ARCHITECTURE CALIFORNIA

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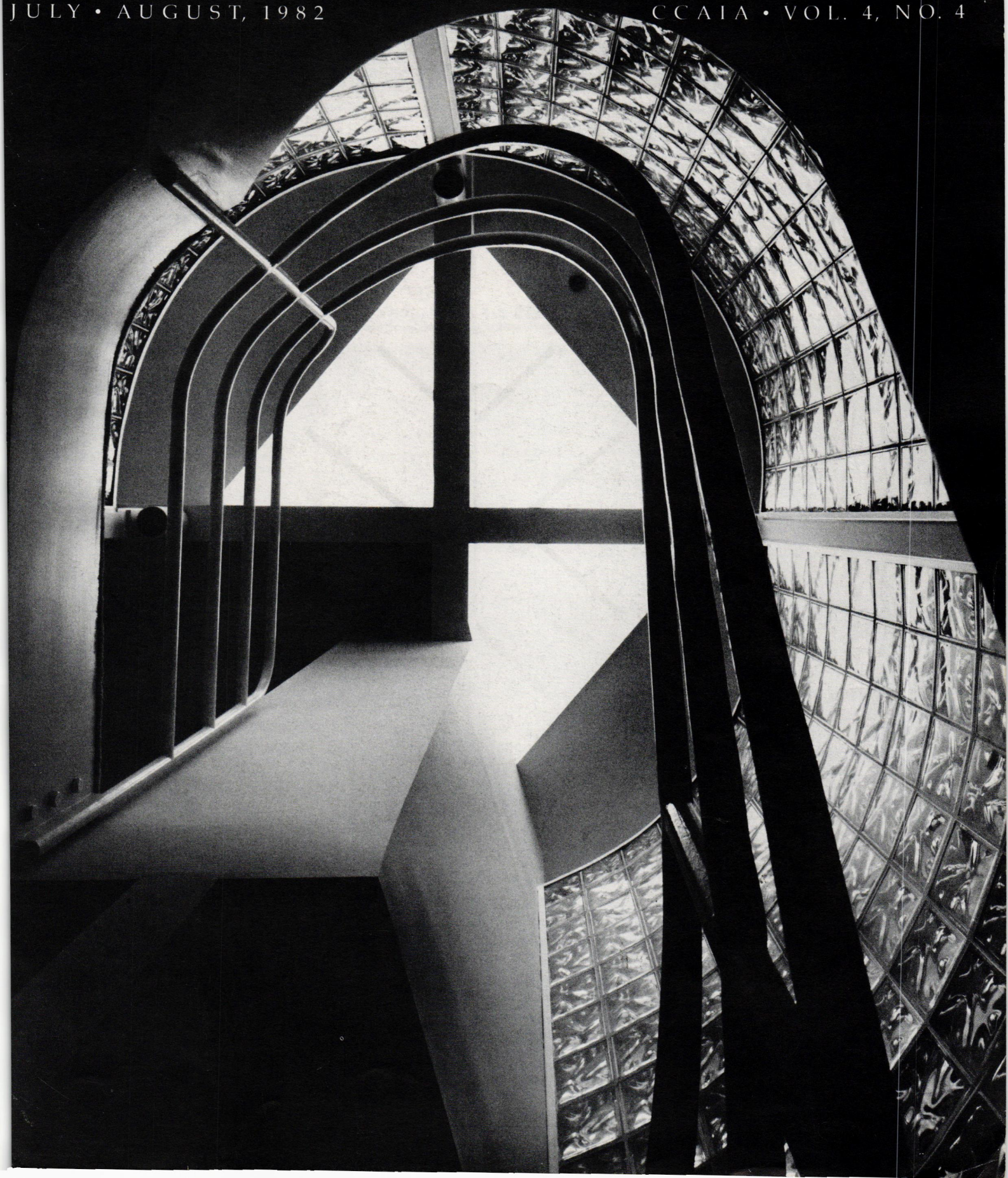
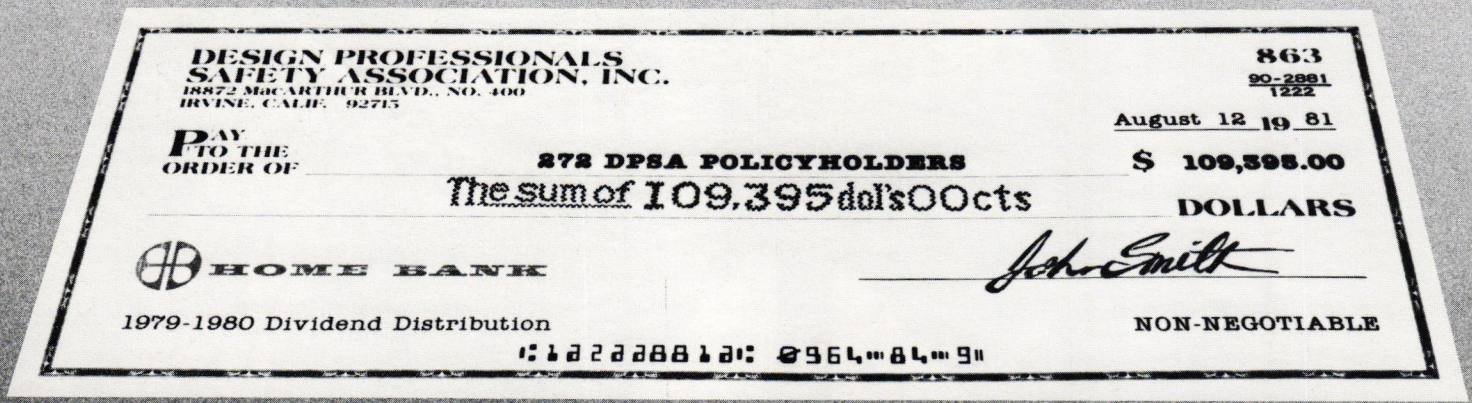


Workers' Compensation Insurance- Some firms save, some don't!



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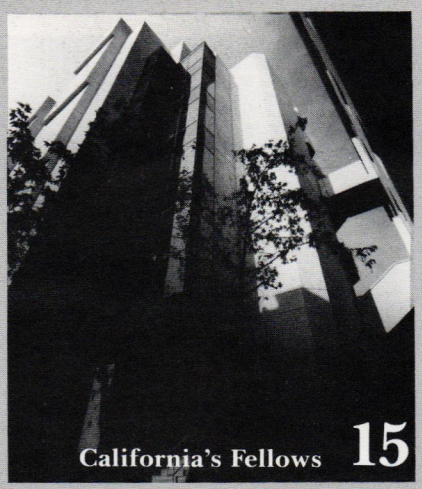

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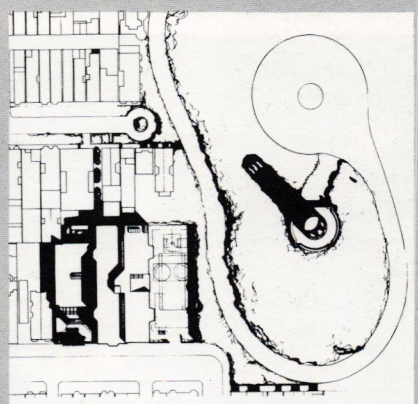

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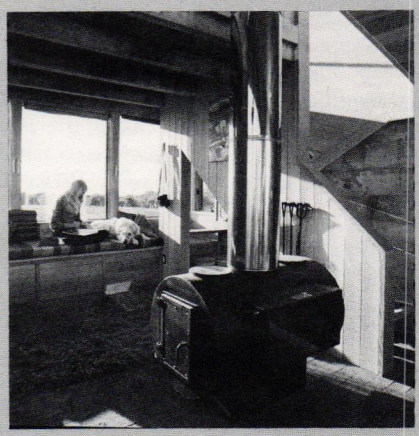

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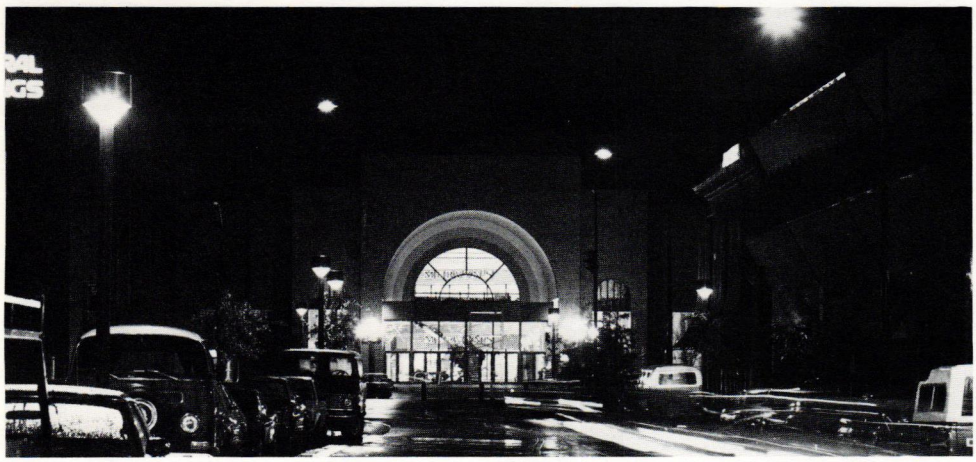


John Jensen

Santa Rosa Plaza, a regional shopping center, is designed to physically and functionally integrate into Santa Rosa's downtown redevelopment, and to play a key role in reestablishing the central city as a major commercial center. The Plaza's 30-acre site links historic Court House Square and Railroad Square, located on opposite sides of the Plaza, by means of a pedestrian passage through the mall and concourse under the five parking garages. The project has an overall construction value in excess of $37 million. The major elements in the Santa Rosa Plaza are a central two-story mall of almost 442,000 square feet, capable of holding almost 130 shops, banks, and restaurants; three major department stores; five three-story parking structures with space for 3,100 vehicles; and a vehicular underpass connecting the main freeway access road with the downtown streets. The shopping mall and garages were planned and designed by Bolles Associates of San Francisco for developer Ernest W. Hahn, Inc.

Frank Pedrick

Thomas K. Butt, AIA was awarded the Meritorious Public Service Award by the U.S. Coast Guard for his leadership in the restoration of the East Brother Light Station at Point Richmond. Mr. Butt founded East Brother Light Station, Inc., the nonprofit corporation that raised funds and coordinated the massive volunteer effort that created a public recreation area on the island where the historic 1874 lighthouse is located. The lighthouse is open to the public and operates as a bed-and-breakfast inn. The restoration serves as a pilot project for adaptive use of threatened lighthouses dotting the nation's coast. The East Brother Light Station just received the 1982 Honor Award from the National Trust for Historic Preservation.

New Design to Collect Winter's Sun

A new design in solar collector cover tubes and absorber may triple heat collection during a typical northern U.S. winter, according to a recent report in *Science News*.

Carlyle Herrick, an engineer at the General Electric Research and Development Center in Schenectady, New York, has modified the traditional flat-plate solar collector, designing optically active elements that are cylindrical in shape. The collector's cover is made of vacuum tubes, similar to those sheathing a fluorescent light, fastened together into panels.

When incident light is normal, tests show that the tubular design increases light collection by 15 percent or more. And as the light's angle of incidence becomes more acute, the tubes become even more effective. The tubular design can almost double the daily light available to the absorber, according to Herrick.

A cavity filled with a mat of black fiberglass sits beneath the tubular cover. Heat collected by the tubes is transferred into warm air circulating through the cavity. A thermally stable, insulating foam backing in the cavity minimizes weight and conductive heat loss. Even during freezing winter weather, when cloud conditions block out three-quarters of the normal solar radiation, the new cylindrical system "delivers heat like gangbusters," Herrick says.

Awards Programs

The first Honor Awards Program will be held by the California Council, the American Institute of Architects, to honor and publicize excellent design in California and to publicize examples of architectural excellence. Any corporate member of the CCAIA may submit projects located anywhere in the United States or abroad. Corporate members of the AIA licensed in other states may submit only projects located in California. Registration information, submission format requirements, and other guidelines are available from CCAIA, 1414 K Street, Suite 320, Sacramento, CA 95814. Phone: (916) 448-9082. Deadline for requesting entry forms: July 23, 1982.

The 1982 CCAIA Commendation Awards Committee now is accepting nominations for the following awards: Excellence in Education, Excellence in Media, Excellence in Allied Arts, Excellence in Technology, and Distinguished

Service. Nominations should be submitted to CCAIA, 1414 K Street, Suite 320, Sacramento, CA 95814, no later than August 20, 1982.

The Naval Facilities Engineering Command is holding the NAVFAC/AIA Biennial Awards Program for distinguished architectural achievement. Entries must be of work completed no more than three years prior to August 25, 1982, in the following categories: medical facilities, family housing, unaccompanied personnel housing, operational facilities, welfare and recreational facilities, improvement projects and energy conservation. Entries must be received no later than August 13, 1982, by the Western Division, Attention: David N. Leslie, Code 401.2, P.O. Box 727, San Bruno, CA 94066. For further information, call (415) 877-7325.

Owens-Corning Fiberglas Corporation now is accepting entries for its eleventh annual Energy Conservation Awards Program. The program recognizes architects, engineers and building owners who have made significant contributions to energy conservation through design excellence in commercial, governmental, industrial, institutional and multi-family residential facilities. Entry deadline is August 27, 1982. Contact: Jane P. DeChant, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, OH 43659, (419) 248-7357.

Architect Applauded in Congress

The work of Patrick Sheehy, AIA was praised in the United States House of Representatives by the Honorable Tony Coelho, Congressman from the 15th District. Citing the recent awards presented by the Inland Empire Chapter of The American Institute of Architects (*Architecture California*, March/April, 1982), Mr. Coelho said, "At a time of budgetary restraint, when every dollar must be spent wisely, it is heartening to me to see an architect create designs that are both pleasing to the eye and serviceable to the public. I applaud the Inland Empire Chapter of the California Council, the American Institute of Architects for recognizing Patrick Sheehy."

Solar Labeling Program

A consumer protection organization is underway to save architects and other solar systems customers both heartache and money.

Cal SEAL, the California Solar Energy Assurance Labeling program, screens contractors doing solar work. Only the most experienced companies receive the Cal SEAL of approval. To merit the Cal SEAL of approval, a company must adhere to a code of ethics and submit to binding arbitration with Cal SEAL, Inc., a nonprofit organization directed by a board representing the plumbing, sheet metal, and solar-only contractor associations, consumers, Western SUN, and the SolarCal Council. To qualify for Cal SEAL, firms must have:

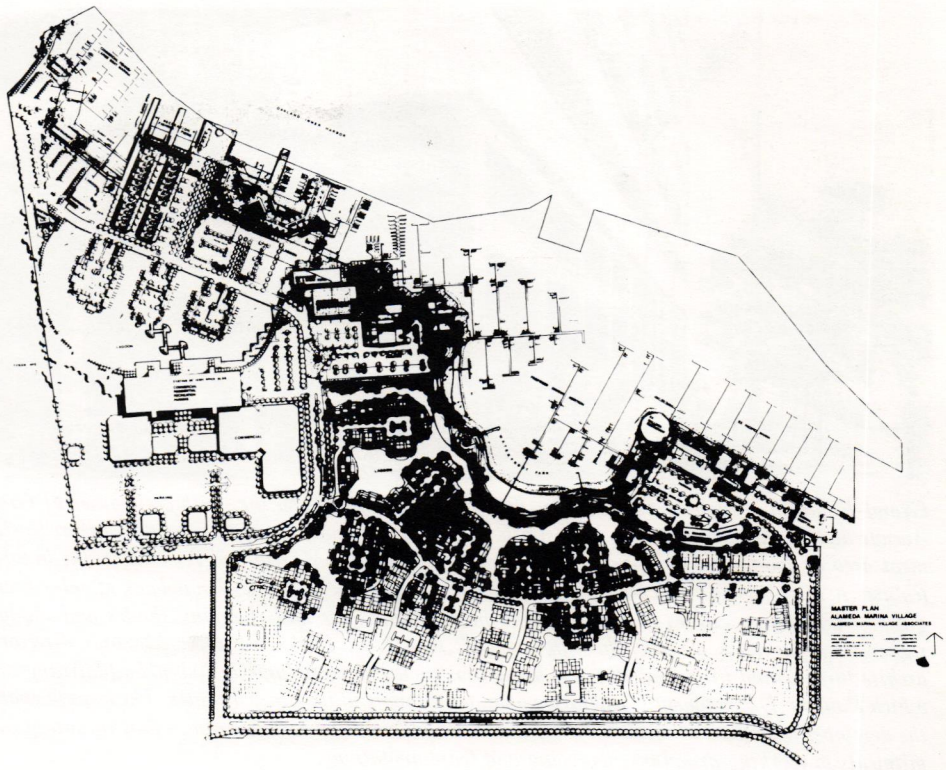
- appropriate licenses;
- a minimum of liability insurance;
- a warranty compliant with the state tax requirement;
- no unresolved customer complaints;
- quality installation experience.

The Cal SEAL-approved contractor agrees to label each solar installation. The label is obtained by submitting an application for each system. After review by Cal SEAL (and occasional field inspections), a label is granted. Customers who are unable to settle disputes with a contractor can call Cal SEAL for help. Rather than lose approved status, a contractor is likely to respond to Cal SEAL arbitration.

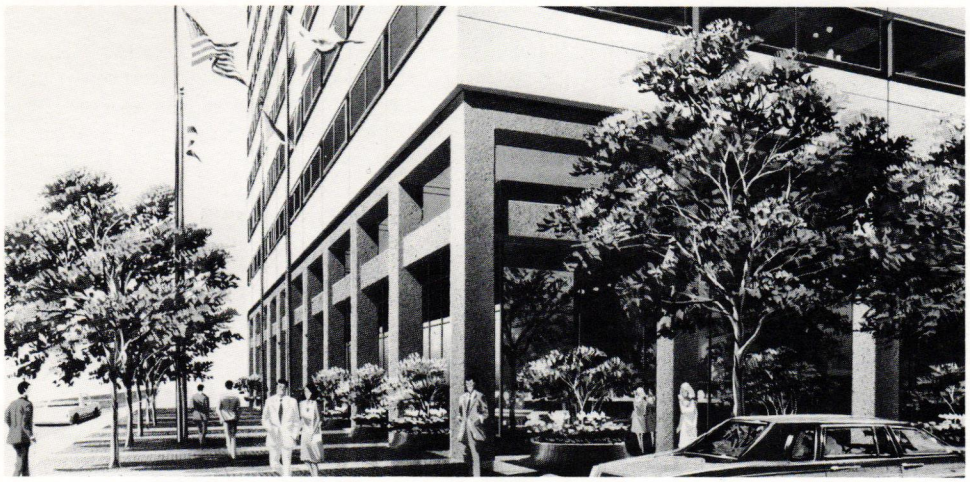
Since the Cal SEAL board selected a warranty insurance program in May, each Cal SEAL label represents a bonded warranty. Even if the installing company goes out of business, Cal SEAL backs the warranty on solar systems for the first critical year. This insurance program also offers the contractor and customer additional coverage to limit the costs of warranty service.

For more information, write to Cal SEAL, 926 J Street, Suite 516, Sacramento, CA 95814 or call (916) 442-6475.

—Robert J. King



Marina Village, a $200 million water-oriented mixed-use development on 206 acres on the Alameda side of the Oakland Estuary, is masterplanned for 1,000 residential units, 300,000 square feet of commercial space, 110,000 square feet of offices and a 600-berth marina. The site once was the home port of the Alaska Packer clipper ship fleet (circa 1893) and a thriving industrial ship building yard in World Wars I and II. The colorful history of the area will be preserved by recycling the existing structures on the site. Residential design is inspired by the Queen Anne Victorian architecture prevalent in the area and by contemporary adaptations of New England "salt box" and Cape Cod architectural styles. A recreational lifestyle is enhanced by a mile of shoreline parks, marina facilities, restaurants, shopping and interconnecting lagoons for boating and pedestrian and bicycle lanes. Architects for the commercial and office buildings are S.G.P.A. of San Diego; residential architects are Fisher/Friedman of San Francisco; masterplan and landscaping is by SWA of Sausalito. Vintage Properties is the developer.



Grand Financial Plaza, a $90 million, 19-story office building on the southwest corner of Grand Avenue and Eighth Street, is the largest office building yet announced in the South Park redevelopment area of downtown Los Angeles. Designed by Albert C. Martin and Associates, the building features a sand-colored, articulated precast concrete exterior with deep-set windows of solar-bronze glass. "The design creates a building with interest and scale and changing shades and shadows rather than one with a slick, flat appearance," says Karl Klokke, FAIA, Martin's director of architecture. Grand Financial Plaza is being constructed under an unique design/build arrangement which Pankow Development Corporation operates throughout the United States. The concept enables the developer to proceed at a much earlier date with construction cost assurances that encourage commitments to working drawings, financing and lease quotations.

Triton Museum of Art Design Competition

A Master Plan for new facilities for the Triton Museum of Art is jointly sponsored by the National Endowment for the Arts, Design Arts Program and the Triton Museum. Winner of the on-site charette will have the opportunity to negotiate a contract for architectural services to develop the Master Plan. A tentative budget of $2–4 million has been established for the construction, scheduled to begin in the spring of 1983.

Eligibility is limited to architects who practice in the San Francisco Bay Area, and who are licensed in California. Five architects will be selected to participate in a three day on-site charette. Competition prizes are a $3,000 first prize and a $1,000 runner-up prize for each of the other four participants. Deadline for application: September 1, 1982. Winner will be announced October 18, 1982.

For further program information, contact William H. Liskamm, FAIA, AICP, (415) 433-7626.

A Quest in Time

"A Quest in Time" was an appropriate theme for The American Institute of Architects 125th Anniversary Convention held in Honolulu, Hawaii in June. It was the first AIA Convention ever held beyond the shores of the continental United States.

About 3,000 members and guests attended three major theme presentations that challenged the profession to look beyond the present and begin planning for the future. B. Gentry Lee, Chief Engineer of NASA's Jupiter Project and Series Manager of the PBS "Cosmos" program, told a captivated audience how space technology and the climatic conditions of the planets impact present and future generations, and speculated on the feasibility of design and construction projects in space. Joseph MacInnis, M.D., leader of the SUBLIMNOS and SUB-IGLOO Projects and series host of CBS-TV's program "The New Wave," discussed how oceanography will influence the near future of the earth, the environment, and architecture. The last theme presentation, delivered by Dr. Gerard O'Neill, Professor of Physics at Princeton University and author of *2081, The High Frontier*, concerned emerging technologies and their impact on the future environments.

Delegates to the business sessions adopted three resolutions, including one written by the CCAIA which urges the United States government to assume a leadership role in achieving total nuclear disarmament and to direct its strongest diplomatic efforts toward attaining world peace through cooperation, brotherhood, and mutual respect.

Delegates adopted a resolution submitted by the Los Angeles Chapter, AIA and cosponsored by the CCAIA to establish an Associate Member Task Force to identify, review and represent Associate goals and programs. Also adopted was another CCAIA resolution requiring the National AIA to assign a representative from an appropriate commission to review the issues of concern to the National Council of Architectural Registration Boards (NCARB) and its member state boards, and to recommend appropriate courses of action to the AIA Board of Directors.

The CCAIA withdrew three resolutions from consideration. A resolution asking National AIA to revise its budget format was withdrawn after the AIA Board of Directors decided to implement a budget format substantially similar to that used by the CCAIA. Two other resolutions concerning Directions 80 were withdrawn after delegates adopted the Directions 80 Report. A resolution submitted by the East Bay Chapter, AIA concerning environmental quality, affordable housing, and community development was withdrawn after the AIA Board of Directors reaffirmed its policies in these areas. A CCAIA resolution asking for a study on a graduated or categorized dues structure was defeated.

The only non-California resolution to reach the floor of the Convention was submitted by the Portland Chapter, AIA. The delegates adopted this resolution which expresses the AIA's support for prompt enactment of a National Scenic Area designation for the Columbia River Gorge.

In a major action, delegates adopted the report and recommendations of the Directions 80 Task Force. The Task Force, established as a result of a CCAIA resolution in 1980, was created in a national dialogue with the membership to define the future goals of the AIA, and the appropriate roles of national, regional, state and local components. The report recommends numerous changes in the responsibilities of AIA components, including broadening the membership of the AIA by establishing a public membership category of the AIA Foundation, and transferring the primary source of direct membership services from the national to the local components. The AIA Board of Directors now must develop a process to implement the report.

Regarding the election of officers, George M. Notter, Jr., FAIA of Boston was elected to the office of First Vice President/President-Elect. Leroy E. Bean, FAIA of Sioux Falls, John A. Busby, Jr., FAIA of Atlanta, and R. Bruce Patty, FAIA of Kansas City were elected as Vice Presidents. Harry Harmon, FAIA, a member of the Los Angeles Chapter, AIA, was elected Secretary.

Paul W. Welch, Jr.

SAFE-BIDCO, Fund for Energy

Architects who open new frontiers of energy-sensitive design and planning often find one ultimate barrier to their innovations: financing. Now there's a new corporation, backed by the State of California, which may help.

SAFE-BIDCO, Fund for Energy, set up shop late last year as a "business and industrial development corporation"—BIDCO. BIDCOs are chartered and supervised by the State Banking Department as lenders who specialize in small business financing.

SAFE-BIDCO has taken this a step further, specializing in small *energy* businesses. SAFE-BIDCO was set up by legislation authored by Senate President Pro Tempore David Roberti. Its charter is to provide loans to small but creditworthy businesses when banks will not. (SAFE stands for State Assistance Fund for Energy.)

The first loan applications to go through SAFE-BIDCO indicate that architects could be an important target group for the corporation. Among these loans are two which will finance purchase of and leasehold improvements for the offices of architects who are leading exponents of passive solar energy design. One project, if funded, will create an example of energy-efficient remodeling of old commercial space.

The corporation is chartered to make loans to small businesses which are providing alternative energy sources, defined as energy conservation, active or passive solar heating and cooling, solar electric, co-generation, wind or geothermal energy conversion, small hydroelectric, and energy from waste, crops or other biomass, among others.

When is an architect in the energy business? Probably when 75 percent of the architect's practice is dedicated to passive solar energy design.

The corporation also will consider loans to small businesses in any field,

by Mark Braly

if the purpose of the loan is to reduce conventional energy use. Thus, SAFE-BIDCO might finance the construction of a new commercial building which is super energy-saving and innovative in design, or provide capital for leasehold improvements which achieve the same result. The building should be a project of the small business itself, not of real estate developers.

SAFE-BIDCO seeks Small Business Administration guarantees for the great majority of its loans and is, therefore, bound by SBA regulations and policies.

With SBA guarantees, SAFE-BIDCO will be able to bring in private dollars to supplement its state loan fund in a ratio of nine private dollars to each public dollar. This is done by selling the guaranteed portion of the loans to private investors.

The corporation does not make subsidized loans. Its interest rates are similar to what applicants would get from banks—as much as 2 percentage points floating above prime. Many banks, if they make the loan at all, may charge more.

The advantage of the SAFE-BIDCO is that it will provide longer-term loans than most banks currently will give their small business customers. The terms are up to seven years on working capital, up to ten years on equipment, and up to 25 years for commercial real estate purchase.

Current loan limits are $550,000. Typical applications are for less than $200,000.

The corporation is, however, launching a special small loan program for small businesses that want to invest in various energy conservation improvements to reduce their utility bills. Loans in this program will be as low as $2,500 and are for shorter terms—up to 18 months. The program is being run in conjunction with a Pacific Gas & Electric program that encourages businesses to convert to more efficient lighting systems by reimbursing up to 50 percent of the cost. SAFE-BIDCO finances upfront costs for this special project only. The program will be expanded to cover other types of conservation improvements as utilities expand their rebate programs.

Mark Braly is president of SAFE-BIDCO. Operating throughout the state, SAFE-BIDCO is located at 2021 N Street, Suite C, Sacramento, CA 95814. Phone: (916) 442-3321.

Residential Energy Standards

by Lee J. Goldin and Arturo Gándara

Four years ago, the California Energy Commission (CEC) initiated proceedings to develop new residential energy standards. All segments of the building industry helped develop the standards through extensive public hearings. The new standards were approved by the State Building Standards Commission in September, 1981, and slated to go into effect on July 13, 1982.

But four separate bills are pending in the California legislature to postpone the effective date of the standards by up to two years. A media blitz, led by the California Building Industry Association (CBIA), is underway to convince Californians that the energy standards are expensive and may be unnecessary. Since the residential energy standards have a vital impact on the practice of architecture in California, ***Architecture California*** *invited CBIA president Lee J. Goldin and CEC Commissioner Arturo Gándara to answer questions raised about the new standards.*

How will the energy standards affect housing costs?

CBIA: CEC says the new residential energy standards will save California home buyers millions of dollars in fuel costs over the next 30 years. What it doesn't say is that the new standards will add $3,000 to the cost of a typical production home built 95 percent of the time in this state. That means it will take 10 to 15 years before a new home buyer's utility bill savings will offset higher mortgage payments.

The only kind of home that will cost $1,900 or less for additional energy conservation features is a passive solar home with half of its slab floor left uncarpeted to act as thermal mass. Passive solar homes can be built on only 60 percent of the available lots in the state, and are built less than five percent of the time. Using CEC assumptions of 13 percent interest rates, tax credits, and $1,900 in added purchase costs, utility bill savings would offset the added costs for a passive solar home in five years in Fresno, eight years in Oakland, and 10 years in Sacramento, according to CEC staff testimony at the June 12, 1981 hearing.

At a time when only seven percent of this state's households can afford a conventionally financed, median priced home, increasing a home's operating costs for the first 10 to 15 years of ownership makes little sense. What makes even less sense is the nonexistent cost benefit to the typical California householder who stays in that home for only seven years.

The average price of new homes in California has risen 200 percent in the past 10 years, to $120,000. Recent studies by the United States League of Savings Associations show that for every $1,000 increase in the price of a new home in the affordable range ($60,000 to $80,000), over 80,000 households are priced out of the home market. Adding $3,000 to the cost of a new home for energy conservation features hurts consumers and hurts a housing industry that Senate President Pro Tempore David Roberti has said is "in a state of depression which threatens to drag the rest of the economy down with it." Representatives of major lending institutions have told CBIA that lenders will not change loan qualification requirements simply because higher-priced homes are more energy efficient.

CEC: Based on cost data supplied by CBIA under contract to CEC, 82 percent of new homes could meet the standards for additional purchase costs of $1,900 or less. This is only about one to three percent of the typical new home selling price in an era when prices have been increasing 16 percent per year. Even at 17 percent interest rates, this amount amortized over 30 years adds only about $27 to monthly mortgage payments.

Although the standards do increase direct monthly housing costs, the savings they produce in utility bills exceed these costs within one to two years. In reality, the standards will make housing *more affordable* to those who can least afford rapidly rising energy bills—buyers of $60,000–$80,000 houses. Providing these home buyers with less efficient homes simply means that the owners will have no protection as utility bills become a dominant housing cost.

The new standards may, in fact, increase new home sales. Faced with rapidly rising utility rates, new home buyers increasingly will demand energy efficient housing. The new standards will reduce utility bills as much as 50 percent compared to currently built homes and 75 percent compared to older homes.

Lenders universally agree that the costs of the standards are too small to negatively affect their lending procedures. Under traditional lending practices, only 1,000 potential buyers would be priced out of the market by a $1,000 price increase, rather than the 80,000 claimed by CBIA. Both primary and secondary lenders, however, have begun to consider the positive effects of energy conservation features in their lending practices—effectively increasing the number of qualified borrowers. Innovative builders and lenders have been working together to market energy efficient housing for several years.

Will the energy standards save energy?

CBIA: Homes built under present energy standards adopted by CEC in 1977 already must be fully insulated and weather stripped. CEC attempts to create the impression that the new energy standards will create a 75 percent saving of energy used in existing houses. Part of this phantom savings results from CEC's double counting which includes savings *already* achieved. By CEC estimates, current homes are 50 percent more energy efficient than those built prior to 1975. Where is the urgency for new standards that theoretically will increase energy efficiency by another 25 percent at such a high cost to the consumer? It's the law of diminishing returns. Consumers will be spending more to save a smaller chunk of their utility bills.

The energy savings from such energy conservation features as double pane windows, R-30 ceiling insulation, R-19 wall and floor insulation are theoretical. The need for them is based upon CEC computer calculations that have not been field tested. No actual proof exists to show how much energy they will save or if, indeed, they are necessary.

CEC: The computer models used by CEC were supported by virtually all participants in the standards hearings, including CBIA. It seems inconsistent that CBIA questions use of these models here while their members continue to use the very same models. Of course, actual energy consumption can vary from computer predictions if occupant behavior differs widely from that assumed in the model. But we have found in recent field tests that actual energy use, when averaged across several houses, agrees with predicted energy consumption within about 10 percent. This small variation has no significant effect on the cost-effectiveness of the new standards.

Do the energy standards affect indoor air pollution?

CBIA: Increased indoor air pollution will occur due to "tighter" houses required by the new standards. The effect on the home dweller's health of increased concentrations of formaldehyde, radon, tobacco smoke, indoor combustion products, micro-organisms, allergens and moisture has been studied recently by both the National Academy of Sciences and the California Department of Consumer Affairs. Neither group has a solution to the indoor air pollution problem.

CBIA expressed concern during CEC hearings that air-to-air heat exchangers required in conventional homes in four climate zones may be neither available nor maintainable—only one distributor markets the device in California. If an air-to-air heat exchanger is out of service, the air change rates in that home can go below the minimum value for safe air

quality recommended by Lawrence Berkeley Laboratory.

CEC: During the rulemaking proceedings, CBIA actually took a stand contrary to its current position and supported *more* restrictive air infiltration standards, and argued against the requirement for air-to-air heat exchangers in "tight" buildings. The new standards, in fact, maintain air infiltration rates typical of current state and national levels. Experts from Lawrence Berkeley Laboratory, the pre-eminent research laboratory on indoor air pollution, testified that the new standards are far too conservative to impose health risks on building occupants.

Can the energy standards be enforced?

CBIA: As of July 13, 1982, the responsibility for allowing any new home to be built in California will fall upon local building officials who have little or no understanding of the new standards. Normally, two years pass between the publication of a building code standard and its adoption at the local level. Building officials had only *three months*—April through June—to be trained to enforce the most complex and far-reaching changes ever made to the building code.

Even though the standards were approved in January, training was delayed until April, awaiting CEC production of the main working documents, one Energy Conservation Manual for each of 16 climate zones. The CEC currently is producing an errata sheet that makes some information in the current manuals no longer satisfactory to meet the new standards.

For example, a builder in Pixley, California who follows the current Appendix 3, Climate Zone 13 example will not meet the new standards—the errata sheet will change the value of the shading coefficients used in the example. This means even builders and building officials who've been minimally trained or who are using the current manuals may be building or approving homes which do not meet the standards.

There are 16 different sets of standards for officials to cope with, one for each California climate zone. But there are five different climate zones in Los Angeles County, four in San Diego County, three in eight other counties, and two in seven more counties. Within each set of the 16 different standards, there are five different ways to comply with the standard. Each of the five ways will result in different requirements to meet the same standard. So in Los Angeles County, for example, there are 25 ways to meet the standards.

Local building officials, inspectors, and plan checkers must understand *all* of these methods. City and county governments statewide already are strapped for cash. The new procedures will be costly to administer, interpret and implement. Who will pay for the added manpower and training needed?

CEC: The new standards were adopted in June, 1981. More than one year will have passed before their effective date—longer than is typical for other changes to the State Building Code. Statewide training programs for the standards already are in operation for building officials, architects, and heating and cooling system installers, and statewide community colleges are offering the general public courses on the standards. CBIA, however, has refused a CEC contract to train its membership and has attempted to discourage participation by its chapters.

The climate zone boundaries and compliance methods resulted from public requests. The counties helped define the climate zones. CBIA and other participants requested several ways to comply for the sake of flexibility. CBIA now unfairly characterizes flexibility as complexity.

The standards permit compliance through a prescriptive *or* performance approach. The prescriptive approach requires the builder to include a set of measures in one of several Alternative Component Packages predetermined to meet the energy budget. The performance approach allows the builder to use any combination of measures that can be demonstrated to meet the energy budget. Many builders will use the easier, but less flexible, prescriptive approach and have no need to use the performance approach. Builders and designers, however, wanted the performance approach

to increase design flexibility.

CEC developed the "point system," as requested by CBIA; to provide a simplified performance compliance method. The point system reflects extensive CBIA and other public input. It provides the simplest, most accurate, and most comprehensive home energy analysis tool available today. A builder simply looks up point values associated with each design feature and measure of a given house and adds up the points. If the score equals or exceeds zero, the house design meets the standards. For the added flexibility, the builder need only spend several minutes looking up numbers, writing them on a one-page checklist, and totaling them.

Are there alternatives to the new energy standards?

CBIA: As an alternative to the disaster that will occur if the new standards are implemented July 13th, CBIA is seeking a two-year delay and is proposing to construct test homes in representative housing developments around the state to confirm CEC computer projections of energy savings.

Each set of homes would be oriented identically and all homes would be occupied. Some would be built to existing standards, some to new standards, some would conform to CBIA energy policy guidelines, and others to standards working successfully in other states. The energy consumption of all homes would be measured by separate metering of the heating, cooling and domestic hot water systems. CBIA believes that conventional homes built to our specifications can be shown to meet the CEC's performance budget based upon measured energy consumption. This goal can be reached at a lower cost and with much less complex and more flexible standards than those presently scheduled to go into effect. If the present standards go into effect July 13th, the greatest energy savings will come from homes that won't be built.

CEC: CBIA's proposal cannot substitute for the totally public proceeding used to develop the standards. All segments of the building industry, public interest groups, and building departments provided expert advice in developing the standards.

CBIA can take advantage of the standards' flexibility to build by its energy policy guidelines. CBIA can use them to develop its own Alternative Component Package or use any of the performance approach compliance methods.

All Californians will suffer if the standards are delayed two years. Such a delay would lock several hundred thousand home buyers into unnecessarily energy inefficient homes. These homes would consume additional energy equivalent to two million barrels of oil per year in unnecessary energy costs. Over 10 years, homes built during a proposed two year delay period would cost Californians nearly $1 billion in additional energy expenditures. CBIA cannot justify this economic burden or, in good conscience, ask the legislature to impose it on state consumers.

Winners and Losers—the Politics of Energy Policy

by Charles Eley, AIA

The new residential energy standards scheduled to take effect this year are the latest upshot of California's energy policy. Like love and war, there are few rules in the game of energy policy making.

Within the California Energy Commission, there are no requirements for players, although your chances of winning are vastly improved if you can claim a constituency, speak in technical prose, appear to have political clout, project an image of altruism and have an ample source of funds. Everyone in the building industry is encouraged to play the policy making game in spite of the expense, since the odds are against you if you remain on the sidelines.

The traditional justification for standards—rules in general—is that they offer an overall positive benefit to society; that, in the end, there will be more winners than losers. But some sectors of the building industry, specialty contractors and product manufacturers view the development of energy standards as a zero-sum game, with just as many losers as winners.

The clear winners among the manufacturers and specialty contractors are those whose products are favored by the standards: insulation, caulking and sealants, masonry products (thermal mass), glass doors for fireplaces, air-to-air heat exchangers. The clear losers are the manufacturers and specialty contractors whose products are discouraged by the standards: electric resistant heaters, pre-manufactured log homes, etc.

Architects and engineers are also winners, since the standards recognize *design* as an important factor in energy performance. Passive solar design services, for instance, are now free to compete with insulation and other material products in the quest for energy conservation.

The issue raised by the California Building Industry Association (CBIA), however, questions the fundamental justification for the standards and predicts more losers than winners. It is difficult to mediate the squabble between CBIA and the California Energy Commission on the cost-effectiveness of the energy standards. It is possible to spend as little as $800 to comply with the standards, but compliance could cost $3,000 or more. That is the nature of performance standards which, like these, impose no specific requirements. There is an inherent wide range of cost, depending on site constraints, the building program and the ingenuity of the designer. Analyzing the latest claims on cost is nearly impossible, since the issue has been elevated to the legislature—a different arena with a completely different set of rules, less analytical rigor and more old time politics.

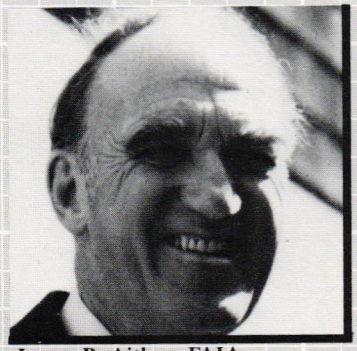
The crux of the issue is really housing affordability, and it is not fair to place this entire burden on the shoulders of the Energy Commission. Unfortunately, the energy standards arrive at a time when the housing industry is depressed. Housing is expensive in California because of many complex reasons, not the least of which is the speculative market of recent years. The issue of affordable housing should not be associated directly with energy conservation. Of all the state and local building standards, none have passed a more rigorous test of cost-effectiveness than the new residential energy standards.

The new standards will, in the very near future, increase the market for new housing by lowering the cost of home ownership. This will increase the market, and we will all be winners. In the meantime, the best strategy for all of us in the housing industry is to address the fundamental problem of affordable housing. Rather than lament the energy requirements, let us pursue new and imaginative solutions to the problem of affordable housing with the tool we know best—architectural design.

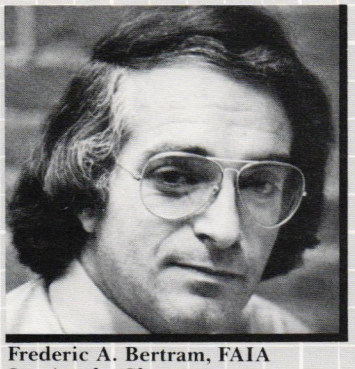
Charles Eley, AIA maintains an architectural and consulting practice in San Francisco, specializing in energy policy analysis and computer modeling. He serves as Energy Consultant to the California Council, the American Institute of Architects.

CALIFORNIA'S FELLOWS

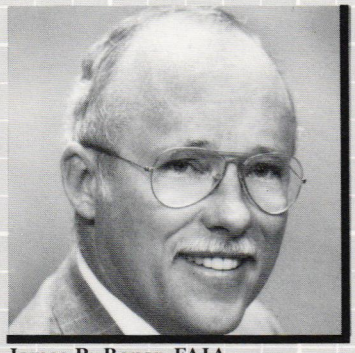
Sixteen California architects became Fellows of The American Institute of Architects at its 1982 Convention in Hawaii last month. Fellowship is conferred on AIA members who have made significant contributions to the advancement of the profession in the areas of architectural practice, construction, design, education, government or industry, historic preservation, literature, public service, research, service to the profession or urban design. ***Architecture California*** *salutes California's honored architects with a portfolio of projects.*



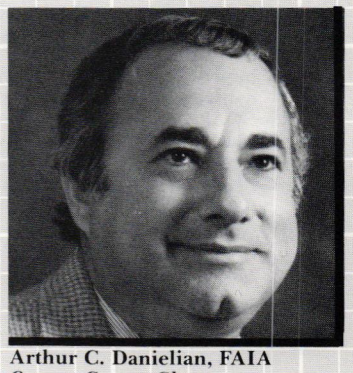
James B. Aitken, FAIA
East Bay Chapter



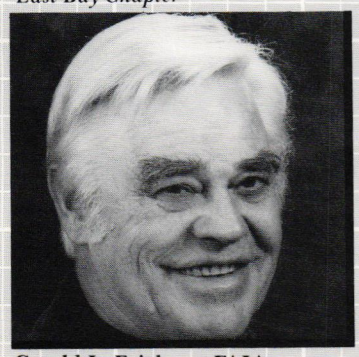
Frederic A. Bertram, FAIA
Los Angeles Chapter



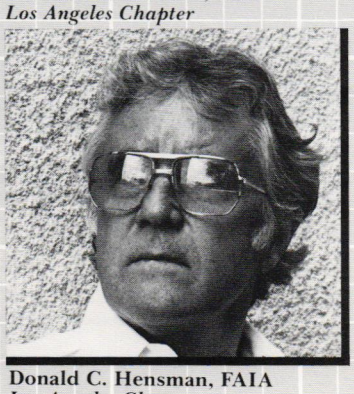
James R. Bonar, FAIA
Los Angeles Chapter



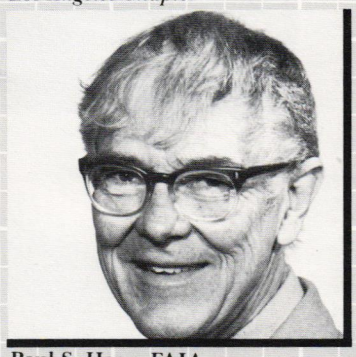
Arthur C. Danielian, FAIA
Orange County Chapter



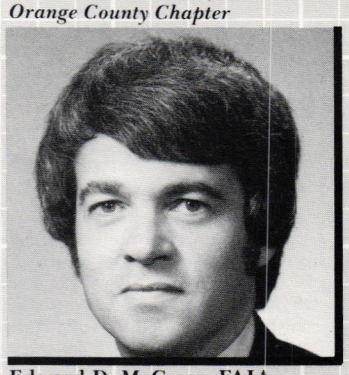
Gerald L. Erickson, FAIA
Santa Clara Valley Chapter



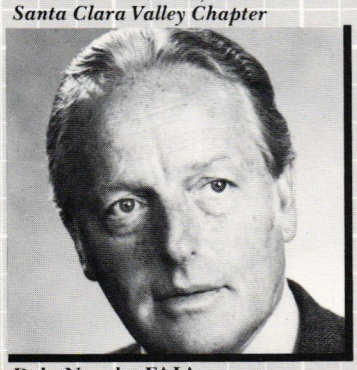
Donald C. Hensman, FAIA
Los Angeles Chapter



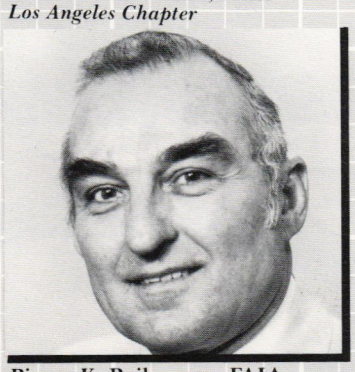
Paul S. Hoag, FAIA
Los Angeles Chapter



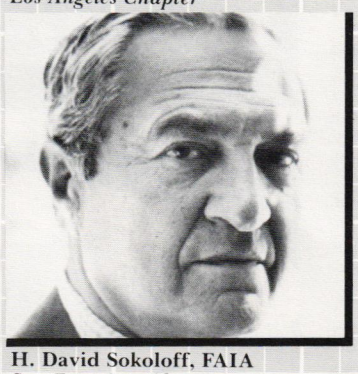
Edward D. McCrary, FAIA
San Francisco Chapter



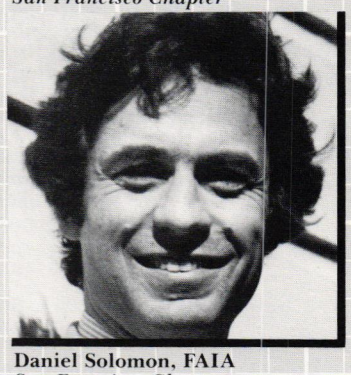
Dale Naegle, FAIA
San Diego Chapter



Piercy K. Reibsamen, FAIA
Los Angeles Chapter

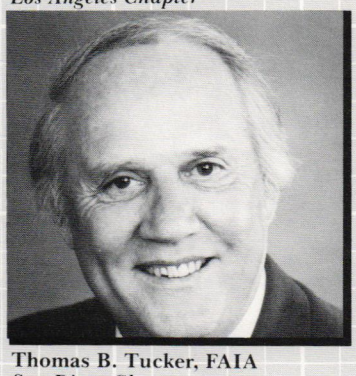


H. David Sokoloff, FAIA
San Francisco Chapter

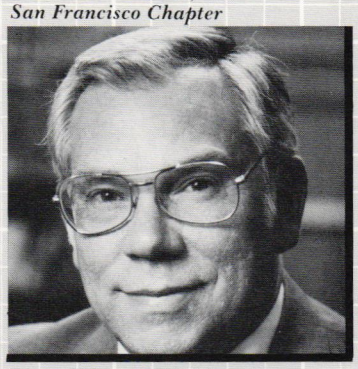


Daniel Solomon, FAIA
San Francisco Chapter

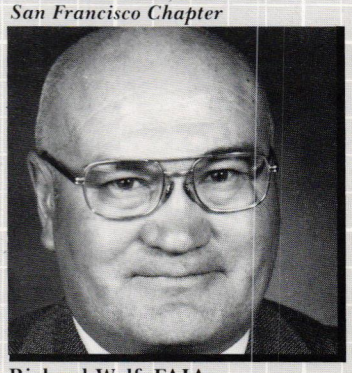
Goodwin B. Steinberg, FAIA
Santa Clara Valley Chapter



Thomas B. Tucker, FAIA
San Diego Chapter



Dean F. Unger, FAIA
Central Valley Chapter



Richard Wolf, FAIA
San Francisco Chapter

Molecular Biology Institute, University of California, Los Angeles

The Molecular Biology Institute, containing the Parvin Foundation Cancer Research Center, is a major scientific research and teaching facility for which the fundamental design criterion was to provide the finest, most up-to-date and flexible research laboratory facility possible. The basic premise was to move all "fixed" nonlab uses to the periphery of a lab cluster and to provide flexibility in equipment and mechanical services in order to permit optimum use of these sophisticated laboratories regardless of what future directions research might take. The exterior design directly expresses the functions within. Lab clusters are seen with their mechanical chases on the exterior, which progressively step back as they descend, reflecting the reduced amount and size of supply and exhaust lines as they descend from the mechanical spaces on the top floor.

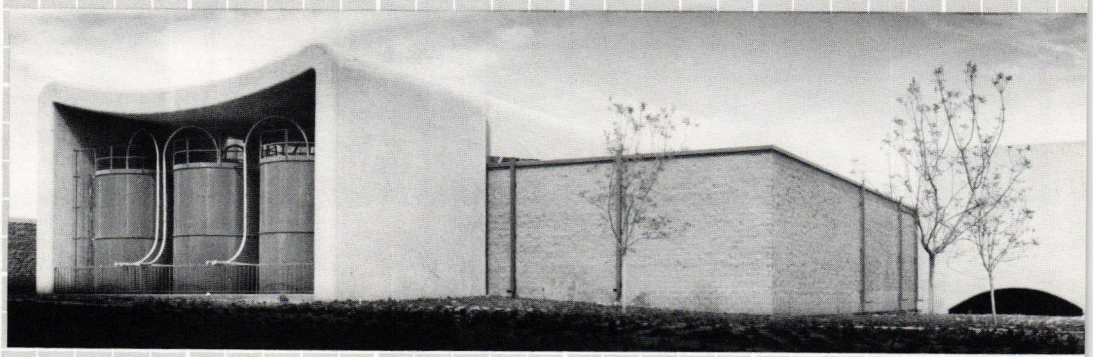
Piercy K. Reibsamen, FAIA
Reibsamen, Nickels & Rex Architects

Wayne Tho

Becton-Dickinson's Falcon Plastics Plant, Oxnard

The 270,000-square-foot plastics plant's soft corners and curves express the fluid nature of its molded medical products. Curved forms also screen rooftop air handlers and form canopies over silos. We selected various flowering trees which bloom sequentially year-round to plant outside the office windows opening onto three interior garden courts. Machinery groups were color-identified to encourage self-identification of small work teams. In competition with 1,500 entries, this building was selected as one of the "Top Ten Plants of 1970," the only unanimous choice of the judges and the only California winner. The award was given for functional efficiency, flexibility, aesthetics and economy of construction.

Paul Sterling Hoag, FAIA
Paul Sterling Hoag, Inc.

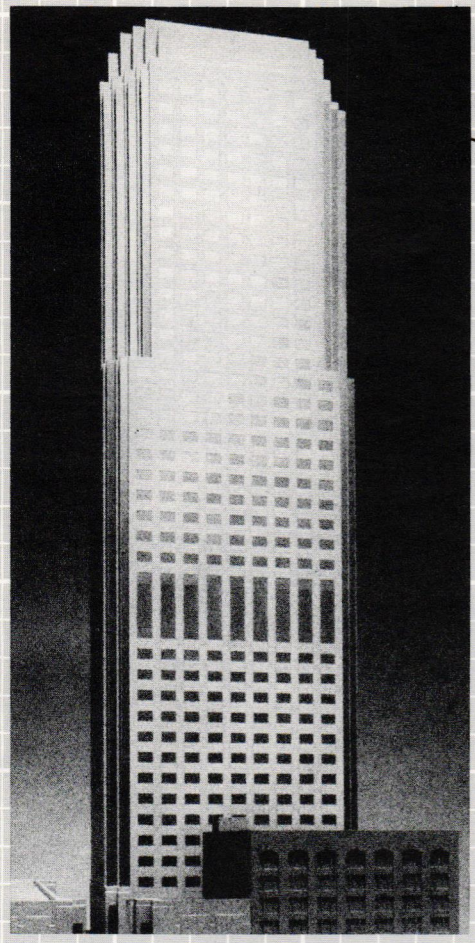


Richard F

South Bay Regional Center, Chula Vista

Houses of detention and courtrooms are historically cold, stark and uninviting. They usually instill a sense of fear, distrust and depression in both the inmate and the surrounding community. We sought to reverse this image in our innovative design for the 350,000-square-foot South Bay Regional Center. Park-like landscaping acts as a buffer between the building and the community, while easing the anxiety of the Center's pedestrian traffic. A skylit garden atrium lobby area serves as the focal point for the courtrooms centered around it. All of the 400-inmate-capacity detention units receive natural light, and each has a view of a naturally landscaped environment.

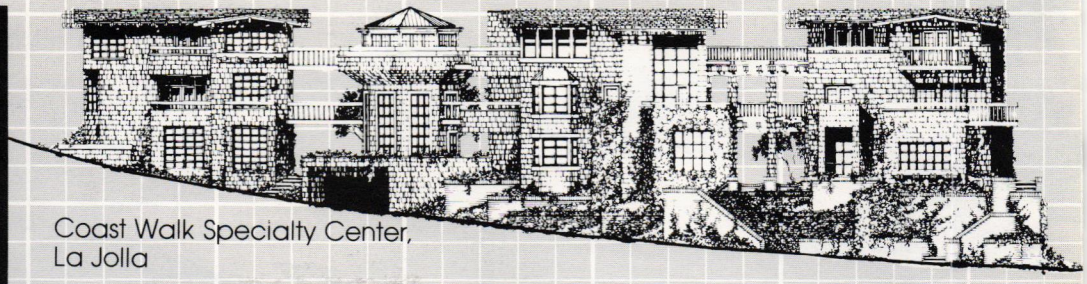
Thomas B. Tucker, FAIA
Tucker, Sadler & Associates



Five Fremont Center, San Francisco

This 42-story office tower has a total area of 950,000 square feet. The exterior facade of Italian travertine marble and silver reflective glass with continuous vertical "prisms" at the tower's corners creates ever-changing patterns of light and shadow. The base of the tower is framed in polished black African granite. The building features advanced life-safety systems, underfloor telephone and electrical ducts, and ceiling-mounted air-conditioning units.

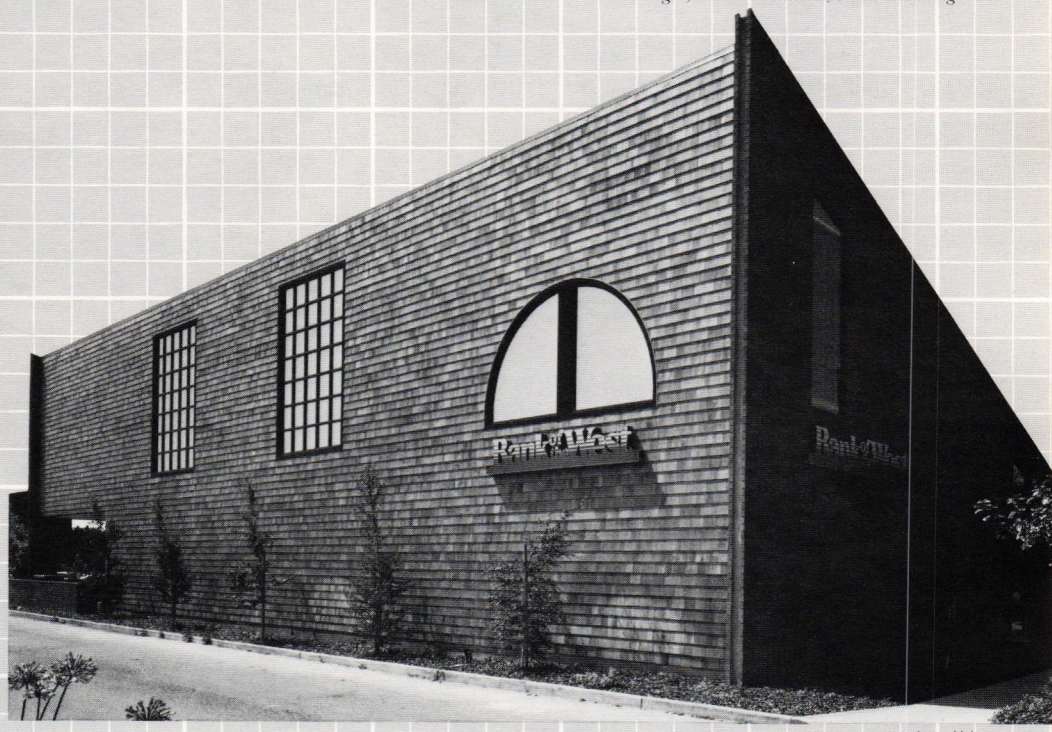
Edward D. McCrary, FAIA
Skidmore, Owings & Merrill



Coast Walk Specialty Center, La Jolla

The design of Coast Walk carefully blends the new structure into the fabric of the existing village community. Constructed over a hidden underground parking structure, Coast Walk steps its way up the hill in a multi-faceted series of residential-scale shops and offices, on three different levels, culminating in a single-story facade opening onto the village street above, with its sidewalk restaurants, shops and boutiques. The Coast Walk shops are oriented around two centrally located, three-level courts that provide circulation as well as "see-through" to the cove and ocean beyond.

Dale W. Naegle, FAIA
Dale Naegle, FAIA Architecture and Planning

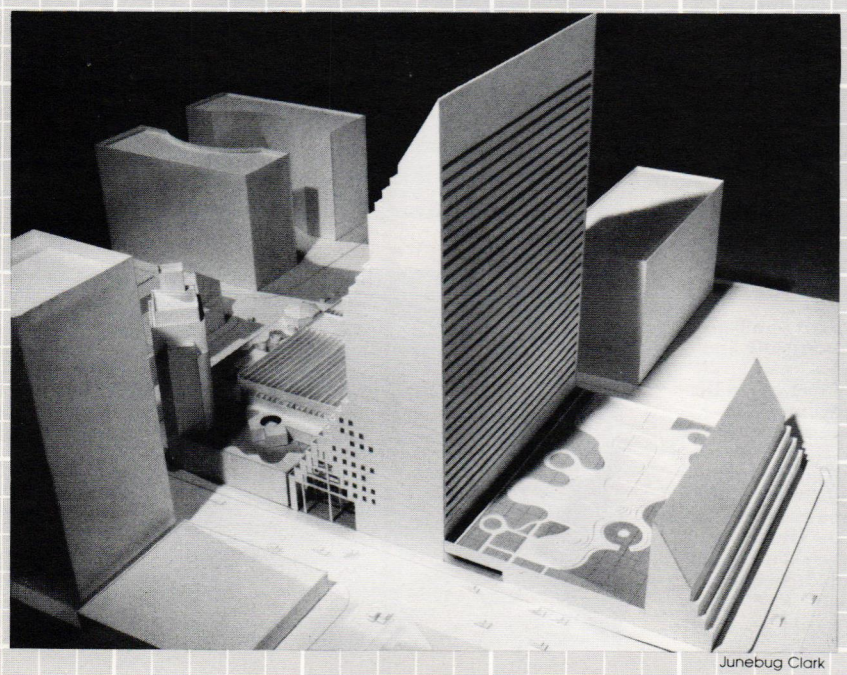


Jane Lidz

Bank of the West, Fremont

This small bank building maintains its identity among its larger neighbors while remaining in harmony with architecture of the surrounding center through its site orientation and strong geometric form. With the exception of the shingle siding, the exterior materials, details and streetscape were borrowed from the surrounding buildings. The officers' area is small-scaled, intimate space with low ceilings and a general living-room ambience. The tellers' area and work stations are located in a lofty, north-lighted space crossed by a small bridge carrying the climate system, teller line lighting and interior planting.

Gerald L. Erickson, FAIA
Higgins & Root Associates, Architects, A.I.A.



Junebug Clark

The Wiltern Center, Los Angeles

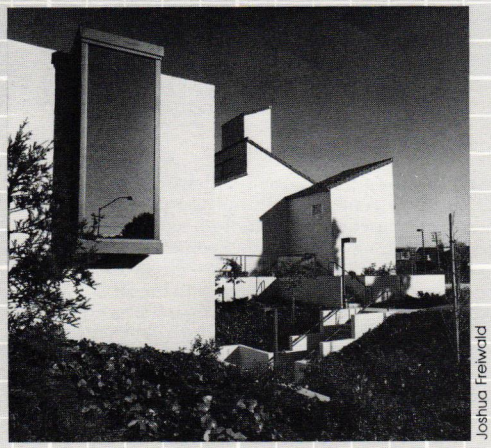
The 12-story, 76,848-square-foot Pellissier Building and the 2,344-seat Wiltern Theatre were built in 1931, and both are listed in the National Register of Historic Places and designated as Cultural Historic Landmarks by the City of Los Angeles. The existing buildings will be complemented by a major, new development in a two-phase project. Phase I is the restoration of the existing buildings and Phase II is the construction of a 30-story, 850,000-square-foot office building. The Wiltern Theatre will be renovated for multi-functional cinema, legitimate theater and concert-hall use. The 4.4-acre site includes an entire city block in the mid-Wilshire area. The primary design objective is to integrate the new buildings with the existing and to create one identity for the entire project.

Frederick A. Bertram, FAIA
Rossetti Associates

Los Angeles Community Design Center Projects, Los Angeles

Many of the Los Angeles Community Design Center projects, directed by James Bonar, FAIA from 1972 to 1981, involved the adaptive reuse of old, sometimes derelict buildings to the current needs of the low- and moderate-income residents of the inner city. One example is the housing under construction for the Skid Row Development Corporation. In this project, Community Design Center staff architect Ron Silveira, AIA converted three former warehouse buildings into a shelter for 130 of the men and women who currently sleep in the alleys and doorways of the central business district.

James Bonar, FAIA
Daniel L. Dworsky, FAIA Architect and Associates



Joshua Freiwald

Mountain View Police and Fire Facility, Mountain View

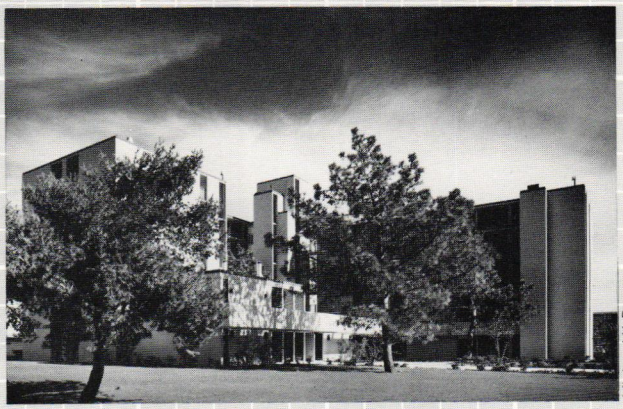
The Mountain View Police and Fire Facility is a 45,000-square-foot passive and active solar office building. The two-story building houses two distinct yet contradictory user groups. Police departments by nature are introverted and security-oriented, while Fire Administration traditionally is open and interested in exchange with the public. The design challenge included harmonizing the users' needs, while creating a facility that reflects the City's goals of energy and conservation, and reflects the history, materials and scale of its well-established neighborhood.

Goodwin B. Steinberg, FAIA
Goodwin B. Steinberg Associates

Bachelor Enlisted Quarters, Submarine Base, San Diego

This project, designed and constructed by Homer Delawie Associates AIA under the direction of Richard Wolf, FAIA, was the first increment of a multi-story bachelor enlisted quarters complex on a very constricted site. The complex was planned in clusters, consisting of two towers and an elevator core, oriented around a garden court and housing 396 men in 33 apartment modules.

Richard Wolf, FAIA
Director of Design,
Western Division Naval Facilities
Engineering Command



Michael H. Denny

Hensman Residence, Los Angeles

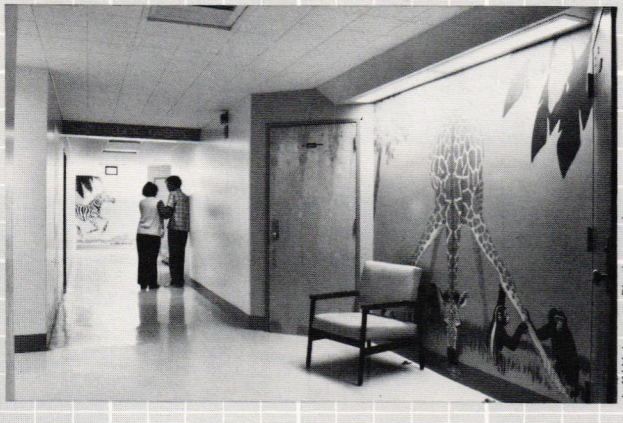
The site consisted of a bank rising almost vertically and terminating in a small level space some 23 feet above the street. The scheme is a 24-square-foot box at street level to house cars. Directly above is a 24-square-foot guest suite. The third level contains the master bath and bedroom, connected to the living area through a gallery. The living room, den and kitchen are on the only available level space.

Donald Charles Hensman, FAIA
Buff & Hensman Architects

Castro Common, San Francisco

Infill housing on an awkward and under-used downtown site, the Common was conceived principally for gay people who populate the neighborhood. The urban design qualities and unit planning respond to living patterns somewhat different from those in conventional housing. The design makes use of a new zoning provision that permits tandem houses with a quiet internal court between front and rear units. All units have private entrances off this courtyard. The larger units are designed for purchase by two single people with two master bedrooms and bath with equal amenity and privacy for each. The 12 units average 950 square feet each. Most units have two-story spaces, fireplaces, and private open space. The building occupies a "key lot" which is perpendicular to the rest of the sites on the block. The building takes its imagery from the backs of the surrounding buildings with their white clapboard siding and fragile layers of stairs, decks and rails.

Daniel Solomon, FAIA
Daniel Solomon and Associates



Jeff Weissman Photography

Napa State Hospital, Napa

The Hospital, serving 800 mentally ill and 600 developmentally disabled residents, is being remodeled to acceptable fire and life-safety standards. Eight codes have to be complied with, and 11 state departments have jurisdiction and their own objectives. Instead of simplifying problems, we have to invent ways to manage complexity.

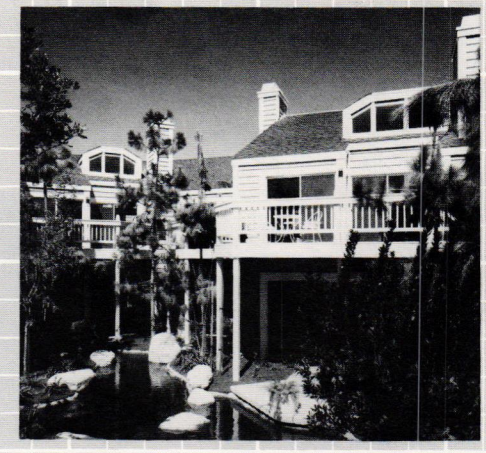
H. David Sokoloff, FAIA
Sokoloff/Bennett Associates

Steve Simmons

Central Park Plaza, Davis

The two major challenges we faced were (1) integrating three distinct uses—retail, office and living spaces — and blending the development into the existing fabric of the community; and (2) developing an energy-conserving system to handle these various uses.

Dean F. Unger, FAIA
Dean F. Unger, FAIA, Inc.



Pentridge Cove, Costa Mesa

A suburban infill development, this project embraces a waterscape program and mature landscaping to create an unique living environment. The 106-unit project (Phase I), situated on five acres, yields a density of 20 dwelling units per acre while maintaining privacy, spaciousness and a keen sense of identity. The stacked flat condominium units range in size from 870 square feet for a one-bedroom to 1,188 square feet for a two-bedroom. Units are staggered to provide visual relief in building massing and to create a sense of individuality and privacy, which is essential in high-density developments.

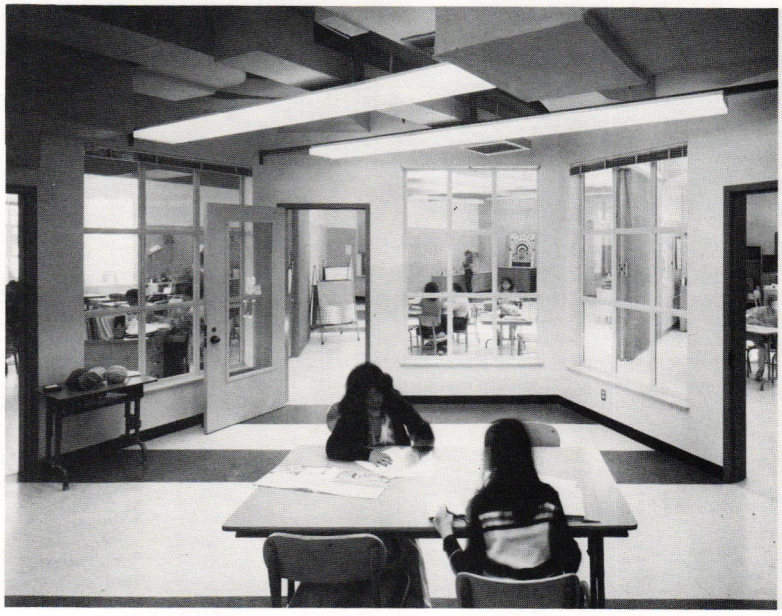
Arthur C. Danielian, FAIA
Danielian Associates

AIA Honor Award

Garfield Elementary School, San Francisco

Located near Coit Tower on San Francisco's Telegraph Hill, Garfield Elementary School replaced an existing elementary school which was inadequate for current seismic safety requirements. This three-story building, designed for stringent seismic safety, contains 10 classrooms, two kindergartens, and a multi-use space shared with the neighborhood. "This small elementary school fits comfortably into its residential setting, making admirable use of its difficult and constrained site," comments the Honor Awards jury.

The street front exterior design strongly reflects the character of the neighborhood's three-story walkup apartment buildings.



The overall design connects the school to its surroundings while placing the major source of noise beyond the hearing distance of most neighbors. The playground has been placed on the far side of the school, against the park that surrounds Coit Tower. "The building's bold orange and ochre color, its low-keyed simple materials, and its carefully organized but informal exterior give it dignity and warmth. An unpretentious but most commendable design solution," the jury comments.

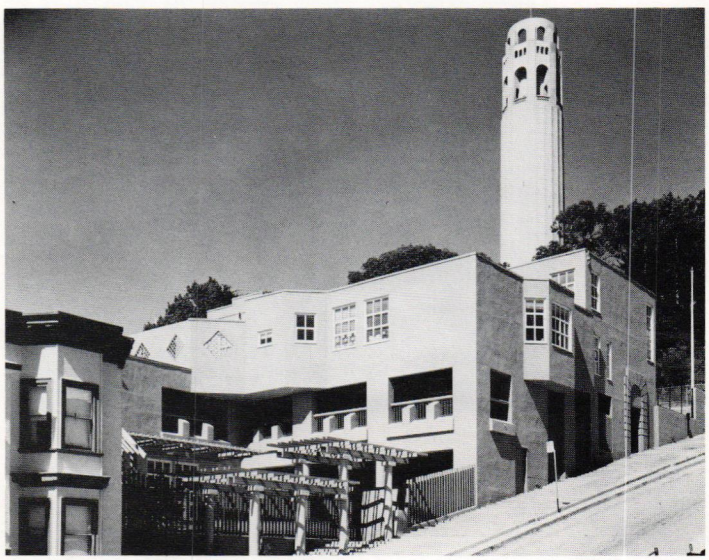
Taking advantage of the city's mild climate, the school uses exterior passages and promenades, large openable windows and other openings to minimize the need for artificial heating, cooling and lighting. This plan also opens up the school to the beauty of the surrounding city.

Classrooms are accessible from stairways off the upper and lower play areas. The administration offices are accessible from the street, while the multi-purpose area has a separate evening entry behind the building. Wheelchair access to the building is from the upper playground level; and throughout the building, it is provided for by an elevator. Solar collectors were installed on the roof to provide for domestic hot water.

1982 HONOR AWARD

Project:	Garfield Elementary School
Architect:	Esherick Homsey Dodge and Davis
Principal in Charge:	George Homsey, FAIA
Project Architect:	Barry Baker
Owner:	San Francisco Unified School District
Structural Engineer:	Rutherford and Chekene
Mechanical Engineer:	Marion Cerbatos Tomasi, Inc.
Electrical Engineer:	Marion Cerbatos Tomasi, Inc.
Landscape Architect:	Richard Schadt Associates, Inc.
General Contractor:	Nibbi Brothers

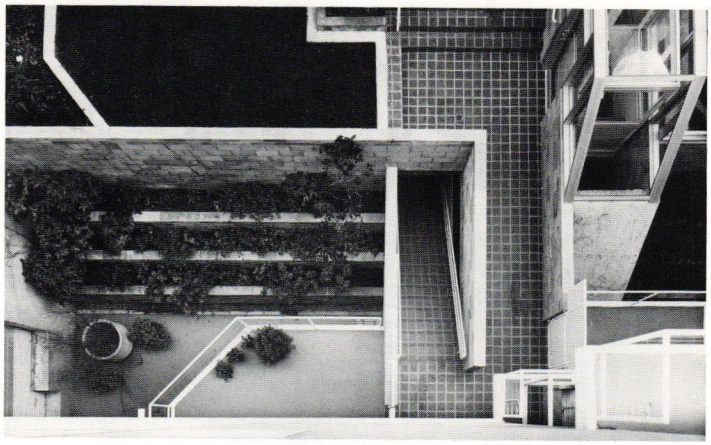
Photographs by Peter Aaron/ESTO



AIA Honor Award

Macondray Terrace, San Francisco

Macondray Terrace is 13 residential condominiums built in a prime San Francisco residential area. The extremely steep site, undeveloped since before the 1906 earthquake, is bordered on one side by a charming pedestrian street, Macondray Lane, and on the other by a busy thoroughfare, Union Street. The primary social concern was that the building should be a good neighbor. "Located in a finely scaled residential area, this relatively large condominium complex relates quietly to its neighbors with well-proportioned set backs and a carefully detailed exterior," comments the Honor Awards jury.



A system of sprayed concrete and tiebacks under neighboring houses allows the project to use all of its difficult site. To adapt to the block pattern, the project was split into two buildings and connected by an inclined elevator which links parking, living levels and the two street entrances. "The glass-enclosed, inclined elevators connecting the various levels add to the overall quality of openness and grace which is inherent in the design," the jury comments.

The project responds to its two public facades, yet maintains a unity. The Union Street facade is formal and symmetrical, reflecting the strong pattern of Victorian facades on the block. On Macondray, the two-story atrium conforms to the informal and rustic landscape of that block.

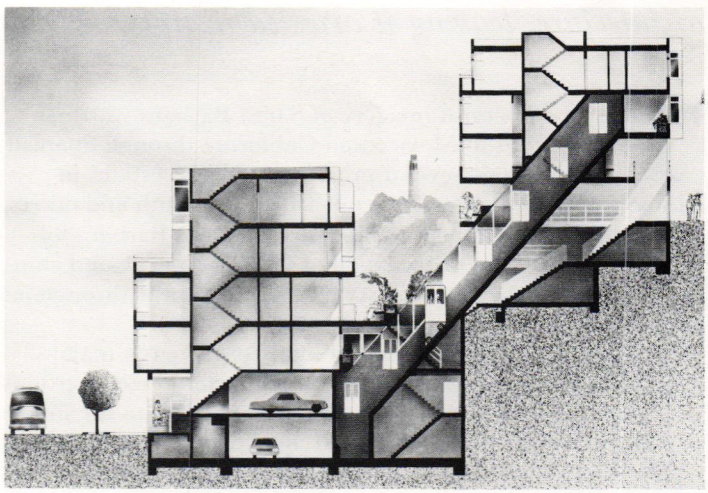
Confined by the planning code and by the needs to allow sunlight into the central garden and to avoid blocking views of nearby buildings, the condominiums are worked like a Chinese puzzle. Only the first two floors repeat plans; after that, each unit is different.

The building is extremely energy-efficient due to double glazed windows, heavy insulation and a minimum of exterior walls exposed to the elements. The handicapped have access by elevator to 11 of the 13 units.

1982 HONOR AWARD

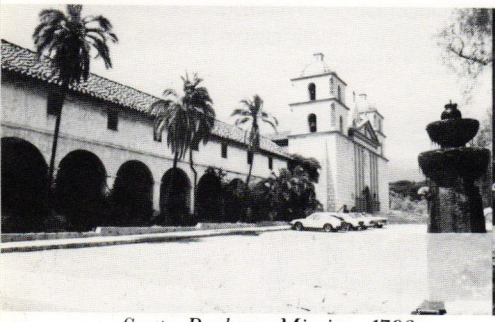
Project:	Macondray Terrace
Architect:	Hood Miller Associates
Owner:	Hood Miller Properties and Farjam Corporation
Structural Engineer:	Shapiro Okino Hom and Associates
Mechanical Engineer:	J.W. McClenahan Company
Electrical Engineer:	Stehle Electric
Landscape Architect:	Paul Leffingwell
General Contractor:	Ralph Larsen & Son Inc.

Photographs by Richard Sexton, Matrix



Architectural Review in Santa Barbara:

William Howard Wittausch, AIA



Santa Barbara Mission, 1786

Christian Science Church, 1931

Five Points Shopping Center, 1981

When people think of Santa Barbara, images of buildings with light colored walls, small openings and red tile roofs come to mind. The community of Santa Barbara has created a strong public policy to protect its rich architectural heritage and beautiful natural surroundings. But some local architects wonder if that policy is retarding the evolution of the city's architecture, leaving it arrested in time.

The architectural imagery of Santa Barbara was first introduced to Mexico and California through Spanish colonization. Several private residential estates in Montecito, designed by George Washington Smith and others, brought Spanish Revival architecture to Santa Barbara following the San Diego Exposition of 1915. Soon civic and commercial projects in the same style began to appear throughout the city.

In 1925, an earthquake leveled many of the city's major buildings. This event provided the impetus for citizens' groups who shared a common vision: to rebuild the city in the image of a Spanish town. The first City Architectural Board of Review (ABR) was commissioned to support this effort. When the ABR fulfilled its purpose, it was decommissioned in 1926.

The reconstruction effort set two important precedents for Santa Barbara. It demonstrated the ability of the private sector to mobilize quickly in an emergency and to work together to achieve common objectives. It also established the Hispanic character of Santa Barbara architecture.

With the postwar population boom and the growth of "smokeless" industry in the Goleta Valley, the City Architectural Board of Review was recommissioned in 1946, to "protect and preserve the natural and historic charm and beauty of the city." The ABR was to review and approve or deny plans for construction within the city boundaries.

The Historic Structures Ordinance, enacted in 1960, created the El Pueblo Viejo district and established strict architectural control over the area that has come to be known as "Old Town." At the same time, the City Advisory Landmark Committee (ALC) was formed to identify and protect structures of historic and architectural significance. The private sector's influence in determining Santa Barbara's architectural style increasingly was taken over by the public sector. Although the intent of these commissions was to preserve the city's Hispanic style, a liberal policy prevailed and contemporary style buildings were approved.

The 1970s marked a significant change in public attitude. Angered by an oil spill from a nearby off-shore drilling platform in 1969, public reaction was directed against the oil industry for the accident which deposited gobs of crude oil and dying birds entrapped in the goo on Santa Barbara beaches. Outraged by the visual and economic impact of this blighted scene, Santa Barbara sued the oil company and won.

With the victory, a new sense of "community" emerged. Mounting public awareness of environmental pollution, energy and resource conservation, the relationship between the quality of life and population density, and population growth limits was evident. When the Environmental Protection Act was passed in 1974, the concerns that had sustained the citizen protest movement became public policy.

The design review process played an increasing role in shaping architectural projects. ABR's authority was expanded to include review of site planning, parking, traffic safety, landscaping, signs, colors, view protection, hillside development, and environmental impact. In 1977, the boundary of El Pueblo Viejo was expanded, as was the ALC's authority to review and approve designs of buildings adjacent to and/or across from the old town and in the vicinity of other landmark buildings. A frequent overlap of responsibility and conflict in the recommendations of the Architectural Board of Review and the Advisory Landmark Committee developed.

To educate the general public and to assist commissioners in evaluating designs, the City staff published architectural guidelines for both the ABR and the El Pueblo Viejo District. The guidelines were written in vague, general terms which, in effect, empowered the ABR to make design decisions. Yet guidelines for El Pueblo Viejo included specific design criteria and a glossary of architectural design elements.

As each edition of the guidelines was amended to reflect new levels of public awareness, a loss of continuity in policy and decision making resulted. The dual, and often conflicting, guidelines present a problem for architects who are confused

volution and Heritage

by William Howard Wittausch, AIA

as to their specific intent and frustrated by working at cross purposes with the design review decisions.

The liberal policies which previously permitted contemporary designs within the city have been replaced with vigorously conservative policies in the last five years. Both the ABR and the ALC believe they have a mandate to keep Santa Barbara a Spanish town. With the exception of an occasional Victorian, this implies that modern architecture cannot be approved. Even existing buildings, when remodeled, must become "Spanish."

Many Santa Barbara architects agree that some form of regulation is desirable and that regulations, by themselves, do not limit creativity or impair the chances for design excellence. But they are concerned that design review by committees using prescriptive "cookbook" guidelines to produce Hispanic architecture will, over time, have a detrimental effect on the community. And they fear that many landmark buildings constructed between 1926 and 1946, without benefit of design review, will become submerged in a background of clumsy, assertive, Hispanic copies.

Many projects with the potential to become fine examples of modern architecture—even contemporary interpretations of Hispanic style—are returned for redesign in a more traditional style. Hispanic designs which have poor scale or character often are approved. The result is a loss of authenticity and the elimination of both good and bad, leaving a residue of commonplace architecture.

The architects who produced the many fine examples of Spanish Revival architecture in Santa Barbara were skilled and inspired. They were supported by appreciative patrons and encouraged by an enthusiastic community to indulge their architectural fantasies unencumbered by government regulations and exacting public review. The spirit that moved those architects came voluntarily, rather than through coercion by zealous over-regulation.

Santa Barbara's present design review commissions intend to achieve aesthetic unity through use of guidelines requiring a homogeneous design idiom. Inspired by a desire to return to roots, this regional spirit is sympathetic with the post modern movement and is a sign of the times. Yet imposing a regional style on designers with differing, albeit discriminating, tastes cannot be done without inviting reaction. How local architects respond to public sector control will determine the future of Santa Barbara's architectural imagery.

William Howard Wittausch, AIA is an architect and civil engineer practicing with his own firm, William Howard Wittausch, in Santa Barbara.

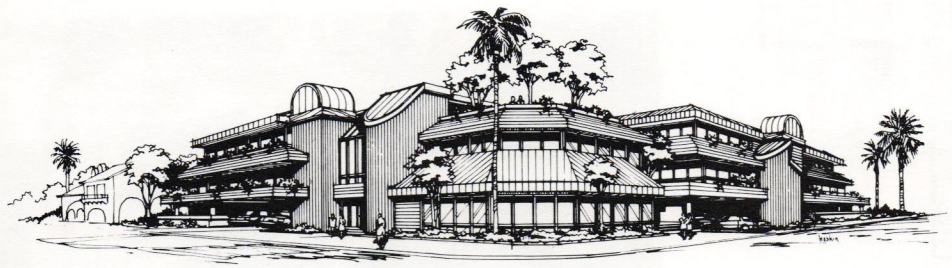


Figure 1

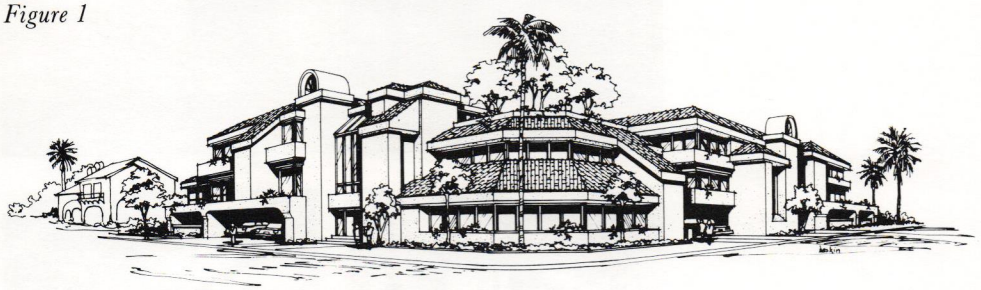


Figure 2

Figure 3

Evolution of a Design

The wood and glass structure shown in Figure 1 attempted to be compatible with the structure across the street, a contemporary, low-profile building done in the same vocabulary, and with the surrounding neighborhood, a transition area outside the city's downtown core, with a mixture of styles done mainly in wood. The ABR rejected this design, being more concerned with the overall texture of the community than with the scale and massing of the buildings in the immediate environment.

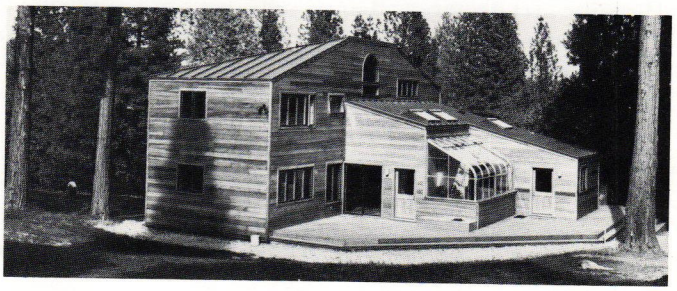
The redesigned building in Figure 2 is a sculptured architectural statement which weaves Hispanic stucco and tile with current design forms. The ABR rejected this design, saying it was too animated and not in keeping with traditional Hispanic design.

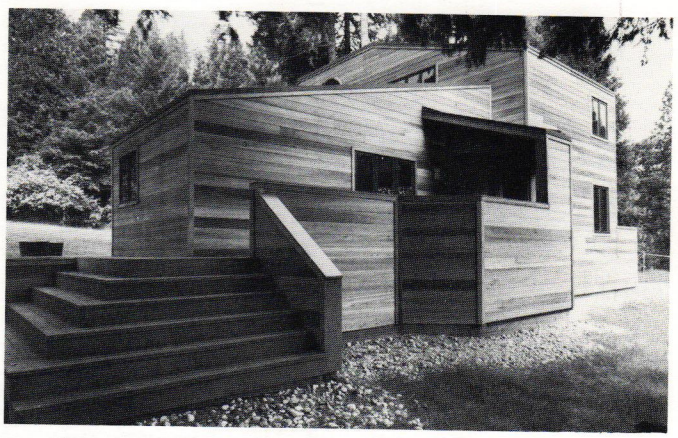
Figure 3, now under construction, is the type of building the ABR desires. In form, massing and material, this structure is compatible with the downtown core. But the building overpowers the graceful lines of the neighboring structure and has virtually no relationship to the prevailing texture of the neighborhood. By rigid adherence to the Spanish style, the city has created at this location the very hodgepodge of styles it seeks to avoid.

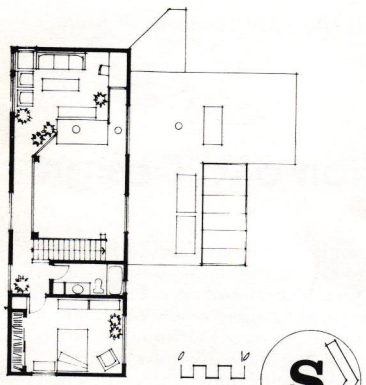
Architectural integrity is not maintained by simple mimicry of the past or strict obedience to one theme. Forcing architecture to be monolithic denies the human experience of progression and bastardizes our history by creating a false sense of time through suppression of change and variation.

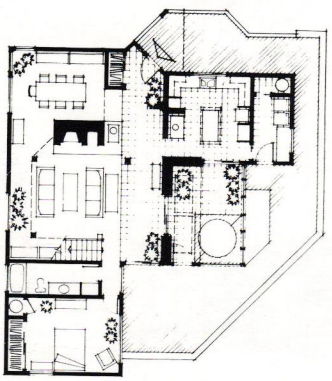
Barry Berkus, AIA
Berkus Group Architects

Interview: David Wright, AIA

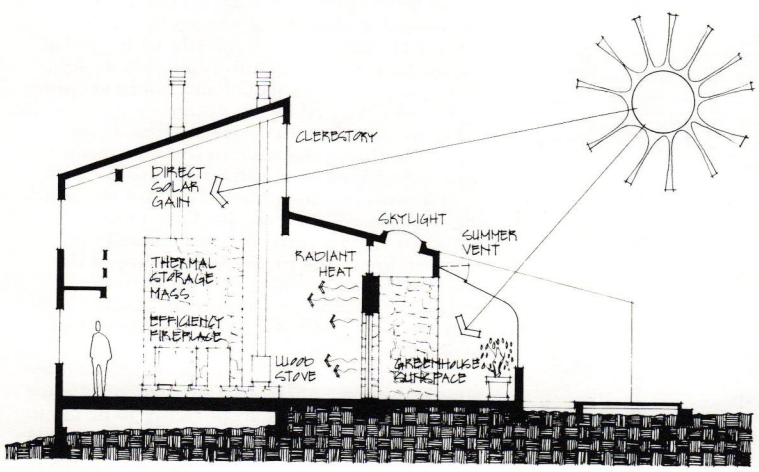








Floor Plans



Cross Section

Lee Residence, Cedar Ridge

Steve Solinsky

David Wright, AIA designs buildings that are in harmony with their environment, and with the people who use them. His nine-person office, tucked into a restored Victorian on the quaint main street of Nevada City, is packed with the sophisticated tools of his trade. Wright's practice reaches beyond the foothills of the Sierra Nevada Mountains to spots as diverse as Wyoming, Vermont, and Australia. Wherever he goes, he leaves behind passive solar, environmentally-integrated structures which showcase the beauty, efficiency and common sense of energy conscious architecture.

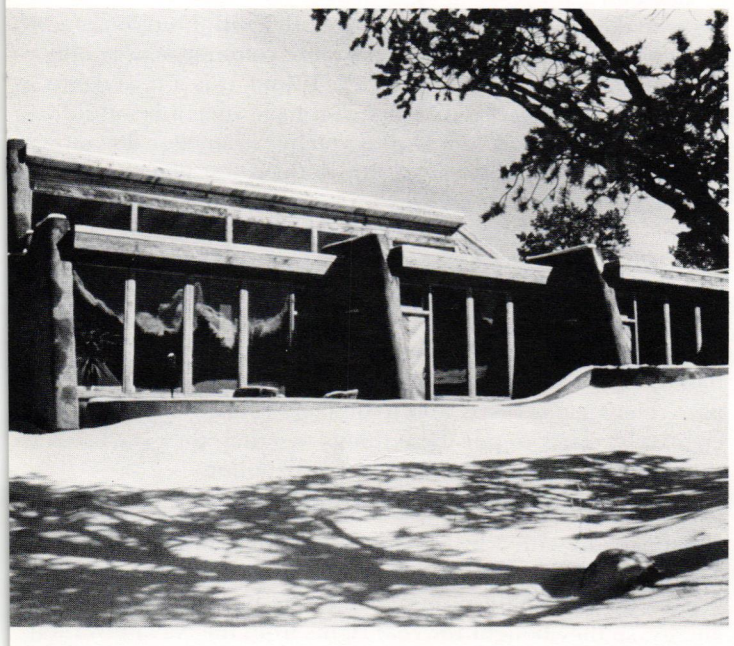
When did you become interested in passive solar and energy conservation?

I was born and raised in Auburn, went overseas in the Peace Corps, came back, got my license in California and then moved to Santa Fe. Solar was popular there before the rest of the United States had even heard about it. Pre-1973, we considered ourselves on the lunatic fringe of conservationists. After the Arab oil embargo, we suddenly became lunatic center. The whole modern concept of passive solar architecture started right in New Mexico in 1973 and 1974. I always considered myself an architect and a conservationist. But I never really consciously put the two together until I got interested in energy conservation. It opened up a whole new direction of architecture for me. All of a sudden architecture had much more validity.

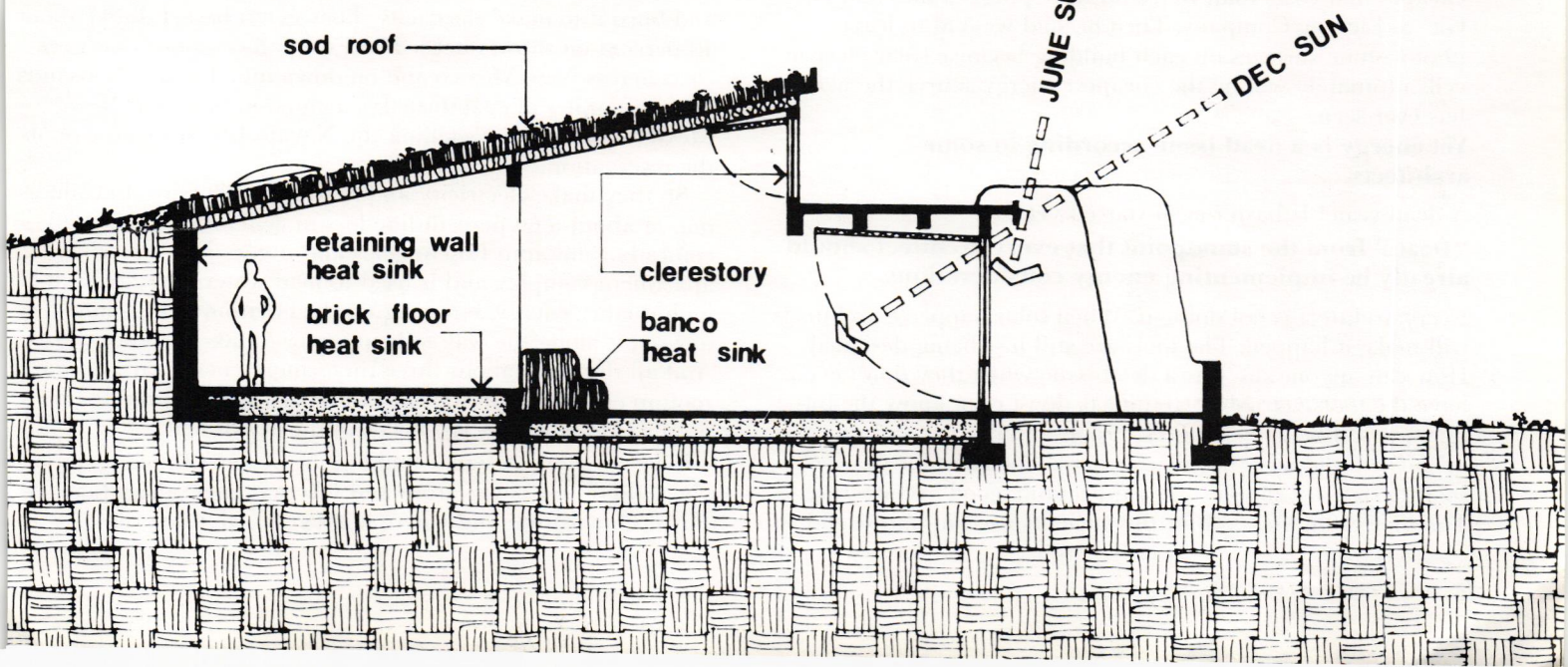
How does your specialization in solar environmental architecture shape your practice?

I don't do a building unless it is an energy efficient passive solar building. I never have had to solicit work. Everybody that comes to me is tuned in to what I do. All I have to worry about is whether they want Victorian or Cape Cod or Pueblo or international style architecture.

I've been stuck in the single family residential rut for the past eight years. I have done three condominiums for young builders or investors who wanted passive solar design. My



Sun Cave, Santa Fe, New Mexico



practice is taking a new direction. Within the past six months, I've had a chance to do a whole town in western Australia, a large office building and a large condominium project.

These are major investors who scoped out the marketplace, saw what the utility companies are doing with their energy rates, read what can be done in terms of designing a building for energy efficiency, and put it all together. Now that people are looking at a monthly utility bill that surpasses their mortgage rate, some developers see that energy efficiency is a real marketing tool.

How cost-effective is solar?

God or Cosmos has given us energy. It's ongoing, it's free, it's available, it's dependable. We know that every day of every year there is going to be a certain amount of this stuff. Every year there is a guaranteed amount that will fall on your body or on your house or on top of your car.

At a design seminar in San Diego, physicist Ted Taylor, who was head of the Orion Project, ran a lot of numbers for us about building and energizing a subdivision of 1,200 units. He showed us we could build our own self-generating plant, totally space conditioned, heat and power the houses—these were very fancy houses, half a million dollars and up—with

Steve Solinsky

Sayre Residence, Applegate

cheaper first costs than we could if we plugged into San Diego Gas & Electric Company. Then he said we had to leave photovoltaic surfaces on each building because solar electric cells ultimately will be the cheapest energy source the world has ever seen.

Yet energy is a dead issue according to some architects...

A dead issue! It hasn't even started yet.

"Dead" from the standpoint that every architect should already be implementing energy considerations.

Every architect is not doing it. When solar happens, architects will make it happen. The tools are still just being designed. How can anyone say it is a dead issue when they don't even have the tools yet? Most architects don't even know the implications of heat exchangers, proper orientation and internal layout of buildings and solar devices. The rules for passive solar design are simple—they are simply good architecture. The master builders did it, the ancients used it, and so did

"Every time we design a bu and have a conscien

the Pueblo Indians. But we've forgotten many of those skills.

I was educated at one of the better schools in the world—Cal Poly, San Luis Obispo. I was taught mechanical systems. I was not taught passive environmental controls—about what turning a building 15 degrees can do to energy performance or to daylighting or to cross ventilation. We were exposed to the rules of thumb. We didn't indulge in the process of applying those tools. We looked at art, functions and structure. Those were the architectural aspects, the Bauhaus kinds of things. You did your building, and then you plugged in an AC system and told the mechanical engineer not to screw it up. That's still where most architects are at.

The problem is that architects, just like the rest of the building establishment, are slow to change, even though we think of ourselves as highly creative, excited people—artists. Well, when you get right down to it, established architects don't change things too fast, because they have a formula that works.

The funny thing is, energy efficiency and passive solar aspects make a better building, a more delightful building to be in. It's fresher, it's brighter, it has more common sense going for it than the air-conditioned box. I think it is a mistake to put people in a spaceship, when you have such a beautiful environment around you. Unless you live in smoggy downtown San Jose; then maybe a spaceship is the safest place to be.

You have to look at architecture on every scale and in every setting, urban or rural or in between. This gets down to microclimate design. Once you know where you are, what microclimate you are in, then there are a whole set of problem solvers, a palette of design choices, that you have at your disposal. It's up to the architect to choose the proper solutions based on a wider range of criteria than we've used in the past. The logic is there, and if anybody is open and thinks creatively, starts to put these things together, they start to see the patterns of democratic energy distribution.

What is "democratic energy distribution"?

I'll explain with a little story. In the four corners of the Southwest, there are vast coal reserves. Sometime back, investors decided that southern California needed a lot more energy, so they bought the coal rights from the Navajo Nation. They're strip mining to beat the band. They take the coal and burn it to make electricity. They get at best, I think, about 40 percent off those stacks. There's a pall of smoke that goes clear across New Mexico and on down into Texas—thousands of square miles of coal dust. It's a cloud in beautiful New Mexico, a cloud that's killing the Navajo Indians who live on the reservation.

So they make electricity and send it on big wires to California, at about a 60 percent line loss in generation. This stuff comes buzzing into Los Angeles and it goes into a garden apartment complex and is used to heat water. They're taking high quality energy, screwing up the environment, losing most of it along the way to heat water to take a shower in. And all the time, about three times more energy falls on the rooftop of a standard unit in Los Angeles than is needed to produce all of the energy needs of the apartment.

Every time we design a building, if we start thinking about where the water comes from and where it goes, and where the air comes from and where it goes...if we think things

g, if we think things through
e'll change our ways."

through and have a conscience, we'll change our ways. There is a chance for us to become better designers, better architects. I am not really a do-gooder. I'm just a normal everyday person who feels some responsibility for what I draw and get built.

What do you mean by "microclimate design"?

There are three scales of climate I look at when I design a project: macroclimate, microclimate and interior climate. Before I even conceive of a solution, I have to start on the outside and narrow it down. I start with the macroclimate, the general climate zone. A general climate zone would be the Sierra Nevadas, the Bay Area, the coastal range from Santa Rosa north to Redding. There are macroclimates in California that are very similar to macroclimates in the rest of the country. The big decision makers are wind, moisture, humidity, sunshine.

The microclimate is the specific site. First of all you have to know if you are in the suburbs, what side of town you are on, whether you are in the urban core, the renewal area. I look to see if the site has a north or south exposure. The exposure starts to dictate just how the exterior of my building is going to respond.

How do microclimate aspects go beyond what usually is done in site planning?

When I am breaking this down into microclimate design, I'm looking at a lot of different things. Lifestyle is a very important aspect. Somebody who lives in Alaska is going to have a different conception of comfort than someone who lives in Florida. The way people dress, their attitude toward hot and cold, urban/suburban, residential/nonresidential are microclimate design factors.

I really look at solar access. I always try to leave space to put in photovoltaic cells. I take my solar site selector out like Captain Solar and make grids before I've designed the building, so my engineer can determine where the BTUs are coming from—where they are problematic and where they are a resource. Once I determine that there is an area of the sky that's going to harvest solar energy, I designate that piece of sky as sacred. It becomes a fixed entity in the design process. I don't know if it is an array, a skylight, an active solar collector, or just a direct gain window yet, but I know that it's there.

Natural air currents are extremely interesting. In the mountains here, I know I can count on an upwelling during the daytime—heat rising, creating convection currents—and a reversal at night. So I know where the ventilation's going to happen. The way the storms come in the winter affects a solar design.

How does the microclimate design affect interior climate?

The interior climate may depend upon where the glazing is, whether there's a north facing skylight or a high transom or a clerestory, where the solar energy and cross ventilation is going to move through the building, and how all the spaces relate to these natural flows.

I put thermal mass in a building differently than somebody who's looking purely at structure, texture, form. I want it to attenuate sound. I want it to be a visually pleasant experience within the volume. I want it to be a fire-rated wall, and I want it to be a solar heat-sink. My placement of the thermal mass starts to generate the interior function.

Then I look at volume and air flow: where do I draw the air off and where do I bring it back into a space so it doesn't blow papers off the desk? I look at how to equalize all of these things out. Maybe it means that I have ten air flow ducts that are driven off of one fan impeller. Maybe I'll have ten small fans so I can create proper zoning. I always bring energy related concerns to the normal architectural decisions. We use computer analysis to help proportion all aspects of the weather skin and the interior elements.

What are the tradeoffs that you give as a designer to use energy conscious design?

I always compromise in favor of aesthetics. A lot of people think of me as a solar architect, yet my point of view is that energy design tactics and tools are no more or less important than the floor plan, the interior volume—all the normal things that concern an architect. I find that making a building energy efficient and applying the passive solar design tools give a better aesthetic solution.

It sounds like you need new eyes to see and design these buildings.

You do need new eyes; at least you need some new circuits in your old head. An energy building is like a flower—it is sitting in its place and metabolizing with the environment. It's tracking the sun. It knows what the sun is doing and allows the sun to work for it rather than just shielding itself.

The design aspects are extraordinary. It gives you a chance to think of new forms that mean a hell of a lot more than the old forms. Before, a building was something for drama, something for sculpture, something for image. Well, now it can do all those plus have another justification for its shape and its internal form. That takes architecture to another positive, more advanced level than what we have been doing for the last 50 years.

David Wright, AIA is principal of the firm SEAgroup, Solar Environmental Architecture in Nevada City. His first book, Natural Solar Architecture: A Passive Primer *(Van Nostrand Reinhold Company, N.Y.) has been translated into five languages. Another book,* Passive Solar Architecture: Logic and Beauty, *will be published this November.*

Toward a New Generation of Energy-Efficie

the forthcoming nonresidential energy regulations and the architect's r

by Wm. Stevens Taber, Jr., AIA

The project of revising the existing Title 24 Nonresidential Energy Standards is now in full tilt, with standards forthcoming for 22 building types and all California climate zones. The California Energy Commission (CEC) intends to alter the manner in which buildings are designed in a fundamental way, to work major changes in the design/construction process, and to do this through a cooperative effort with the regulated industry, replacing the customary political football of the standards-development process with a consensus-developing effort.

Since design professionals have had a few years to work with the existing nonresidential energy standards, a number of deficiencies have surfaced. First, the standards are not strict enough. The CCAIA has argued successfully that standards should be based not on historical practice, as the CEC first stated, but on the point of minimum life-cycle cost. The existing standards do not even remotely approximate this point. By their very nature, they probably are incapable of doing so. While most architects now design for minimum life-cycle cost, the vast majority of the buildings being built in California are designed by nonarchitects who lack the skills to understand these criteria, let alone design for them. Yet these very buildings will last for decades, and will constitute the bulk of the building stock in years to come, when energy will be much more expensive.

Second, the existing standards essentially are a prescriptive standard, addressing design criteria for the components of the building, rather than a performance standard addressing the design of the building as a whole. (There is a performance standard in the regulations, but it is largely unworkable.) This makes the standards incapable of approaching optimum cost-effectiveness, because the greatest potential for conservation lies in the design of the building, not its components. Indeed, a prescriptive standard inherently is incapable of approaching optimum energy use because, as it becomes more stringent, it becomes enormously complex and ultimately unworkable.

Performance standards have several other advantages. By their nature, they require that the designer consider energy use while making decisions, and this has the advantage of improving the designer's skills. Also, performance standards are readily adaptable to local climates, industry conditions, and changing energy costs and policy, and can be dovetailed with a wide range of nonregulatory incentives for conservation.

Third, the standards by themselves are not enough. Our economy and society have evolved in an environment of cheap energy, and consequently have learned to waste energy and conserve other more expensive resources, such as labor. Now that the situation is reversed and we would like to conserve, we find in place a host of disincentives which frustrate even those who want to conserve. These disincentives include tax law, utility rate structures, land use planning policies, financing, and inertia. To change our habits of energy use will require more than regulations. It will require the dismantling of these marketplace forces.

How the new standards are being developed.

The new standards are being developed through the use of a generic building model, which describes to a computer the essential design characteristics of the building type under study, for analysis of its energy use. To this model are added a series of energy conservation measures. With each measure added, the life-cycle cost of the model is recalculated. When the analysis reaches the point of minimum life-cycle cost, the budget is established.

At that point, an important leap is taken. The performance budget becomes the basis of the standards, and a set of alternative prescriptive standards are developed based on the budget. Designers complying with the standards are free to design the building however they wish, if the building uses no more energy than the budget. This constitutes a major breakthrough in energy standards, since it simultaneously raises the stringency of the standards to the optimum point and increases design flexibility.

The major difficulty with a performance-based standard is the method of demonstrating compliance. The existing performance standards require that compliance be demonstrated with a mainframe computer model. Although these tools are becoming increasingly accessible to architectural offices, they remain outside the mainstream of the industry.

The CCAIA has convinced the Commission and most of the industry that, for the standards to be workable, they must be promulgated with a simplified energy calculation method, so that designers of moderately sized projects can demonstrate compliance with a simple hand calculation or a hand-held, programmable calculator. Under urging from the CCAIA, the Commission has allocated $380,000 to the development of this tool. Coupled with such a tool, the standards literally could make any designer capable of state-of-the-art, energy-efficient design, almost without training. This also constitutes a major breakthrough in standards development.

None of this would have been possible if the Commission had not undertaken a joint regulator-industry approach to standards development. Much of the creative thinking which has gone into this project has come from industry representatives. Because the standards are being developed in this environment, a great deal of the political furor that normally accompanies standards promulgation is being avoided.

What the new standards will mean to architects.

Of all the people designing buildings, the standards will have the least impact on architects, since the profession already is designing for higher standards of energy efficiency than the rest of the construction industry.

uildings

making them

The standards will establish energy budgets for all major building types and all California climate zones at or near the point of minimum life-cycle cost, with some tolerance for local site conditions. They will require that all designers either design to the budget or incorporate into their design a set of prescriptive standards which will approximate the budget.

Architects will find themselves using these tools during design, as well as during permit applications and code checks, and in advising their clients about the projected energy use and life-cycle cost of their buildings. Architects probably will find themselves designing more daylit buildings, and paying more attention to orientation of glass. This may give architects a competitive advantage over designers with lesser skills, who have less facility in dealing with these concepts.

Over time, the standards will bring the building stock as a whole into line with the economic realities of the world today. In the decades since the advent of air-conditioning, we have learned to design buildings to exclude the outside world. In the coming decades, as our society and economy evolve toward more optimum levels of energy use, our buildings will become more intelligent, interact selectively with the environment to admit light and energy when it is benign, and return us to a closer awareness of our natural environment.

This approach will change architecture in a fundamental way, since these issues—light and energy—are central to our understanding and experience of the built environment. Our challenge as architects is to solve these problems in concert with all the other issues which make up architecture, discovering what, in the late twentieth century, constitutes commodity, firmness and delight.

CCAIA Energy Committee Chairman Steve Taber, AIA is an associate at ROMA, a San Francisco architecture, urban design and planning firm. He also serves as chairman of the Professional Advisory Group to the CEC on the nonresidential standards development project.

C L A S S I F I E D

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