruce Coppa at Pacific Resource Partnership. We know the market, we know the people, and we know ways to help.

**The Pacific Resource
PARTNERSHIP**



Bruce A. Coppa, Director

3660 Waialae Avenue, Suite 314 • Honolulu, HI 96816 • Ph: 808.739.7700 • Fax: 808.735.9944

The Joint Market Recovery Program of Hawaii's Unionized Contractors and the Hawaii Carpenters Union

problem that was challenging as was using the computer as a design tool. Although our design didn't win first place, the experience was a catalyst that would form my initial training as an architect.

New Challenges

When I entered the 200 level, the school was going through an exciting transition, moving to a new facility. There seemed to be a changing of emphasis, with a new focus on computerization and exploration which contrasted with the traditional curriculum. This facility was designed to incorporate computers as an integral part of the design studio. It took a full year to initiate the first completely digital design studio pioneered by Leineweber. We were required to supply our own computers and use ArchiCAD modeling software. We discarded the drafting boards and produced everything on computer. For our final presentation, we used Apple Computer's QuickTime VR technology which allowed us to navigate through the 3D model interactively.

As I entered the 400 level studio I had the opportunity to be under the instruction of Amy Anderson, a talented designer and architect. She designed the course entirely on the concept of "exploration" and eliminated many traditional forms of instruction. We explored design ideas through various media such as writing, video, models and computers. We were encouraged to use FormZ, a free-form, three-dimensional modeler to explore initial design concepts. Through exploration, I was able to derive forms that were difficult to create by traditional means. This experience allowed me to free my mind and create beyond what I thought I was capable of doing.

When I graduated, I continued to work at Entheos, working on 3D design models and construction documents. As an intern, I was focused on the design process and its role in

the digital environment. I was amazed at how initial concepts would flow into each phase and eventually into the finished product. We termed this process "visual reality," which reinforces the concept of "what the client sees is what the client gets." One of the key ben-

Clients are expecting more these days from design professionals and computers are allowing clients to be more involved in the creative process than ever before. The marketability of architects today largely depends on their commitment to technology.

efits is that as the project is being constructed, the digital image shown is very close to the work produced thus instilling more confidence in the client. Another benefit is that the architect is forced to resolve the design in the early phases thus eliminating potential problems that may occur throughout the life of the project.

Great Expectations

Clients are expecting more these days from design professionals and computers are allowing clients to be more involved in the creative process than ever before. The marketability of architects today largely depends on their commitment to technology. The more experience one has with technology, the more he offers his employer. By comparison, today's architecture graduates have experience in Web design, page layout, graphics and CAD. These graduates are bringing tremendous potential and talent to today's firms and they will have a major impact when given the chance.

Since graduation, I have had the opportunity to work on a variety of

design projects. I am committed to technology and believe that it's the future of architecture. As of January 1999, the office of Entheos and Okita • Kunimitsu & Associates, Inc. (OKA) combined talents to create a new company known as Okita • Kunimitsu • Entheos International, LLC (OKE). The goal of this company is to provide state-of-the-art design services across the entire project spectrum, which allows me to continue my pursuit of technology in architecture.

With each successive experience, I am convinced that the more we open ourselves to technology, the closer we will get to freeing our minds and take architecture to the next plateau. It will take the commitment of both intern and experienced architect to make the future of architecture both exciting and fun. I encourage students, interns and architects to be open-minded, visionary and fearless of technology and architecture.

Jeffrey R. Matsuki is a project manager at Okita • Kunimitsu • Entheos International, LLC (OKE). He has also worked for Kerry Hill Architects in Singapore.

New Products

Deltek Offers Front Office Software

Deltek Systems, Inc. recently announced the development of a Web-enabled product application suite that focuses on the front office functions of project businesses.

The new software will help users identify opportunities, manage customer relationships, administer projects, improve project communication, recruit employees, and manage the cost and performance ratio of projects.

UH program focuses on technology, internship

From Academy to Practice

by Joyce M. Noe, AIA

Students at the University of Hawaii School of Architecture who already are offered a strong technology emphasis will benefit even more with the establishment of a new degree program. The school's new Architecture Doctorate (Arch. D.) degree program was recently approved by the Board of Regents. The professional program is designed to focus on "integrating professional and international experience with an improved curriculum."

To achieve the Arch. D. goal of excellence in practice and international experience, the new curriculum will include more integrated student access to computer and information technology design processes. Advanced technology skills and knowledge relative to the design process are tools for informed decision making. Proficient skills in three-di-

mensional modeling and information technology make alternative solutions easier to document and assess.

Computer and information technology also provide a basis for efficient collaboration and conflict resolution because technology allows all members of a team to have access to project information. Use of the Internet, e-mail, and Websites will streamline student-practitioner dialogue; remote collaboration technology can enrich and expand the international exchange program; and all provide alternative venues for teaching and learning.

Expansion of the established focus on professional practice and Asia-Pacific exchange opportunities, inclusion of supervised internships, and utilization of technology will make the Arch. D. program one of a kind in the nation.

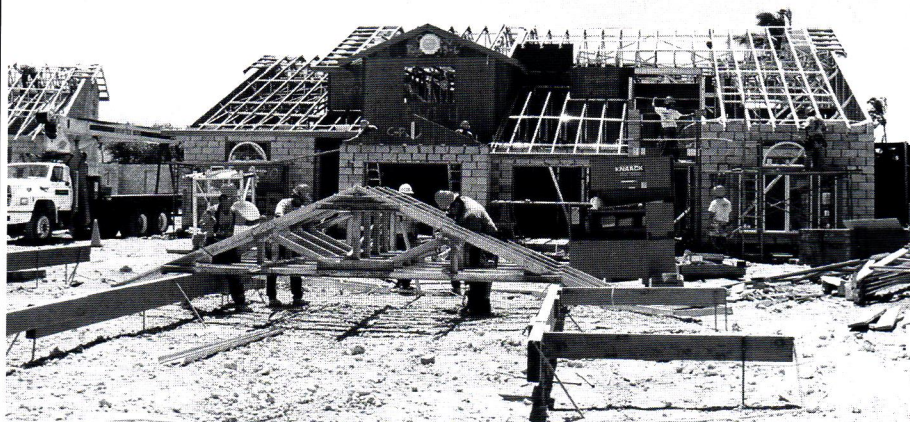
The human contact and in-

teraction that are essential to the success of the new program will be enforced with student exposure to cutting-edge practice methods. The School of Architecture has traditionally enjoyed the benefits of strong support from the professional community as design jury critics and lecturers. Since 1994, several leading practitioners have participated as adjunct faculty in a unique professional practice program. They expose students to the realities of practice and conversely gain insights into student capabilities and needs. This exchange beginning early and continuing through the curriculum is designed to provide a seamless transition from academy to practice and result in improved intern performance.

Joyce M. Noe, AIA, is an associate professor of architecture at the University of Hawaii at Manoa.

Hawaii's Leaders in Steel Home Fabrication Since 1980

S & G CONSTRUCTION, INC.

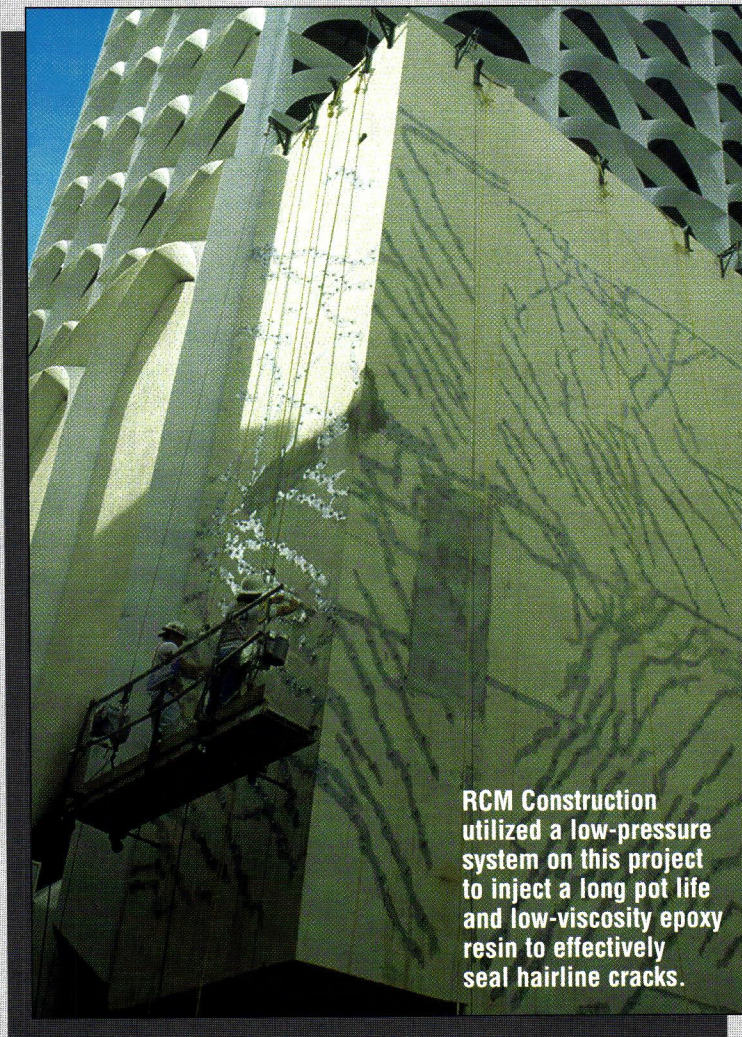


- Termite Proof
- Hurricane/Fire Resistant
- No Shrinking, Cracking
- Cost Effective
- Free Consultation

P.O. Box 2659
Ewa Beach, HI 96706-0659

Phone: 689-5400
Fax: 689-5406

ATTACK THE CRACKS



RCM Construction utilized a low-pressure system on this project to inject a long pot life and low-viscosity epoxy resin to effectively seal hairline cracks.

RCM Construction Corporation: The Concrete Restoration Specialists

RCM attacks the cracks using epoxy injection in concrete walls, slabs and other surfaces with excellent results.

With these injection systems, concrete damaged by adverse structural conditions is strengthened and cracks are sealed to eliminate water infiltration.

Utilizing both high- and low-pressure systems, RCM has restored cracks in a wide range of projects from fire damage repairs to historic renovations.

Call RCM Construction Corporation. We offer effective solutions for concrete problems.

Phone: 545-2177
Fax: 538-1914

866 Iwilei Rd., Bay 219
Honolulu, HI 96817
Lic.No. ABC 13668

RCM
CONSTRUCTION
CORPORATION

Technology in the one-man office

Professional Practice, Personal Service

by Wayson Chong, AIA

One-on-one service is the hallmark of the very small architectural firm. Without gatekeepers such as secretaries, accountants, technicians and other support staff, clients deal directly with the designer on a personal as well as professional level.

In my 28 years of practice, I have seen firsthand how technology has enabled me to establish advances in my practice to the point where I alone can perform the work of several individuals that would normally have to be hired. These advances have evolved from the

the professional value of my firm.

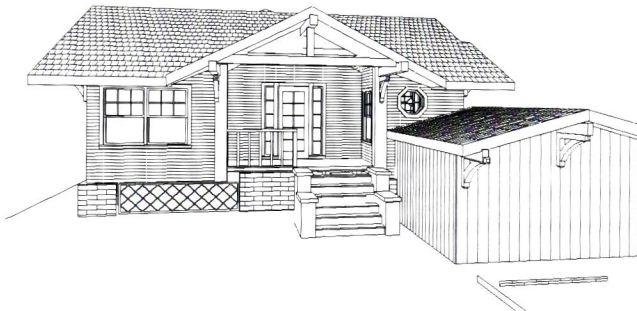
I switched from hand drafting production and design work to a fully computerized one-man practice in 1989. The computer allows

me to experiment with new applications including CAD, word processing, spreadsheets, multimedia, visualization, animation, virtual reality, on-line services and more. I actively market on the Internet with a Web page which has enabled me to obtain commissions from all parts of the world.

I'm also a beta tester for two mainland computer aided companies. One of them, Chief Architect by A.R.T., is an object-oriented program and the other is Summit3D, a virtual reality program. These programs have begun to change my architectural practice to that of a digital office nearing the so-called "paperless" office of the future. Clients have confirmed that responsiveness to their needs and the abili-



Wayson Chong renovates old houses using new technology, such as this Manoa bungalow.



original answering machine, pager, fax and cellular phone, to new computer communications and technology which have begun to supplant many of those early functions. By embracing these technologies instead of resisting them as some of my contemporary colleagues have done, I have been able to leverage



These Chief Architect renderings were done entirely by computer and within a few minutes. Normally such drawings by hand would take at least a few hours if not days to complete.



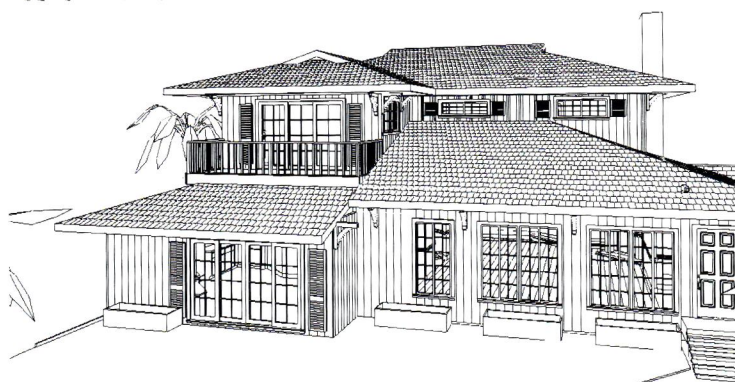
I have found that a good three-dimensional "walk through" without "bells and whistles" is usually sufficient for the residential market in which I specialize.

Although the telephone remains my primary means of communication, I also extensively use e-mail. Internet communications using chat lines, NetMeeting and video camera linkages show some promise but have not advanced far enough for the small office practice I have developed. Faxes and e-mail are fast becoming the mode of choice in the written word and/or graphic transmissions required in my office.

ty to communicate in multimedia and three-dimensional presentations is an important benefit.

My practice involves creating three-dimensional "walk throughs" and "fly bys" captured on videotape which then can be played at home at the client's convenience. Sound, titling and narration are added when requested by the client. This adds value to the presentation and clients appreciate the extra effort.

Photorealistic renderings can also be done, albeit with a lot more effort and cost for publication.

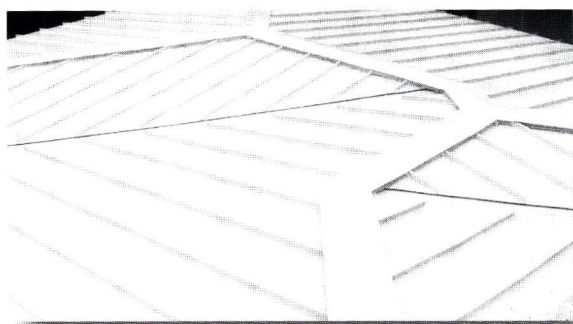


Interior and exterior drawings give clients a good idea of how the design will be executed.

As the computer industry rapidly develops, I anticipate that the architectural profession will be solidly entrenched in 3D object-oriented CAD programs now only just beginning to take shape. I look forward to this new millennium in CAD development and in other technological advances that allow my one-man office to thrive.

Wayson Chong, AIA, is an architect in private practice in Honolulu.

UPRITE ROOF Designed exclusively for Hawaii's unique environment...



...with a
LIFETIME WARRANTY!

- No deterioration from: sun, wind, salt spray, acid rain, air pollution
- Custom-made panels fit every roof
- Class A fire rating

HI. STATE LIC. BC6667

Riteway Builders, Inc. at 845-9782

180 Mokauea St., Honolulu HI 96819 • Fax 847-2527

Our 23rd Year

Known for Quality since 1976

JW Inc. Lic. #B 8458

**Commercial & Residential
New & Remodel**

630 Laumaka Street • Honolulu 96819
Phone 841-5888 • Fax 842-5941

*PMP Co. thanks our advertisers for their
support of Hawaii Pacific Architecture.*

Local and national leaders in...

**COMPOSITE TECHNOLOGY FOR • MANUFACTURING
• COMMERCIAL • INDUSTRIAL • ARCHITECTURAL**

- Custom Fiberglass, GRG, GFRC Architectural Products
- Composite Retrofit for Concrete Structures
- Restoration



Society of
Plastics Engineers
The International
Plastics Society

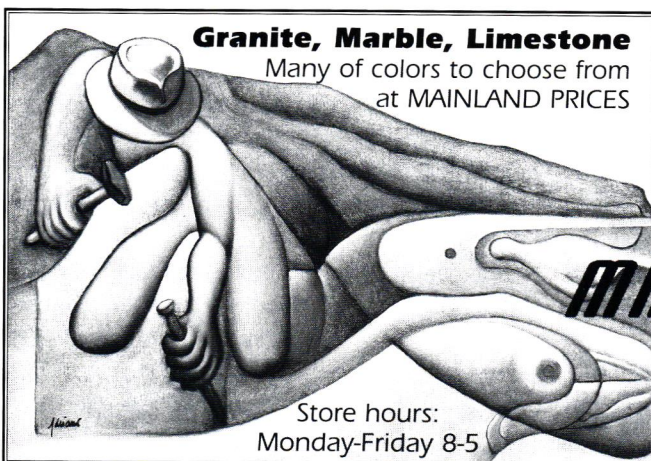


Composites
Fabricators
Association

PLAS-TECH LTD.

Ph: 847-2339 • E-Mail chanrowe@msn.com • Fx: 845-4337

Granite, Marble, Limestone
Many of colors to choose from
at MAINLAND PRICES



**Hawaii's
VIA
APPIA,
LTD.**
dba
MARMOL
Lic. #C-20054
120 Mokauea St.
Phone 528-5533

Store hours:
Monday-Friday 8-5

Sell Yourself

Advertise in Architecture:

A Directory of Hawaii AIA Members and Firms

- Expanded listings of AIA Hawaii firms
- Excellent target marketing for Hawaii architects

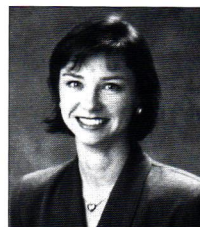
For advertising information

call 621-8200

Ginger Marable, ext. 223

The Royal Treatment

Always Treated
Like Ali'i



Maureen Purington
Avis Account Manager

When you're traveling inter-island regularly, it's always nice to be greeted by someone who knows you and gives you the service you deserve. Whether it's boarding your plane or picking up your rental car, it's comforting to know that there are people who know the importance of your business and exceed your expectations by providing superior service.

At Avis, our Corporate program satisfies the unique needs of the inter-island business traveler. Ali'i Club members can expect a level of personal service that no other rental car agency can provide. You'll be greeted by senior rental agents when you pick up your rental contract and keys. These senior agents, the best of Avis, will provide you with all the assistance you need and ensure your rental experience is efficient and professional.

To take advantage of the many unique business services and promotional offers available only to Avis Ali'i Club members, call **834-5545** and sign your company up today. Great rates and superior service await you.

AVIS

We try
harder.®

Lighting controls for luxury residences

Simplicity Requires Sophistication

by Richard Moss, P.E.

Custom and luxury residences require high quality architectural design. Lighting design must enhance and complement the quality of the architecture. Lighting controls must be an integral part of the quality of the lighting design and easy for the owner to use.

Lighting control can be achieved with simple dimmer switches, or sophisticated systems requiring extensive planning to achieve that are also easy to use. Lighting control switches can set "scenes" for the various functions or moods that can be anticipated in a luxury residence.

Lighting control systems can include individual wallbox dimmers that can control incandescent, low voltage, and/or fluorescent

lamps (with matching dimming ballasts), or on/off control of equipment; master dimmer switches interconnecting and controlling several individual dimmers; or remote dimmers controlling other individual and/or master dimmers.

Types of systems include "local" systems with pre-set pushbuttons that create scenes or moods as desired which can be controlled from any number of remote locations; "distributed" systems integrating the local systems plus individual dimmers; "radio" (wireless) systems that don't require interconnecting wiring; and "central" microprocessor controlled systems that integrate control of lighting, audio/visual and equipment (fans, draperies, etc.), which are completely software controlled and offer the ultimate in flexibility.

Central Dimming

Central dimming control systems can have many capabilities.

Switches are only 2" x 4" (or narrower) with up to eight or nine pushbuttons in each station. Programmable pushbuttons can control just about everything, from anywhere, with just one button including draperies, equipment, or anything that can be turned on or off.

The buttons can be labeled for their specific function (e.g. "Downlights," "Wallwash," "Chandelier," "Draperies").

One (or more) button(s) can turn off all lighting or set the house into a random vacation mode that emulates your last



Photo courtesy of Lutron

Lighting plays a big part in enhancing interior design.



WE KNOW *the business of* PROJECTS *like nobody else.*

We proudly announce that **Harper and Shuman**, the acknowledged leader in accounting software for A/E firms of all sizes, has joined forces with Deltek, combining the resources and industry expertise of both companies to offer your firm expanded product choices and enhanced services.

Businesses like yours often struggle to fit their processes to software systems designed for general business – not project business. Those systems don't provide the sophisticated project tracking, costing, revenue recognition, billing, project reporting and management that's so critical to a project-oriented business.

Deltek software is designed to meet the needs of *your* business. Not business in general. That's because we focus exclusively on designing enterprise software for the project-oriented business. Our products are developed and supported by people who thoroughly understand the way you function.

We've been implementing successful, cost-effective solutions to companies like yours for the last 14 years. Let us show you how well we know your business.



Software for the Business of Projects

Call Today: 800-872-4050

www.deltek.com

www.harperandshuman.com

week of occupancy. The handheld controls can be operated remotely and exterior lighting can be automatically controlled with adjustments for seasonal variations.

There are also more exotic qualities to lighting system design.

- Remote interface allows the homeowner to call in and turn on the water heater and pumps so that the hot tub is ready when he arrives.
- The system can be integrated with security systems to turn on

all or designated lighting during an alarm.

- It can integrate with audio/visual systems so that control station buttons match.
- The system can be modified or changed if the clients' wishes evolve or change.
- It may offer remote telephone access for diagnostics and modification.
- Graphical interface and controls can be implemented for gadget-happy clients who have lots of

free time.

- The system can control just about anything that runs on electricity.

Design of lighting control systems can require merely reading manufacturers' literature and specifying the appropriate devices, to consultation with a manufacturer's representative for more detail controls, or the services of an experienced engineer to prepare detail control diagrams and schedules when a sophisticated central system is appropriate.

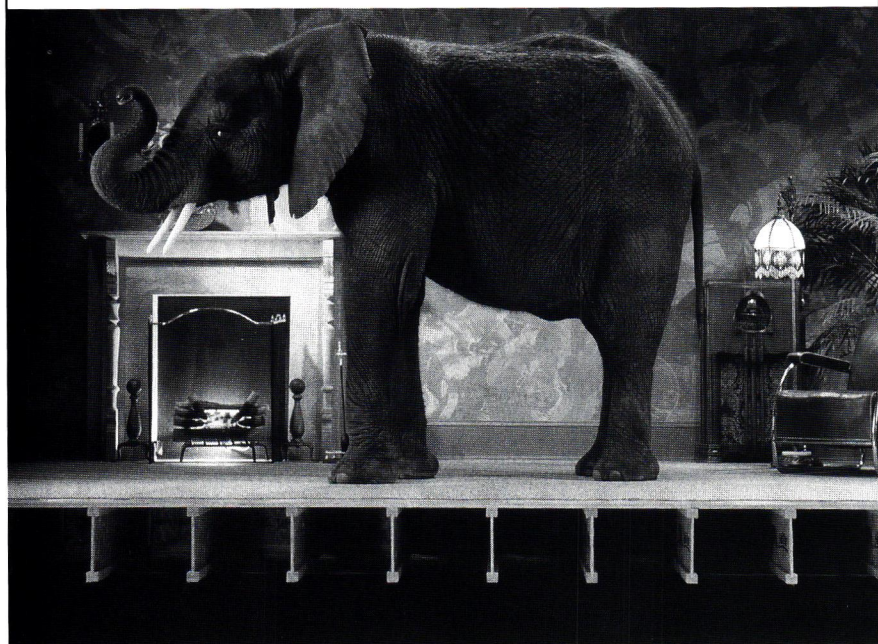
The above systems can require slight or significant additional design time to make them easy for the owner and can add \$1,000 to more than \$50,000 to the cost of a custom residence.

We recommend that the specifications for a central system require the contractor to be factory trained and certified prior to beginning construction. We also recommend that after the owner has three months' experience with the system, the contractor's lighting control technician return to the project to complete final adjustments, in the presence of the owner, to ensure that the system is working (it is impossible to predict with 100 percent accuracy what the client will ultimately desire).

A sophisticated system is only as good as the quality of installation. Make sure the contractor is qualified. "Low bid" will not necessarily result in the lowest cost to the designer.

Richard Moss P.E., is president of MOSS Engineering, Inc., an electrical/lighting engineering consulting engineering firm. Projects have included 20/20, First Hawaiian Center, One Archer Lane and KITV 4 Television Station.

THE SILENT FLOOR® IS AS QUIET AS A MOUSE. GUARANTEED.



No matter how big an entertainer you are, your floor doesn't have to squeak. Build your home with the Silent Floor® system and it won't make a sound, we guarantee it.



Part of the FrameWorks® Building System.

Distributed in Hawaii by:



HONOLULU:
PHONE: (808) 682-2011
FAX: (808) 682-5252

MAUI:
PHONE: (808) 877-5045
FAX: (808) 877-6571

HILO:
PHONE: (808) 961-6000
FAX: (808) 961-5892

KONA:
PHONE: (808) 329-0738
FAX: (808) 326-2764

KAUAI:
PHONE: (808) 246-2412
FAX: (808) 246-2413

FrameWorks®, Silent Floor® and Trus Joist MacMillan® are registered trademarks of Trus Joist MacMillan, a limited partnership, Boise, Idaho.

Asthma.

It doesn't have to
restrict your life.

**AMERICAN
LUNG
ASSOCIATION.**
1-800-LUNG-USA

Lightweight forming systems

Concrete Housing Made Affordable

Hawaii design and construction professionals are taking another look at using concrete in residential construction following a recent seminar sponsored by the Building Industry Association and the Cement and Concrete Products Industry of Hawaii.

The seminar focused on lightweight handset forming systems, along with specific design, scheduling and production suggestions which reduce the labor and equipment requirements of constructing single-family concrete homes. Diverse attendees including residential builders, developers and design professionals were provided a technical presentation and demonstration and participated in a discussion on the system.

Presentations were given by George Stewart, CCPI Concrete Housing Committee member; Jim Adams, principal of JAI Structural Engineers; Pete Cooper, Construction Management & Development; Owen Chock, architect; and Tony Gregory, president of Ikaika Masonry.

Saving Costs

Utilizing lightweight forming systems, the cost of erecting the concrete perimeter walls of a typical single-family residence can be reduced by 25 to 30 percent, according to seminar participants. The lightweight forming systems are suited to the requirements of residential

Continued on page 27



Seminar participants watch a demonstration of a lightweight handset forming system.

CONCRETE ACHIEVEMENTS

Presents

HMSA Center



1998 Recipient of the JUDGES AWARD

Concrete is the key to HMSA Center's energy efficient design. Molded into specific profiles and angles to block direct sunlight from the building's interior, the facility's vertical concrete fins and horizontal shelves reduce total air conditioning and lighting demands by 25%.

Owner: Hawaii Medical Service Association
Architect: The CJS Group Architects, Ltd.
Structural Engineer: Libbey Heywood, Inc.
General Contractor: Albert C. Kobayashi, Inc.



HAWAIIAN CEMENT

1100 Alakea Street, Suite 2300
Honolulu, Hawaii 96813-2833 (808) 532-3400

Environmental aspects of building restoration

Old Buildings Bring New Challenges

by Greg Mescan

The renovation of older buildings creates many challenges. These challenges not only involve the resolution of engineering and architectural issues but also must address environmental issues.

Older buildings most likely will contain certain coatings, insulations, fixtures and other materials which may pose a health hazard to the public and personnel involved in renovation activities. Because of this, there exists a need for a survey to determine their composition, location and quantity. Additionally, because of the presence of these materials there is a variety of required worker protection safeguards which must be in place in order for work to proceed.

Older buildings typically may contain lead-based paints; asbestos-containing floor tiles, insulation and roofing; and Polychlorinated biphenyls (PCBs) to name a few.

Lead-Based Paint

Lead-based paints will most commonly be found in pre-1978 buildings. To determine if lead-based paint is present, a survey will have to be conducted by a certified inspector or certified risk assessor. The inspector will conduct a surface-by-surface investigation which will involve the collection of paint chip samples and/or the utilization of an X-ray fluorescence (XRF) device. In addition to a survey, a risk assessment should be conducted to provide the renovator with information as to

what hazard the presence of lead-based paint poses in the building, as well as providing the renovator with the means to accurately determine how to abate the paint.

Lead-based paint abatement options include removal of the paint, replacement of lead-based paint components with non-lead-based paint components, encapsulation of paint areas and enclosure of the areas containing lead-based paints.

In addition to a survey, a risk assessment consideration must be given on how to properly dispose of lead-based paint materials. The disposal options will be based upon whether the material qualifies for disposal at a permitted non-hazardous sanitary landfill or if it must be disposed of in a hazardous waste permitted disposal facility.

Disposal options are based on whether the waste after testing is characterized as either non-hazardous or hazardous.

Asbestos can be found in a variety of older materials including siding, floor tile, joint compounds, adhesives, insulation, roofing felts, wallboard, cement pipe and acoustical plaster.

Asbestos Removal

Estimates indicate that more than half of the large multi-story buildings constructed during the 1950-1970 time period contain some form of sprayed asbestos-containing materials. Asbestos can be found in a variety of older materials including siding, floor tile, joint compounds, adhesives, insulation, roofing felts, wallboard, cement pipe and acoustical plaster. Older buildings will commonly have asbestos-containing materials throughout the structure.

Again, a survey and risk assessment should be conducted in a similar fashion as in lead to determine presence, amount, location and type. Actual determination of asbestos presence will have to be made by laboratory instrumental analysis.

Asbestos abatement must be done by qualified, trained workers guided by a supervisor knowledgeable in proper worker safeguards, removal techniques and disposal requirements.

PCBs

Polychlorinated biphenyls were commonly utilized in electrical transformer-cooling oils and light ballasts because of their enhanced flame retardance and insulating properties. Their use was banned in 1979 by law. Even today, there are many electrical components with PCBs remaining in older buildings.

Concrete Housing Made Affordable

Continued from page 25

construction and the reusable forming panels are designed to set up and disassemble quickly. The systems require less labor than traditional systems and eliminate the need for heavy onsite lifting equipment.

In a specific example, the load bearing perimeter wall system of a 1200-square foot unit was completed by a four-man crew in four days, including form set up, placement of window and door openings, electrical conduit and structural reinforcing material, concrete placement and form breakdown. Seminar participants concluded that this value-packed concrete perimeter wall system would be within five to 10 percent of the cost of traditional wood or light gauge steel framing systems on a typical home. For more information, call the Cement and Concrete Products Industry at 833-1882.

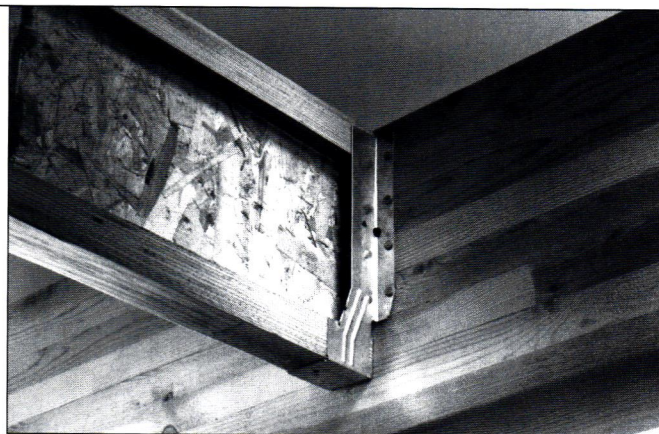
Disposal of these PCB-containing components must be done in a fashion to ensure full compliance with the law. Disposal typically will be at a permitted hazardous waste disposal facility.

There are numerous state and federal environmental regulations which address each specific area of environmental concern and provide the guidance necessary to ensure compliance with the applicable laws. To ensure compliance itself would almost be a full-time occupa-

tion for several people. There is relief out there to aid building renovators in ensuring they remain compliant within the maze of regulations. This relief comes in the form of a professional full-time environmental consulting firm which specializes in compliance and regulatory issues and remediation.

Greg Mescan is project superintendent for The Nakoa Companies, an environmental consulting firm based in Honolulu specializing in asbestos, lead, UST removal, AST installation and demolition.

You Can Do the Job



Right... or Save Enough to Buy Lunch!



When you substitute another brand of connector, how much do you save? It might only be enough to buy your lunch. Why risk using a product that may use non-mill-certified steel, have different load values than spec, and may not even be code recognized.

To save time and be sure of code acceptance, there's no equal to Simpson Strong-Tie. Simpson sets the standards for the connector industry, with more code-recognized connectors than any competitor. It's the brand known and trusted by architects, structural engineers and building officials in your area.

The lunch may satisfy you today. Strong-Tie® connectors will satisfy your client for years to come!

SIMPSON
Strong-Tie
CONNECTORS

SIMPSON STRONG-TIE®
COMPANY, INC.

 *The World's "No-Equal"® Structural Connector Company*

Rinell Wood Systems, Inc.
650 Kakoi St., Unit 200
Hon., HI 96819 Ph. 834-1344

MidPac Lumber Company, Ltd.
1001 Ahua Street
Hon., HI 96819 Ph. 836-8111

City Mill
Available at all seven
neighborhood locations.

HPM Building Supply
Hilo: 935-0875 Kona: 329-1634
Waimea: 885-6036

Honsador Lumber Corp.
Kapolei, Kahului, Lihue
Hilo & Kailua-Kona

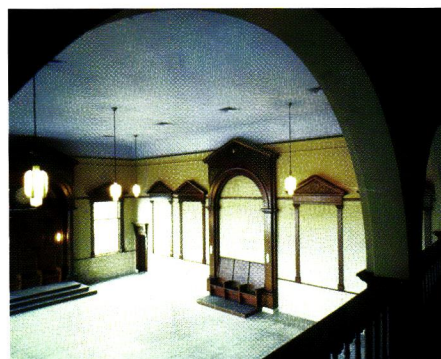
Wire Products of Hawaii, Inc.
Honolulu: 833-6602
Hilo: 935-1098

Award of Merit

Historic Preservation

Mason Architects, Inc.

Toyama Building



Above: The restored Masonic Hall meeting room features the original paint schemes. **Left:** The southeast elevation is shown after renovation.

The Toyama Building, originally the 1908 Masonic Temple/Bishop Trust Building, is one of Hilo's most substantial historic structures. The Toyama Hawaii Corporation purchased the 28,000 square foot, three-story building in 1992 and retained Mason Architects to design modern, high-quality retail/office spaces. His-

toric building elements such as the canopy, storefronts and original paint colors were restored in accordance with Department of Interior standards.

Significant existing interior materials and finishes were saved, particularly in the Temple Room and public areas. Modern lighting, electrical data, telephone systems, air condi-

tioning and fire sprinklers were carefully incorporated in the building. The structure was upgraded to meet current seismic requirements and made handicapped accessible. Floor area was added to make the rehabilitation project economically viable for the owner. The new work was designed in a style compatible with the design of the original building.

Jury's Comments:

"The renovation displayed a lot of expertise in historic preservation."

The restored storefronts, marquee and ornamental wrought iron brackets are compatible to the building style.



Credits

Client:

Toyama Hawaii Corporation

Architect:

Mason Architects, Inc.

Contractor:

J.E. Merk Construction

Consultants:

Structural: Afaq Sawar

Electrical: Wallace T. Oki

Mechanical: Prepose Engineering Systems

Photos by David Franzen

Kitchen & Bath Design Showcase



Hallmark Kitchen & Bath

This Modula kitchen illustrates perfectly how the four functional areas of a well-designed kitchen can be integrated for maximum efficiency. Modula's flexibility opens up new perspectives for creative design: a mix of contrasting materials such as light birch cabinets, stainless steel and basalt grey laminate.

Marmol

MARMOL provides fabrication and installation of products in addition to supply. An example is the "Puako" house by Adams Design. The master bath, counter tops, tub deck and floors for this Kona project, designed by Jack Adams, were made using a combination of marbles from Greece and Turkey.



Companies here are advertisers in this issue.

When you advertise in the 1999 Parade of Homes Guide

you reach more than
100,000 homeowners and
potential homeowners.

Available this year at
City Mill, Borders and
Barnes and Noble.

For advertising
information
call 621-8200

Isle CELLCRETE LIGHTWEIGHT CELLULAR CONCRETE TECHNOLOGY



Manufactured in Hawaii by:

Island Ready-Mix Concrete, Inc.
91-047 Hanua Street Kapolei, Hawaii 96707

**Strength.
Durability.
Termite Resistant.
Low Maintenance.**

**All the Advantages
Of Normal Concrete
And More.**

- Lower Construction Costs
- Economical Foundation and Structural Requirements
- Faster Placement
- Easier Finishing
- Greater Moisture Resistance
- Greater Sound Control
- Improved Insulation Values

Contact Tom Ahsing for more information about CellCrete's performance advantages and complete product specifications.

Phone: (808) 682-1305
Fax: (808) 682-4478

PMP
Publishing
Company, Ltd.
since 1978

Look for
Exciting, new
publications
from PMP!

We've been in this business a long time and our integrity shows in the quality and diversity of our publications.

Let one of our account executives show you how to use your advertising dollars to their best advantage – target your market in one of our professional or community publications.

To ask about advertising opportunities

Call

621-8200



Market Place



Advanced Roofing Technology, Inc.

Hawaii's Representatives of
Quality Roofing/Waterproofing
and Related Construction
Materials

With Advanced Roofing Technology...
"Your building can wear a roof that fits!"

Ph. 235-5542 • Fx 235-5543

Visit our new web site
www.advanced-roofing.com

46-431 D Kahuhipa St.
Kaneohe, Hawaii 96744

DSS ASSOCIATES



SPECIALIZING IN

- Landscape Architecture
 - Site Planning
 - Irrigation
 - Landscape Lighting
- Tel/Fax: 537-1038

E-mail: dshiusa@worldnet.att.net



KAHALA CONSTRUCTION

Remodeling Quality
Neighborhoods Since 1981

737-7757

Lic. #BC-16706



CONCRETE CREATIONS
of Hawaii, Inc.



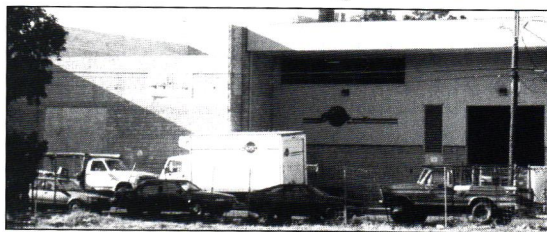
Call us
for our
FREE
catalog.

**OUTDOOR
INDOOR
CONCRETE
FURNITURE**

- Planters
- Benches
- Tables
- Custom Window Sills
- Ash Urns
- Trash Receptacles
- Custom Signs

**P: 682-4300
F: 682-4120**

Warehouse Specialists



57 Builders Ltd

1650 Liliha Street, #202
Honolulu, HI 96817

Ph: 255-5777 • Fax: 396-1898 • Lic: BC 20825

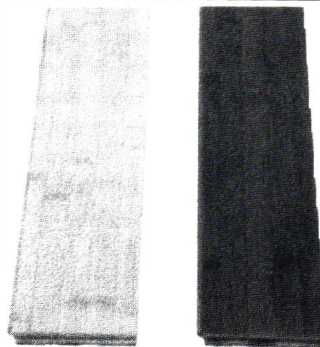
NATURALS • TEXTILES • METALS • VINYL

Wallpaper

& all Coverings

The Preferred Source of Architects and Designers.

ARCHITECTURAL SURFACES INC.
Gentry Pacific Center, Suite 217E, 560 N. Nimitz Hwy., Honolulu, HI 96817
523-7866 • 1-800-523-7886 • Fax 523-8199



**Bamboo Flooring
Wholesale**

*Beautiful, durable
& affordable...*

ARCHICO INC
680-0364

94-340 Ukee St., Unit 4
Waipahu, HI 96797

DON'T LET A GOOD PLAN DOWN...

with less than quality construction. Whether the job is new commercial, remodeling or expansion, fast track or minutely technical, small budget or big, hire the contractor who will make sure the design meets the measure of the dream in the real world — and save money, time and worry in the process.



ALLIED BUILDERS SYSTEM

Teamwork.
Our motto.
Our method.

1717 Akahi Street
Honolulu, Hawaii
96819

Telephone
(808) 847-3763

Fax
(808) 842-3905

Contractor License
ABC-5068

