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HAWAII ARCHITECT

September, 1980

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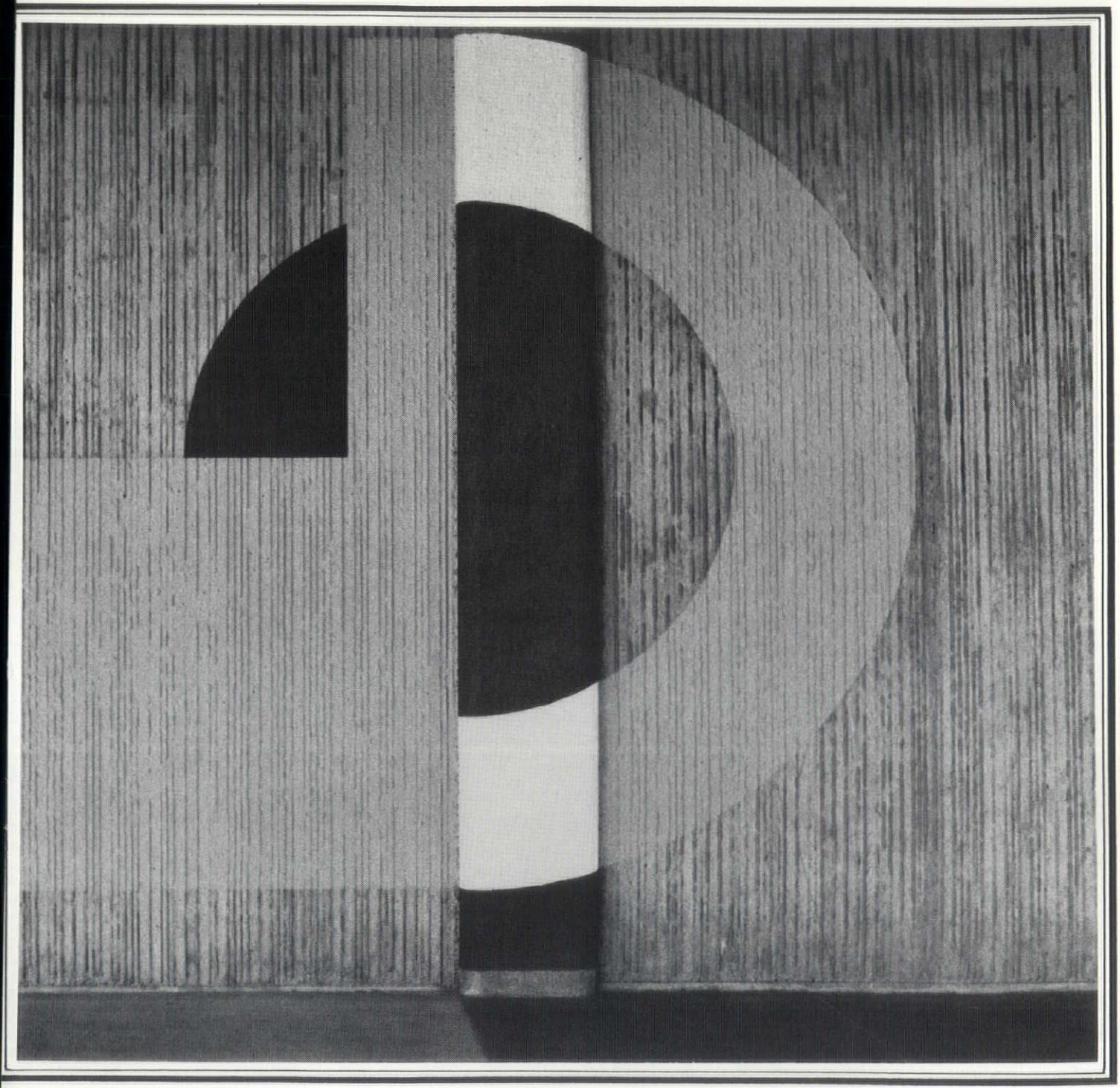

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Volume 9, Number 9 **September, 1980**

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Contents:

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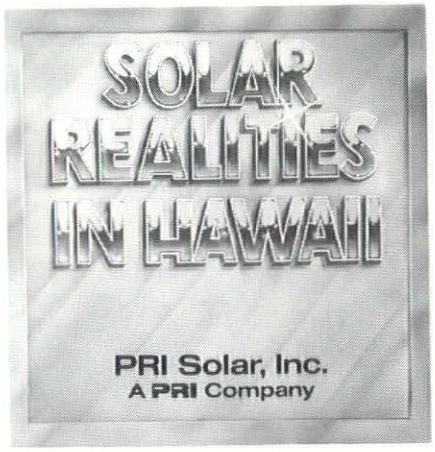

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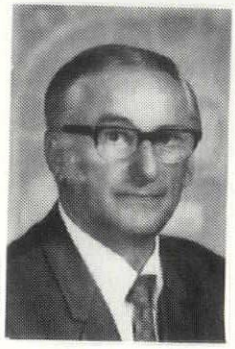
Performance and Payment Bonds

by JACK C. LIPMAN, AIA
President, Hawaii Society/AIA

t is becoming difficult enough or an architect or an engineer o operate a profitable business s a professional without add- ng the financial burden of a "Performance & Payment Bond" to the prerequisite of obtaining municipal work. The County of Maui now requires he architect or engineer to obtain such a bond before that county will award a professional service contract for the design or municipal projects.



Jack Lipman, AIA

No other governmental agency or private client, to he best of our knowledge, requires such a bond or surety from the A&E. Certainly, no such requirement exists n Hawaii.

It is generally understood that a Performance & Payment bond is a normal requirement for construction contractors, because of their extensive subcontracts and material purchases. We are unable to understand, however, the full reasoning for Maui County requiring such a bond for professional services.

Maui County officials claim that there is no distinction, under Hawaii Revised Statutes 103-34 ("Contractor's bonds; conditions") between contractors and A&Es for the purpose of bonding requirements.

Besides creating a financial burden on the part of the A&E, unless the cost of such a bond is reimbursable by the county, the time constraints involved in obtaining a bond considerably delay the approval of the contract by the county and, thus, delay the project work start.

Before the bond can be issued the A&E must complete all the necessary forms currently executed by construction contractors, including a full financial statement or the submittal of the previous year IRS information. This, together with a brochure or resume of the A&E firm's history showing all projects completed within the past few years, and a copy of the pending county contract, is reviewed and must be approved by the surety company prior to the issuance of the bond. Obviously this takes time.

Very few local insurance brokers will handle an A&E Performance & Payment Bond. This probably is based on the fact that very few surety companies, through whom the brokers must deal, know anything about such a bond for professionals.

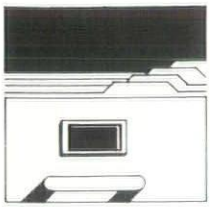
The HS/AIA is currently working with HCEC and Maui officials in the hope that the Maui bonding requirement may be rescinded. We would welcome letters from our members giving any suggestions or thoughts which could assist us in our negotiations with the Maui County officials.

WHY IS THIS MAN LAUGHING?

Val Ossipoff sat on a high chair in ront of 260 friends and got roasted by 10 former clients, fellow professionals, and contractors. His willingness to take the ever respectful gaffing resulted in an evening filled with often side-splitting laughter and some interesting tidbits of information. Skinny-dipping at Kaanapali—really?

The 10 roasters who highlighted aspects of their associations with Val included Ed Sullam, FAIA; Alred Preis, FAIA; J. Russell Cades; Elmer Botsai, FAIA; Don Shimazu, PE; Alan Rowland, AIA; Addie Duke; Bill Merrill, FAIA; and Maka Sakamoto. Sakamoto, a general contractor on many Ossipoff projects, was generally accorded he distinction of being responsible or any unfortunate physical ailments which might result from excessive laughter.

George Kekoolani organized a group of Ossipoff staff alumni which topped off the evening with a skit called "Song of the Vulgar Draftsman."



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Painting Technology

By ABEL BANOV

Banov

Coatings technology, which is both an art and a science, enables today's architect or builder to select finishes with performance characteristics and potential durability that can be matched to almost any set of simple or challenging circumstances.

And yet even when shielded by coatings, metal is humbled by corrosion; concrete and cement crumble before the bite of acid or the onslaught of driven rain; and wood still rots. The reason, in many instances, is selection of the wrong coating; but other reasons are just as important, namely improper surface preparation or improper application.

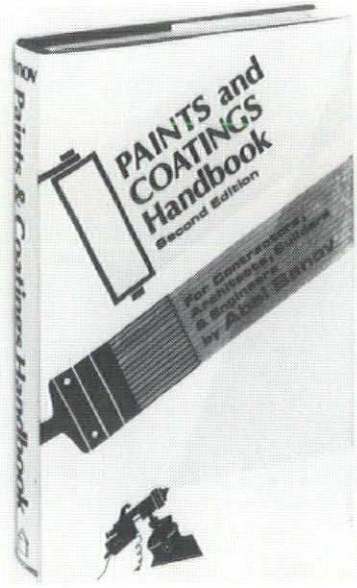
The selection of coatings for long-term protection is far more complex than most people realize. Some architectural firms, aware of the hugh technological strides that vaulted the coatings industry from its primitive pre-World War II stage to its present sophistication, have assigned specialists to keep abreast of coating developments. Others have done the best they can; and, depending on the extent of their design-reach, this may not have been enough.

It's assumed here that most architects, and others in the construction industry or at least many such individuals, are far too occupied with the intricacies of their own demanding professions to have mastered all that is to be known about surface protection.

It seems, then, that simple methods for specifying maximum surface protection in even the most demanding circumstances should be welcome. Also welcome, we believe, will be a method for specifying protective materials, application procedures, and just as important, if not more so, techniques for preparing surfaces. These methods are aimed at making the once-onerous specification chore so easy that a "special effort" will be required to do it wrong.

A coating can be defined as a mixture, which, when applied in a thin film, provides protection or decoration, or both. The term "thin film" seems self-evident, but this can describe a film ranging from 1/1000 of an inch to 40/1000 inch; and too thin or too heavy a film may have an important bearing on adhesion, durability or surface protection.

Of greatest significance, though, is the word "mixture." Only rarely will a specific type of coating—such as an exterior house paint—have



the same components when made by different manufacturers. Each formulator has a broad choice of mixtures for a particular kind of coating. One formulator may put less pigment and more resin in his house paint mixture than another formulator and still have an effective paint; or he can use a different resin or combination or pigments; or he can use less pigment and more "supplemental" pigments, which are also known as extenders, fillers, or inerts. He may end up with just as good a product as his competitor, or even better; but if he selects his components unwisely, he may end up with a product that is not quite as good, or even almos as good.

Thus it is important to under stand why each formulator come up with his own mixture and wha can happen. First, and easiest t explain, is why formulations differ and why any one company is ofte obliged to change its formulations The simplest explanation involve production costs. Raw materials i coatings, like most other chem icals, are bought by the gallon which is a unit of volume. Eac chemical varies from others in th number of pounds that make a gal lon. For this reason, the formulato tries to make the best possibl paint with the quality ingredient that can help him fill up his gallo cans with the bulkiest, or lighte weight materials. Each formulato has his own combination of com ponents for producing a high quali ty paint; and similarly, he has com binations for making low- an medium-quality paint—all of which are usually identified by price structure, and usually, brand name

If titanium dioxide, the mos important hiding pigment, cost $0.50 per pound, for example, the formulator can make a lower quali ty paint, and identify it as such, by cutting back on the amount of ti tanium dioxide and increasing the amount of clay, calcium carbonate or talc, which are known as extend er pigments, and which, in proper amounts, serve very worthwhile purposes.

Other formulators for their high quality, or medium, or low quality paints may get equally good paints in each price range, with more o less titanium dioxide. Similarly they may increase the percentage of binder resins to get a better paint, or may cut back on binder and increase the amount of extend er pigment—thus making a lower quality paint.

For the same reason, a formu-

Continued on Page 8

From The Big Island of Hawaii

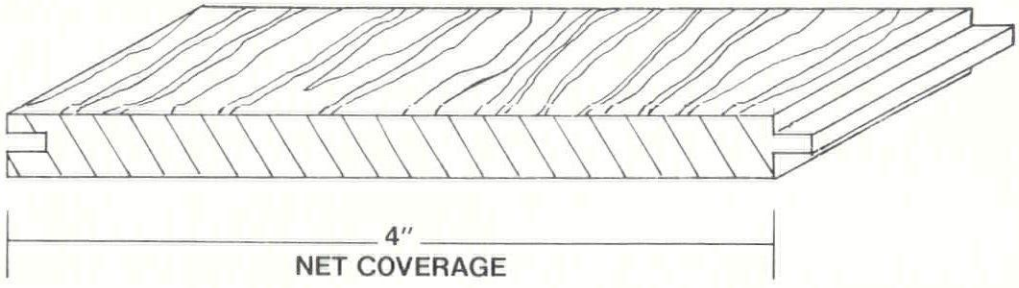
KOA WALL PANELING

This tongue and groove solid koa is manufactured for us on the mainland and is 5/16" thick. It is not end matched like flooring. It is manufactured from #1 common and better which is the top grade of koa available. The lengths vary from 2 feet to 12 feet with some defects in some panels. You can figure about a 5% waste factor. This panel is surfaced both sides and is reversible with no V grooves on face. The surfacing is very smooth and needs only 120 and 180 grit sanding.

Installation can be finish nailed in tongue for blind nail effect, surface nailed, or plugged for a plank look. Color is not matched, but is random color and grain.

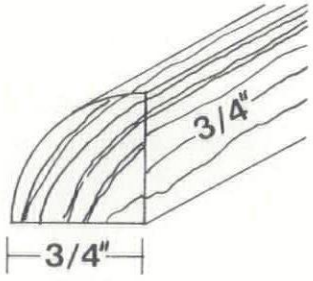
	L.ft.	Sq. ft.
5/16 × 3" × random lengths (2' to 12')	.57	2.28
5/16 × 4" × random lengths (2' to 12')	.75	2.28
5/16 × 5" × random lengths (2' to 12')	.95	2.28
5/16 × 3" — 4" — 5" × random lengths (2' to 12')	2.28	2.28

Cross Section:



KOA QUARTER ROUND

3/4" × 3/4" × RANDOM LENGTHS (6' to 12')
$1.25/L. ft.



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Painting Technology

Continued from Page 6

lator may maintain the sam amount of binder resin but may us a less desirable resin in place of th one he uses for the top-of-the-lin product. For an alkyd-resin enam based on soybean oil, he may sub stitute an alkyd based on linseed o and menhaden oil, which at th time may be considerably les expensive than soybean oil; but h will very likely get an enamel tha will not have the color and tint re tention of the soybean oil alkyd. (A alkyd, incidentally, is really a veg etable oil that has had its fault cooked out of it by modificatio with some fatty alcohol, lik glycerine or pentaerythritol, an with an organic acid of a typ known as dibasic, of which phthali anhydride is typical.)

One formulator may pick a soy bean oil alkyd because of its colo fidelity, and another may prefer t use a safflower oil alkyd for th same reason. One may choose combination of oils and fatt alcohols that give extra flexibility o wood substrates, and another ma want to add components tha provide scrubbability or impac resistance.

Quite often, the chemist will hav to combine components to yield slate of performance character istics that are really compromises He may prefer only a desirable lev el of scrubbability, let's say, rathe than the ultimate, so that he doesn cut too deeply into stain remova ease. He must, thus, compromis in one performance area in order t achieve superior characteristics i another area.

From the specifier's standpoin it is important that the product h selects has been thoroughly teste in use under circumstances tha approximate the conditions unde which the material is expected t perform. The integrity of the manu

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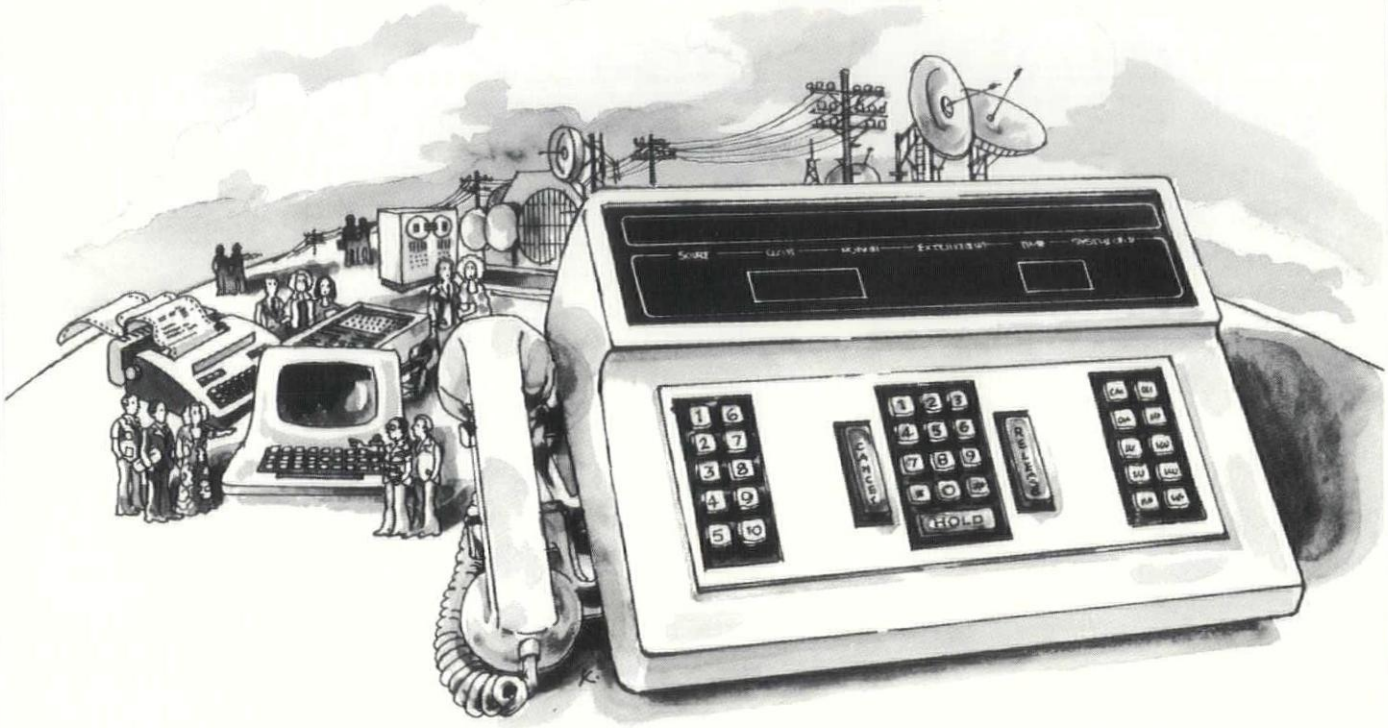
TOMORROW'S TECHNOLOGY BEHIND TODAY'S BUSINESS PHONE SYSTEM.



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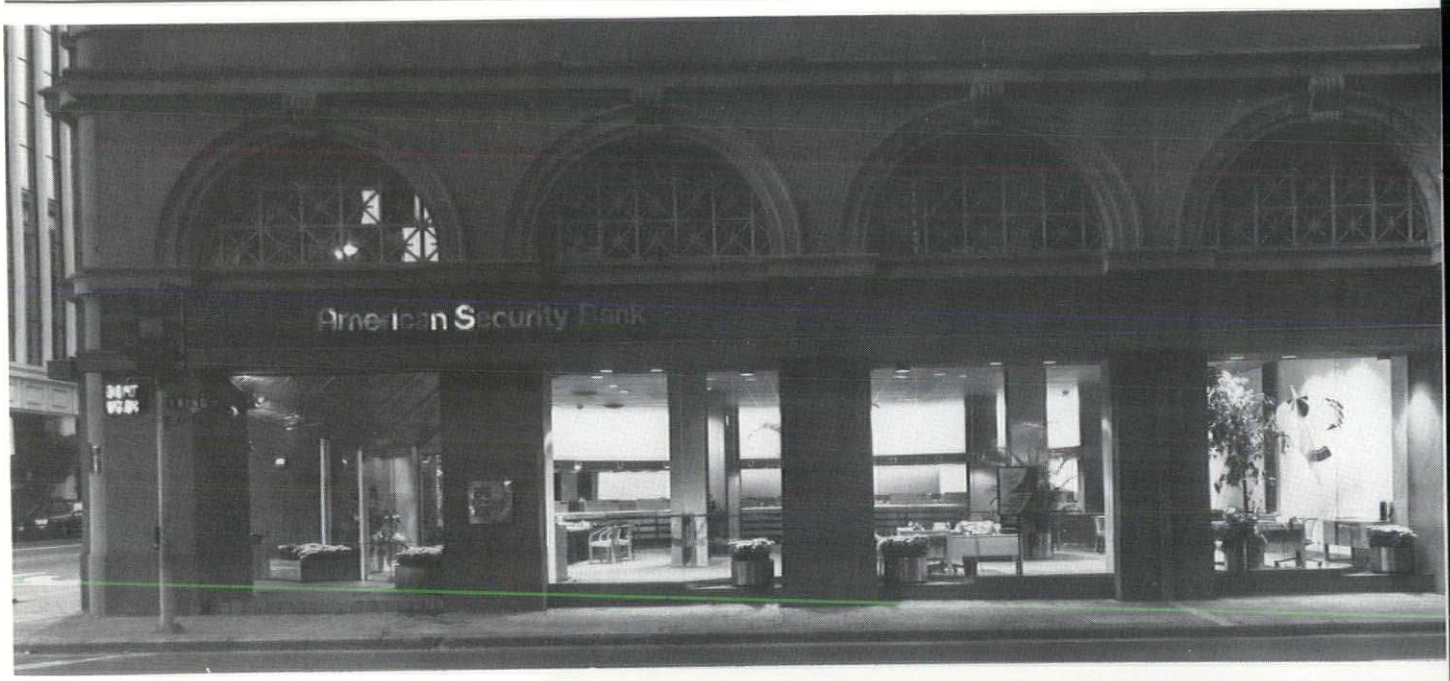
GTE

Laurels

HS/AIA Awards Program American Security Bank, Branch Banking Facility

Award for Design Excellence
by FRANKLIN GRAY & ASSOCIATES



PROJECT
American Security Bank,
Branch Banking Facility
LOCATION
1001 Bishop St., Honolulu, Hawaii
(Alexander Young Building)
ARCHITECT
Franklin Gray & Associates
STRUCTURAL ENGINEERS
Martin, Early & Bravo, Inc.
ELECTRICAL ENGINEERS
Bennett & Drane
SIGNAGE AND GRAPHICS
Clarence Lee Design, Inc.
BRASS WORK
Au's Plumbing
CONTRACTOR
Imua Builder Services, Ltd.

PROBLEM

The problem was to create a new, efficient, and functional banking facility in the Alexander Young Building, a turn-of-the-century neoclassical office structure, without destroying the essential character of the host building nor its structural and visual relationship to the Bishop and King Street corner.

The client was also concerned with establishing strong identification for the branch bank without visually overpowering the vehicular and pedestrian traffic.

JURY COMMENT

A very sophisticated urban solution in an urban location.

The semi-circular solution of the tellers windows is a creative approach to the functional problem of queuing. The detailing of the tellers counters and booths are well done and makes a routing activity, banking, a "fun experience."

An imaginative use of contemporary materials, forms, and shapes that blend with the character of the existing building to create an extremely elegant solution at a heavily traveled intersection.

The final concern was that of establishing the proper ambience for the branch, one which would impart a feeling of permanence and stability without resorting to a use of monumental scale, the technique normally used to impart these qualities.

SOLUTION

The problem of preserving the host building's integrity was approached by removing those existing architectural elements at ground level which detracted from the expression of the building's base structural elements and replacing them with treatments compatible with existing finishes and textures.

The need for strong visual impact and identification was handled by removing from the exterior wall openings as many visual barriers as possible and highlighting the interior peripheral walls.

This was then coupled with a low level of general illumination which resulted in maximizing visual penetration of the space.

In the attempt to resolve the final concern of establishing a suitable architectural direction for the branch, it was decided neither to retain the host building's neoclassical quality nor to depart from this completely into a contemporary handling, but to pursue an eclectic approach.

The direction pursued borrows stylistically from the *art nouveau* period. Materials and finishes were selected which would have been utilized in this era, but the detailing and fabrication reflect contemporary methods of construction.

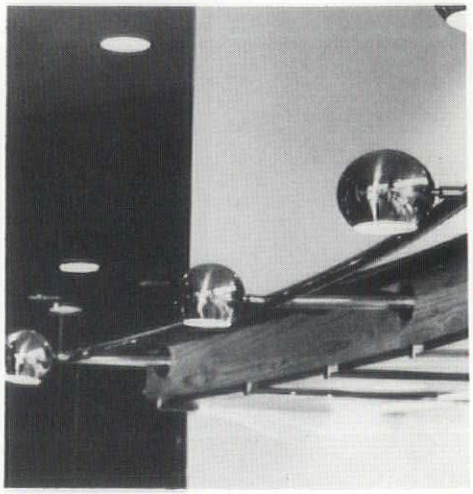
The scale of the various architectural elements were kept a little beyond that of residential architecture, but less imposing than that experienced in most central business district banks.

The materials, finishes, colors, and furnishings used were also scaled to impart this quality.

PROJECT DESCRIPTION

Building Square Footage:	ground level 5,213 sq. ft.
	lower level 4,032 sq. ft.
Ceiling Heights	ground level 12'-8"
	lower level 7'-6"
Construction Types	
Exterior Entry Soffit and Letters Soffit	sheet brass over steel framing members
Exterior Walls	¼" tembered plate glass
Partition	gypsum board over metal studs
BID DATE:	August 22, 1977

CONSTRUCTION PERIOD	6 Months
COSTS	
Architectural	$155,364
Structural	19,020
Electrical	43,240
Total Construction Cost	$217,624
Ground Floor	
Banking Level	$35 sq. ft.
Lower Floor	
Administration Level	$8.70 sq. ft.
Additional Cost Information	
Interior Furnishings	$54,227
Signage & Interior Graphics	$21,000



HS/AIA Awards Program

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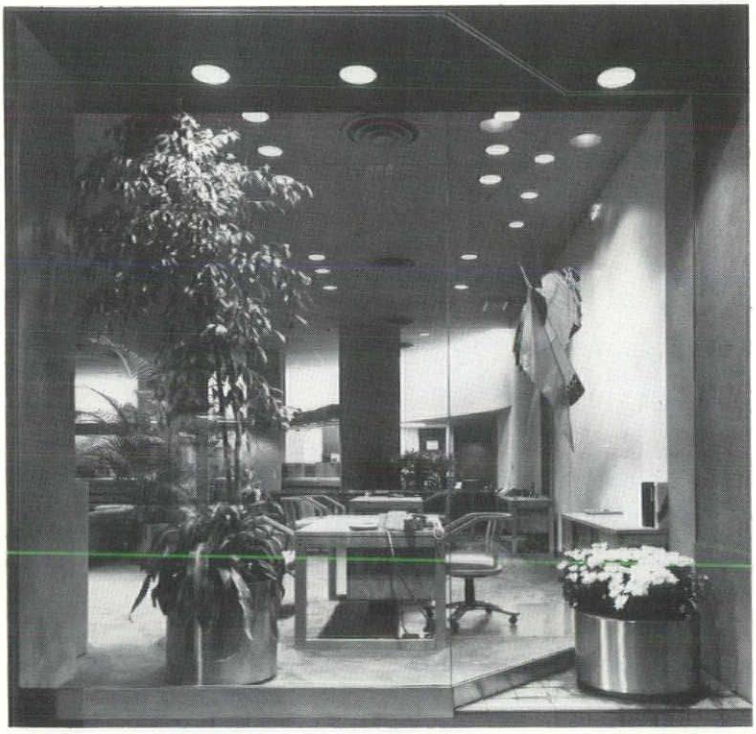
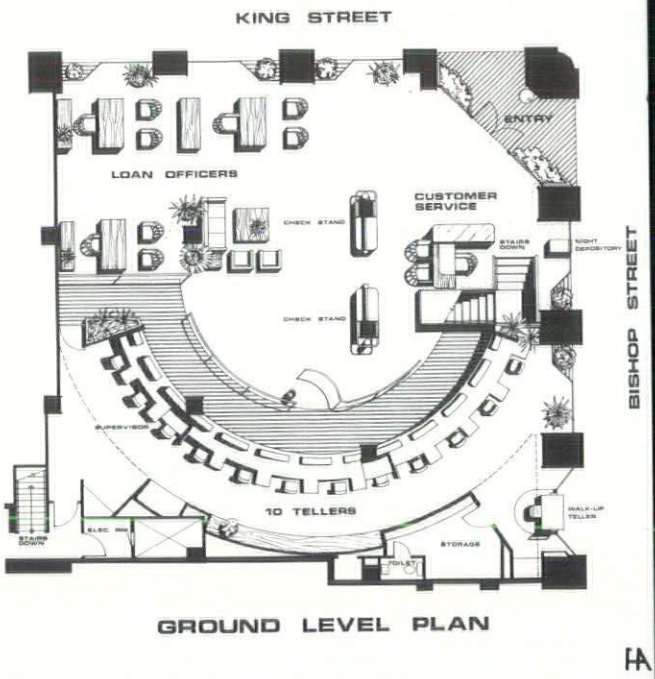
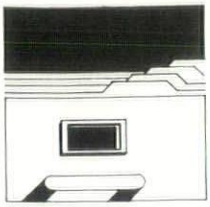




GROUND LEVEL PLAN



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Specializing in Finishes

by GLENN E. MASON, AIA

Housed in an unassuming board and batten Kakaako building is a unique business specializing in custom finishes, primarily of fine furniture. While the first love and much of the workload of the firm is finishing fine furniture, the firm's talents often have led to related highly specialized finishing work such as upholstering, glazing or marbleizing walls, graining or gilding.

Previous visits to Hawaii had convinced Richard Minnick of both his strong desire to live here and that Hawaii had no one who could provide his services. Both perceptions have proven accurate since the firm's 1974 beginning.

"We've never advertised," says Richard, "and have been busy from the very beginning. We've relied on referrals from friends who are interior designers and from satisfied clients."

The formula of offering unique services coupled with a preoccupation with only the finest workmanship has worked well. "We don't feel we have any real competition," Richard continued.

But pressures to keep their prices reasonable do exist. The lack of exposure of people here to older furniture and sophisticated finishing techniques is part of the story. Another factor is the relative lack here of older established families with the financial capability to afford and appreciate fine finishing.

Still, there seems to be enough to keep them busy. "We can accommodate only about 2 percent of the calls which come into the shop," says Richard. "Most of the rest we have to refer to another shop which can accommodate that work."

The seeds of Richard Minnick's expertise as a furniture finisher chart a wide-ranging but interconnected course. What other description would suit a man who was a motion picture major in college and traveled nationwide establishing special effects sound and lighting for discotheques, whose devotion to music expressed itself in years of training on the harp, and who did not engage in official training in furniture finishing until, at the age of 27, he joined with Mike Hamilton in Los Angeles. He stayed with Hamilton, one of the nation's top custom finishers, for three years.

Today he believes those varied experiences have all made positive contributions to his practice. Knowledge of chemistry, lighting and color have a firm base in his early interests.

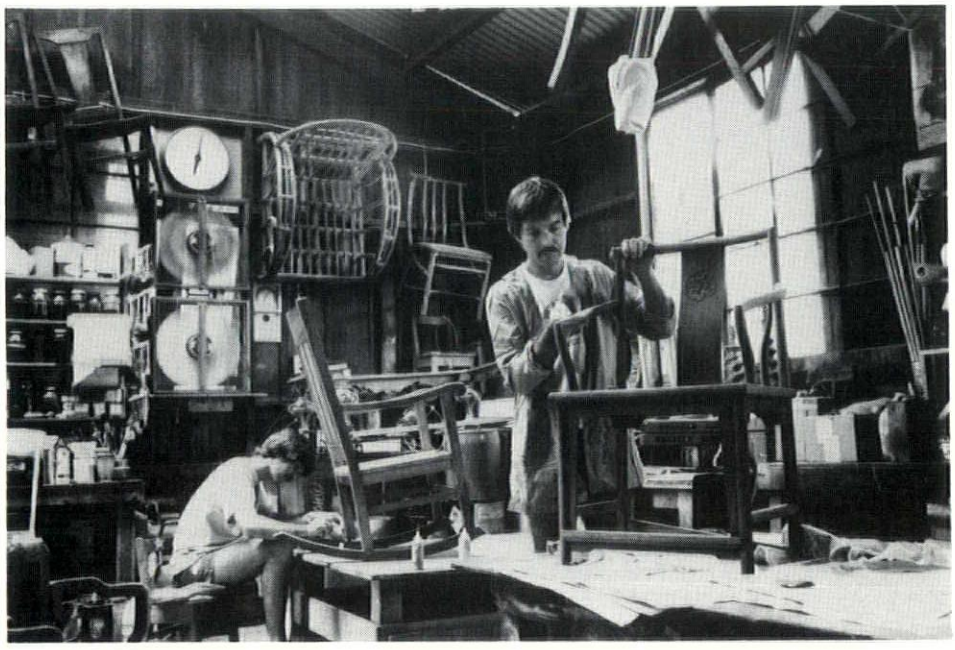
The firm today consists of Richard, his brother Thor, and their mother Veronica. Thor joined the firm in 1976 and comes by his expertise through experience here. Both sons attribute their earliest interest in fine furniture to Veronica, via her stint as an interior decorator in California in the early 1960s.

As in any good small business each member of the family has particular interests and talents which complement those of the others. At the same time each is capable of doing all the tasks in the shop.

Richard's interests are in reproduction finishes, especially painted finishes. Clients sometimes bring in color and material samples from other elements in a room and ask him to do a finish which will harmonize with those elements.

Richard also did a series of eleven pieces presently on display at Ansteth's which are used as samples of finishes unavailable anywhere else. Ansteth supplies the raw frames to Richard for finishing.

"That opportunity to take some artistic license is important to me," he says. "About 10 percent of the firm's work falls in this category



Richard Minnick, right, and Thor at work amid the ever-present clutter of the Minnick shop.

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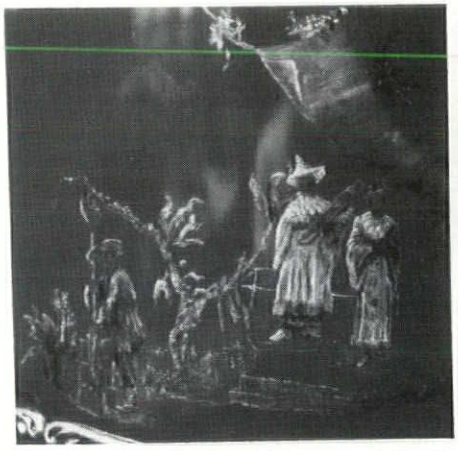
Specializing In Finishes

Continued from Page 14

and I want to see us do even more."

Thor is much more interested in rebuilding and restoration of broken furniture and existing finishes. This might take the form of repairing a broken chair leg, disguising any patches with a finish which must recreate the existing patina of the rest of the chair.

Veronica is interested in both reproduction and restoration finishes. Veronica joined the firm in 1978 after two years of learning the finer points of marbleizing, graining, *trompe l'oeil,* and other finishing techniques in Spain at Barcelona's Esquela Masana.



Painting detail of red lacquered grand piano done in the Minnick shop.

This writer first became aware of the firm's capabilities when the restoration of Kailua-Kona's Hulihee Palace required recreating original koa graining on existing Kalakaua-era redwood baseboards. Veronica was the only person in Hawaii with the training to undertake the task. The results are so realistic that the only way a viewer can know the "koa" they are looking at is a painted finish is to be told.

There are a number of changes ahead for the firm.

"We could use more people right now but don't have the room to put them," says Richard. By the end of

the year they will have reorganized the shop to accommodate two or three more people with stripping and sanding. The addition of a stripping tank is planned. Too often, according to Thor, "work done for us by other strippers doesn't meet our standards."

Getting a good furniture stripping job isn't the only problem they've faced in Hawaii. The common complaint of many designers and craftsmen here about the poor availability of some materials is heard again at Minnick's shop.

In addition, experience has been their teacher in learning to deal with some of the unique characteristics of finishing furniture in Hawaii. The higher ultraviolet radiation, humidity, and salt content of the air all create special problems.

Local finishing styles are also a little different. For example, lacquered finishes are much more prevalent in Hawaii than on the Mainland.

A longer-range goal of the firm is the establishment of each of the three Minnicks in separate but interrelated firms. They envision these firms as sharing some facilities and clients but having the flexibility and focus to develop the areas which most interests each of them.

Says Richard, "The work is definitely there. We are looking for ways to service those clients who need us without sacrificing the personal influence we each desire to have on the quality of our work." HA

Painting Technology

Continued from Page 8

facturing firm providing the coating is important in that its reputation is being accepted as an endorsement of the pre-testing of the product.

From the foregoing it may appear that the mixture making up a surface coating consists of nothing more than a pigment and a binder, but actually organic solvents are used in many paints to provide a liquid carrier—or water may serve this function. Constituents are also added to get the various components to combine more readily; others are used to make the mixture flow better on the substrate or to help prevent brush marks in the dried film, and still other materials are added to prevent "skinning" in the can, or sagging after the coating has been applied and is still wet.

Additives are used in water-thinnable paints to get the tiny emulsion particles in the binder to coalesce into a coherent film. Fungicides are needed to fight mildew on exterior surfaces, and bactericides are added to prevent spoilage in the closed can. Still other materials may be stirred in to make the coating dull or glossy.

Then, we have supplemental pigments—clay, calcium carbonate, talc, mica, silica, nepheline syenite—all serving a proper and beneficial purpose—when used correctly. Often they are used importantly in the manipulation of mixture.

When coating ingredients are manipulated it is usually to alter an important relationship between the quantity of pigment and the quantity of binder-resin, a relationship expressed as Pigment Volume Concentration, or PVC, a term encountered in coatings industry jargon as often as horsepower is heard in automotive comparisons.

Extenders or supplemental pigments, it should be said here, are counted as pigments for purposes of computing PVC.

The PVC is determined by dividing the volume of pigments alone into the combined volume of resin-plus-pigments. Hence, if 12 gallons of pigment are used in a formulation with 36 gallons of alkyd resin, then the PVC (Pigment Volume Concentration) is obtained by dividing 12 by 48. This comes out to 25 percent and is expressed as a PVC of 25.

Since Pigment Volume Concentration refers to the amount of pigment in proportion to resin, it follows that a low PVC means considerable resin is being used in relation to pigment.

With increased proportions of resin, you would expect the coating to be more flexible, able to take more washing and scrubbing, and to be more durable than one with a decreased amount of resin (assuming the pigment volume stays the same). That's why, in general, a paint with a low PVC (more resin in relation to pigment) is more flexible, washable, and durable. It's also glossier, and low PVC mixtures are usually known as enamels.

A paint with a high PVC (more pigment in relation to resin) is usually more buttery and brushes on more easily, has better hiding power (if the added pigments are hiding pigments such as titanium dioxide, instead of supplemental pigments such as clay, calcium carbonate, mica, or talc), and usually costs less to produce because of the lower raw material costs. Also, because the mixture has relatively less resin it is thicker and does not penetrate as well into porous surfaces as do the more fluid mixtures that are richer in binder. High PVC paints, thus, are used where penetration should be limited, as in primer-sealers, which are used to prevent waste of paint in coating porous substrates such as wall

Continued on Page 22

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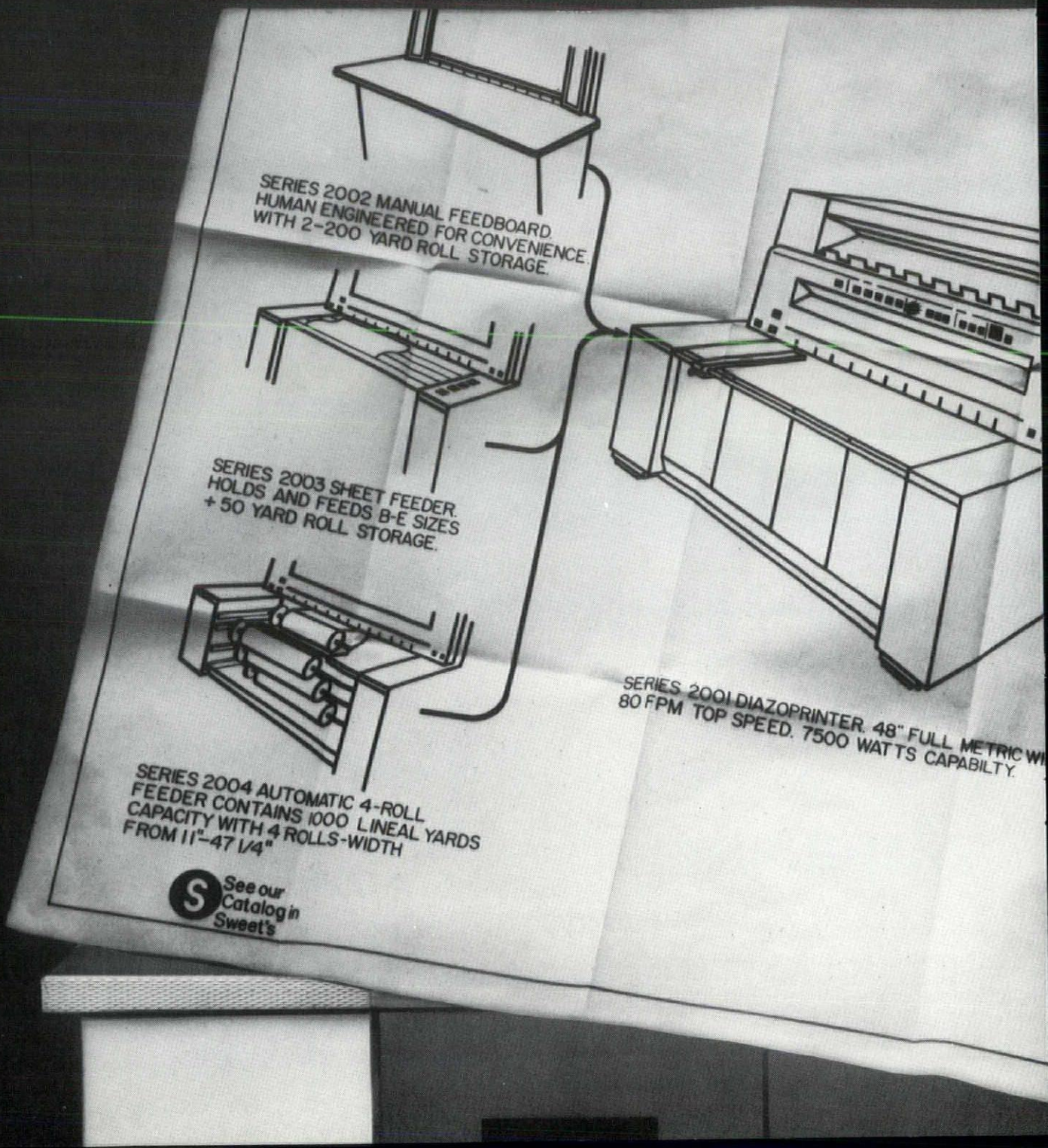

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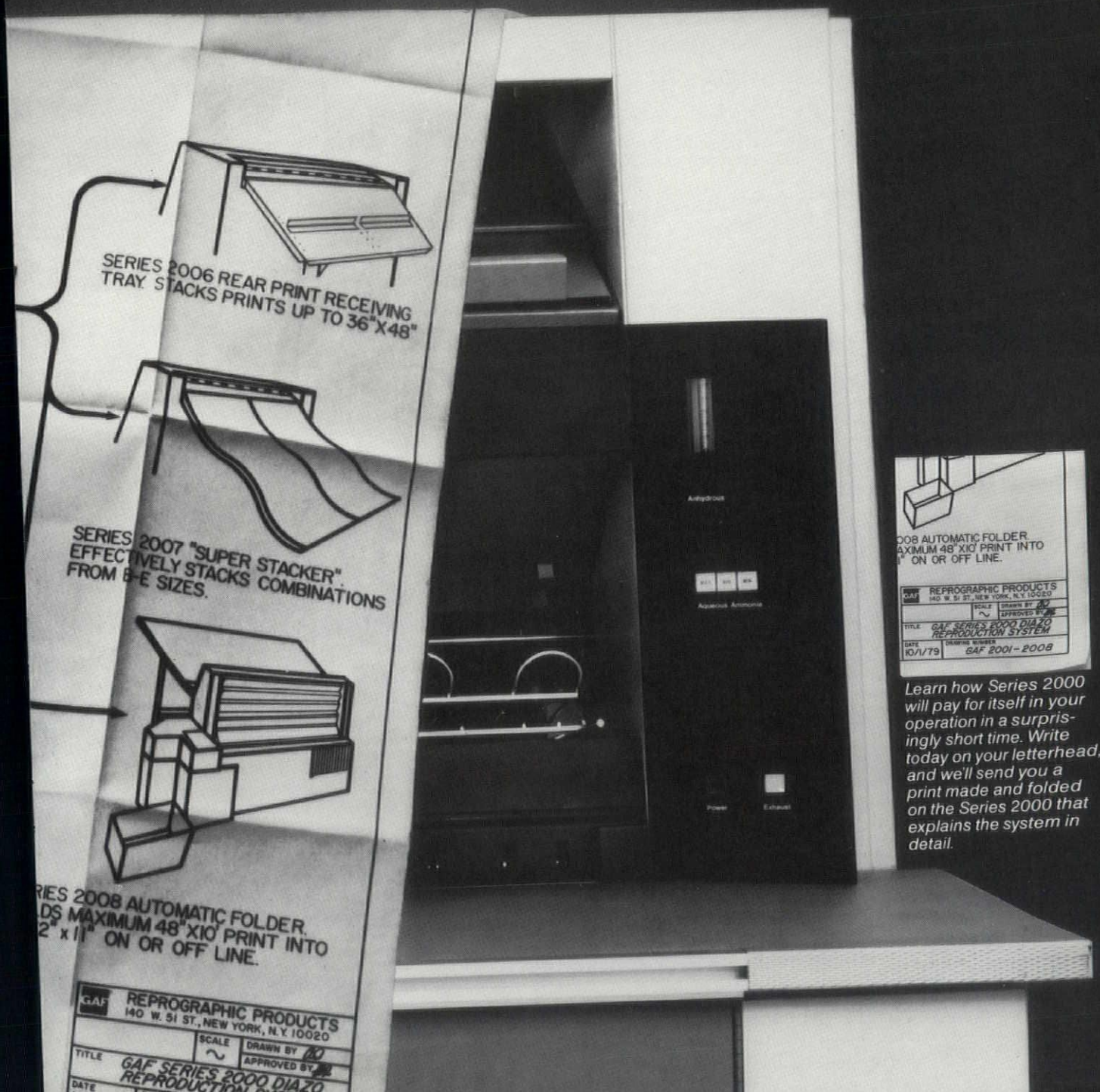

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Painting Technology

Continued from Page 18

board or plaster.

A conscientious formulator will stick close to desirable PVC rates when he is obliged to tinker with his mixture. But, since a cost-conscious formulator can achieve his desired PVC by substituting low-priced supplemental pigments in place of more expensive hiding pigments, he may end up by using too much substitute and cause undesirable development. One of several possibilities is excessive water absorption (particularly if he uses too much hydrous clay or calcium carbonate, both of them helpful materials in limited quantities). Recent findings point to this as a cause of early failure, particularly if the primer coat and the topcoat absorb and then release water at different rates.

Two outstanding paint scientists, T. Kirk Hay and Garmond G. Schur, carried out a series of classic experiments showing that harm results when water absorption and desorption rates of the primer differ from those of the topcoat. Above certain percents of humidity, water enters the coating system (by a process resembling capillarity) and then cannot leave the primer fast enough because the topcoat releases its moisture too slowly. A primer with a PVC that is too high has a lot of soft, permeable pigment and holds the water longer than a coating with a low PVC (and, thus, less pigment) in the topcoat; and all sorts of troubles can result, such as corrosion of metal, fungus, peeling, and stripping.

The results of tinkering with PVC are offered here to hint at what can happen if you select paint too casually.

Many reliable firms—just about all the major national manufacturers and most of the well-established regional firms—jealously guard the sanctity of their good names and are zealous in their quality control and in their assur-

ance that their production departments have selections of proven formulas to use for their product mixes. But the price-manufacturers, who live by cutting corners, are another matter.

An observation is in order here: the few dollars saved on a job by buying questionable coatings is inconsequential when you consider that the big cost of painting is surface preparation and application.

If by this time, we've understood what is meant by Pigment Volume Concentration (the ratio of pigments—both hiding and supplemental—to the combined volume of these same pigments and the vehicle), then we're ready to understand how they are controlled to get desirable properties in a coating.

First, we must understand that pigment particles have very tiny voids or air spaces separating them, much of it caused by the irregular surfaces of these ground and milled solids. For each quantity of a pigment or combination or pigments, a given amount of a binder is required to fill up all the tiny voids and air spaces.

If we start with dry pigment, as we add resin, or binder, we gradually reach the point where all the voids are filled. This stage is known as the Critical Pigment Volume Concentration. If we add more binder, it has no pigment to bind, so we are said to have "free binder," which could be said to be an excess of binder, since it has no binding duty to perform. As we shall see, it has other roles to play.

At the stage denoted as Critical Pigment Volume Concentration, we have no voids among the pigment particles and no free binder in the mixture. This is known as CPVC, and is important because it becomes a reference point when a formulator seeks to develop properties of a coating.

Coatings with Pigment Volume Concentrations above the critical point, in effect, have excess pigment. This means that between the pigment particles voids exist. Let's say we have materials for a paint, which when mixed would have a Critical Pigment Volume Concentration of 60. If we start out with dry powder and begin to add resin, we have a PVC well in excess of 60. In fact, we may not get any feeling of

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fluidity until we have about 10 percent binder present. Now, remember all of the pigment particles will not be surrounded by binder until we move through PVC's of 80, 75, 70, 65 and come to a PVC of 60, the Critical Pigment Volume Concentration. That means that even when we have added enough binder to attain a PVC of 62, we still have some pigment particles that have voids around them.

At all those PVC's above 60, the coatings are somewhat soft because of the excess pigment; so these PVC's lend themselves to coatings used for easy sanding undercoats, where you want a material that isn't very hard and which can be easily abraded to form a good tie-coat for the top finish.

House paints, on the other hand, need a small excess of binder so they will level and form a smooth coat and impart a small amount of gloss, so they are formulated just below the Critical Pigment Volume Concentration. Just below CPVC, some of the binder, then, is not needed to fill voids between the pigment particles; and this is available to add fluidity. Fluidity, in this case, in addition to aiding leveling and imparting slight gloss also helps house paints to penetrate and absorb small particles of chalky substances that may be present on the surface from deteriorating coats that had been on the house previously.

Metal protective paints provide maximum durability at approximately CPVC, because at that point pigment and binder are well-balanced, with essentially no space for harmful moisture to ease its way to the susceptible metal beneath.

The primer selected for use with an enamel topcoat should be a mixture with a Pigment Volume Concentration somewhat below the

Continued on Page 36

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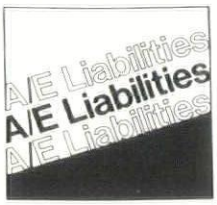

Third Party Legal Claims

by ARTHUR F. O'LEARY

Arthur F. O'Leary, FAIA, a partner of O'Leary Terasawa & Takahashi, is chairman of the Ethics and Practice Committee of the Los Angeles Chapter of the American Institute of Architects. He is a consultant to the legal profession in matters pertaining to architectural and construction litigation. As a member of the National Panel of Arbitrators of the American Arbitration Association, he has arbitrated over 60 construction industry disputes since 1957 and is a member of AAA's Los Angeles Advisory Council.

When a contractor-developer type undertakes to build a project for his own account, he usually engages his architect on a minimal-service basis. This is normally the case in the construction of speculative projects such as neighborhood shopping centers, apartment houses, condominiums and light industrial/office/warehouse complexes. When an architect is hired by a conventional owner, the plans and specifications and other documents produced by the architect will be used to form the contract between the owner and general contractor. Such contract documents are generally expected to be complete and will comprehensively define all of the contractual obligations of the owner and contractor.

Completeness of these documents is very important because they will be the basis of all charges and credits to the contract sum.

The general contractor will then delegate portions of his responsibilities to subcontractors and suppliers, incorporating by reference the applicable portions of the architect's documents in his various sub contract agreements.

During the course of construction, the architect will render the usual construction services including checking of shop drawings, visiting the project to observe the progress of the work, administering periodic payments to the contractor, making rulings on the claims of owner and contractor, processing change orders and time extensions and making construction progress reports to the owner.

Upon completion of construction, the architect will perform various other duties such as issuing the Certificate of Substantial Completion, collecting contractor's warranties, as-built drawings and operating instructions for the owner and certifying the final payment to the contractor. All of these services are necessary and valuable to the conventional owner.

A typical "contractor-owner-builder-developer," hereinafter for brevity called "developer," does not feel that he needs the full spectrum of services normally offered by architects. The developer, being the owner of the project at least before and during the construction period, will not usually look to the architect for any more than the meager necessities: only basic design concepts and minimal construction drawings. The drawings will usually be considered to serve only two principal criteria: (1) to satisfy applicable governmental agencies sufficiently to obtain all necessary approvals and permits, and (2) to construct the building.

The developer will generally not require any more than the barest of outline specifications. For additional economy of architectural fee, the architect is commonly expected by the developer to eliminate from the drawings all of the "standard" details and instruction. All supplementary clarifying details, sections and elevations are to be omitted. For convenience, I will hereafter refer to this genre of documents as *owner-builder documents* as distinguished from complete contract documents.

It is the developer's expectation that all of the omitted specifications, details, notes and drawings will be accounted for in two ways: (1) by the inclusion of this information in the subcontract agreements which the developer will write and enter into with his subcontractors and suppliers, and (2) by relying on his own experience and construction expertise and the technical expertise of his subcontractors and suppliers who will be coordinating and constructing the project.

Some developers are very skillful in this process and they have been extremely successful in completing construction projects by this system. Many architects who are accustomed to these procedures produce competent and appropriate documents which, in the hands of capable developers, result in creditable projects.

So where is the problem? If developers are obtaining good quality architectural services tailored to their unique needs and if architects freely enter into these contracts, everyone should be reasonably happy. If developers and architects are dissatisfied with the situation in any way and need to make changes in their methods of dealing with each other, they can easily resolve these matters in their professional service agreements.

The major problems for architects which arise out of this type of professional activity are presented by third parties, that is from people who were not the architect's client. The developer-client is not the usualy primary claimant.

Then, who are the third-party claimants? During the construction

period, it could be any of the subcontractors, suppliers, their employees, lenders, insurers, sureties, passers-by or trespassers. After the project is completed, third-party claimants could be lessees, their employees, customers, invitees, repairmen or cleaning personnel.

Often, the building is sold by the developer upon completion, so the new owner is added to the list of possible claimants.

In the case of a condominium residential development, there will be a multiplicity of owners plus a homeowners' association. Some of these third-party claimant entities are quite militant and well-organized for litigation. Homeowner associations are capable of pursuing extensive class action litigation, financed by nominal monthly contributions from each participant.

Usually the third-party claimant first comes to the architect's attention in an indirect way. The aggrieved party will have filed a lawsuit against the developer, among others, alleging a design defect in the drawings or the building, and the developer will react by filing a cross-complaint against the architect for indemnity.

Even though the architect and his developer-client may have enjoyed a satisfactory long-standing and continuing business relationship and a sensitve working rapport, the architect will certainly be sued as this will be the advice of counsel for the developer or his insurer.

Aside from the abbreviated features of owner-builder documents, there are two additional characteristics of their use that create potential problems for the architect:

1—The developer is under no obligation to the architect to follow the drawings. Although, he is obligated to comply with the drawings insofar as compliance with governmental regulation is depicted.

He may also in some situations have a contractual obligation to a lender of a lessee to follow some aspects of the drawings; but, essentially he can comply with the drawings or not, in his sole discretion,tinasmuch as he is the owner of the land and building.

2—The architect's services which should be performed during the construction period are commonly not contracted for. Consequently, misconceptions in interpretations of the documents are frequently carried into construction.

Often features which the architect would have regarded as important to design, safety, or function will be changed or left out, either through inadvertence, misunderstanding, lack of coordination or by developer's considered decision.

Had the architect been retained for field observation of construction and checking of shop drawings, such alterations or omissions could have been at least discussed at the appropriate time for informed decisions or to avert untimely extra costs.

When third-party claimants and their lawyers and other expert consultants are reviewing the owner-builder-documents, commonly they are judging them, erroneously, on the same scale as contract documents produced for conventional owners.

This error in understanding of the quality of architectural work product has proven to be a very costly burden to the architectural profession.

The developer's completed building may not have been constructed in conformance with the documents produced by the architect and frequently an attempt will be made to hold the architect legally responsible for the differences, even though he had no control over the construction process.

If the owner-builder has substituted his judgment for the architect's by exercising his right of not complying with the construction documents then there is no question that he has assumed the design liability. To the extent that he has perpetrated a design defect, the owner-builder must be found liable.

Another source of complaint against the architect springs from the abbreviated form of documents. The claimant will attempt to show that the normal architectural work product would have included such determinations as are usually omitted from owner-builder documents.

Logically, the owner-builder should be legally liable for the portions of the design determinations for which he has assumed responsibility.

Non-architects have difficulty in discriminating between conventional contract documents and owner-builder documents.

Usually, such claims against architects will not ultimately be perfected in the court room because there will be adequate opportunity for architect's counsel to present well-researched briefs, expert testimony and compelling legal arguments. This is a very time-consuming and expensive process, even if the architect is sustained in the merit of his position.

On many occasions, the expense of trial and the risk of losing can be forestalled by a pre-trial voluntary settlement. This is usually made after considerable legal expense and research has already occurred and the settlement contribution is heaping insult on injury. It is tanta-

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Photo Feature

Painted Murals in Public Places

Photos by CURTIS K. MIYAMURA

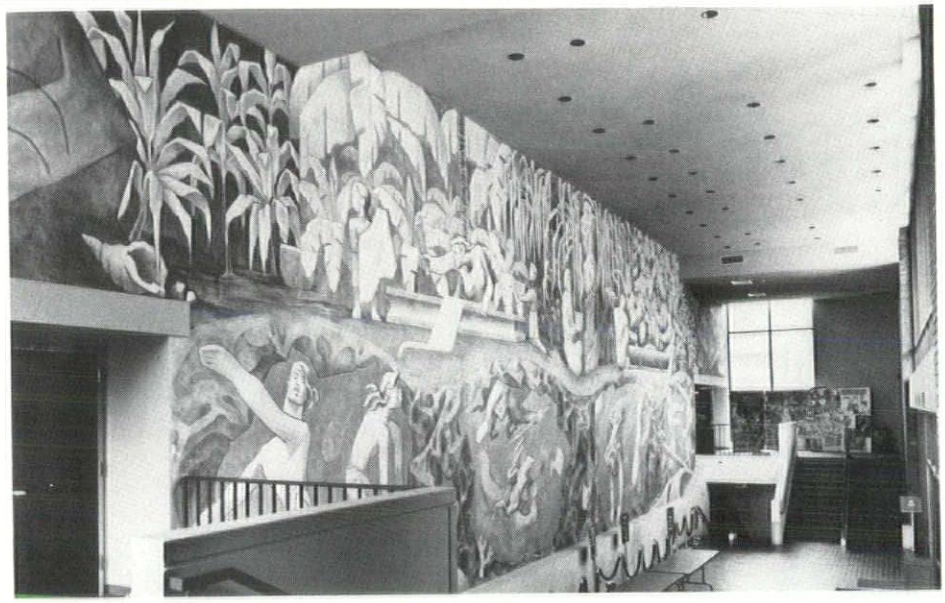
Through the efforts of the State Foundation for Culture and the Arts, painted murals have brought walls to life in many of Hawaii's high schools, colleges, libraries, and other public buildings. That these murals remain bright, alive, and unobstructed from view is essential. Many are displayed in areas with heavy traffic flow and have been damaged by the public; other murals are partially exposed to outside elements and run the risk of fading or peeling over the years.

A few of the panels in Pegge Hopper's mural, "Here's to You, Kids," at Mililani-Waena Elementary School are exposed to sunlight. Hopper painted the mural in 1976, using a water-based latex paint with several finishing coats of a matte acrylic sealer.

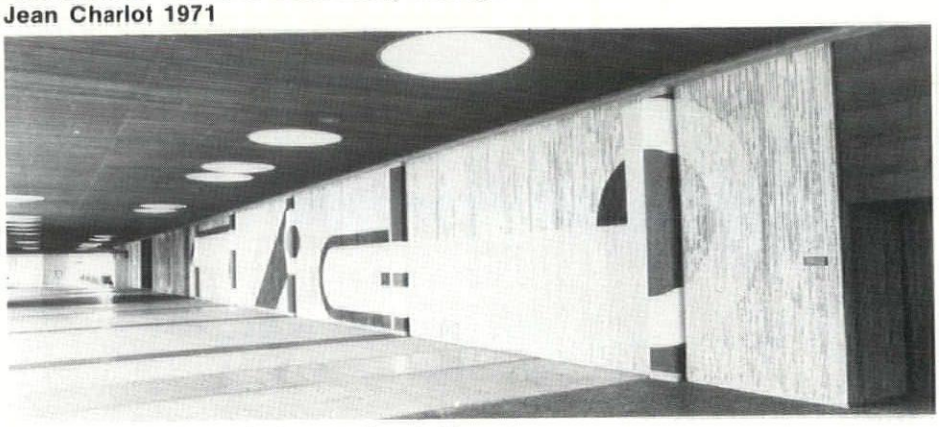
She reports that the mural has stood up well over the past four year, although "it's impossible to expect schoolchildren to keep their hands off the panels, and markings are periodically removed by the janitors." Husband Bruce Hopper, who assisted with the project and has done several commercial murals of his own, recommends that deep pigments be factory ground for longer life, and says that there are paint coatings with ultra-violet inhibitors available now which may be beneficial in the long run.

The true frescoes painted by the late Jean Charlot do not suffer so much from exposure to the elements as they do from public carelessness and, in certain cases, the shifting of structural walls. Evelyn Giddings, who worked with Charlot for nearly two decades, is now restoring much of his work. She is currently filling up holes in the "Old Hawaii" fresco at Leeward Community College Theatre.

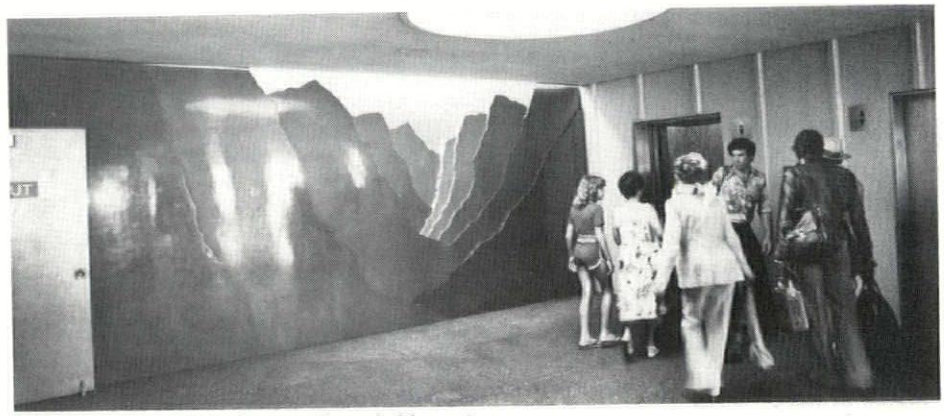
Giddings emphasizes that once the artist has completed his work, the building owner must make an effort to insure that the mural will be protected.



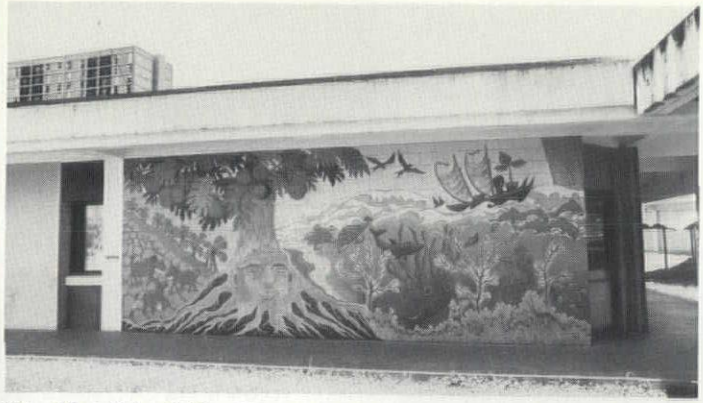
"Old Hawaii" Leeward Community College
Jean Charlot 1971



"Ho 'ele'elu" Honolulu International Airport
International Arrivals, Kathe Gregory 1971

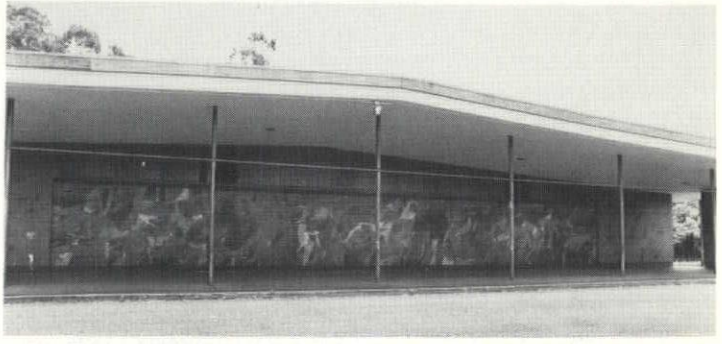


"Mauka" Honolulu International Airport
International Arrivals, Wayne Creekmore 1973



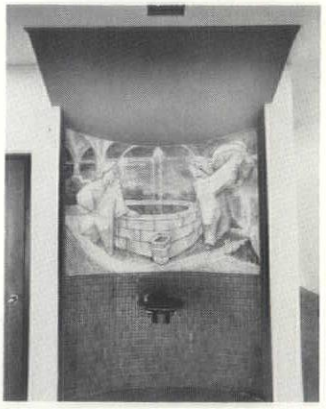
"Na Mo'olelo O Ka 'Ulu" (Tales of the Breadfruit Tree) Kauluwela Elementary School,
Donna Stoner 1975

"Waipio Valley" Kaimuki Library
Guy Buffet 1972

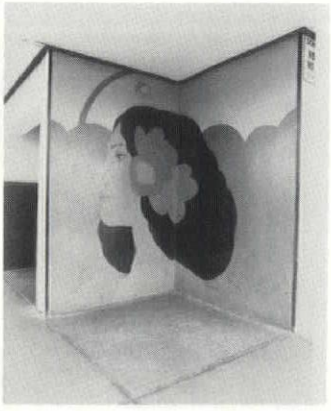


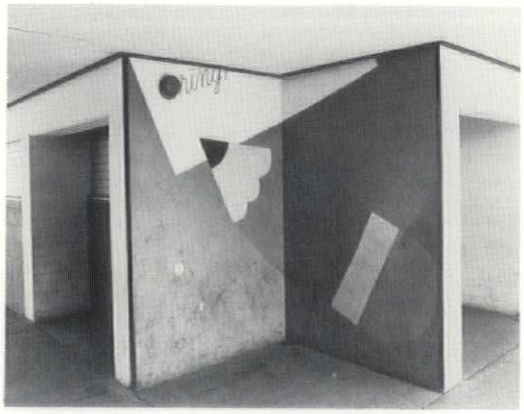
"We Each A Universe Create"
Wahiawa Intermediate School
Murray Turnbull 1976

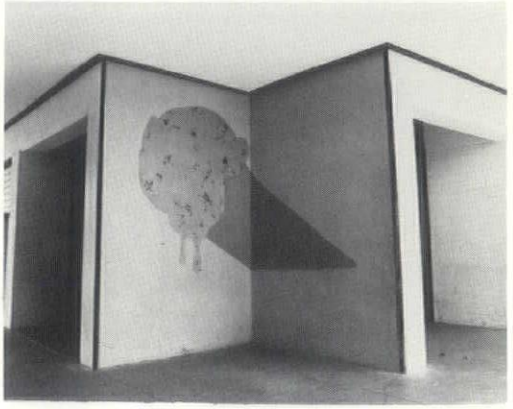
"House in Kalihi"



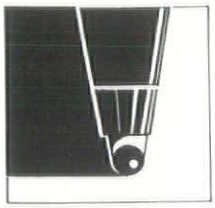
"The Women at the Well"
Maryknoll Grade School
Jean Charlot 1979







"Here's Lookin' at You, Kids" Mililani—Waena Elementary School
Pegge & Bruce Hopper 1976



Commentary

Letter to the Editors

by ELMER E. BOTSAI, FAIA

I particularly enjoyed the August issue of Hawaii Architect, but I am afraid I must take issue with the article by Alice Shelly on specification consultants.

It is my position that specification consultants by and large have been a contributing factor towards mediocrity in architecture. My experience indicates that all too often specifications consultants are captives of the manufacturer. They have little ongoing field experience, they have little ongoing design experience, they tend to be isolated and surrounded by the written word and inundated with literature. Point of fact is that a very high percentage of manufacturer's claims are unfounded and misleading and our standardized specification forms are really reflecting those manufacturer's claims resulting in the lowest common denominator of quality of work. This is not, in my opinion, conducive to quality architecture.

I realize specification consultants are cost effective, but cost effective in the short range only and not necessarily cost effective in the long range. With today's society demanding a higher and higher level of professional quality, I believe it behooves the architectural professional to insure that their clients receive architectural service; and with all due respect to CSI, CCS is not an equivalency for an architect. If we are to satisfy the needs of society today, we are going to have to make sure that our documents are done at a professional level and done with the background and knowledge of expertise that is achieved through actual building practice, actual design expertise, and actual experience. It cannot be achieved through the printed word.

Perhaps I am one of the last of the dinosaurs, an anachronism or a throw back to the caveman era, but I have seen too many specifications that have little or no relationship to the contract documents as a whole and too many specifications that were a job from manufacturer's literature and too many of them were done by specification consultants. I would instead make a pitch that we would be all better off if one of the principals or one of the key people involved in the given project was responsible for the specifications in the same manner that they are responsible for the working drawings or other portions of the contract documents and then perhaps we might all stay a little longer out of court.

ELMER E. BOTSAI, FAIA

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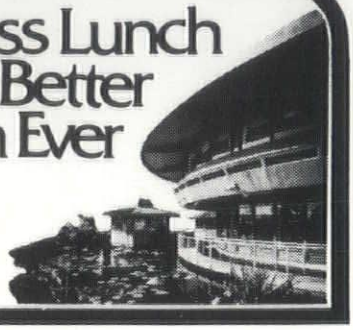

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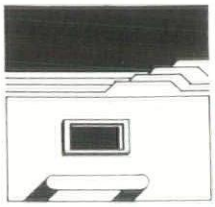

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Works in Progress

Tripler Renovations

by BELT, COLLINS & ASSOCIATES

The Tripler project, officially known as the Hospital Addition/Alteration Project, Tripler Army Medical Center (TAMC), is being designed by a joint venture of Belt, Collins & Associates/Lyon Associates, Inc., and Welton Becket Associates for the U.S. Army Corps of Engineers, Pacific Ocean Division. The project, which involves the design of over one million square feet of new and renovated hospital space, is expected to cost about $150 million.

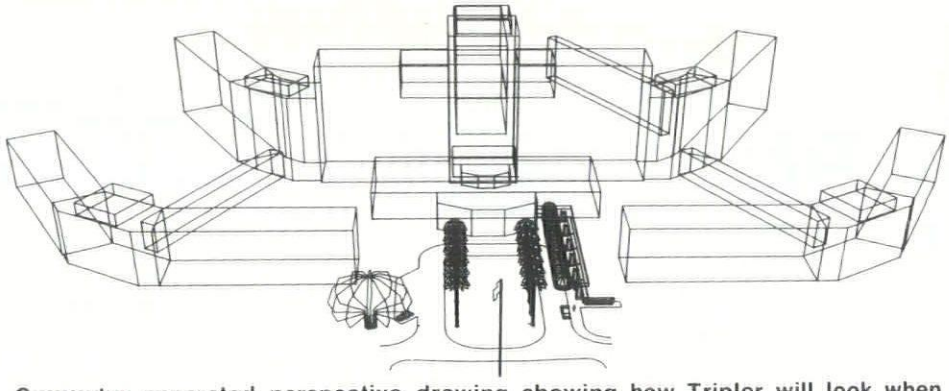
The new construction is scheduled to be completed in 1985, and the renovations to the existing hospital in 1988, if the project is funded in consecutive fiscal years. It is the first major renovation of TAMC since it opened in 1948.

Designed during World War II to serve a predominantly battle-wounded young adult male population, TAMC now serves a large dependent population consisting of women and children as well as active duty personnel and retirees, with emphasis on outpatient care. It also provides inpatient health care services to Public Health Service patients from U.S. territories throughout the Pacific.

The existing hospital spaces, mainly narrow rooms with low ceilings, are insufficient to house the diagnostic and life support systems of a contemporary medical center. TAMC also needs a new mechanical plant to support modern medical, electrical, and life safety support systems.

The joint venture is designing more than 465,000 square feet of new construction, including a diagnostic and treatment/outpatient clinic wing; a new mechanical plant with a solar hot water system; and the realignment of roadways, parking areas, utility lines, and other support facilities. It is also designing the renovation of more than 576,000 square feet in four wings of the existing hospital.

Model showing how Tripler will look when project is completed.



Computer generated perspective drawing showing how Tripler will look when project is completed.

The renovation will include entirely new internal mechanical, plumbing, and electrical systems, and the existing structures will be upgraded to meet seismic zone 2 requirements.

The new and renovated facilities will comprise a new diagnostic treatment center with radiology facilities, delivery and surgical suites, a laboratory complex, pharmacies, central supply and support facilities, a new 40-bed intensive care unit, and 500 beds in totally renovated nursing units.

There will be 20 outpatient clinics

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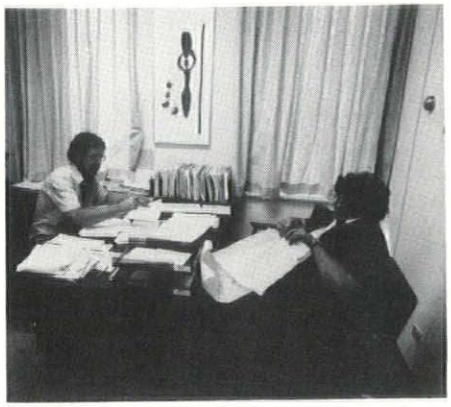
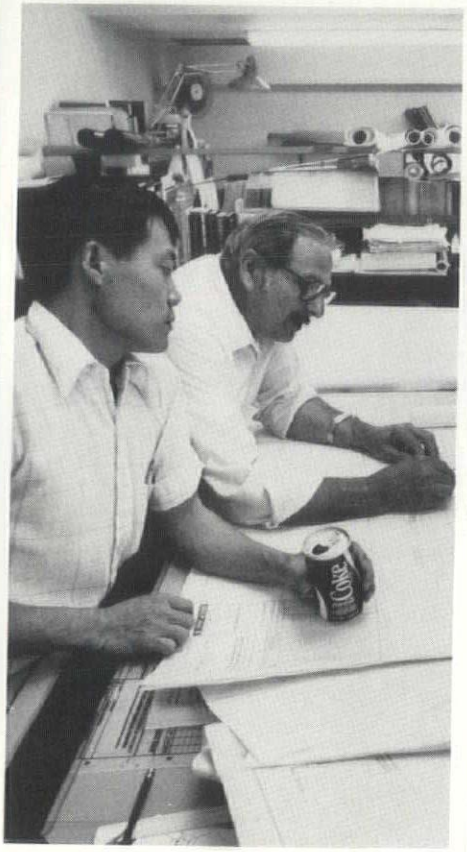


Project Director Cliff Hanssen, AIA, consults on the Tripler project with Director of Health Planning Olga Petters, AIA.



Chief of architectural production Manny Wolfenstine (right) goes over Tripler project drawings with designer Henry Lee.

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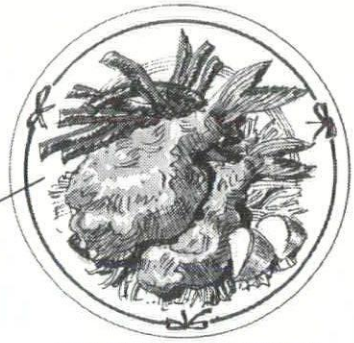

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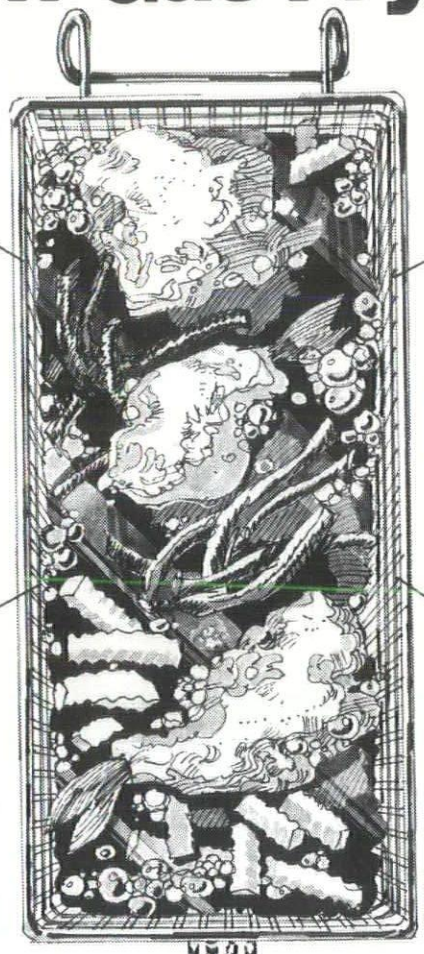

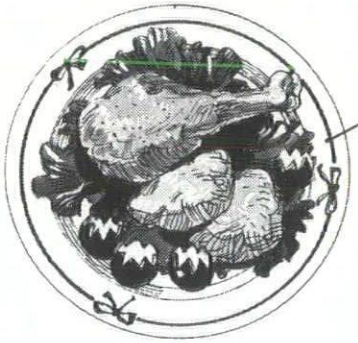

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Tripler

Continued from Page 33

with 10 to 46 examination rooms each. Covering a total of 210,000 square feet, they will include a 17,000-square-foot pediatrics clinic, as well as general, physical examination, family, emergency, surgery, and medical specialty clinics.

A noteworthy aspect of the project is the intensive use of the two Belt, Collins/Lyon Associates Digital Equipment Corp. PDP-15 computer systems to facilitate the design process. They are used as quick and accurate sketchers, as data base organizers, and for the production of three-dimensional perspective drawings from any angle (see illustration).

The advantage of these computer-aided design processes is that they assure both architect and client that every possible schematic relationship has been considered and that optimal relationships, based on mutually agreed upon quantitative judgments, have been selected for further design development.

Construction of this project has been divided into four packages. The construction contract package sizes will enable Hawaii contractors as well as large out-of-state firms to bid on the project. The early preparatory work preceding Package 1 includes interior modifications and the construction of temporary buildings and additional parking facilities.

Package 1, which is divided into four phases to allow the hospital to continue to function, comprises the construction of the addition and some of the alterations to the existing hospital areas.

Package 2, construction of the new central plant, will occur simultaneously with Phase II, Package 1.

Renovations to the existing building will be completed by the Package 3 contract. HA

Painting Technology

Continued from Page 24

Critical Pigment Volume Concentration so that no excess pigment or extender pigment will be available in the primer to absorb solvent or vehicle from the enamel, thus causing loss of gloss.

So much attention has been given to Pigment Volume Concentration and Critical Pigment Volume Concentration because it is essential to an understanding of what makes a coating work, or not work. In a sense, knowing about PVC and CPVC starts a specifier on the road to understanding at least some of the problems of paint formulation and also some of the variables in paint manufacture, which if abused can lead to trouble.

The real heart of the book is to relate surfaces to be protected to the circumstances in which they will function and the materials that will protect them—plus the methods of surface preparation and application that will make these materials work.

This would help in avoiding the all too common practice of designing and constructing a building and then—as an afterthought—making a decision on painting. The point is merely that an integrated knowledge of painting and coatings and construction surfaces is desirable if a coating system is to be an integral system of a building rather than simply something added on at the end. The result of thinking of coating last is apt to be either an inadequate or costly coating system. HA

This article is an edited version of the introduction to the Paints and Coatings Handbook, Second Edition, by Abel Banov.

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A treasure for Hawaii . . .

CHARLOT CERAMIC TILE MURAL GLORIFIES UPW HEADQUARTERS ON SCHOOL STREET

Entire front wall of the United Public Workers Union Building at 1426 N. School Street is a state treasure. Six large panels (three shown here) are works of beauty and they will last and last, colorful, non-fading. They are the work of the late Jean Charlot, one of Hawaii's greatest artists and himself considered a treasure of Hawaii where he spent so many productive years following a distinguished career in art in Mexico and mainland USA. The UPW mural is tribute both to artist and workers. The public workers themselves were the models. Their portraits will live on. Henry Epstein, UPW director now for nearly 30 years, and the building committee planned well. Long enduring Ceramic Tile is one of the ideal materials for mural art. There are other fine tile murals here, notably by Juliette Mae Fraser, who worked with Charlot on many projects, and the much younger Mataumu Alisa, whose favorite material is tile. Ceramic Tile's role in art, moreover, is just one use in Hawaii for this material of such wide variety of colors, shapes, finishes and sizes—indoors or out—for walks and walls, floors, entries, poolside decks, lanais, dining areas and more—in addition to beautiful baths and kitchens. Ceramic Tile is a growing trend in Hawaii too, spurred on by developers, architects, interior designers plus the skilled craftsmen employed by the able tile contractors who support the Hawaii Ceramic Tile, Marble & Terrazzo Industry promotion program. It all adds up— beautiful Hawaii.

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Third Party Legal Claims

Continued from Page 27

mount in the architect's mind to extortion. This is particularly offensive to the architect's sense of fair play and justice if the professional work product is within the normal standard of care for owner-builder documents.

Attempts to prevent this type of problem by the mere addition of caveats and exculpatory notes on the drawings is not highly effective as many of the possible third-party claimants will not have ever seen the documents.

So what practical measures can an architect take to minimize or eliminate this exposure?

Considering that the real underlying cause of the problem is the owner-builder's desire to obtain low cost professional services, it would seem the owner-builder should, as a quid pro quo, indemnify the architect against third-party suits in which the plaintiff's damages are not proven to be caused by the architect's negligence.

An indemnity clause to this effect could be negotiated for and included on the architect's professional service agreement with the developer-client.

Advice of legal counsel should be sought to obtain contract language which will be effective in limiting this area of professional liability. HA

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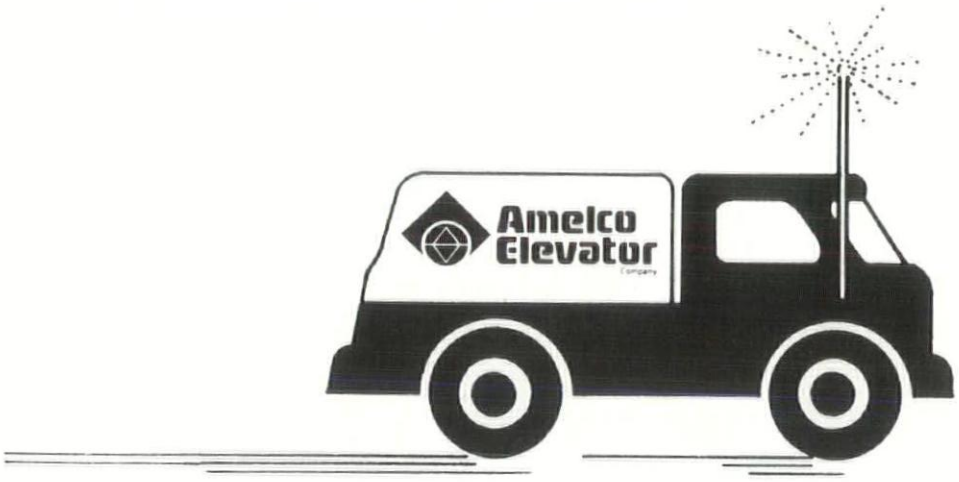

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