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A SOPHISTICATED SHED, BY VENTURI, RAUCH AND SCOTT BROWN
BUILDING TYPES STUDY: THE WELL-BEING OF DESIGN IN THE HEALTH-CARE WORLD
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

MAY 1980

5

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Letters to the editor

I was delighted with your article on O'Neil Ford [RECORD, December 1979, pages 126-136]. It arrived just before Christmas and was a marvelous present for the holidays.

After reading the story, my son, a young architect with SOM Chicago, was caught up in a continuation of it. He wanted to see Ford and drove to San Antonio hoping to spend fifteen minutes with the man. Instead, the young architect was swept off his feet by a two-day whirlwind tour of the riverwalk, the missions, the cathedral, the university, the family, the shops, the chickens and the birds. It was, I believe, the greatest gift he could have received.

The O'Neil Ford Chair in Architecture at the University of Texas at Austin is conceived to honor Neil and perpetuate the spirit of his architecture and teaching. We are presently seeking our initial matching grant from a foundation and should know about it shortly. Inquiries should be addressed to me.

What gives meaning to the Chair is Ford's role as a teacher. Neil is a pacesetter, albeit a different drummer: he has never varied his pace or his direction, yet he has been innovative throughout. His basic school is his office. His school is also his work, his many lectures and visiting professorships. And most important perhaps is his one-to-one model, evidenced in my son's recent experience. Hundreds of architects have had this course.

Hal Box, FAIA
Dean

School of Architecture
The University of Texas at Austin

Your December 1979 issue *New Perceptions for the 1980s* was a fine and refreshing document, singularly free of the annoying rhetoric that goes along with so much of the discussion of architecture today. The article by William Marlin about O'Neil Ford was generous in tone, insightful and truly transmitted a sense of the pleasure of making architecture.

Ulrich Franzen, FAIA
Ulrich Franzen & Associates
New York City

Your August 1979 editorial ("Architects' involvement in housing: encouraging trends. Can we hope for more?") brought to mind an issue that I feel deserves greater attention from all architects and from our (architectural) media. This is the recent trend for an increasing number of individual A-E firms to prohibit their employees from any type of "moonlighting." State AIA chapters are

studying ways of widening and enforcing this ban.

While such action may have some actual basis in a liability context, it is inherently a roundabout measure unfairly restricting the after-hours activity of many architects, and it hurts architecture as a whole and residential design in particular.

Considering the number of firms that are commercial/industrial in nature, and considering that most moonlighting architects are involved in single-family new housing or remodeling, it is apparent that the prohibition of moonlighting diminishes the available pool of "affordable" architects for the public's residential needs, even while it aims to avoid a very remote chance of legal action and/or conflict of interest.

It would seem that our employing architects could and should solve their legal problems and still allow their employee architects the chance to help improve the one area of American architecture that stands in greatest need of the architect's hand—housing.

Douglas R. Campbell, AIA
Birmingham, Michigan

I was delighted to read the impressive article on the proposed design for a tower structure above the existing Radio City Music Hall in your January 1980 issue [pages 121-124].

As partner in charge of the design for the Office of Irwin G. Cantor, I was pleased to develop the concept of the four huge columns and the post-tensioned pick-up girder system referred to in the article. It was a delightful experience working with Davis, Brody in developing this exciting concept, and I do hope that eventually we will have the opportunity of developing final working drawings.

In the meantime, I am certain that the omission of credit to our firm for its very significant contribution was entirely inadvertent.

Ysrael A. Seinuk
Executive Vice President
The Office of Irwin G. Cantor
New York City

Corrections

In its story on Pickering Wharf (March 1980, pages 120-123), designed by ADD Inc., RECORD should have credited Michael Hass (not Hall) as a member of the project team.

Tom Crane should have received credit for his interior photographs of Knoll Center, designed by Venturi, Rauch and Scott Brown, in RECORD's story of March 1980 (pages 97-102).

Calendar

MAY

13 Seminar, "Design Cost Analysis for Architects & Engineers," Chicago. Program will be repeated June 23 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS, 1221 Avenue of the Americas, New York, N.Y. 10020 (212/997-3088).

13-14 Workshop on Seismic Performance of Low Rise Buildings, at the Illinois Institute of Technology, Chicago. Contact: Ajaya K. Gupta, Department of Civil Engineering, IIT, Chicago, Ill. 60616.

14 Seminar, "Design/Build and the Law (for Architects, Engineers & Owners)," the Conrad Hilton, Chicago, Program will be repeated June 24 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS (see above).

15-17 Conference, "Cityscapes," sponsored by the University of Regina, Canada. Contact: University of Regina, Department of Extension, Room 208, College Building, Regina, Sask., Canada S4S 0A2.

16-18 Seventh annual conference of the Preservation League of New York State, held at the Hotel Statler in Buffalo. Contact: Preservation League, 13 Northern Blvd., Albany, N.Y. 12210.

19-27 13th annual meeting and seminars of the Society of Fire Protection Engineers, to be held at the Sheraton Boston Hotel and John B. Hynes Auditorium, Boston. Contact: Society of Fire Protection Engineers, 60 Battery-march St., Boston, Mass. 02110.

22-23 Lighting seminar conducted by Abe Feder, sponsored by *Interior Design*, given at the Juilliard School Auditorium, New York City. Contact: Virginia Evans, *Interior Design*, 850 Third Ave., New York, N.Y. 10022.

23-25 Conference and exhibition, "Old Buildings . . . Presents From the Past—A Renovation and Preservation Idea Market," sponsored by the Utah State Historical Society. Contact: Luci Merin, Utah State Historical Society, 307 West 200 South, Salt Lake City, Utah 84101.

29 Seminar for Barrier Free Design, sponsored by The Producers' Council/AIA; McGraw-Hill Auditorium, New York City. Contact: Roy Woodman, McGraw-Hill Information Systems Company, 1221 Avenue of the Americas, New York, N.Y. 10020 (212/997-3165).

JUNE

1-4 1980 American Institute of Architects National Convention, Cincinnati. Contact: AIA 1980 Convention, 1735 New York Avenue, N.W., Washington, D.C. 20006.

11-13 NEOCON 12, at the Merchandise Mart in Chicago.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER) (USPS 132-650)

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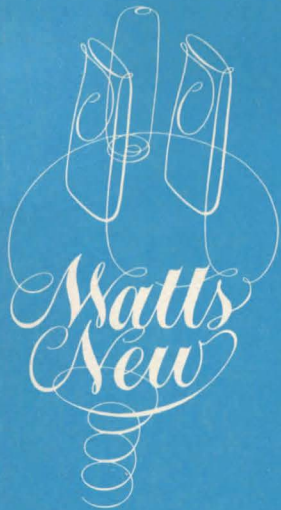
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Second Look I.

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Electrical Energy Views
from The National Electrical
Contractors Association
Volume IV, Number 1

How to solve our energy problems? Try using a little common sense. (with appreciation to Jefferson and Hegel)

Between July 2 and July 4, 1776, while composing the Declaration of Independence, Thomas Jefferson wrote of "... a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States." Today, we are facing an equally ominous tyranny, a tyranny born from the growing demand for oil and the economic and political power wielded by the countries who export it.

Our insatiable demand for oil is proving basic economic principles. Because domestic oil supplies are not meeting demand, foreign suppliers in a sellers' market are increasing prices. As a result, demand is shifting toward increased use of alternative fossil fuels and their prices are also rising in response. Due to misunderstandings about basic laws of supply and demand, rising prices sustained by demand for oil to fuel industrial, commercial, and residential uses are threatening to, in Jefferson's words, "excite domestic insurrections amongst us." We are rapidly shifting from a nation based on the profit incentives of free enterprise to a people who are skeptical and downright antagonistic toward large oil producers who happen to be supplying a product for which excessive demand has created large profits.

We seem to be creating a new economic ethic: it is all right to make a lot of money if your organization is small and privately owned; it is unethical if the organization is large and publicly owned. But only very large organizations can create the capital needed for energy exploration, processing, and distribution. We must soon decide whether such large organizations are going to be run by professional managers or by professional bureaucrats. The game is tilting toward the bureaucrats.

Solving our energy problems should be only a matter of putting good American common sense to work. If there are no economical alternatives to oil distillates for personal and commercial transportation, it would seem logical that transportation should be our primary use of oil products. All other uses should be shifted to some other fuel as rapidly as possible. This would include all industrial processes as well as all home heating. And, of course, all efforts should be applied to exploration and development of possible domestic oil supplies. It also means developing domestic oil shale and tar sand potential. The easiest way to accomplish this is through free-market pricing and incentives for more oil exploration and synthetic development.

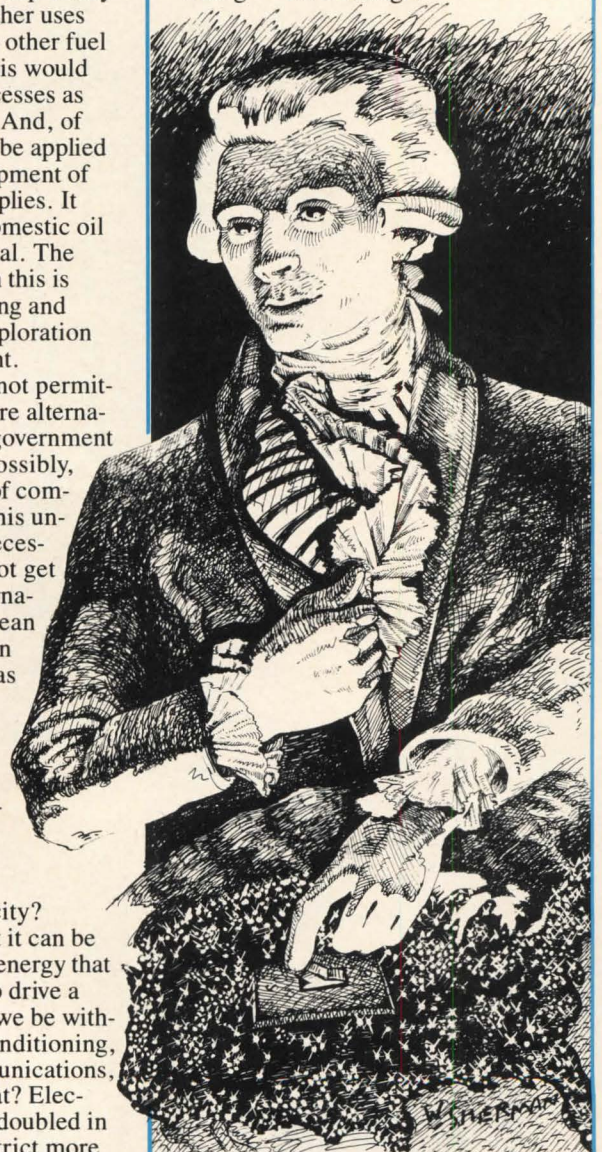
If the free market is not permitted to work, the only future alternative may be compulsory government allocation of fuels and, possibly, all forms of energy. Use of common sense should make this undesirable possibility unnecessary. For example, let's not get trapped into another international cartel because we lean too heavily on importation of natural gas. If rising gas prices indicate domestic supply is not keeping up with demand, let's concentrate gas use for its most economical applications, and begin shifting as rapidly as possible to other alternatives.

And what of electricity? Its basic advantage is that it can be created from any form of energy that contains enough power to drive a generator. Where would we be without electric motors, air conditioning, lights, computers, communications, and yes, even electric heat? Electricity generation can be doubled in 15 years, if we do not restrict more use of coal and nuclear fuel.

As Jefferson said, "These United colonies are, and of right ought to be, Free and Independent

States." "... Such is now the necessity which constrains them to alter their former Systems..." We don't need more government regulations to increase both costs and confusion. We just need to get on with what needs to be done. If you wish to know more about managing energy in all its forms, write us for a free copy of the newly-expanded "Total Energy Management Handbook." In it you'll find ninety pages of valuable energy-saving information ranging from subjects such as energy audits to effective solar applications.

Georg Wilhelm Friedrich Hegel (1770-1831) said experience and history teach that people and governments never have learned anything from history, or acted on principles deduced from it. Let's prove him wrong — for a change.



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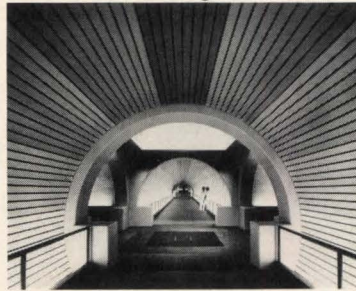
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112 Eastern Maine Medical Center, Bangor, Maine

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122 New England Medical Center Hospital, Boston

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ARCHITECTURAL ENGINEERING

127 Tent structures: are they architecture?

Fabric tension structures have arrived. They are now an accepted approach for major projects, such as the Haj Terminal in Jeddah covering 105 acres and the Florida Festival pavilion, a \$6½ million facility for Sea World in Orlando. These two projects represent benchmark fabric structures. They illustrate on the one hand the influence of architectural outlook and program on form and engineering design, and on the other hand, the contribution of engineering finesse to formgiving.

141 Product reports

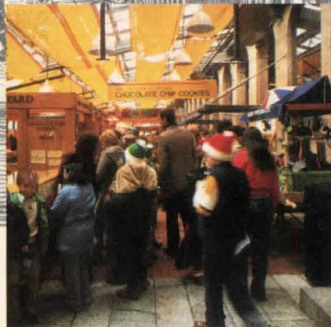
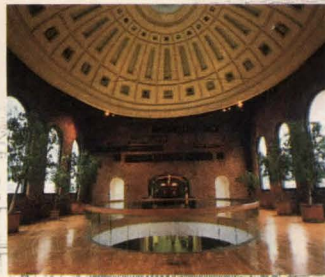
A special roundup of new products to be introduced at NEOCON XII in Chicago June 11-13.

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NEXT MONTH IN RECORD

Building Types Study: Industrial buildings

While the immediate forecast for the volume of construction activity on industrial buildings may not be completely rosy, the volume may be helped by unusual factors like the construction of new plants by foreign companies fearing embargoes on imports, in what will remain for some a lucrative market. It is no news that clients in the industrial area are demanding higher levels of design—just as they are in other areas. And design considerations are going to constitute a strong factor in architect selection in the heavy competition for what is built. The particular interest seen in the high-style industrial design that will be seen in June is that there seems to be an even closer convergence between some popular design trends for general building types and that which suits this particular building type. It might be called a maturing of the "industrial esthetic."



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It pays to meet with a Bell System Building Industry Consultant in the early stages of any new building or restoration project. To locate your consultant, call 0-201-221-4000 collect.



June's concentration of conventions: too much travel, but lots to learn

One of the things that an editor does for a living is travel to as many of the profession's major meetings and conventions as possible. And since, for reasons apparently lost in antiquity, the AIA National Convention, the Aspen Design Conference, NEOCON, and the CSI Convention all are scheduled in June every year, next month is a month of hotel rooms and airplane flights. But it's worth it, because these meetings are such a good way to learn, and to exchange ideas, and to debate what the future may hold for architects and architecture. And so I take this space to urge you to attend at least one of the major events taking place next month.

Major event No. 1 is the 1980 AIA National Convention, being held this year in Cincinnati from June 1st to 4th. It has two major threads running through: four theme speakers focusing in on the inevitable question of "Where do we go from here?" (and this year featuring some extraordinarily thoughtful people) and the professional development seminars (this year set up to benefit not just practitioners, but the AIA's associates, interns, and student members).

The theme sessions begin with futurist and acting president of the Hudson Institute, Leon Martel, who will take a broad look at the problems that confront use—energy, inflation, our aging as a society, leisure time, urbanization vs. suburbanization. His talk, rumor has it, is surprisingly positive—which would be refreshing if his thinking holds up under challenges of the other theme speakers: the problems confronting all professionals, to be addressed by Irving Kristol, professor of social thought at NYU's Graduate School of Business Administration as well as co-editor of *The Public Interest*; the expectations of the client, the community, and society at large, to be addressed by super-client J. Irwin Miller of Cummins Engine; and a discussion and wrap-up of all these issues to be conducted by Gerry McCue, who is a very good and thoughtful architect and newly appointed dean of the Harvard Graduate School of Design. Attendees will also have a broad choice of seminars—for further debating the theme ideas, on design, on production technology, on energy, on extended services, and, again, a special series for the not-yet-licensed on "the nuts and bolts of construction detailing," on setting up your own practice, and on career options outside conventional practice.

The second major event of June is the

biggest interior-design event of the year, NEOCON. This year's NEOCON 12, at the Merchandise Mart in Chicago, runs June 11th through the 13th. In addition to the Mart's enormous and enormously helpful display of the newest interior products spread through the manufacturers' showrooms, this year's professional program sounds very good indeed. The keynote is by Edward Cornish, president of the World Future Society, who will offer several scenarios ("optimistic, pessimistic, and practical") on the future. Other major seminars and speakers will include AIA president Chuck Schwing and David Hambleton of the Royal Architecture Institute of Canada; a look at "tomorrow's office" by a major private client and a major government client; Paolo Soleri on "Energy and its impact on urban planning," which ought to be fascinating seen through his eyes and given his Arcosanti research; and Michael Brill on "Measurably increasing output through better environmental planning."

Major event No. 3 is the International Design Conference in Aspen scheduled for June 15th and 20th, for which chairman Moshe Safdie has assembled a fine interdisciplinary group of speakers. It sounds as if Moshe is going to tackle head on "the pursuit of novelty and fashion" in favor of "a search for relevant patterns and models to guide us in building an environment which will be enriching and uplifting to the human spirit." A more complete program description is given in this month's *Record Reports*.

Finally, there's the 24th Annual Convention and Exhibit of The Construction Specifications Institute, slated for the 16th through the 18th in Anaheim, California. The appeal again is not just the very, very impressive display of products and materials that CSI attracts—making it a very efficient way to review your knowledge of what's available to be designed-in and specified—but a thoughtful professional program. Perhaps the most intriguing presentation is "Construction Dollars—From Where? For What" by Bank of America senior vice president Richard Hoffman, but there are a host of seminars on specifications, marketing, coordinating multiple contracts, and the like that form the backbone of almost any design process.

Well, a heavy description, I guess. But also heavy on the possibility to learn. It's not too late to wonder whether you shouldn't be planning some travel of your own. . . .

—Walter F. Wagner

In a World of Ordinary Windows,

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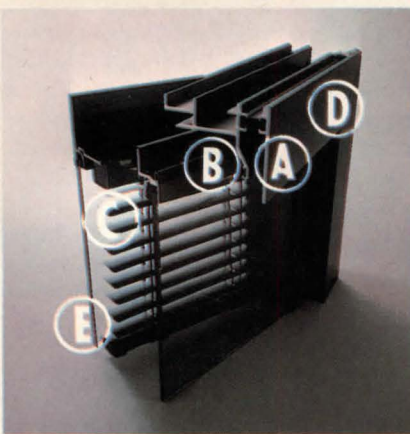
Insulated Glass. Sometimes the obvious answers aren't so obvious. Ask owners who've experienced seal fracture failures. They've found that insulated glass delivers improved shading coefficients when it clouds up. An unorthodox way to save energy. But tough on folks who want to look outside.

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C. Wedge-glazing system provides a high compression seal between glass and aluminum, preventing air and water infiltration.

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E. Fully enclosed narrow slat venetian blinds help provide shading coefficients as low as .10 when set at 45 degrees. Virtually maintenance free.

February contracts for new construction, totaling \$10.4 billion, were down 25 per cent from the same month of 1979, reports the F.W. Dodge Division of McGraw-Hill Information Systems Company. In the first two months of 1980, contracts for construction projects came to \$21.4 billion, compared with \$25.7 billion during 1979. "Although economic conditions are clearly moving against the construction industry in 1980, comparison of current contracting with the early months of 1979 leaves the impression that the situation is a lot weaker than it really is," noted George A. Christie, vice president and chief economist for F.W. Dodge. "Almost all of the difference between the two periods concerns a pair of nuclear power plants with a combined value of \$4 billion that were started in February 1979," he points out. "Except for these two extraordinary projects, construction contracting has held virtually even with last year's dollar total. The makeup of 1980s building, however, consists of more nonresidential building and less housing," said the economist.

The Fourth Annual Professional and Scholarly Book Awards, sponsored by the Association of American Publishers, have been given to *The Plan of St. Gall* by Walter W. Horn and Ernest Born, published by the University of California Press, as the most outstanding book in Architecture and Urban Planning, and *Building Engineering & Systems Design* by Frederick S. Merritt, published by Van Nostrand Reinhold Company, as the most outstanding book in Engineering. *The Plan of St. Gall* also received a special award for Excellence in Book Design and Production.

Serge Ivan Chermayeff will receive the fifth annual Award for Excellence in Architectural Education, presented by the AIA and the Association of Collegiate Schools of Architecture. Mr. Chermayeff taught 30 years at Brooklyn College, Chicago Institute of Design, M.I.T., Harvard Graduate School of Design and Yale University. His nomination read: "Mr. Chermayeff's wit, charm, bullishness, intransigence, knowledge, taste, prejudices and delights all contributed to the zest of a great teacher. His attention to rigid principles, his unforgiving drive toward excellence and his step-by-step development of design concepts served as the foundation" for two generations of architects. Mr. Chermayeff will be honored during the 1980 AIA National Convention in Cincinnati, June 1-4.

Owens-Corning Fiberglas Corporation is accepting entries for its annual Energy Conservation Awards. 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—new this year—multi-family residential facilities. The competition is open to all registered architects and professional engineers practicing in the U.S. Any building completed, under construction, or commissioned and being designed on the date of entry is eligible. Use of Owens-Corning products is not an entry prerequisite. Letters of intent to enter must be submitted by June 27; official entries must be in by August 29. For additional information contact: Mary G. Reinbolt, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

Hugh Stubbins received the Thomas Jefferson Memorial Foundation Medal in Architecture at the University of Virginia, April 14. Mr. Stubbins is well known for his design of the Federal Reserve Bank of Boston and Citicorp Center in New York City. Among his more recent buildings in the U.S. are the University of Virginia Law School, St. Peter's Church in New York City, Pusey Library and Loeb Drama Center at Harvard. Mr. Stubbins has served as past president of the Boston Society of Architects, Fellow of the American Academy of Arts and Sciences, chairman of Harvard's department of architecture, and is a Fellow of the AIA.

The Prestressed Concrete Institute has issued a call for entries and named the jury for the 1980 PCI Awards Program. The annual event, now in its eighteenth year, recognizes architectural and engineering design excellence in precast and prestressed concrete buildings and bridges. Attention will be given to the use of these materials to achieve esthetic expression, function and economy. Deadline for entries is August 1, 1980. Instructions on how to submit are available from the Prestressed Concrete Institute, 20 North Wacker Drive, Chicago, Illinois 60606.

The Chicago Chapter of the AIA is initiating an Interior Architecture Awards Program, developed to recognize the increased activity within the architectural profession involving interior design. Interior architecture projects completed and constructed between January 1, 1976 and March 1, 1980 are eligible. The Awards presentation will take place June 10, and the winning projects will be exhibited at NEOCON XII. Projects must be designed by AIA members, associate members, professional affiliate members or member firms of the Chicago Chapter AIA.

Boston Globe architectural critic Robert Campbell has been selected by the AIA to receive a 1980 medal for his architectural reportage and commentary. In selecting Campbell, the AIA jury said it felt unanimously "that Robert Campbell brought a lively judgment, independent and unprejudicial, to the architectural community via the daily papers. His witty reflections have often been a source of learning for architects. He has become one of the best interpreters of current architectural work. . . . His constant activity in public discussion has proved to be an exceptionally good source of information about quality in architecture for the public." The AIA medal will be presented to Mr. Campbell at the 1980 AIA National Convention.

1980 OWENS-CORNING ENERGY CONSERVATION AWARDS: CALL FOR ENTRIES.



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Owens-Corning would like to honor those specific architects and engineers responsible for conceiving and creating the most energy-efficient designs of 1980.

Registered architects or professional engineers practicing in the United States may enter as

individuals or in teams. The building entry must be a commissioned project: new or remodeled, in the design process, under construction or completed.

A panel of proven professionals in architecture and engineering will act as jury. Entries must be submitted by August 29th, 1980. Winners will be notified in early October.

The Call for Entries has full details. For your copy, write today to Mary Reinbolt, Department 126, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659. Or call her at this number: (419) 248-7419.

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Circle 18 on inquiry card

Amid controversy and dissent, the AIA endorses BEPS—with minor reservations

The American Institute of Architects remains the staunchest supporter of the Energy Department's proposed Building Energy Performance Standards (BEPS). But even the AIA would prefer the standards to be phased in over a two-year period; to allow for needed refinements and to give the building industry time to adjust.

Department of Energy officials are settling down this month to weigh technical changes suggested by hundreds of witnesses during formal regulatory hearings in five cities in February and March. The officials are also considering a recommendation for Congress to delay the implementation schedule. (Under a 1976 Federal Law, the final language of the standards is to be set by August 14, and be in effect twelve months later.) There is great skepticism surrounding the practicality of such a schedule. John M. Deutch, until recently the Under Secretary of Energy, conceded that the BEPS, as now written, "may not work." And John H. Cable, an

architect in charge of developing the standards, hinted that he too favored a slower implementation. At the hearing Mr. Cable helped build in support for a delay.

Building industry witnesses, appearing before the hearing, all favored a delay, though the AIA did so obliquely. Herbert Epstein, the AIA's witness, said that the Standards should be implemented, but not enforced for two years. Epstein's scheme for carrying this out would be: promulgate the standards as presently written, have architects and engineers prepare an energy use analysis, but permit building-code officials to issue a permit whether or not the analysis showed the structure meeting the specified energy design budget. And after two years, the code officials would insist upon adherence to the budget numbers. According to Epstein: "Such an approach allows for, and stimulates, the rapid development of more effective calculation methods. It also

provides the necessary time to educate and improve the skills of all members of the building industry." Mr. Epstein suggested other changes, but urged the Department of Energy not to "lose sight of the long-range benefits of the program through the design of better buildings." The AIA opinion is that other standards, including ASHRAE 90, cannot be made the equivalent of prescriptive standards, and urges the DOE to continue its support of a "total building energy performance standard."

AIA spokesman Epstein suggested a change in regulations involving energy budgets; because the proposed method "allows energy inefficient buildings to be designed in some regions of the country and also permits different levels of energy efficiency of buildings within the same region." The AIA solution would be a "dual budget that recognizes both building energy use and source-weighted energy use." Under the AIA's plan a designer would be given

two values based on the choice of fuel type and the more restrictive of the two budgets would have to be met.

Other changes suggested by the AIA involve the calculation methods, a process of evaluation and certification of alternative methods for calculation of energy consumption, and simplified administrative procedures. These suggestions were coupled with a ringing endorsement of the BEPS approach, which Epstein said, offers flexibility, creative freedom, ease of adjustment, and the opportunity to accurately match building function to appropriate conservation measure.

The AIA was alone in its praise of the Standards. Other organizations, representing professional engineers, builders and contractors offered lengthy criticisms. To a reporter who suggested that the AIA was standing alone in vigorous support of the Standards, Epstein simply said, "So be it."—William Hickman, *World News, Washington*.

ACE spokesman urges substantial changes to BEPS

According to Donald G. Carter, spokesman for the American Consulting Engineers Council at the Department of Energy hearings on the proposed Building Energy Performance Standards, the fuel-use policy seems to conflict with other parts of the energy policies promoted by the Carter Administration. He also charged that the standards, while representing "a remarkable attempt" by DOE to develop energy conservation requirements for new buildings, were based on "an unacceptably small research sample—one hundred and sixty-eight buildings," and called for further expedited research.

According to Mr. Carter, the fuel-use shift in new buildings which would result from adoption of the BEPS would impose severe hardships on coal-fired, hydroelectric and nuclear generating facilities through the application of energy-source weighting factors. . . . "While we recognize the need to encourage the use of nondepletable sources of energy, we believe the proposed standard discriminates against certain electric generating processes based upon nondepletable energy sources."

Mr. Carter went on to say that while 45 states have adopted their

own energy standards since the Arab oil embargo of 1973-74—standards that must be replaced with the national standard if they are not as strict as the BEPS—DOE has not addressed the impact of the BEPS on state and local building code authorities. "The regulatory and economic analyses focus on the impact of the BEPS on the national economy. We would have preferred to learn of the standards' potential effect on design firms, local construction permit offices, construction contractors, local material suppliers, local labor forces, inspection services and manufacturers who must create new products."

Design requirements of the rules were also criticized by Mr. Carter. Design evaluation techniques contain fixed criteria including air infiltration factors, weather data, and building operating conditions. Carter believes these factors "should not be fixed since there will be instances where flexibility will produce a more accurate estimate of the actual building energy consumption."

The ACE spokesman believes the DOE II computer program, to be used in estimating energy consumption for buildings under design, "neglects benefits achieved by daylighting, active and passive solar heating, thermostat control, and building use profiles. . . . We are disturbed by the

suggestion that computer simulations will be required to indicate compliance with the standards." And he called for the BEPS to permit use of simplified design tools, including hand calculations and development of a *Manual of Accepted Practices* which references alternative energy conservation methods such as the ASHRAE Standard 90. Finally, Mr. Carter recommended that:

- The standard should be voluntary over an extended time frame to minimize potentially harmful impact on any one segment of the construction industry.

- A detailed assessment should be conducted of potential increases in design time, computer time and consequent cost increases for design firms. (He predicted 20 per cent less construction and building starts for the short term under BEPS.)

- DOE should work for Congressional extension of the implementation deadline for states to adopt BEPS.

- An educational program should be developed immediately for design professionals, code officials, legislators and compliance personnel.

- Existing Federal laws which limit design professionals' fees on Federal projects should be revised or repealed, with the support of DOE, because the BEPS will make the design process more costly.

- The liability risk of design professionals who must certify to the new building's compliance with energy consumption limits should be resolved. (The Council recommended that DOE include an affidavit of compliance minimizing risks to designers.)

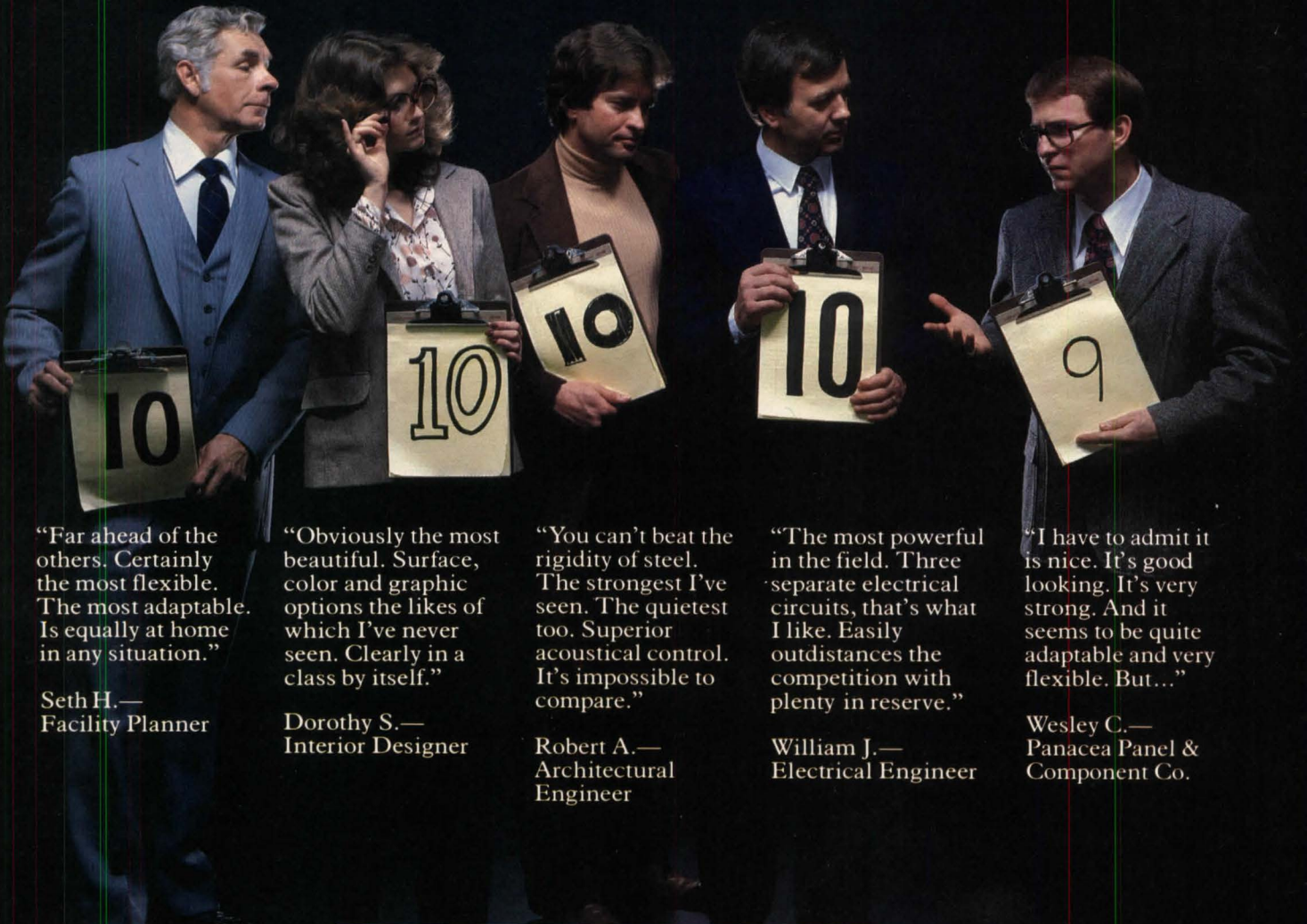
West German competition: emphasizing color in design

The Farb-Design-Internation e.V. welcomes entries for the "Internationaler Farb-Design-Preis 1980-81", being held under the auspices of the *design center stuttgart*, Trade Department, State of Baden-Württemberg. The objective of the competition is to award prizes to work in the fields of architecture and interior design, industrial design, and teaching which places a special emphasis on color. The coherence of design, esthetic impression, and the relevant object are crucial.

The primary aim of the competition should be to give a general idea about the subject of coloration, and provide new guidelines.

A jury will award DM 30,000 (approximately \$16,000) to the winners. More information is available through: Farb-Design International e.V., Danneckerstrasse 52 (Architektenhaus), D 7000 Stuttgart 1.

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Electrical Engineer

"I have to admit it is nice. It's good looking. It's very strong. And it seems to be quite adaptable and very flexible. But..."

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UniGroup Open Office Interiors System. A 10 at Neocon XII.

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Circle 19 on inquiry card

Protective legislation may adversely affect AE's

Some construction-design organizations in Washington are worried about getting a bad name—from consultants.

The Federal government hires thousands of consultants every year. Many perform legitimate functions, permitting the government to acquire expert advice without having experts on staff. In other cases, however, subjects covered by the consultants

appear frivolous. One example cited was a Justice Department study of why prisoners want out of jail. The problem is that the public perception of the distinction between these two kinds of consulting and the architectural and engineering work related to construction projects is often blurred.

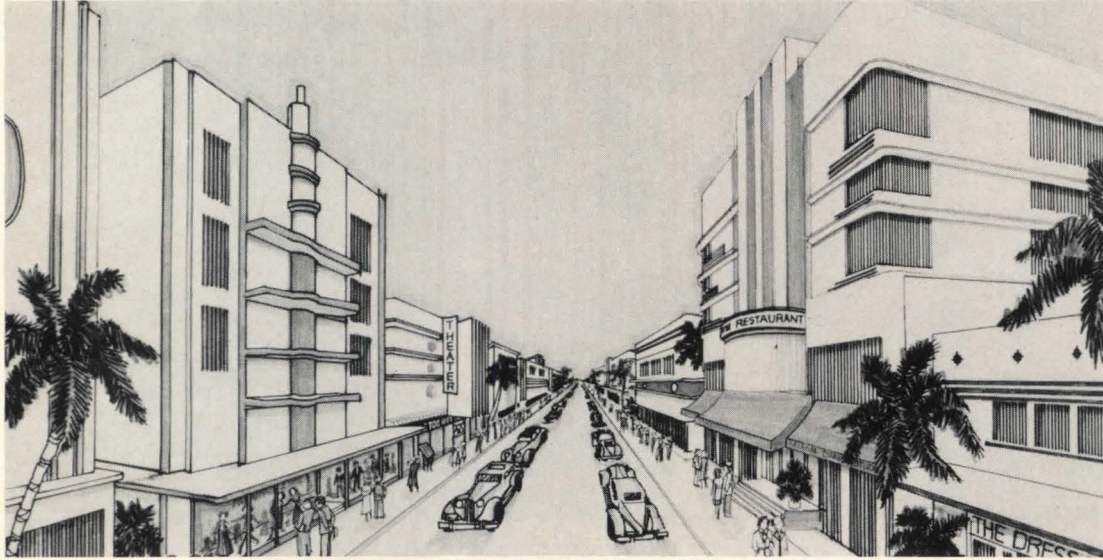
Congress is considering legislation to eliminate abuses that, some worry, will adversely affect architects and engineers. To head off this possibility, Milton F. Lurch, general coun-

sel of the National Society of Professional Engineers (NSPE), has drafted legislation intended to eliminate questionable consultant work without hampering legitimate work.

The bill would require Federal agencies, when planning to award a contract of more than \$50,000, to submit a summary statement of the proposed award to Congressional committees. The theory is that committee staffs would be able to defend their usefulness.

According to Mr. Lurch, the sin-

gle largest problem in drafting the bill is in defining consulting work to be covered. His intended legislation proposes this definition: "contracts for consulting service mean studies, reports, preparation of data, or similar services intended to provide information or advice to the government, but does not include contracts for the performance or production of tangible goods, custodial and related services, data processing tabulations, plans, designs, and specifications for proposed facilities."



Boston firm selected to draw master plan for Miami Deco district

A 10-person committee of Miami Design Preservation League members, and city and county planners, chose Anderson Notter Finegold, Inc., of Boston to prepare a master plan for a "renaissance" of Miami Beach's mile-square Art Deco district. The aim of the six-month, \$60,000 planning contract will be to re-establish the ambiance of the area without disrupting the neighborhood.

Last May, as a prelude to the contract, the U.S. Interior Department declared Miami Beach a historic district, because it is the largest known concentration of '20s & '30s resort architecture—containing more than 800 "architecturally significant" buildings. Miami Beach is the first such area to receive the designation for 20th century structures.

According to Maurice Finegold, a

principal in ANF, Inc., "This project represents a preservation challenge of national significance and an opportunity to implement new preservation and adaptive-use techniques." The architects will attempt to show the viability of rehabilitating the area by devising a preservation plan that will support the lifestyle of the existing low-income population.

The planners will conduct sur-

veys, hold public hearings with local residents, initiate design workshops, prepare economic and marketing analysis, and review historical data. Special consideration for the Art Deco flavor of the district will be incorporated into a proposed historic district ordinance. The ordinance will define the architectural characteristics of the district which are important to preserve and develop for ensuring that rehabilitation and new construction are of a size, scale, and design which will be in harmony with the existing Art Deco character.

The architects hope to devise a scheme that will create new income-generating activities, employment opportunities, more pleasant outdoor shopping and recreation, and improved living conditions, while making the area attractive to potential investors.

The planners final report will include plans, drawings, and sketches containing all major proposals designed to guide development, capture interest and attract federal grants.

Assisting ANF, Inc., will be Hammer, Siler, George Associates, economics and marketing consultants of Washington; Sandra Cooper Howell, consultant on environment and professor at MIT; and a local architect.

Moynihan sponsors bill to spur Federal construction

Congressional approval appears imminent for a plan calling for construction of more Federal buildings—many of them to be designed by winners of architectural competitions.

Bill S. 2080, sponsored by New York Senator Daniel Patrick Moynihan, won unanimous approval from the Senate Public Works Committee in April; and one of the largest hurdles—the Carter Administration's acceptance of a financial scheme that would involve borrowing from the Treasury—was cleared when the White House offered its tentative approval.

The main thrust of the Bill is to reverse the trend toward housing Federal workers in leased space, and to relocate them in Federally-owned office buildings. (Under the terms of the Bill, this construction/relocation scheme would require spending

some \$31-billion over the next 20 years.) S. 2080 would also establish a supervising architect for the government, and, the sponsors hope, result in high quality government architecture. The Bill goes on to suggest that government architects and engineers should do much of the non-competition government design work.

Increasingly, over the past two decades, fiscal experts in the White House and Congress have been reluctant to spend the necessary money to house government employees. The net result is that about half of all government workers are in leased offices, and the number is growing. S. 2080 specifies that the government accelerate its building programs to reverse the trend with no more than 40 per cent of all workers housed in leased space 10 years from enactment, dropping to no more than 25 per cent in 20 years. After careful calculations, the General Services Administration concluded

that compliance with the proposed law would mean constructing hundreds of buildings (with a total value of \$31 billion in current dollars).

The reason this figure is so startlingly high is that the government has been operating with a very small budget for new office construction. In fact, the Carter Administration asked for only \$34 million for the fiscal year beginning October 1, and this amount has already been slimmed down to \$15 million by the Senate Public Works Committee.

Now, with Administration objections largely removed, the most controversial provision still remaining is the one that insists on architectural competitions. The AIA opposes such competitions, fearing they would weaken the government's traditional reliance on the Brooks Law (most qualified) selection procedures for architects and engineers. The Committee, on the other hand, says architectural competitions would encour-

age innovative designs and the use of smaller, less well known architectural firms. The AIA is joined, in its opposition to architectural competitions by Mike Marschall, Commissioner of Public Buildings at the GSA. Mr. Marschall feels that "competitions are time-consuming and expensive," but adds, "if it's the wisdom of the Congress that we do them, of course, we will. I just don't think it's the smart way to go."

Other provisions in the Bill—essentially a total rewriting of the Public Building Statutes—require the GSA to conduct a systematic research and post-occupancy evaluation, to give preference to buildings of historic, architectural, and cultural distinction before building new. Two other specifications included in the Bill are: access for the handicapped, and one-half of one per cent of the budget must be set aside for art-in-architecture programs. —William Hickman, *World News, Washington*.



Laminated wood trellis at Boston Waterfront Park, Boston, Mass. Wood structure supplied and assembled by Unadilla Laminated Products, Unadilla, N.Y. Architect, civil engineer, landscape architect: Sasaki Associates, Inc., Watertown, Mass.

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Aspen Conference to address 'Form and Purpose'

The 1980 International Design Conference will be held in Aspen, Colorado from June 15-20. This year's conference will be chaired by international architect and planner Moshe Safdie, and will address the theme "Form and Purpose."

Chairman Safdie's conference theme statement poses a challenging synopsis of the problems and questions we will confront in the '80s:

"The pursuit of novelty and fashion in the design of our environment is a preoccupation of our culture. Art and craft are increasingly distinct, and artists function apart from society's concern. Architects and city planners, only recently captivated by the issues of social accountability and the challenges posed by contemporary technology and bureaucracy, now retreat to narcissistic, introverted and indulgent activities—activities in which personal fascination and eclectic sophistication are the mainstays.

"Ahead of us lies a world of growing numbers, dwindling resources, and limits on energy. It will require the ingenuity and responsiveness demonstrated in design in nature and design in indigenous cultures to achieve a balanced, affordable and wholesome environment.

"The 1980 International Design Conference in Aspen will be devoted to examining 'Form and Purpose.' We will search for relevant patterns and models to guide us in building an environment which will be enriching and uplifting to the human spirit."

The rostrum of speakers will include a wide spectrum of inter-

disciplinary professionals, including architects, anthropologists, biologists, sociologists, a fashion designer and a historian. Many facets of both design in nature and of the man-made environment will be discussed with a view of developing a greater appreciation of the issues and the processes of design.

The conference will be devoted to fundamental issues such as:

- What is the process of design in nature and what can be learned about it in designing the human made environment?
- To what extent is indigenous building (people building for themselves where artifact is art) relevant to us today?
- What are the forces of fashion? Does fashion respond to basic needs or is it the result of manipulation and exploitation?
- Can and should art, design, and architecture be closely related?
- Will a search for design responsive to needs and expressive of materials and processes result in beauty? Or can and should beauty be the object of a search in itself?
- To what extent are the interests and preoccupations of architects today capable of influencing the quality of our environment?
- Will placing the design decision-making authority in the hands of the users profoundly influence the form-purpose relationship?

For further information regarding fees, deadline for registration, and accommodations write: IDCA, P.O. Box 664, Aspen, Colorado 81611.

Architectural fellowships program expanded for 1980

Six fellowships of \$10,000 each will be awarded to winners of the 1980 Architectural Fellowships Program. The \$60,000 Awards Program is funded by the Architecture and Environmental Arts Program of the New York State Council on the Arts (NYS-CA), and administered by Educational Facilities Laboratories (EFL), a division of the Academy for Educational Development (AED).

The 1979 Architectural Fellowships Program, also funded by the Council and administered by EFL, awarded a total of \$40,000 in Fellowships to eight winners, including: Roger C. Ferri's "Pedestrian City: A Proposal for an American Architecture and Urbanism in the Post-Petroleum Age," Ralph Arlyck's "Art for Whom: Beaubourg, MOMA, and Quincy Market," and Patricia Leigh Brown's "The Preservation Notebook," and Steven M. Holl's "American City Fabrications."

Alan C. Green, senior vice president and director of the Academy remarks: "We are pleased that the NYS-CA is providing support for the 1980 program based on the number of applicants, the fine project results of the winners, and an overwhelm-

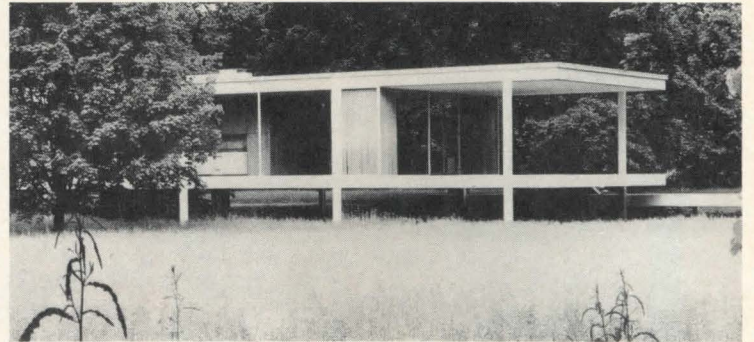
ingly positive response by panelists, recipients, and the New York State architecture, planning and design community. . . . We are particularly enthusiastic about the increase in the amount of the funds available and the sum of each award."

The Fellowships are to cover a six-month work period and will be awarded in architecture, interior design, landscape architecture, urban design, and historic preservation. The program is designed to assist individuals of proven accomplishment and future promise by freeing their time for independent work.

Professionals eligible for 1980 Architectural Fellowships include New York State residents not matriculated in a degree program at the time of the award. The program is specifically directed toward individual development, and group project applications are ineligible. Requests for Fellowship guidelines and application forms should be submitted to Nancy Morison Ambler, Public Information Coordinator, EFL/AED, 680 Fifth Avenue, NYC, 10019. Completed applications must be received by EFL no later than June 2, and an announcement of winners will be on July 1.



Clem Fiori



Princeton students play Mies for a day

Mies van der Rohe's Farnsworth House, built in 1950 in Plano, Illinois, is a recipient of the 25-Year Award from the Chicago Chapter of the AIA. A jury of prominent architects termed the house "a flawless meeting of architecture and engineering. Due to the simplicity of its design and the quality of its materials, it remains a timeless and enduring example of its era."

Each spring, just beyond the end zone of Palmer Stadium in Princeton, New Jersey, the Farnsworth House reappears in the form of a two-ton, half-full-size replica that the students of Princeton's School of Architecture and Urban Planning assemble from fabricated structural steel. Princeton's project breaks the academic routine to let graduate students don hard hats, wield wrenches, and heft some 50 steel columns, beams, and girders into place to form a structural frame about the size of a mobile home.

According to Professor Alan Chimacoff, the exercise has a twofold purpose: to give students first-hand involvement with structural steel, and to let them "experience structure as architecture. In fact, in this house, the structure is the architecture." Even

though it lacks a finished roof, floor slab, and glass, the New Jersey version bears a striking resemblance to the spare, minimally detailed original 47 miles west of Chicago.

Support for the project came from the American Institute of Steel Construction to devise a way to help architecture students feel for themselves what steel is like to work with. The resulting program, called "Hands on Steel," has provided welding outfits, technical expertise, and financial aid to most of the country's accredited schools of architecture.

Six concrete footings are the only permanent feature of the half-size house, which will be dismantled and bolted together again for the third time this year. Record assembly time is two hours, 45 minutes.

Professor Chimacoff emphasizes that the project is not only an exercise in construction technology, but also a chance to appreciate an outstanding work of architecture on its own, structural terms. The real Farnsworth House, a spare, exquisitely detailed pavilion of steel and glass in a rural setting, Chimacoff calls "one of the first statements of the expression of a steel architecture."

Lighting seminar scheduled for New York City

Abe Feder, one of America's best-known and most-respected lighting authorities, will conduct another *Interior Design* sponsored lighting seminar on May 22-23 at the Juilliard School Auditorium in New York City. The program has been developed specifically for architects, interior designers and students.

Using flexible full-scale mockups on the Juilliard stage, Mr. Feder will demonstrate how to deal with light-

ing problems in both contract and residential work, using methods he has developed during his long career as both an independent practitioner and as a lecturer in universities.

The complete cost of the program is \$325 (\$100 per day for students) and advance reservations are suggested. For further information contact: Virginia Evans, Whitney Communications Corp., 850 Third Avenue, N.Y.C. 10022.



The natural look of aluminum... works beautifully in Denver.

The Denver National Bank Plaza is a beautiful example of the use of Alcoa® architectural sheet in a major curtain-wall project. An office complex consisting of a 26-story tower and two adjacent buildings, it was designed to meet the Denver Urban Renewal Authority exterior facade specifications.

Alcoa supplied approximately 400,000 lbs of specially controlled 5005 alloy sheet to PPG Industries for fabrication and finishing of the spandrel panels. The pleasing natural aluminum finish is Alumilite 215, Alcoa 1 etched and anodized (AA-M10C22), providing a long lasting, corrosion resistant protective coating.

Bill Manning, PPG Branch Manager, sums up Alcoa's contribution to the project: "The Denver National Bank Plaza is typical of the quality and service we continually receive from Alcoa. From the supplying of high quality aluminum sheet to the furnishing of fine technical information and service, Alcoa plays an important part in our success in this field."

Let Alcoa help you on your next curtain-wall application. For more information, write Aluminum Company of America, 1012-E Alcoa Building, Pittsburgh, PA 15219.

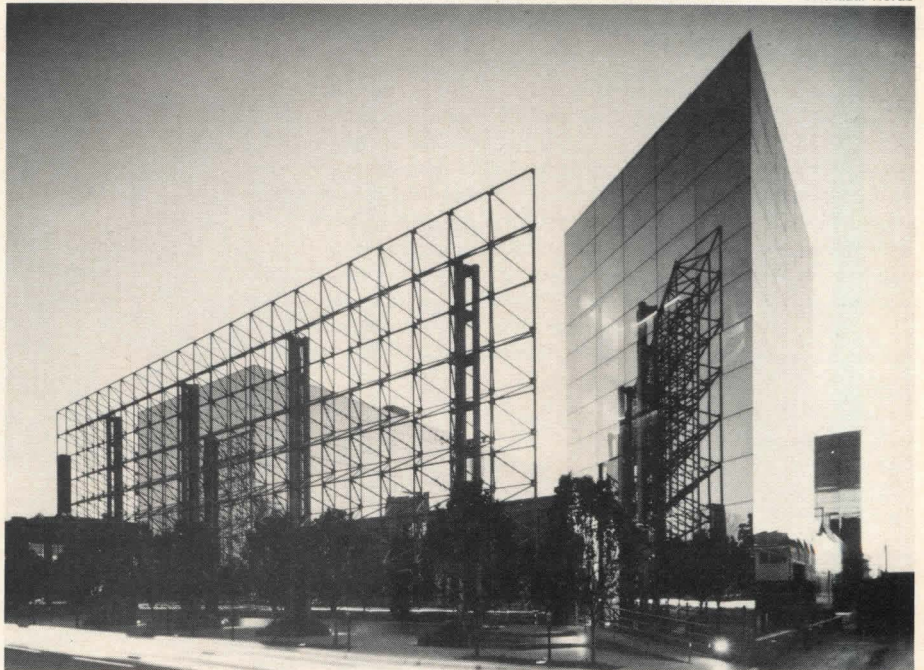
The Denver National Bank Plaza,
Denver, Colorado
Fabricator: PPG Industries, Inc.
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 **ALCOA**

The AIA honors 13 projects with 1980 design awards

The American Institute of Architects has selected seven current use and six extended use projects, from a field of 412 entries, to receive 1980 Honor Awards at the AIA National Convention in Cincinnati, June 1-4. The winning designs indicate the wide gamut of architectural problems and solutions now confronting the profession—ranging from a sensitive restoration of the Smithsonian's Arts and Industries Museum to a glittering \$125-million hospital in Detroit. Frank Tomsick, FAIA, of San Francisco, chairman of the jury for current use noted: "More awards probably would have been given except that this particular jury was a very serious, uncompromising, diverse group. All felt that an award winner could not have a major flaw . . . The siting of a building and the idea that a project should give something back to its community in its siting were major considerations for many of the projects. Some very good buildings were eliminated because they were inappropriate and incompatible with their area." Despite the variety of the winning projects, virtually all are accessible to the handicapped and feature some energy-conserving techniques. Members of the juries included: for current use—Mr. Tomsick; Thomas H. Hodne, Minneapolis; Jane Hastings, FAIA, Seattle; Donald L. Stull, Boston; Bruce J. Graham, FAIA, Chicago; David V. Maudlin, student, Miami University, Ohio; and John Graves, Berkeley; and for extended use—James L. Nagle, FAIA, Chicago, (chairman); Herbert Newman, New Haven; Frances Halsband, New York City; Sally Woodbridge, architectural historian, Berkeley; F. Blair Reeves, FAIA, Gainesville; Jerry Mann, Palmer, Alaska; and Joseph C. Mancuso, student, Princeton University. The thirteen award winners, and the jury's comments, are shown here and on the following pages.



Balthazar Korab

Indiana Bell Telephone Switching Center, Columbus, Indiana; Caudill Rowlett Scott, architects. "A delightfully whimsical solution to the use of mirrored glass. Almost a nonbuilding is achieved by the use of the vertical trellis; a very pleasant building to be

around. A parklike appearance is achieved on a very limited site. It is an appropriate solution to what is essentially a building to house machines. Although starkly modern in a traditional town, its many-faceted reflecting surfaces, trellis, and brick bring it to scale."



Phokion Karas

Market Square Historic District, Newburyport, Mass.; Anderson Notter Finegold Inc., architects. "The Market Square Historic District is one of the few examples of district restoration that we received,

and it certainly is the best. This project is restrained but functionally innovative; it is a set piece. The square is unusual as it is an environment built at one time. Consequently, the restoration takes on a same-

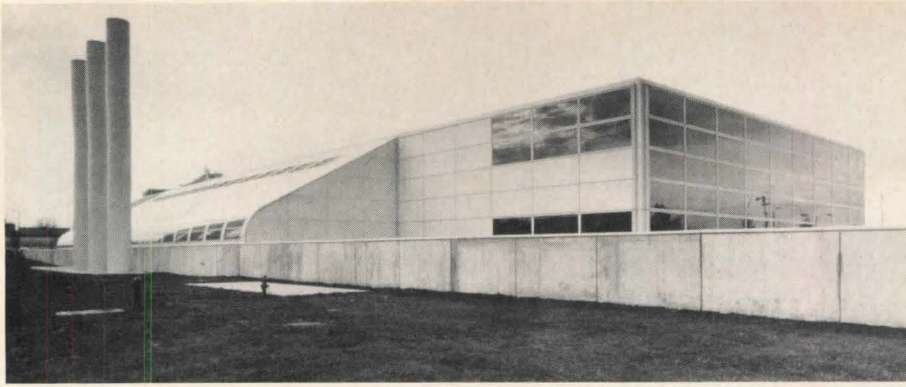
ness, which is overcome by the architect's attention to detail without becoming 'precious.' The new portions of the project are nicely integrated into the existing structure of this working town."

Townhouse, New York City; Robert A. M. Stern, architect. "The townhouse facade deals with the language of its neighbors in a unique way, recalling the images of the traditional/classical townhouse design. The interior is a bold and personal statement emphasizing

form, light, texture, color and circulation. The architect is working at many levels in a sophisticated way. The jury wished the original structure and construction had been better documented as this project was one of the most altered of the work we saw."



Ed Stoeklein



James Norris

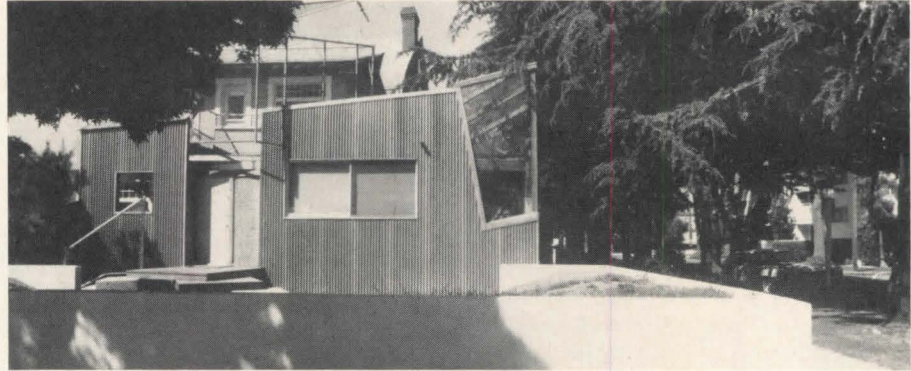
Frank Gehry residence, Santa Monica, California; Frank Gehry, architect. "This residence was certainly the most controversial of the awards. The jury was concerned that the solution was out of context with the immediate neighborhood, but this often happens with fresh ideas. The idea and the

resulting environment are inclusive, not exclusive. This is an expansion of the 'American Dream' (the single family house) into new areas, new forms and spaces. The architecture is a study of materials and questions living patterns. The result is charming and unsettling, but rewarding."

Environmental Health Laboratory, St. Louis, Missouri; Holabird and Root, architects (see RECORD, May 1979, pages 132-133). "A highly refined solution to a very high-tech, complicated program. Low scale, high-style exterior forms and materials are contrasted with exposed ducts, trusses and strong color on the interior. The mechanics of the building

are highlighted by bringing light through the interstitial space truss. The cooling towers, transformers and the multiple mechanical support systems for the laboratory are all housed under the solar collector roof so the total building and site have a clean urban appearance. Simple but delightful forms give the building a very pleasing scale."

Tim Street-Porter



Heaton Court, Stockbridge, Massachusetts; Goody, Clancy and Associates Inc., architects (see RECORD, mid-May 1979, pages 116-118). "A delightfully planned courtyard concept that illustrates how elderly housing should be done. Ev-

eryone agreed that if you had to go to a retirement home, this was the place to go. Careful detailing of the traditional forms and materials make the simple shapes rich in texture. These are well-integrated into the excellent landscape with

well-thought-out amenities such as the raised planters (easy to reach, but not too many to maintain). A vegetable garden (but not a farm) and strolling parklike walks added to the low-key, calm excellence of the project."

Robert C. Lautman



Arts and Industries Museum, Smithsonian Institution; Hugh Newell Jacobsen, architect (see RECORD, November 1976, pages 89-94). "The Arts and Industries Museum 'recaptured the essence of the original building without imitation

of the past.' This museum was the best interpretation of extended use that we received. The character of the interior is delightful. It is complete in concept and detail. It is a real and lasting expression of Americana."

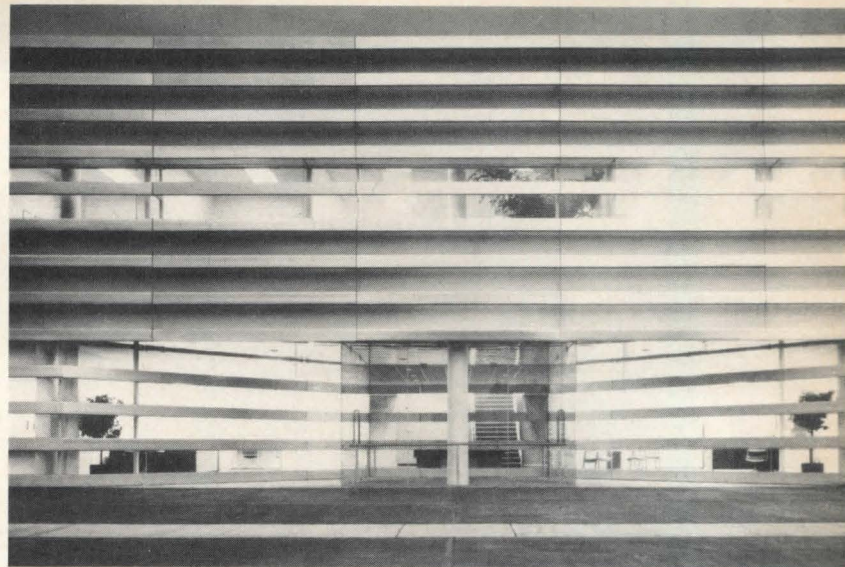
Saari & Forrai Photography



Colonial Church of Edina, Edina, Minnesota; Hammel Green and Abrahamson Inc., architects. "A subtle, interesting building group that responds clearly to the users' needs. The continuity of the gable forms, white trim and rich gray mass create the harmony of a perfect village square. Even though it is an historical recall design, it responds to modern energy needs and user requirements, and gives the feeling of being very up-to-date."

Clemens Kalischer

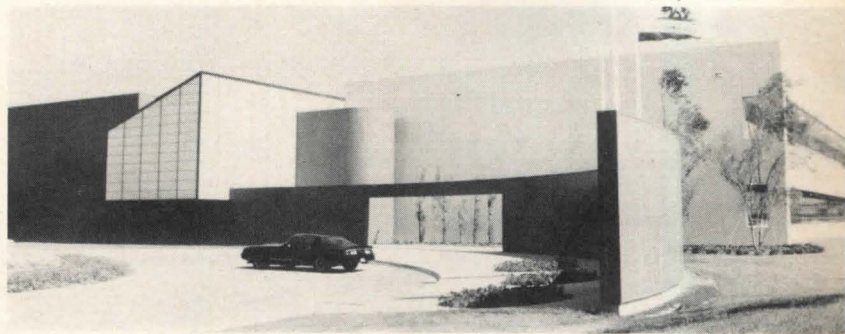
©David Franzen ESTO Photos



Southern Service Center for Equitable Life Assurance Society, Charlotte, North Carolina; Wolf Associates, architects (see *RECORD*, March 1979, pages 140-143). "A slick, brilliant use of glass in a simple but innovatively planned building.

The space and the elegance of the building show clearly that complicated forms and shapes are not necessary to achieve good design. The detailing and materials used are as significant to the over-all design as the concept."

Jerry Holland



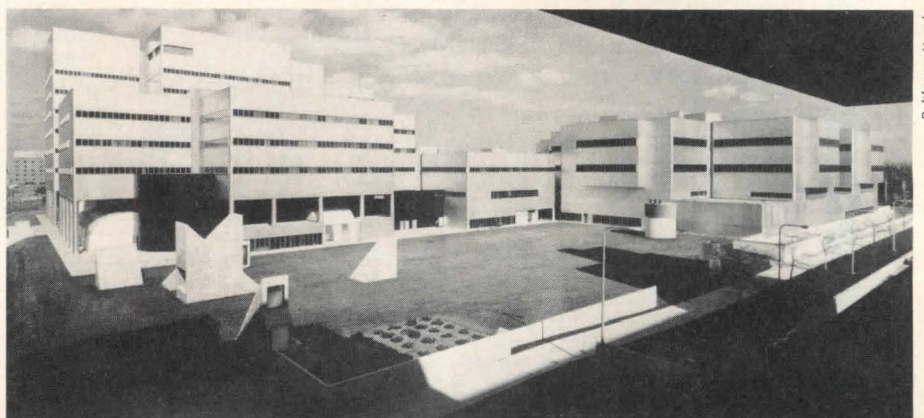
Qume Corporation, San Jose, California; Hawley and Peterson, architects. "A totally industrial building that uses light, planting and color to overcome the crude economic factory detailing. The assembly line and the office space share

the garden. The exterior has simple, strong forms accented with strong colors." Energy efficiency was a prime consideration: all roof and wall surfaces are fully insulated and skylight material is an insulated sandwich panel.

Wayne State University Health Care Institute/Detroit Receiving Hospital/Detroit Medical Center Concourse, Detroit, Michigan; William Kessler and Associates Inc., Zeidler Partnership Ltd., Giffels Associates Inc., architects and engineers in joint venture (see *RECORD*, April 1980, pages 83-90). "This is a very exciting

solution to what is often a dull, massive building type. Color, sheen and brightness are used inside and out to create many pleasant areas along the circulation of this dense, complicated facility. The materials and the articulation of the repetitive towers give the appearance of light and open space."

Balthazar Korab



Shin Koyama Photography

Landmark Center, St. Paul, Minnesota; Perry, Dean, Stahl and Rogers Inc., architects (see *RECORD*, December 1978, pages 100-105). "Perhaps the best example of adaptive reuse we saw. The interior structure shows creative restraint in rebuilding and restoring the

spaces. While the jury was concerned that all spaces are not yet complete, we felt that the quality of the completed portion of the major spaces was so good that it deserved an award. The building is a major renovation/conservation statement."

Hedrich-Blessing



The Biltmore Hotel, Los Angeles, California; Ridgway Ltd., architects. "The Biltmore Hotel has been beautifully restored, creating a modern elegance juxtaposed with the building's original romanticism. The once mundane hotel rooms have been completely transformed and are now reminiscent of a

luxury liner. While the private rooms reflect high design and individual attention to detail, the common spaces take on an urbane character which far exceeds the hotel's original environment. The jury felt this was the most completely detailed and followed through of all the projects we saw."

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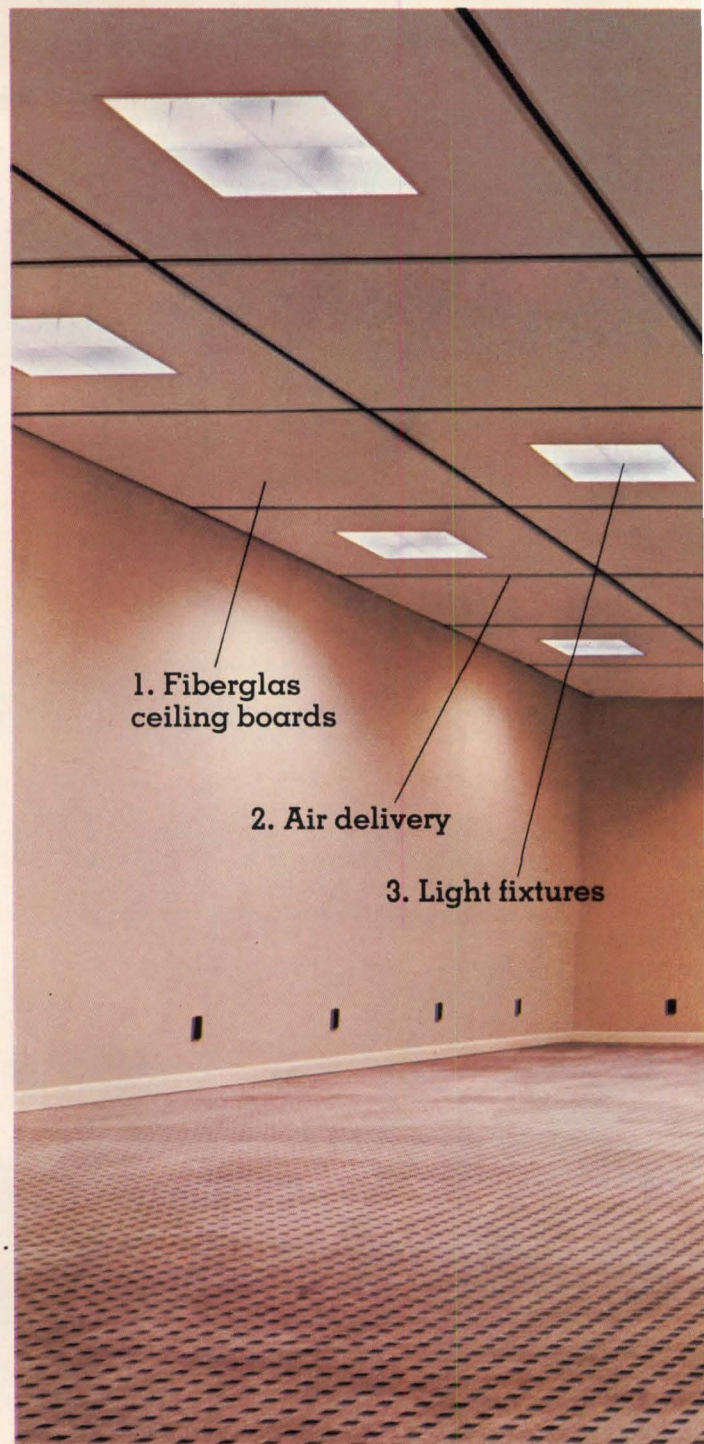
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Domestic bliss

THE ENGLISH HOUSE, by Hermann Muthesius; Rizzoli New York, \$75.

Reviewed by Robert L. Vickery

Before we semiotically dash past Post-Modernism perhaps we should look again at the origins of our art, and what it is we want our architecture to be. In this light, *The English House* is worthy of a most careful reading.

This is the first English translation of Hermann Muthesius' classic and monumental 1904 German study of the English house. It is overwhelmingly complete with 272 pages and 524 illustrations describing in detail every aspect of the "modern English house" (1860-1904), from the evolution of plan to considerations of seating in the inglenook, laying out the vegetable garden and covering the chairs with chintz, "particularly necessary in London where the smoke from coal with which the air is perpetually laden quickly begrimes unwashable materials."

Despite its length and dated publication, the book remains surprisingly fresh and a valuable research document. Muthesius' writing is always clear, and it is often sharp and pithy as well. He describes the inner suburbs of London as having "streets laid out with dull-witted indifference, with no higher aim than that of naked gain."

In addition to Muthesius' crisp writing, this present edition is blessed with an excellent translation and careful editing. Dennis Sharp has done a good job in tightening the original three volumes covering historical development, layout and construction, and the interior, into one readable condensed book.

Finally, the book itself is sumptuously printed with a great number of the original illustrations retained, complete with translated legends and notes. In short, this is a book which any serious architect should have in the library. For it is not merely scholarly research in housing, it is also a re-affirmation of the idea that the practice of architecture should serve and reflect the functional, social and cultural needs of a people.

The first section of the book dealing with the historical evolution of the English house has particular contemporary interest.

Muthesius, an attaché with the German Embassy, viewing England as an outsider and a cultural "investigator" saw the evolution of



Shaw's perspective of Leyes Wood

the house as being unique and special to the English sense of individuality. "The Englishman sees the whole of life embodied in his house. Here, in the heart of his family self-sufficient and feeling no great urge for sociability, pursuing his own interests in virtual isolation, he finds his happiness and his real spiritual comfort." And, for Muthesius, this sense of individuality could best be found within the *new country house* emerging since 1830 from a revival of Gothicism, the writings of Ruskin, and the arts and crafts movement of William Morris.

As Professor Julius Posener states in his introduction to the current exhibition of Muthesius' work being shown in London, "in England he met a theory, a mood may be a better word. . . . This mood was anti-Italian, anti-Renaissance, it was in favor of an architecture related to life, to modern life, more precisely to the life of his own age."

Muthesius saw this mood as producing a new kind of house breathing "simplicity, homeliness and rural freshness, occasionally, indeed, verging on the vernacular. But a fresh breath of naturalness wafts through the house and a sound down-to-earth quality is combined with a sure feeling for suitability."

The hero of this movement, and in Muthesius' eyes an architectural giant, was Norman Shaw, born in 1831 and still alive in 1904. Muthesius clearly recognized Shaw's early dependence on vernacular forms and materials in his return to "gothic" additive plans with brick surfaces and tile-hung walls. In particular, "the chimney-stacks have almost become the *pièces de résistance* of the building as they deliberately and resolutely raise their heads aloft."

Muthesius takes pains to explain his opinion that as Shaw and others moved away from Gothicism to English Renaissance forms, they did so in a way which did not abandon the arts and crafts goals. Muthesius calls this "domestic Baroque" to differentiate these architects' innovations from the more popularly titled "Queen Anne" style.

Professor Posener says that Muthesius'

understanding of Shaw's work as the "foundation stones of a new architecture" and his use of windows as "the essence of the English house," signify his recognition of the English Country house as part of "the philosophy of functionalism." As Muthesius traces the rapid emergence of the newer, smaller, domestic country house, he unerringly selects examples which both in plan and in facade represent what has later come to be recognized as pivotal and important architecture. Ranging from Lethaby's elegant Avon Tyrell to C.F.A. Voysey's Broadleys on Lake Windermere, Muthesius' selections show the development of a house in which the traditional "hall" becomes a living room and as the servants disappear, the house becomes smaller and more "functional."

A host of "younger" architects—Walter Cave, William Arthur Smith Benson, Sir Charles A. Nicholson, Edgar Wood, Edwin L. Lutyens, to name but a few—are discussed in detail. But just as Muthesius sees Norman Shaw as the master of the recent past, he selects Charles Mackintosh, "an architect to his fingertips," as the hero of the future.

In particular, Muthesius sees both the differences and the common bonds between followers of Voysey and Mackintosh. "The former seek extreme plainness in which imagination is suppressed, the latter are virtually governed and led by imagination. Common to both, however, is a strictly underlying tectonic factor that holds qualities of material and construction sacred."

Muthesius sees this contemporary struggle of his day between the realist followers of the Arts and Crafts movement and the idealist romantics from Scotland as being salutary to the evolution of a new house form. Reacting to the "utilitarian and rational principles" of the London group, the Scots "replied that without imagination there is no art." For example, Voysey's pragmatic plan for Broadleys, with its bays all opening to a lake view, realistically uses a simple "hall" both as a billiard room and circulation space. In contrast, Baillie Scott's imaginative "architect's house," uses one large irregular room for inglenook seating, socializing, dining and circulation all together.

Muthesius does not speculate on the future. No hints of Continental developments, Art Nouveau and the approach of Futurism and Cubism creep into his text. The interesting parallels in America of the Prairie School's use of materials and the spatial ideas of Frank Lloyd Wright are missing. Yet, Muthesius has confidence in the future: the young architects will find a better country

continued on page 48

Robert L. Vickery is a practicing architect in Charlottesville, Virginia, a professor of architecture at the University of Virginia, and the author of *Anthropysical Form*.

house form which suits the endearing English quality he most admires, a taste "which values unadorned simplicity above all else, finds poetry in the primitive because it gratifies its yearning for the country and detests flights of fancy most bitterly when it is expected to live in their midst day after day. When an Englishman lives in a house he expects to find peace there."

Having established his thesis that the simple, private *house* represents the best in English culture, Muthesius then goes on to devote two-thirds of his book to a meticulously "functional" analysis of why this is so. No possible "local determinant" of form is left *unexamined*. Geography, subsoil conditions, climate ("the air is extremely damp, and it is generally inhospitable"), building materials, landscaping, gardens, the use of fireplaces ("The many advantages the fireplace is deemed to possess [not least its esthetic advantages, some of which it must be admitted, exist only in the imagination] so completely convince the Englishman that he never considers replacing it with the more efficient stove.")—all come under investigation.

Social factors are studied; land tenure laws, setbacks, interior furniture, ceilings, friezes, fabrics, papered walls—each is given full attention. Such a lavish analysis would soon grow uninteresting and tedious for the reader were it not for Muthesius' continually sharp eye and pungent pen.

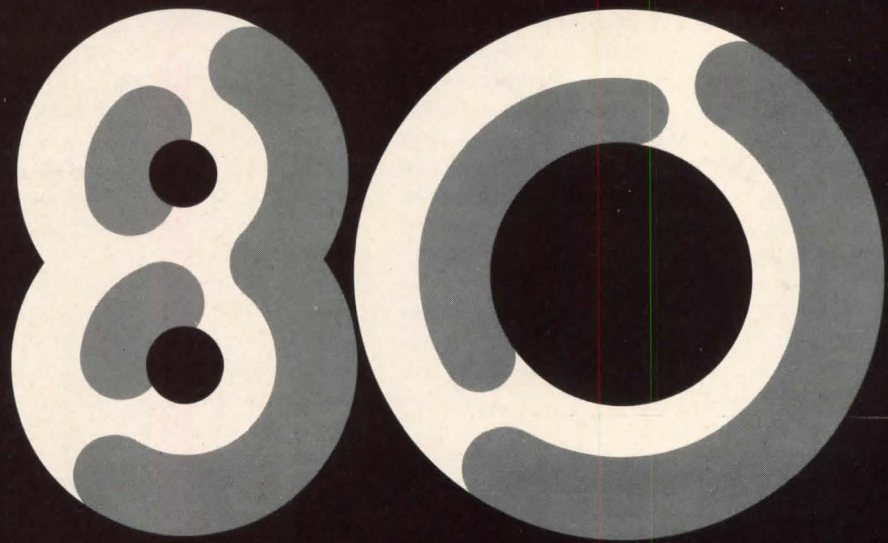
Slowly and carefully Muthesius has built his case. It is impressively done, and by the book's end one cannot help but admire the thought and superb research which have led to his unassuming conclusion. "Naturalness makes up the best part of the Englishman's character. And we see this character in its present-day form reflected in the English house more truly and clearly, perhaps, than in any other manifestation of English culture."

There is one other aspect of Muthesius' work which is appealing and deserving of mention in this confusing period of our own culture—this is his insistence on discussing the house *as a place in which to live*, with clear diagrams, plans, photographs, and readable prose. There is no room in his writing for juxtaposed ambiguities, syntactical arguments, and reversible figure-ground diagrams. And, we do not have to agree with Muthesius' esthetic, which champions the Romantic, vernacular and functional, to nonetheless admire his skill in constructing the argument. And, we understand what he means when he states the English House is pre-eminently friendly, "... instead of a sham modernity expressing itself extravagantly in a whimsical artificiality."

For Muthesius, the issue is not one of "architectonic ostentation, the creation of 'architecture' and 'style' to which we are still so prone," but rather "freedom from the trammels of style, but not to the extent of scorning tradition." When he warns us against "that which is so commonly dubbed 'architecture,' i.e., the proliferation of articulating and decorating forms," the message sounds prophetic for the year 1980, not 1904.

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Goodnight Vienna

OTTO WAGNER 1841-1918, by *Heinz Geretsegger and Max Peintner*; Rizzoli New York, \$25.

VIENNESE ARCHITECTURE 1860-1930 IN DRAWINGS, edited by *Karl and Eva Mang*; Rizzoli New York, \$32.50.

Reviewed by Laurence Booth

It seems that architectural theory has suffered over the last fifty years from theory specialists who have taken single aspects and tried to make them the key to understanding and practicing architecture.

Functionalism, structuralism, rationalism, historicism, formalism, modernism, and so on have focused certain aspects of our profession in a continuous academic game of king of the mountain. While these aspects generally have significance it has been like the blind man exploring the elephant—the description has been somewhat inadequate.

Occasionally an architect synthesizes the many essential architectural ideas into forms that make art, creating architecture that survives as examples to all ages. Otto Wagner, in the early twentieth century, set such an example by creating inventive, permanent, useful, and beautiful buildings.

Laurence Booth is a principal in the Chicago architectural firm of Booth/Hansen & Associates.

Wagner was over fifty years old, with thirty years experience, when he established a revised theoretical base for his architecture. Unlike most theorists he then put these ideas for his buildings into practice with consistently sensitive buildings. For 30 years prior to 1893 Wagner supported himself as an architect, developer, and builder of "Ringstrasse" historicist apartment buildings in Vienna. In addition he published books of drawings, entered competitions, and proposed civic schemes such as 'Artibus' in 1880, a classical complex for a private museum. In 1893 he won the competition for the regulation of Vienna (city plan) making him the architect for the new subway system and artistic advisor to the Danube Canal Commission.

In 1894 Wagner was asked to teach at the Academy in Vienna. His encounter with the emerging technologies in the subway project coupled with his academic need for clear thinking had a profound influence. To spare himself "the embarrassment of too frequent repetitions during class lectures" Wagner wrote a concise book *Moderne Architektur* articulating challenging architectural theories. In this book he argued that the necessity and methods of modern life were the basis for architecture and that the misuse of historical form and style was farce.

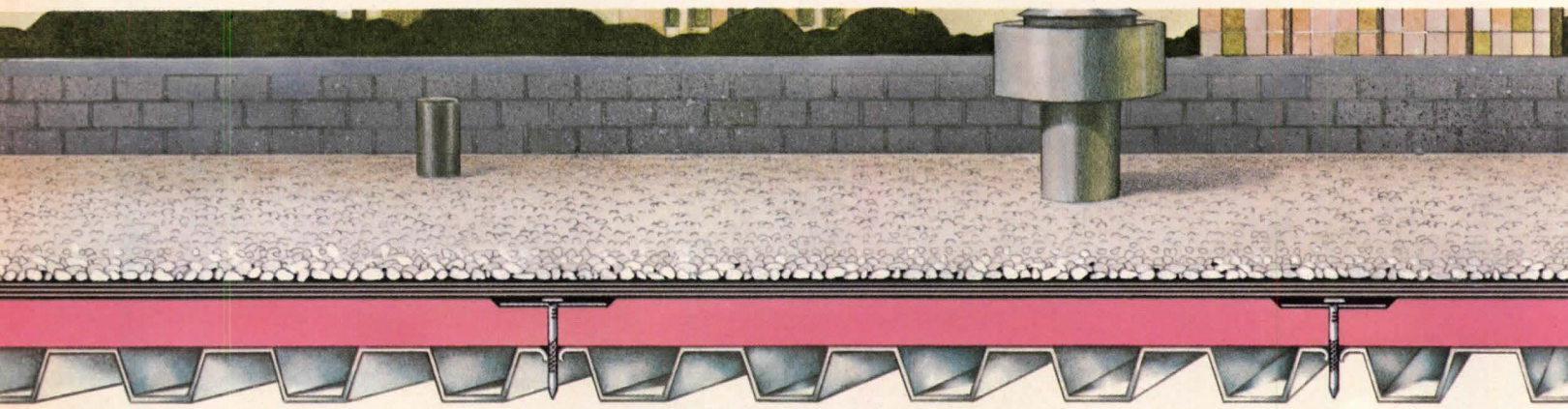
Wagner did not argue for a pre-ordained "spirit of the times" that must be expressed, nor for an artless functionalism; rather he argued for art to prevail over engineering, he

wanted art to fill forms with "new pulsating life" expressing reality. He saw no conflict between rational thought and art, no conflict between engineering and art, no conflict between practice and theory. He simply put all these ideas together in his architecture.

Wagner's conversion was so complete that he destroyed almost all traces to his previous eclectic apartment buildings and with his students, Joseph Olbrich (1867-1908) and Josef Hoffman (1870-1956), joined the Secession in 1899, pioneering this new architectural consciousness.

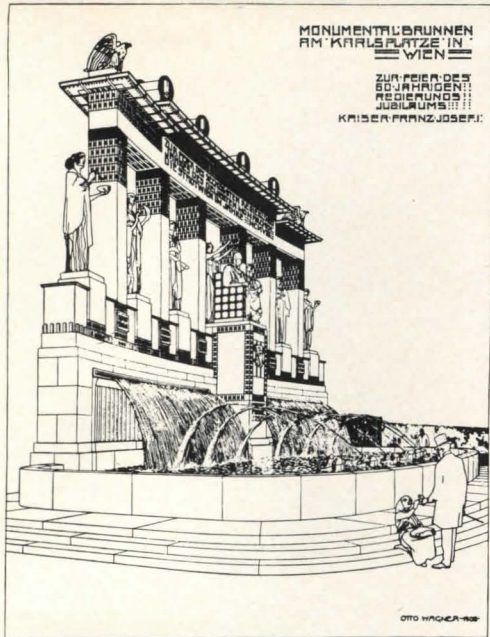
The drawings and buildings photographed in the Rizzoli monograph, *Otto Wagner 1841-1918* testify to the validity of his ideas and to their practical application.

This book is a pictorial survey of Wagner's work, providing only an introduction to his architecture. Starting with the Stadtbahn, Danube Canal Buildings, and residential and business houses, it includes sanatoria and hotels, banks and financial institutions, museums, schools and libraries, and finishes with public buildings, religious buildings and monuments. (So you may see how Wagner's thinking was tested by a wide variety of building programs.) The subway stations show his gradual transformation, with Wagner never abandoning the civilized sensibility that was his Viennese legacy. He did not seek a revolution, but rather invention within a tradition and established culture. Although with anything new, especially in conservative Fin-De-



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Monumental fountain on the Karlsplatz (second design, 1905). Concrete pillars and superstructure faced with monnier and decorated with glazed tiles in white, black, blue and gold. Figures in porcelain, aluminum and copper.

Siecle Vienna, there was reaction and Wagner did create some controversy.

Two buildings most certainly must be considered as monuments to civilization and masterworks of architecture. The Church Am Steinhof (1905-07) and the Post Office Sav-

ings Bank (1904-06) exhibit Wagner's imaginative employment of new construction techniques, always being true to his motto "Artis Sola Domina Necessitas." As the idea of ornament begins to receive renewed attention, his method of ornament derived from the construction process, will be appreciated. One measure of the success of his architecture is that both of these buildings are virtually unchanged from his drawings and have been continuously used and lovingly maintained since construction.

Today as the ideology of functionalism and pure rationalism is perceived as inadequate it is understandable for architects to look at inventive practitioners who maintained continuity with civilized traditions and created buildings to which we can respond wholeheartedly. Current interest in Asplund and Lutyens must include Otto Wagner, who may have particular relevance for our industrialized mass society.

Wagner deserves more than this book provides. Unfortunately there are no colored photographs. The drawings would make a magnificent portfolio rather than being squeezed. Critical evaluation with commentary would have made a more complete presentation. However, we should be thankful for this long-awaited English edition that gives us a better picture of Otto Wagner and his significant works whose influence was felt as far away as Oak Park by a young Frank Lloyd Wright.

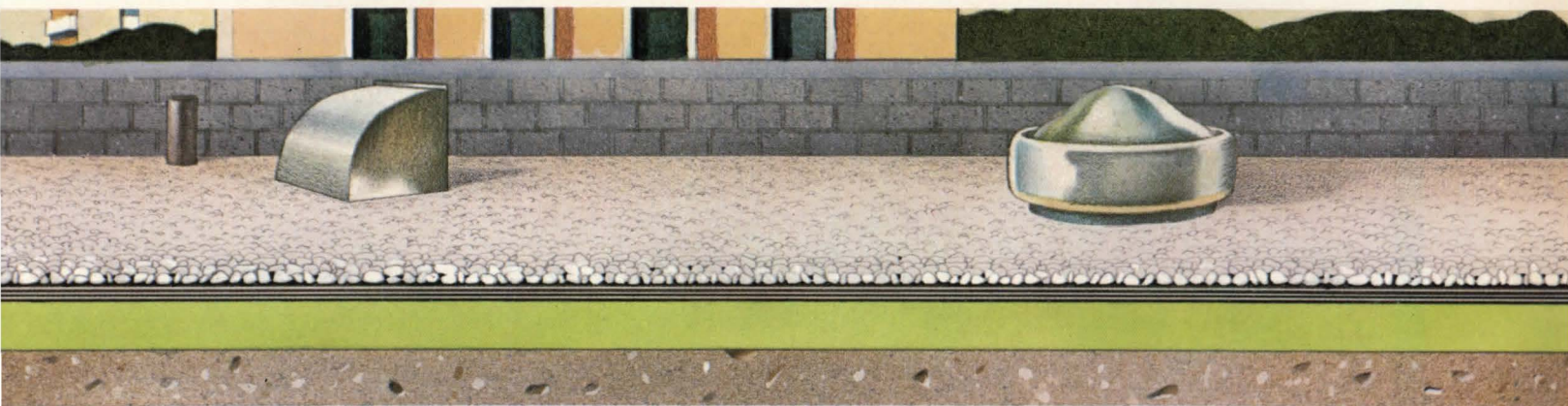
As an appropriate accompaniment to *Otto Wagner, Viennese Architecture 1860-1930 in Drawings* shows that Wagner was part of a strong tradition of outstanding architects beginning with the classicist Theophil von Hansen (who happened to have Otto Wagner's mother as a client when Wagner was a young boy).

Heinrich von Ferstel, Gottfried Semper, Friedrich Ohman, Wagner, Joseph Olbrich, Joseph Plecnik, Adolph Loos, and Josef Hoffman are among those represented in this 70 years of drawings. Critical commentary and some historical background again would have made this book far more informative, even though the pictures speak eloquently for their authors.

This book is a "picture book" of a touring exhibition of photographs of the original drawings. The authors contemplated an exhibition of original drawings, but evidently were not able to realize that project.

Both books provide an introduction to lessons of the Viennese architectural tradition that have not been familiar enough in the United States.

We see in Viennese architecture a regional architectural tradition embodying the cultural values of a particular society, evolving over 70 years, taking the industrial revolution in stride, and maintaining the highest level of quality. Quite an accomplishment and an inspiration to us as today architects again become interested in civilization.



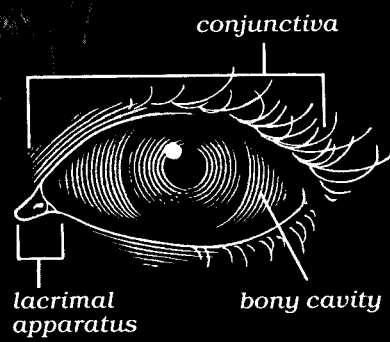
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Architectural barriers to the partially sighted—and solutions

The phrase "architectural barriers" suggests architectural obstacles that hinder persons confined to wheelchairs. But there are architectural barriers that encumber the lives of other handicapped persons. This article is concerned with some of the barriers that impinge upon the lives of the more than 1.74 million partially sighted persons in the U.S.

by Dr. Samuel Genensky, Ph.D.

The partially sighted are persons whose visual acuity in their better eye, even with the help of ordinary eyeglasses, does not exceed 20/70 but is better than light perception or light projection; or whose visual field in no direction exceeds 30 degrees. These are generally people who, even with the help of ordinary eyeglasses, are not able to read newspaper type but who can distinguish shapes and forms and sometimes color. Nearly all of them can use their eyes, with the help of more sophisticated visual aids, to do such things as read inkprint, write with a pen or pencil, take notes on or copy from a chalkboard, and move along even in an unfamiliar environment without the help of a guide dog, white cane, or sighted person.

Approximately 20 per cent of the partially sighted are legally blind. Persons are legally blind if the visual acuity in their better eye, even with the help of ordinary eyeglasses, is no better than 20/200 or if their visual field in no direction exceeds 20 degrees—which means they are partially sighted. (Indeed, the great majority of the legally blind are partially sighted.) In less abstract terms and from the point of view of visual acuity, persons are legally blind if at 20 feet the most they can see on the common Snellen eye chart is the big E.

Restroom graphics

One of the most difficult architectural barriers faced by partially sighted persons is locating a restroom in a public building and determining whether it is for men or for women. This problem can be easily solved by affixing panels to restroom doors in such a way that visually impaired persons can readily identify the facilities. Those on men's restroom doors should be an equilateral triangle with a vertex pointing upward, and those on women's restroom doors should be a circle. The edges of the triangle should be one foot long, as should be the diameter of the circle, and all panels should be ¼-inch thick. The color and



gray value of these geometric figures should be distinct from the color and gray value of the doors.

If this were done, even the totally blind could touch the edge of a panel and easily determine whether it is straight or curved.

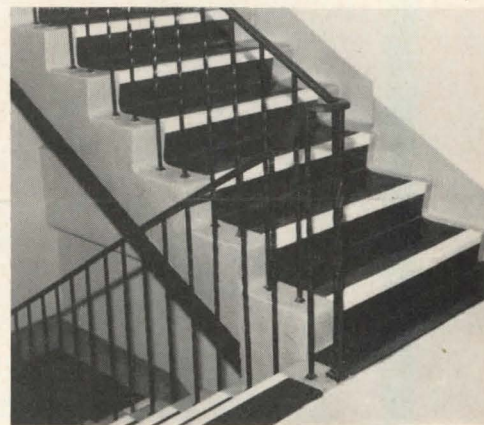
One may ask why the partially sighted would not be able to identify restrooms by means of enlarged stick figures affixed to the exterior of restroom doors. The answer is quite simple. Stick figures are distinguishable from one another at a rather detailed level, and hence would have to be offensively large to be of value to many partially sighted persons. However, the geometric figures de-

scribed above are distinguishable themselves and from one another at a much coarser level of detail. Hence they are much easier to see and to interpret correctly. Geometric figures of the size, shapes, colors, and gray values recommended above should be distinguishable visually by at least 90 per cent of the partially sighted.

If the geometric panels were adopted, it still would be reasonable for the words "men" and "women" or the appropriate stick figures to appear on the restroom doors for the convenience of the fully sighted.

Stair markings

Another architectural barrier faced by partially sighted people is detecting and negotiating flights of stairs, even in broad daylight, and especially when the ambient lighting does not provide any clues as to the existence of the stairways or of the individual steps themselves. Here again the problem can be easily and inexpensively solved by the following procedure: mark the leading edge of each step, on both the runner and riser, with a



paint or nonskid material that has a color and gray value which is in high contrast to the color and gray value of the stairs themselves. These markings should run the entire width of the step and be two or three inches wide on both the runner and the riser. Markings of this sort would be helpful to at least 90 per cent of the partially sighted as well as to fully sighted older persons who are fearful of tripping on or missing a stair. Stairs have been or are being marked this way at the Santa Monica Hospital, the Rand Corporation (also located in Santa Monica) and in all municipal buildings in the city of Santa Monica.

text continued on page 67

Dr. Samuel M. Genensky is Director of the Center for the Partially Sighted, Santa Monica Hospital Medical Center, Santa Monica, California.



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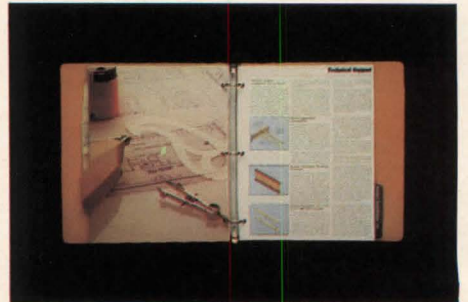


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Painless alternatives to the "CM" process

Construction management processes are enjoying increasing popularity in the construction of simpler, repetitive buildings without complex mechanical systems. Many of the techniques which have evolved as alternatives to the CM processes may be enjoyed by architectural firms doing business in traditional manners.

By Charles F. Pock, JD

The presence of the CM influence in the marketplace has forced an improvement in AE services, without a corresponding increase in AE revenues developed by those services. The trend is to compact the document package, and deliver it to a rising market as soon as possible. The owner wishes to reduce the timespan of his obligations for interest on construction funds, and, as soon as possible, to enjoy the cash flow of beneficial occupancy necessary to establish and to amortize his permanent financing.

These trends push the architect to reduce to a very minimum the extent and complexity of his documents. But, at the same time, he is held increasingly accountable for disruptions caused by documents which do not adequately cover construction. It is not surprising that these changing goals are producing a multitude of changing attitudes about design responsibilities during the construction phase.

Bids and pieces

Usually absent from CM transactions is a single, responsible contractor who is legally bound to furnish a complete and coordinated project. Under the CM's direction, a host of practicing subcontractors will turn in an assortment of bids for as much work as each of them cares to do. If the sum of all these portions of work is somewhat less than a total project as contemplated by the architect's documents, there is not a general contractor who is obligated to bridge the gap.

The CM has not agreed to provide the owner with a completed project, but rather to manage the execution of work as described by someone else's document—which may be re-defined a number of times throughout the construction process. The CM's contract clearly delegates him to manage and administer the construction processes; the architect's role is simplified to that of observer and advisor.

The owner may have any number of prime contracts with specialty contractors

who would otherwise have been subcontracted to a general contractor. The CM will process the payment certificates, but payment is made directly to the host of specialty contractors, to keep the CM legally clean. The architect may not even be included in the approval-for-payment process; he will lose even more control should his interpretations of the documents tend to conflict with a schedule already approved by the owner's board of trustees.

As the architect's role tends to diminish in the presence of a CM, it has simultaneously tended to expand in the absence of a CM. While managed projects can move faster and cost less, differing interpretations of the documents can produce significantly differing construction schedules and costs.

Courts and arbitration panels are tending to give greater consideration to qualified interpretations differing from those of the architect. These shifts in attitudes toward professional liability have caused the architect to become very careful about how he sells his construction-phase services.

One alternate approach

One forward-looking international design group has engaged not only to provide absolutely clear documentation for a particular overseas project, but also to make a timely review and coordination of all materials and equipment necessary for each successive phase of the project.

While the owner in this instance provides his own project scheduling, and the A/E firm provides the usual design services, the construction-phase processes represent departures from tradition. Rather than conducting submittal reviews by sub-professional, construction-oriented employees of the architect, all materials and equipment are submitted through an A/E review department staffed by senior professionals.

Approved brochures immediately become the manufacturer's fabrication drawings. It is very clearly mandated by the owner that all equipment and connections must be delivered to the jobsite for installation by semi-skilled workers. Reviewing senior pro-

fessionals are thus required not only to certify that the manufacturer has complete instructions for fabrication, but also to certify that—in their professional opinion—there should be no installation problems. Reviewing professionals report directly to the project manager, coordinating with the initial design group only as required to clear up questions about original criteria.

This increased emphasis on terminal flexibility runs against the beliefs of many design-oriented firms. But in accelerated projects there is barely time for design, much less time for coordination between disciplines. The early-phase designer has only the vaguest exposure to the equipment marketplace available to the successful contractor. It is instead the construction-phase design reviewer who will have exact and complete product selection and application information, and who can thus determine from certified test and balance reports whether the installed system is meeting the essential programmatic requirements.

Cross the bridge when you come to it

In much the same way that construction overlaps documentation, distribution system design and coordination can be telescoped in such projects. Only the essential decisions need be made during the early phases of compressed design scheduling. Although this could result in dilution of early-phase design control, it does not necessarily signal a corresponding dilution of project quality. The significant result is that the process provides a continuing design response to a fast-moving project.

Most domestic clients would not attempt to undertake a project unless they could foresee the requisite funds available at the right times, and unless they could simultaneously believe that the occupied project would at least pay for itself. With the advent of design-phase and construction-phase overlapping, an architect must service the client's cash flow schedules without having to complete the documents before going to market.

Many progressive A/E firms are thus tending to adjust their production phasing to better conform with fast-track construction scheduling. By so doing, they are finding it necessary to distribute their most experienced personnel throughout the span of the project, rather than restricting their input to design phases.

Dr. Pock has for 26 years provided services to various major A/E firms in the Southwest.

A 10-acre roof of TEFLON...and air



Energy Requirement Analysis at design stage allows timely evaluation

A new computer program developed by McGraw-Hill's Cost Information System evaluates the future energy consumption of proposed new buildings at the earliest design stage, allowing designers to compare alternate designs for efficiency or to make cost-saving design changes. Combined with McGraw-Hill's existing Conceptual Budget Analysis, this service enables architects and engineers to quickly and inexpensively determine not only how much it will cost to build a building, but also how much energy will be required to heat, cool, light and service a structure once built.

The Energy Requirement Analysis, developed by McGraw-Hill in conjunction with Mueller Associates Inc., a Baltimore-based consulting engineering firm, considers a structure's intended use, size, building materials, location (by zip code) and other factors, to determine

its annual heating and cooling load and its energy consumption for lighting and building services. Total annual energy required is reported in total annual Btus and Btus per square foot per year.

Applicable to buildings anywhere in the

U.S., the service offers designers a simple tool useful in helping meet the new government Building Energy Performance Standards (BEPS), which require that energy analyses for new construction be submitted before building permits are granted.

A second program, McGraw-Hill's Conceptual Budget Analysis, uses the same input data to provide a current or projected estimate of the total cost of any building and the costs of major building components. The combined results enable planners to assess potential trade-offs between immediate construction cost and long range energy costs.

Price: \$39 for the Energy Analysis, \$49 for the Conceptual Budget Analysis, or \$75 for the two together. Results can be obtained in 12 to 24 hours from the time the data is fed into the computer.

Data may be submitted by telephone—call 606/921-6500 or 800/447-1980 - or by filling out the one-page data form (reproduced at left) and mailing it to McGraw-Hill Cost Information Systems, P.O. Box 28, Princeton, N.J. 08540. Contact CIS for forms and/or further information.

Conceptual Budget Analysis/Energy Requirement Analysis

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Each input form can be used to analyze a single building design. If you would like analyses performed from more than one building design, please submit a separate input form for each design alternative.

IMPORTANT: Whichever method you use to give us your order (mail or telephone), please remember to specify which service you would like: The Conceptual Budget Analysis alone, the Energy Requirement Analysis alone, or the Conceptual Budget Analysis/Energy Requirement Analysis Combination. **If you do not specify one of the three options, we will run the Conceptual Budget Analysis/Energy Requirement Analysis Combination, and bill you for the combination service.**

Please complete this form before calling (609) 921-6500
or (800) 447-1980 (in Illinois call (800) 322-4410.)

Completed analysis will be sent to the following address:

Company Name _____
Attention of _____
Phone _____
Address _____
City _____ State _____ Zip _____
Building Name _____
Location _____
City Union State N.J. Zip 07083
Construction Date _____
Inflation Factor (if desired) 0 %
Quality: Superior Above Average
 Average Minimal

Building Use:
Primary Office 90 % of total area
Secondary Data Center 70 % of total area
Other _____ % of total area

Please complete all of the following:

Basic Data:
Gross Floor Area (excl. basement) 75800 Sq. Ft.
Number of Floors (excl. basement) 3
Area of Ground Floor 25267 Sq. Ft.
Perimeter at Ground (if known) 809 Ln. Ft.
Floor to Floor or Eave Height 11' 9" Ln. Ft.
Basement—% of Main Floor None
% Finished _____

Approx. Length/Width Relationship 3/1
Building Axis (orientation) Main: N/S E/W
Wing: N/S E/W

Superstructure:
 Steel Frame Wood Frame-Commercial
 Concrete Frame Wood Frame-Residential
 Wall Bearing Pre Engineered
Other _____

Exterior Wall: 6" Block - 4" face brick
Insulation: Type Board Thickness 1/2"
Fenestration: 10 %
Type of glazing: Single Insulating

Roof Deck: Steel
Insulation: Type Fiberglass Thickness 2"
Roof Cover: 3 Ply paper w/ tar gravel

Partitions:
 Dry Wall Block Plaster
 Other _____

Elevators: Number 1

Escalators:
Number _____ Height (floors) _____

Finishes/Equipment:
Check if normal for bldg. use. Otherwise describe below.
 Interior Finish—Wall painted
 Interior Finish—Floor carpet
 Interior Finish—Ceiling lay-in acoustic
 Built-in Equipment _____
 Htg., Vent. & Air Cond. _____
 Plumbing _____ Sprinklered Computer Area
 Electrical 480V 3Ø

OFFICE UNION, N.J.
MARCH 17, 1980 ANALYSIS NO. 4717

	Btu—Millions			
	Total	Sq Ft		
Annual cooling load	3,387	0.04		
Annual heating load	3,580	0.05		
Total energy load for heating and cooling	6,967	0.09		
Annual energy load for lighting and building services	4,037	0.05		
Total annual energy load	11,004	0.15		
Description	Labor	Material	Total	Sq Ft
Foundations	39,550	32,368	71,918	0.95
Floors on grade	29,872	38,813	68,685	0.91
Superstructure	289,352	506,443	795,795	10.50
Roofing	16,507	15,947	32,454	0.43
Exterior walls	175,135	108,939	284,074	3.75
Partitions	97,137	146,828	243,965	3.22
Wall finishes	64,120	35,932	100,052	1.32
Floor finishes	46,844	144,249	191,093	2.52
Ceiling finishes	28,678	74,048	102,726	1.36
Conveying systems	18,114	34,478	52,592	0.69
HVAC	223,454	179,254	402,708	5.31
Plumbing	116,865	98,113	214,978	2.84
Electrical	252,132	206,097	458,229	6.05
Total	1,397,760	1,621,509	3,019,269	39.85

Above cost is based on current wages and prices for the zip code area 7083, and includes mark-ups for overhead & profit, taxes and insurance, general conditions and sales tax on materials.



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Prepared defense of delay claims

In construction disputes, the architect, as an integral part of the design team, is almost always summoned to court to testify. Although the architect's primary concern should be the preventive measures to anticipate and avoid litigation in construction disputes, there are, nevertheless, specific strategies he may employ once called in to arbitration or litigation to defend his involvement in a particular building project. However, steps taken by the designer in anticipation of litigation serve only to supplement an over-all battle plan once the court case begins. The architect must prepare for the court battle and be aware of the implications of the defense of delay claims.

by H. James Wulfsberg, Esq.

Frequently, a clause in the architect's insurance policy requires him to notify the company immediately upon learning of an imminent claim against the policy holder. The designer must remember to notify the company, even if he is not sure that a claim will arise, if such a clause exists.

The longer the designer waits to report the possible claim, the longer the insurance company will take in crediting money for legal fees against the policy holder's deductible. Also, the company may refuse to defend the claim if the policy holder does not take prompt action in reporting it.

The architect should have engaged an attorney in reviewing his professional obligations in a building assignment immediately upon being selected for design work.

Outside experts can strengthen defense

The attorney representing a designer in a construction dispute should have a thorough understanding of the design and construction process at the outset of litigation. Except for certain complex court cases, however, he should not be expected to have a mastery of architectural terminology and procedures.

Often, to supplement a designer's defense, it becomes necessary to employ the services of an expert who can provide an in-depth, objective analysis of a particular problem area or even of the entire project. Depending on the attorney's own knowledge of the scope of the project and the type of dispute, the retained expert may be an architect, contractor or engineer in any one of numerous specialties.

An expert's involvement prior to or during the discovery phase may become known to the opposing parties in a construction dispute. This affords the opposition the opportunity to retain a similarly qualified witness and prepare to challenge your expert.

If the specialist is retained directly by the designer and provides reports directly to him, the opposition may request to see those reports (and may well be entitled to do so). It is advised, therefore, that the expert be retained by the attorney and should prepare all reports at the attorney's direction. If these procedures are followed, the reports should fall within the work product doctrine and may well be protected from the opposition's discovery.

Help your attorney

Once a lawsuit commences the chances of a favorable outcome for an architect depends to a large extent on the amount of involvement he has with his attorney. The designer must take a great deal of time working with his counsel to review documents, information, and sworn depositions.

In the event that counsel has been selected by his insurance company, the designer should inquire about the attorney's capabilities and experience in representing him in a case of this nature. A designer has the contractual right in his insurance policy to be represented by knowledgeable counsel and he should take steps to ensure that he is, in fact, being ably represented before arbitration or litigation begins.

Implications of delay claims

The architect involved in a delay claim situation is invariably a defendant, with nothing to gain, but plenty to lose. The best a designer can usually do in such a claims case is to emerge without having to contribute to the settlement costs.

The designer usually enters into the conflict in regard to change orders: he is accused

of either delaying a change order or refusing to issue a necessary change order. In short, any time there is a change order on a construction project, there is the potential for a delay claim situation. Yet almost all construction projects involve change orders. Consequently, virtually any commission an architect undertakes carries with it the inherent and very real possibility of his being drawn into a delay claim situation.

The primary task of a designer involved in a delay claim is to reconstruct the "as-built" schedule of the construction work. Evaluation of the chronology of work allows the architect to determine how and where complications might have arisen during the building process and who is actually responsible for the incurred delays.

If a designer has done his "homework" and kept detailed records and documents, his presentation will be made stronger. (Keeping such detailed records entitles the designer to charge for such services in addition to ultimately protecting himself should arbitration or litigation arise.)

There are specialists in the fields of records review and it is worthwhile to consider retaining such experts, particularly where voluminous documentation is involved. These experts offer a range of services, including a detailed analysis of the entire project or a specific area of work, based upon the documentation supplied to them.

Because there are so few of such experts offering these services, one should be certain that no conflicts of interest exist before engaging them. This analysis, however, is not a substitute for a thorough review of the documents by client and counsel, since the expert's view is only one interpretation of the records themselves.

Do not volunteer your participation

It may sound like an "of course" assumption, but an architect should never get involved in arbitration/litigation between owner and contractor if he is not contractually obligated to participate. Stop and make this determination early. Once embroiled in the legal action, you can not simply withdraw. Designers often get ensnared in litigation with which they should never have been involved. Since a designer's involvement inevitably leads to his being asked to contribute to the settlement costs, it is certainly worth his while to determine if settlement can be reached without his involvement.

"Legal Perspectives" is published with the understanding that the publisher is not rendering legal service. If legal advice is required, the services of a competent professional should be sought.

H. James Wulfsberg is a partner in the Oakland, California firm of Lempres and Wulfsberg and a member of the Forum Committee on the Construction Industry of the American Bar Association.



New interiors catch the spirit of the older buildings they transform

Norman McGrath



Claude Fullerton



Architects are especially capable of understanding that the insides of buildings are an integral part of the outsides. And today there seems to be a heightened awareness of the subtleties of the art of putting that concept to work. These nuances are mainly concerned with appropriateness. In the case of small older buildings wherein the relationship between the interiors and graceful facades can easily be seen—appropriateness becomes more than an academic question. Especially where the original interiors no longer exist, the problem has produced solutions that range from elaborate recreations of what might have been to a kind of bare bones esthetic that leaves original brick walls and beams exposed to view, although they were never meant to be that way when the building was first designed. For gutted buildings that are graceful but not historic, the most appropriate response in the 1980s would seem to be one that catches the spirit of the original, but recognizes today's esthetic as well. What is this spirit and how do we capture it?

Two answers on the following pages offer diverse solutions within the concept of keeping new work stylistically current. The once greatly abused interiors of a townhouse (top photo), remodeled for a consulate in New York City by architect Susana Torre, is a particularly urbane response to a typical East Coast building type. Hers is a formal, carefully structured solution with elegant finishes and details that heighten a visual experience begun with the symmetrical and imposing facade. By contrast, the combination showroom and architectural offices of *Ambienti* and *Synthesis* in Redondo Beach offer an equally elegant solution to the interiors of a 50-year-old local landmark using open spaces and a very informal relation of functions. Each project seems not only particularly appropriate to the character of the building it occupies, but each seems well suited to its region of the country. —Charles Hoyt



Norman McGrath photos except noted

**The formal exterior
is the key to the
symmetry and elegance
of the interiors for
the Consulate for the Ivory Coast
in New York City**

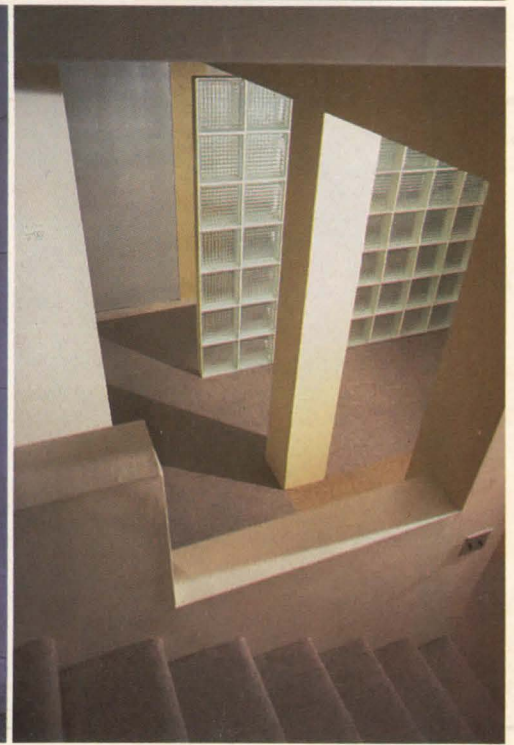
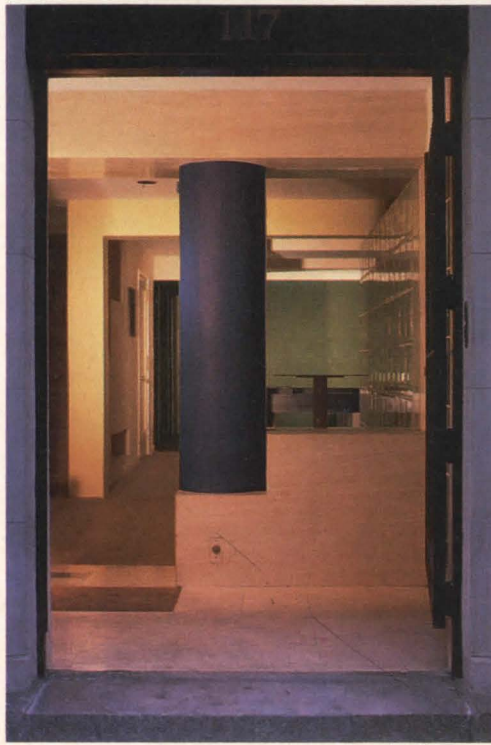
Architect Susana Torre is so strongly influenced by the basic nature of every building for which she designs interiors that she makes this nature an integral part of her expressive design language. For this consulate in New York City, Torre designed two very different successive schemes for two very different successive buildings. And the results graphically illustrate both how she is influenced by the buildings, and what she means when she says that—despite the obvious design differences that come from context—she has “a constant theory of interior space. There are three parallel considerations that lead to both proper formal relationships and the tensions that are important to make the viewer aware of environment.” (And more subtle than to seem contrived, the tensions are “neither

purely perceptual nor conceptual.”) The parallel considerations are structure (the actual and what Torre wants the viewer to perceive), the hierarchies of activity (which if properly arranged produce a certain sense of ceremony) and the purely esthetic and symbolic values. To produce esthetic and symbolic values that are “neither banal or superficial,” Torre does extensive research into the natures of her clients, and—in the case of interiors—into the natures of their buildings.

Torre designed two schemes for the Ivory Coast Consulate. Her first design for space in an office building (shown in isometric only) was unexecuted because more suitable quarters were subsequently found. In the first design, the rhythm of columns was expressed by both a series of storage walls and over-

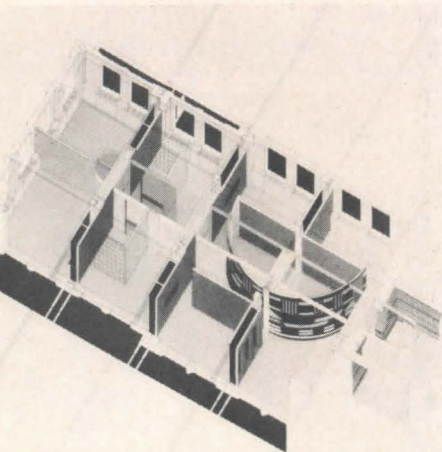


The entrance area (see bottom plan overleaf) forms a subtle transition from the symmetry of the facade to a new symmetry that expresses the desire for continued formality and ceremony. At the same time the transition accommodates the asymmetrical stairs and service entrance, located behind the glass-block wall. The ceremonial aspects are strengthened by the symbolic columns (see text) and by a series of walls across the building that are treated like gates, a carryover from an earlier scheme for a different building (see isometric below).



Dorothy Alexander

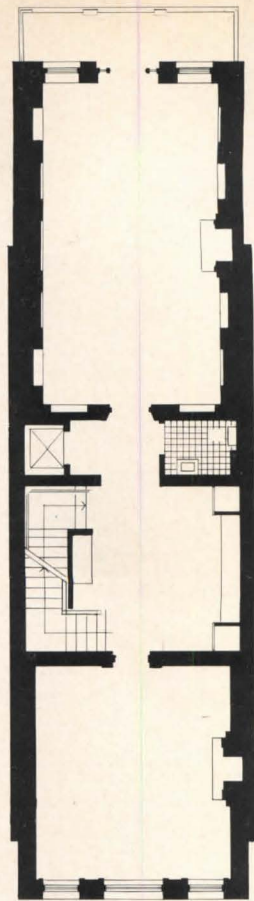
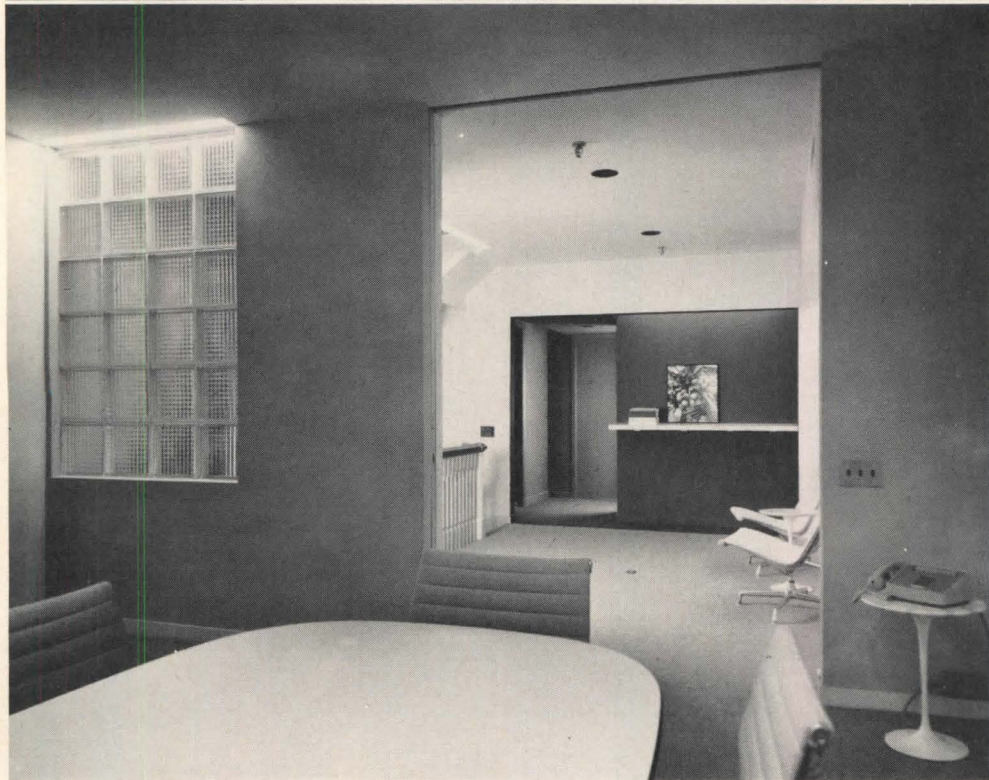
Dorothy Alexander



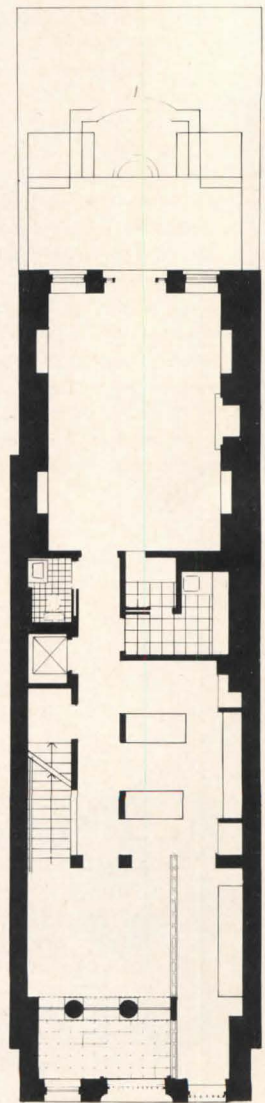
head lighting strips, indefinitely extended by mirrors, through which the visitor would pass in a processional route to reach the offices of the ambassador and financial officer (left in isometric). A semicircular wall around the conference room intrudes into the route, and this was to have been covered in mosaic tile patterned on native weavings. (To learn the code meanings of the weavings, Torre consulted with a historian at Harvard.) Natural light for secretaries—a particular concern of the designers—was to be brought to their cubicles through clear glass block. In the open anonymous framework, the formal concepts take place in concert with structural clues.

The executed design (above, previous page and overleaf) for the turn-of-the-century townhouse has as its "structure" the exist-

ing walls and mechanical enclosures to the right of the plan. While the interiors had been totally altered in recent years and were in bad shape, Torre had a very limited budget. On the typical upper floors, the spaces have been modestly restructured by color and some new construction in the core areas, which are divided into zones by a dark green area across the building at the elevator (see overleaf). Indeed, all of the walls across the building have been treated as gates in a procession. While side walls are white, the cross walls are various colors influenced by both Ivory Coast painters and the building itself. For instance, the front interior walls are a red-tan that matches a color frequently used by the native painters, and the building's brick facade as well. Other gradations of



SECOND FLOOR



FIRST FLOOR

color are even more subtle, like the palest of sky blues on the ceiling.

The most graphic example of both Torre's "constant theory" and her care about context is the ground-floor reception area. As seen in the photo at right, it seems to be a calmly ordered procession from the entrance. But, a view in the other direction (photos on previous pages) reveals it to be a highly complex sequence of ceremonial "gates." The second gate (inside the street door) is both a sympathetic transfer of symmetry from the facade and a symbol of entering a different culture. The columns' yellow and blue colors, for example, are used at all entrances to symbolize respectively the male and female. Part of the design problem here was to shrink the scale of the space seen on

entry from the larger street facade without losing a sense of importance, and the gates have admirably done this. The glass block wall required to separate the service from the public entries enhances the play of natural light for both visitors and the secretaries, while the dark green wall begins the rhythm of interior divisions that stretch through the building.

CONSULAR AND FINANCIAL OFFICES OF THE EMBASSY OF THE IVORY COAST, New York, New York. Architects: *Susana Torre, The Architectural Studio*—production: *Dorothy Alexander with Richard Velsor, Steve Midohuas, Jane McGroarty*. Engineers: *Robert Stilman Associates* (structural); *William A. Schwartz and Sons* (mechanical). General contractor: *Garson-Bergman*.



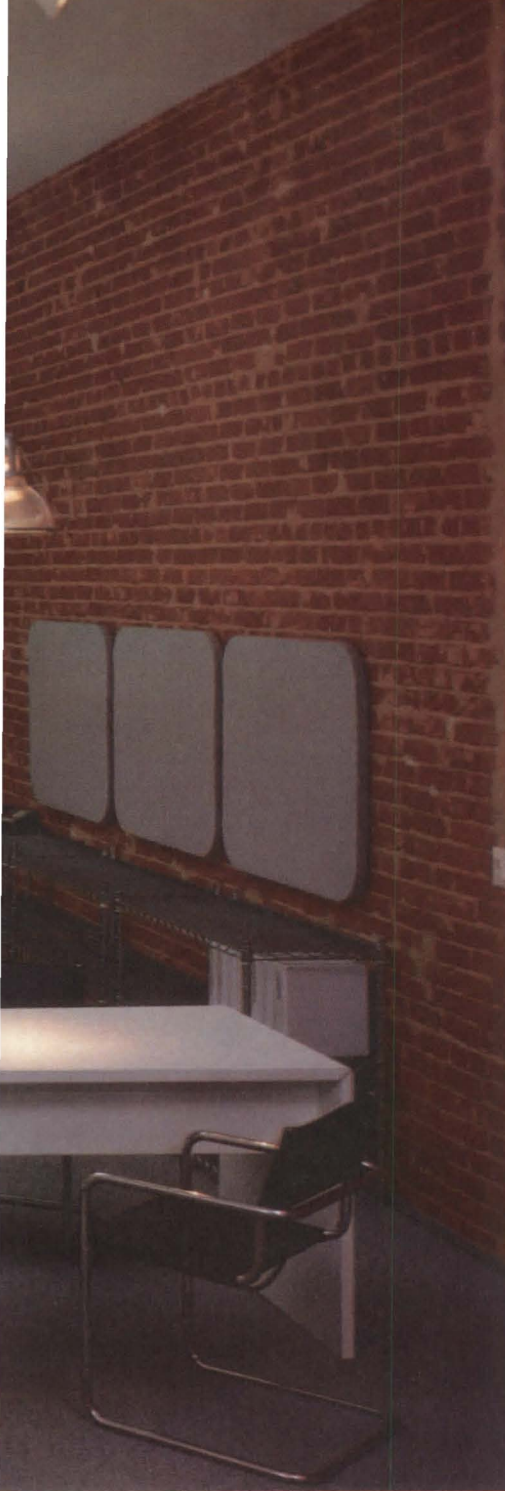


**An architect's office and
a furniture showroom adapt
a local landmark in
Redondo Beach
for shared interiors with an
appropriate but intriguing sense
of scale and texture**

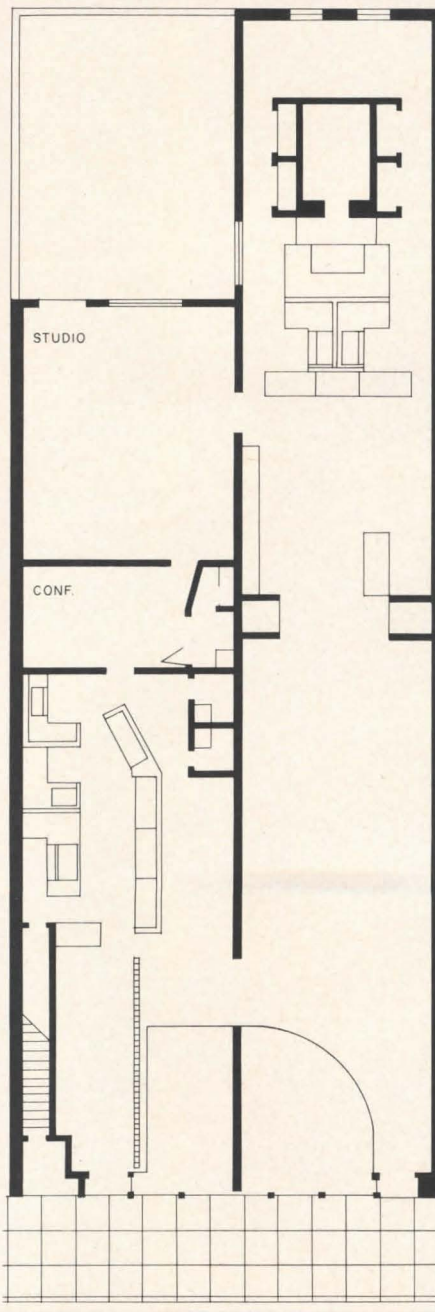
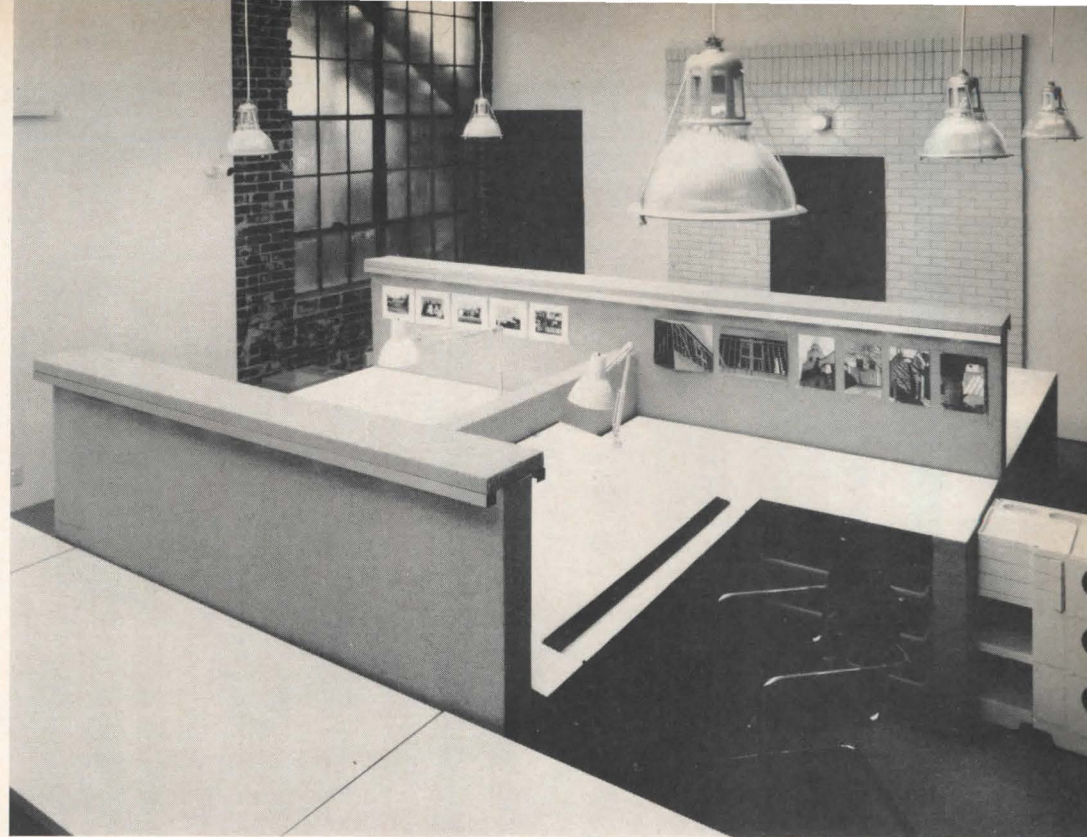
Synthesis, a confederation of seven young architects, along with the owner of the Ambienti furniture store have sympathetically remodeled the 1925-vintage offices of Southern California Edison in Redondo Beach, California, for their own use. They share the space in an informal way that is not uncommon in Europe. And what may seem to Americans to be an unusual marriage of functions, coupled with the imagery of the resulting interiors, seems particularly appropriate for both the high quality Italian furniture sold and for the way that the architects pursue their work in the widely ranging areas of design, urban planning and environmental research. For the quality of these spaces, the informal arrangement meant that there could be large open areas, with the resulting grand scale that

seems to match the building's character so perfectly. (See the lower photo of the facade on page 85.) Of course, the marriage also meant that the re-use of the 6,600 square feet of floor space became economically feasible for both groups.

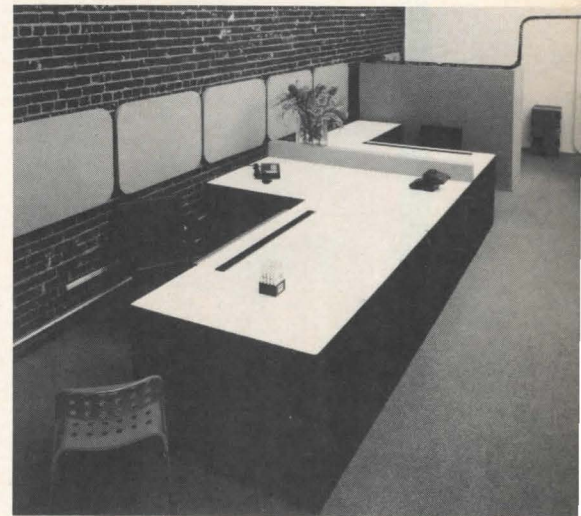
Store owner Fran Mello has a particular fondness for the building, having grown up only a few blocks away. She is the wife of Synthesis architect Daniel Mello, and she can remember when the show windows displayed refrigerators. Now they display elegantly designed furniture in a way that is meant to attract both retail and wholesale interest. And this interest obviously works out to be at least partially symbiotic, as the architects design with Ambienti in mind and the store's customers seek design services. The



Claude Fullerton photos



At the back of the larger showroom section, a shared workspace reveals an unusual and dramatic sense of scale and proportions.



building is part of the last remaining commercial block of largely residential Redondo Beach, and—as such—is sort of a landmark. A structural wall down the center forms two roughly equal divisions of the space, which are utilized by having the architects' reception area and some of their desks in the front part of the left hand section, as seen in the plan. A glass-block wall (photos overleaf) funnels visitors past the furniture displays that overlap into this section immediately inside the show window. A small conference room is shared by showroom and designers, and a large workshop and storage room opens to a rear patio. On the right hand side of the plan, the major showroom space is in the front, and a library and design studio (large photos above) is arranged so that both architects and

retail personnel can work at the large table with clients. Here, the original white glazed brick vault where Edison customer payments were kept becomes a central design focus, and serves for storage. Throughout all of the spaces a contrast of textures has been achieved by alternately exposing the structural brick walls and by painstakingly applying a surface of hard plaster. In the rear one-story section, skylights provide natural light over the individual desks.

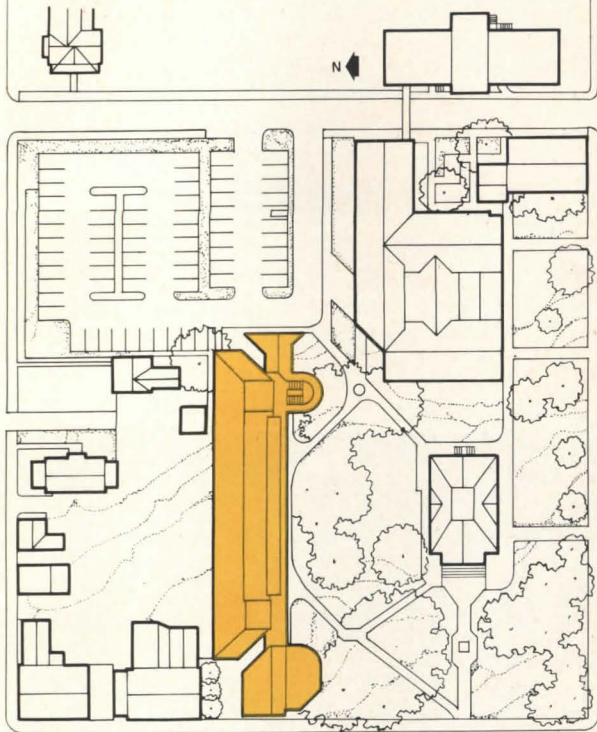
AMBIENTI/SYNTHESIS, Redondo Beach, California. Architects: *Synthesis—Cheryl Brantner, Daniel Mello, Guido Misculin*. Landscape consultant: *Ron Serato*. Contractors: *Frances Mello* (general); *Murray Harreschou* (finish carpentry); *Paul Hebert, Bon-Am Enterprises* (plastering).



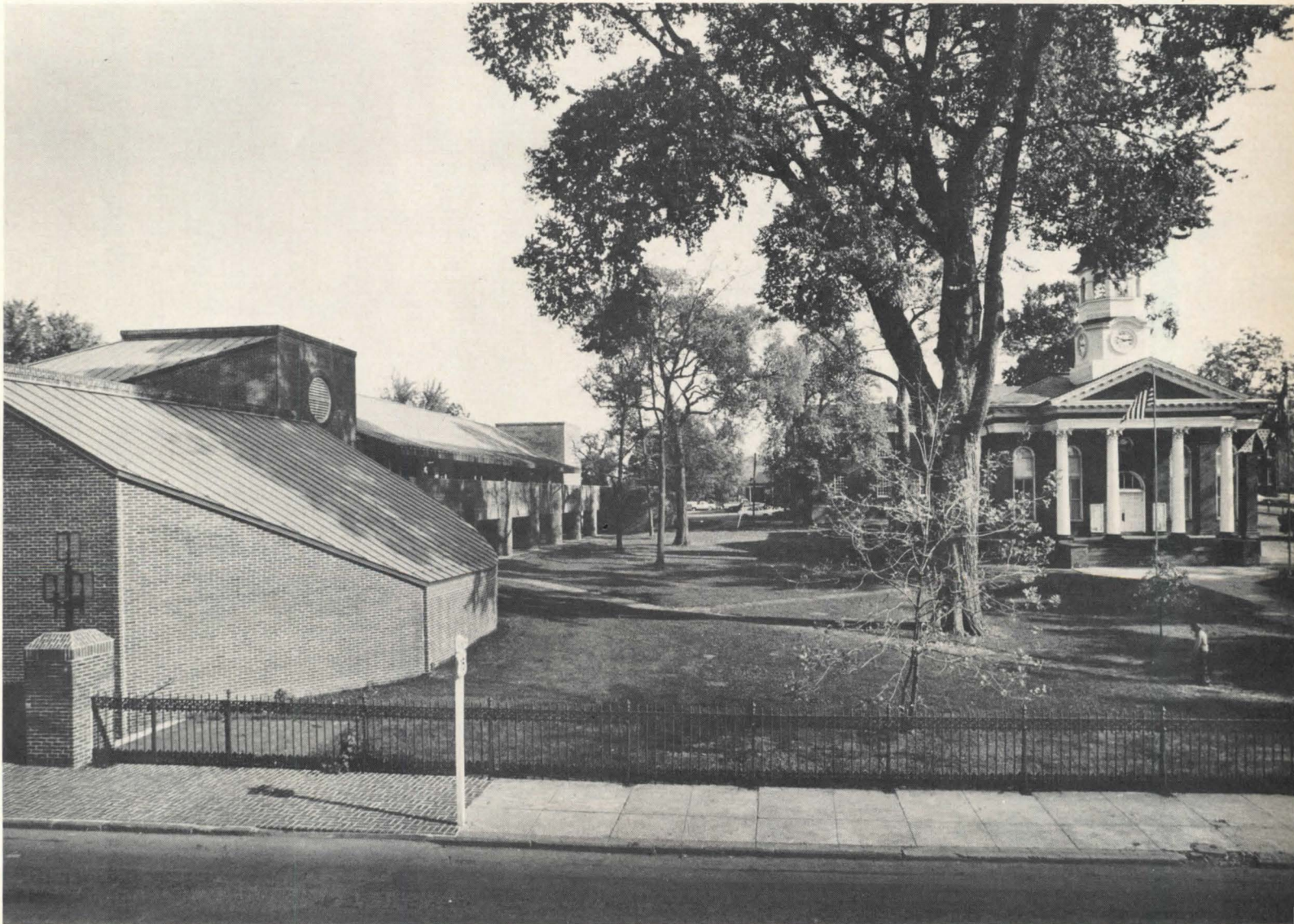
The basic showroom space occupies an L-shaped section of the building in the largest open space that extends across the central dividing wall to a smaller platform on the inside of the storefront windows. The glass-block wall forms a separated passage to the architects' basic area, that—along with the shared facilities—occupies an interlocking L (see plan on previous page). The more neutral showroom space with its dark carpeting and smooth white plaster walls gives way to the more expressive sort of spaces seen in the photos on the previous pages.

QUIET NEW OFFICE ENHANCES AN HISTORIC DISTRICT

In an historic district in the heart of Leesburg, Virginia, architects KDA, Inc. designed the new Loudoun County Administration Building not as a grand governmental statement but as an unobtrusive, low-key structure that suitably fits into the context of the city's street scale, which dates from the 18th century. By positioning the building along one border of the Courthouse Square, the architects refocused attention on the Colonial-style Courthouse built in 1890 and its "front yard"—the revered Courthouse Green.



Robert Lautman photos



The use of an historic site for construction of a new county office building erupted in the classic struggle of new versus imitative design in the small (9000 population) community of Leesburg, Virginia, 35 miles from Washington, D.C. In a city imbued with Colonial heritage and its citizenry reveling in home-town pride for the charm of the past (evidenced by Colonial elements replicated on streetfronts of all kinds throughout town), many vocal townspeople were outraged by the proposed building's contemporary appearance. A dominant "period piece," however, was contrary to the architects' philosophy; instead architects KDA, Inc. designed the structure as a backdrop to its location in an Historic District, relating it in siting, scale, materials and selected stylistic elements of Colonial design, while providing the mandatory functional

spaces. "It took a lot of persuading," declares partner-in-charge Thomas Kamstra, "but we succeeded in our objective—to make the county building subservient to the historic Courthouse."

The resulting design solution was a linear, low-rise building with a total of three floors (36,000 sq ft contained in one floor partially below grade and two floors above grade), slipped between the prominent Colonial-style Courthouse and other non-government neighbors. The building serves as one parameter of, and brings a new sense of importance to, the Courthouse Green. At the opposite end of the Green is another Colonial building that also acts as a defining edge. An addition of a metal fence along the streetfront further frames the park.

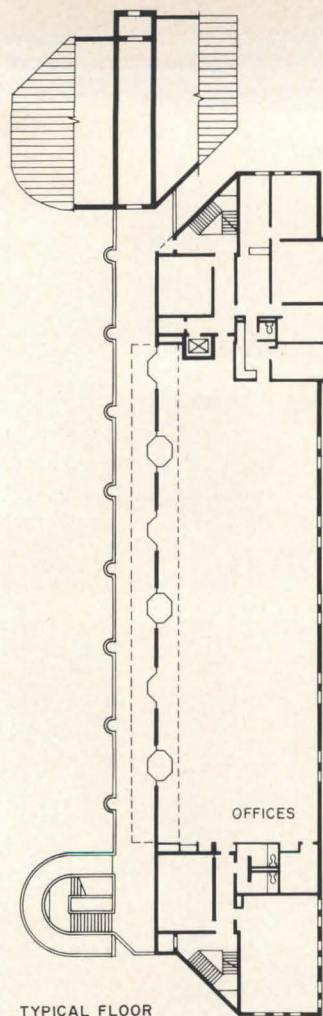
The new structure opens onto the Green

with a covered colonnade that reflects those of the Courthouse and other buildings in the government complex; this first floor arcade and the roof overhang on second level provide sun shading on this southern elevation. A sloping roof over the most noticeable portion of the structure near the street (housing the board room, see interior photos next page) echoes the lines of an earlier building on that spot. To further tie the new with the old buildings, there is a square tower with circular air vent on the new structure as a counterpoint to the Courthouse cupola/clock tower, and the building is similarly clad in brick. A particularly people-conscious design, the first level arcade and upper story outdoor walkway provide immediate access to all of the building's departments through hexagonal entry bays.

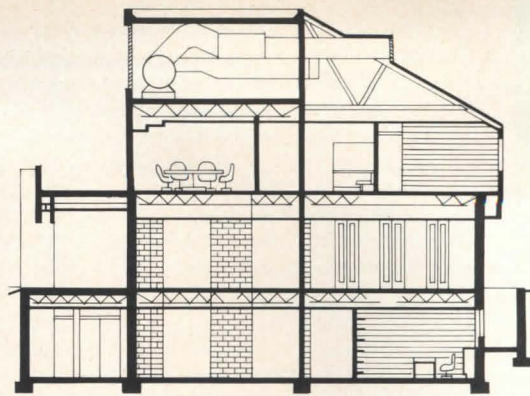


In preparation for the program, the architects had taken an inventory of every building in the Historic District and written a design manual for the town; the suitability to this documented environment won for their "subservient" design a Merit Award from the Northern Virginia Chapter AIA.

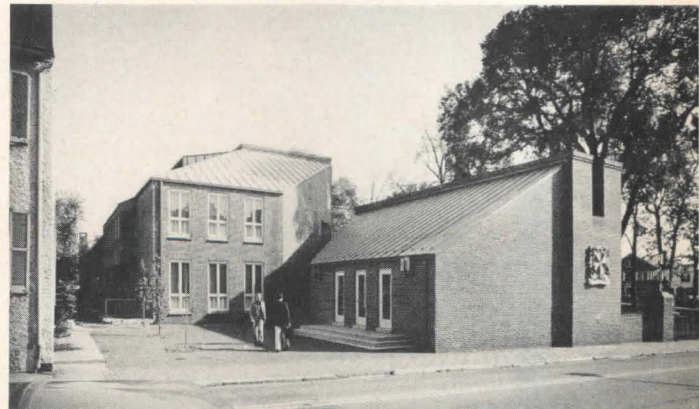
LOUDOUN COUNTY ADMINISTRATION BUILDING, Leesburg, Virginia. Architect: *KDA, Inc.* — *Thomas A. Kamstra* partner-in-charge; *Dorman O. Wyant*, project architect; *Nathan Pringle*, design. Engineers: *FDE, Inc.* (structural); *Glassman LeReche* (mechanical/electrical). Landscape architect: *William Potts*. Consultants: *Ken Cobb, Consulting Engineering* (acoustical); *Glassman LeReche* (lighting); *Red Walthers* (cost); *Gerald P. Finn* (exterior decorative county seal). Interior design and graphics: *KDA, Inc.* Contractor: *Whitener Jackson, Inc.*



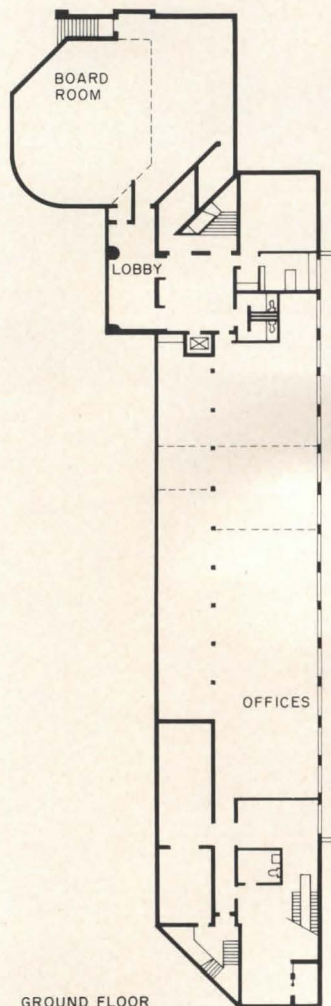
TYPICAL FLOOR



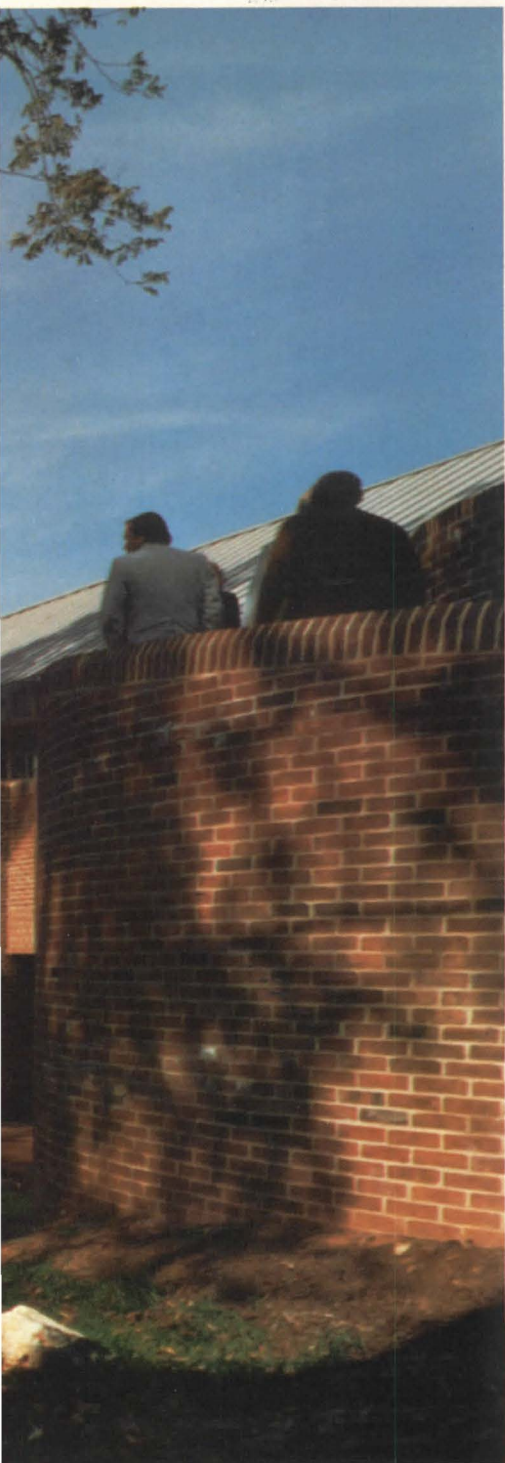
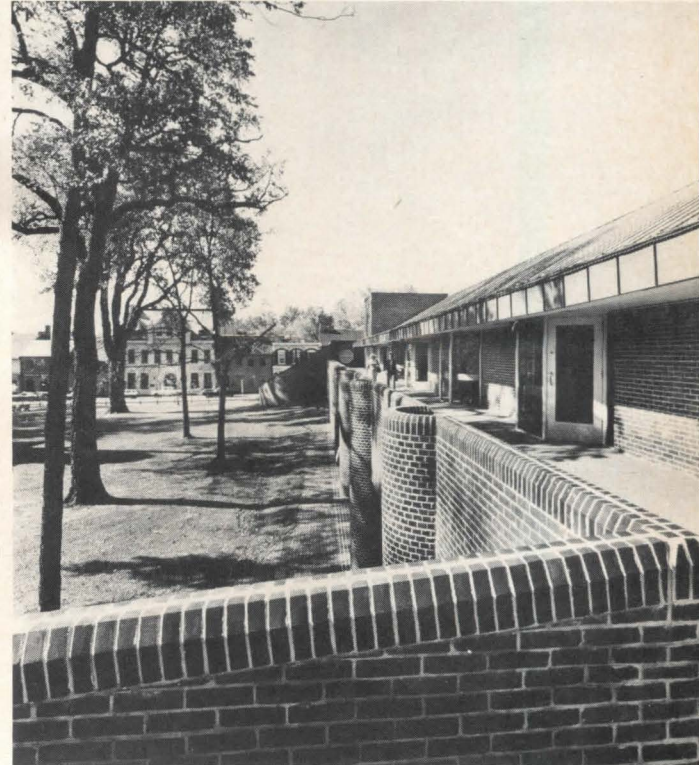
A narrow 70-foot-wide site adjacent to the Courthouse dictated a linear building. In order to provide the required number of offices, one floor was constructed partially underground using the gently



sloping site, and topped by two upper levels (the second floor plan, left, represents a typical floor). An extended colonnade permits a covered arcade at first floor and open perimeter walkway on second level—both open to the Courthouse Green and allow easy access to departments through vestibule entrances.



GROUND FLOOR



LOUDOUN COUNTY OFFICE BUILDING

The largest interior space, seating 150 persons, is the board room (below), a two-story wing with sloping roof positioned near the street and connected to the office structure. County departments, located inside bay window entrances (shown right is one off the upper porch), use a combi-

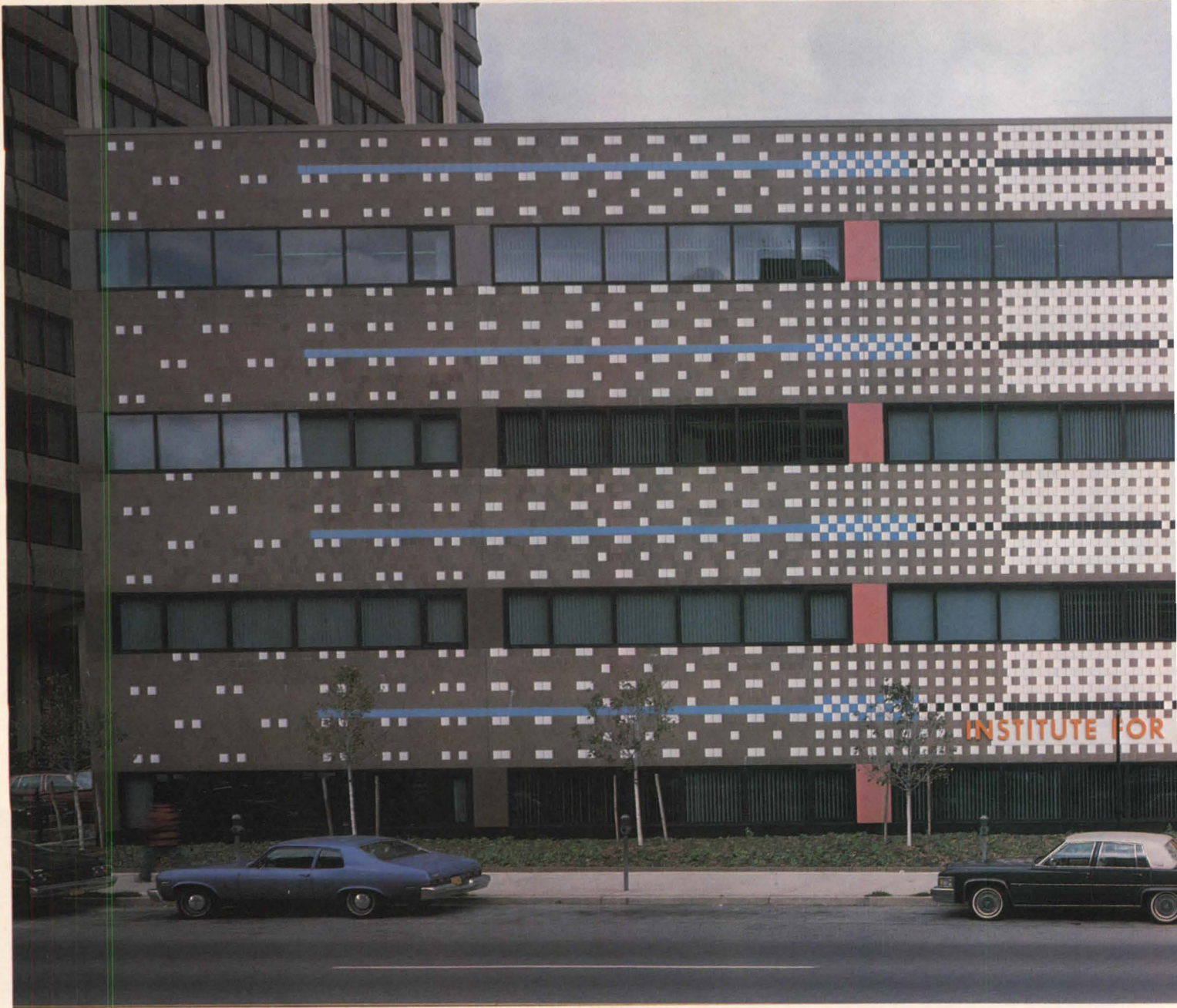
nation of movable floor-to-ceiling walls, open-plan offices and open counters. Glass walls on this southern elevation permit the best infiltration of daylight into work areas and vistas to the Courthouse Green for employees. Some community spaces for recreation and the elderly are also provided.





A basic box with a brilliant facade on an industrial-commercial "Main Street" (Market Street in West Philadelphia), the new headquarters of the Institute for Scientific Information has been shaped by the theory Robert Venturi, Denise Scott Brown and Steven Izenour set forth almost a decade ago in *Learning from Las Vegas: Ugly and Ordinary Architecture, or the Decorated Shed*. The essay has become a keystone of modern architectural polemic. But the ISI headquarters, completed last October, proves Venturi, Rauch and Scott no mere theory-mongers, unable to deal in their architecture with the dictates of the popular taste they analyse in their writing. Indeed, taking ISI as evidence, the theory seems to work. The building is functional, efficient, responsible and well-behaved. But it is also slick, funny, jazzy and very cool. —Eleni M. Constantine

THE SOPHISTICATED SHED



The Institute for Scientific Information (ISI) takes itself seriously. "Commercially the largest for-profit organization in the world specializing in secondary information services in the scientific/technical area," ISI never forgets that it is a multi-national corporation serving ivory tower researchers of lab and academe.

ISI's recent move from its offices in downtown Philadelphia to the University City Science Center (UCSC), a developing research park along a four-block stretch of Market Street West, reflects the company's dual image. Their selection of the Philadelphia firm Venturi, Rauch and Scott Brown as architects for their new headquarters suggests some recognition of the architectural connotations of that image and a readiness for an esthetic exploration of these.

For ISI is a perfect "Venturi" program. If it somewhat surprises architectural dabblers to hear that Venturi, Rauch and Scott Brown—"you know, Pop Art and messy vitality"—designed a small corporate headquarters, it is because the stylistic devices of the firm have been popularized at the expense of the philosophy and method in which those effects are rooted. Both serious imitations and facile knock-offs of the "Venturi" style have focused on such projects as the 1962 residence in Chestnut Hill, Pa. (see page 100), or the Brandt-Johnson House in Vail, Colo. (1976), which have a high concentration of identifiably Post-Modern features—borrowings, allusion, false fronts, punctured planes. *Learning from Las Vegas*, and the firm's other theoretical writings, describe a mode of thought, not a mode of fashion. So their true

offspring—to be found more in urban design than in architecture—don't look like Venturi (Rauch and Scott Brown), they act it.

ISI shows the theory in action. By preimposed definition, the structure is an ugly and ordinary shed. It follows the rules set down by the University City Science Center, a non-profit corporation that has an exclusive contract with the Philadelphia Redevelopment Authority to develop the area into a research park. Conforming to the zoning policy, it keeps its mid-block profile low compared to the corner structures, sets back the requisite 15 planted feet, covers its lot and aligns with the street. It wears the mandatory corporate uniform of tan brick.

ISI staff programmed the building, stating the number of square feet, the size and shape of the site (a square) and thus the form of the



building. They also executed the interiors (schematic and design development) while Venturi's office did the working drawings and exterior. Budget was a prime concern.

Venturi, Rauch & Scott Brown recognized this seemingly unpromising situation as an opportunity to build what they describe in *Learning from Las Vegas* as "the purest decorated shed . . . a conventional systems-building shelter that corresponds closely to the space, structure, and program requirements of the architecture and upon which is laid a contrasting—and if in the nature of the circumstances, *contradictory—decoration*." The context of ISI adds point to their polemic: the contrast between that building and the Monell Chemical Senses Center (see page 100) across the street, is a case study in definition by the comparative method out-

lined in *Learning*. Monell, designed in 1969 by the since-dissolved firm of Ewing, Cole, Erdman and Eubank, embodies what Venturi, Scott Brown and Izenour labeled "heroic and original architecture"—down to the giant bronze head marking its portal, a modern version of the fragmented antique colossus of the Roman Emperor Constantine. ISI is simply shelter with decoration on it.

In their other recent decorated shed, the BEST building, Richmond, Va. (see drawing), the architects contradicted the box with a flower pattern, based on a French wallpaper, that surges in irregular diagonals across the facades. The decoration of ISI contrasts with the order of the street facade, but reinforces, not contradicts, it. This regular geometric scattering from the center inflects toward structural elements—the windows—and stops a prudent distance from the edge. Where in the BEST building the gesture of decoration is cut off in continued action, like an Impressionist painting, here the edges of the canvas are respected by the pattern.

In its street orientation, dominant central axis, and punched horizontals, ISI's facade is formally reminiscent of that of Guild House, 1963 (photo below). As originally drawn, ISI, like Guild House, was topped by a TV aerial. (The aerial is there, but positioned by ISI conventionally back from the parapet).

The Cartesian quality of the pattern has earned the building the epithet "the punch-card" in the local press, a catchy transformation of the architects' connotative meanings into rather simplistic denotation. And while ISI justifiably plays up the dominant orange, black and white color scheme as symbolic identification, the "scientific" effect of the central panel is subtly and wittily balanced by the flanking rose panels and blue brick.

Breaking the plane of the facade and the

surface is taut, flat and the bands of windows strapped around three sides are set absolutely flush with the panels separating them. The smooth, unpunctured facades describe the undifferentiated loft floors behind. This building has, in concept, no rooms; and therefore no punched apertures.

Each facade, though it reflects the same homogeneous interior, also responds to its particular exterior conditions. The west side, facing a tall neighbor, makes an unadorned statement. Four bands of black-framed windows are articulated by beige porcelain panels, with bands of tan brick between. On the back, the porcelain panels are sacrificed, and a loading dock breaks into the facades at the second level, a convenience made possible by exploiting the slope of the site. The east facade faces onto the site of a possible expansion, now a parking lot. Allowing for such potential growth, services—elevators, stairs, etc.—are grouped along this side, and the fenestration reflects these: the huge windows light the stair well, a pair of windows mark the elevator lobby, and a windowless stretch covers the mechanical room.

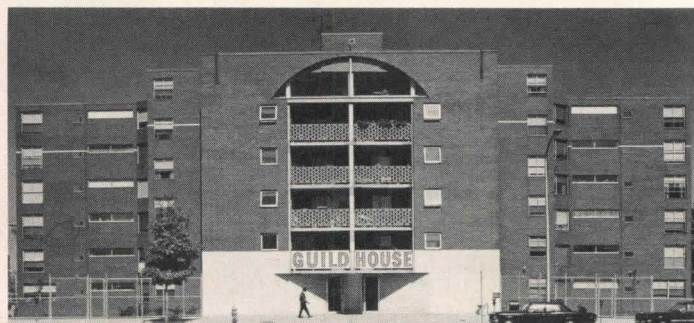
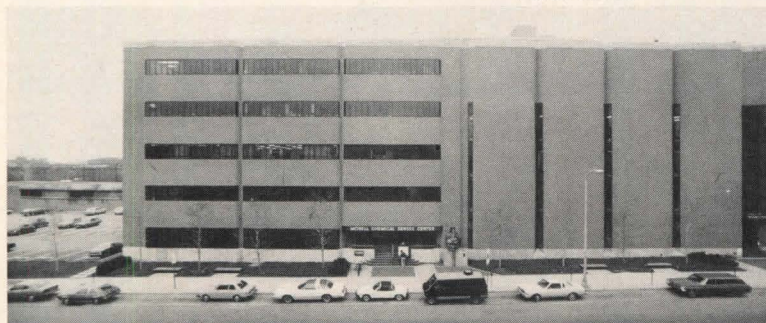
The corner rupture of the entry symbolizes the building's layout. Each of the floors spreads out from this corner. Inside the double doors, a curved granite wall cycles movement past the reception desk back to the elevators and the generous well-lit stair beyond.

Of the interior, Venturi Rauch & Scott Brown's office executed only the envelope, and it is esthetically and technically original. The lighting in the entry, board room, conference room, and president's office is arranged in descriptive patterns. That in the entry is a random scattering, outlining the traffic flow; that in the board and conference rooms defines particular bounded spaces, the former centrally oriented, the latter homogeneous and divisible; that in the president's office precisely illuminates the special functions contained. Details like these, demonstrating the finesse of the architects' intervention, confirm the building's assertion: the firm's concern with "what is—and how to help improve it now," and their argument that this "humbler role for architects" holds artistic promise.

INSTITUTE FOR SCIENTIFIC INFORMATION HEADQUARTERS, Philadelphia, Pennsylvania. Architects: Venturi, Rauch and Scott Brown, Philadelphia, — principal-in-charge: Robert Venturi, project architect: David Vaughan. Engineers: Keast and Wood Co. (structural); Woodward-Clyde Consultants (foundation); Vinokur-Pace Engineering Services (mechanical/electrical). Consultants: Ostergaard Associates (acoustical); (lighting); Raymond Grenald, AIA. Interior consultant for lobby: Dian Boone. Interior schematics and design development: ISI. Contractor: Nason and Cullen, Inc.

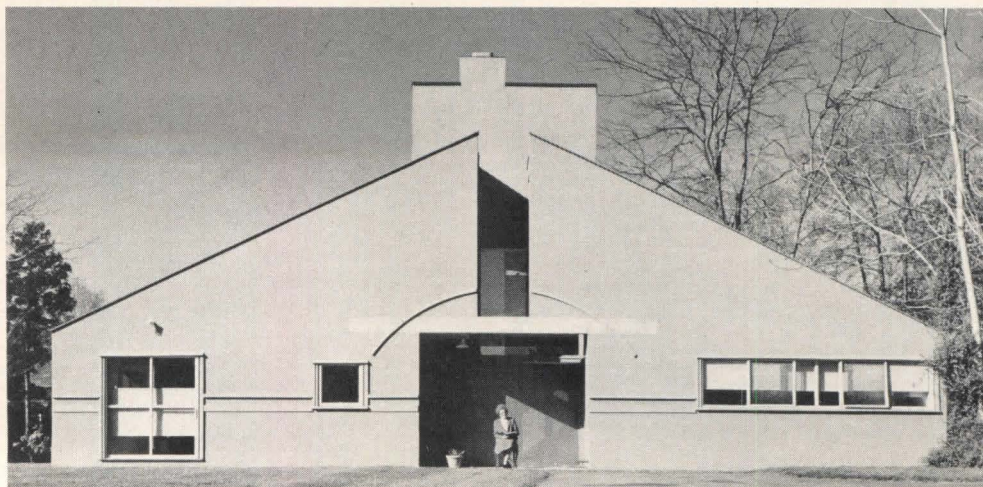


Right, from top: Venturi, Rauch and Scott Brown's BEST, Guild House, Chestnut Hill; ISI's predecessors. Left: the "heroic" Monell Center.



symmetry of its decoration, the entry is a strong and curiously inviting discontinuity. The gay flowers on the panel by the doors, borrowed from that same wallpaper design used for BEST (rumor has it Venturi and Scott Brown's bedroom is papered in that pattern) offer a figurative contrast to the facades' abstract formality, and the mishmash of letter forms hints at alternatives not allowed by the severe lettering centered across the lower story. Acknowledged by the facade pattern with the raised eyebrow of a blue line, the entry admits the volume of the building, the shed behind the decoration.

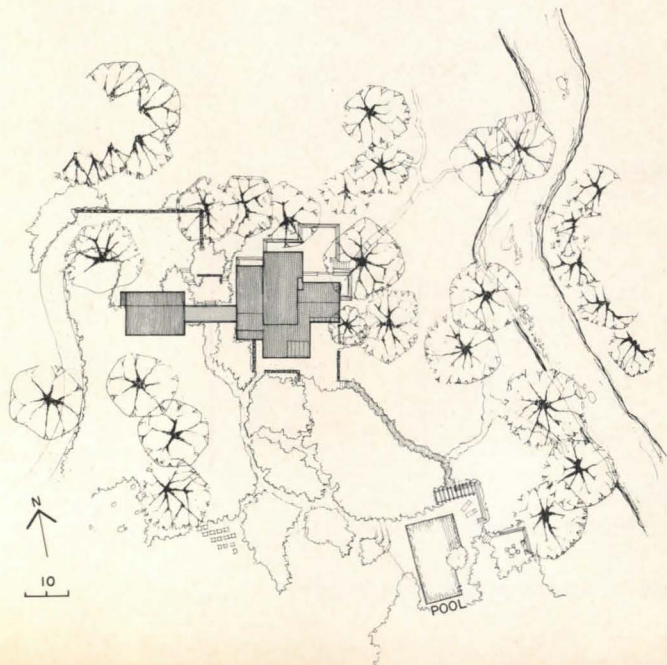
It's a shed of designed elegance. The four floors of open office space are wrapped in a skin so tight it seems stretched. The





Steven Scheer photos

A Californian's version of a New England farmhouse



That's San Francisco architect Robert Marquis' apt description of the Scheer house in Millbrook, New York—for a professional couple (one a doctor, the other a teacher) with grown children. In the midst of today's sometimes frantic search for new expression, a house like this—calm and comfortable but nonetheless the result of the most careful kind of architectural thought—is a pleasure to study. As an East-West hybrid it is full of surprising and delightful spaces for living, which is, after all, what a house is all about. . . . —W.W.



The exteriors show the house-plus-additions look that marks the old New England house—yet there is a crispness to the vertical cedar siding, the minimal trim, the roof detailing, the framing of the big deck reaching out toward the passing stream, the entry link from the house to the loft/garage, even the disciplined laying-up of the stone walls that suggests that this is a very contemporary house.

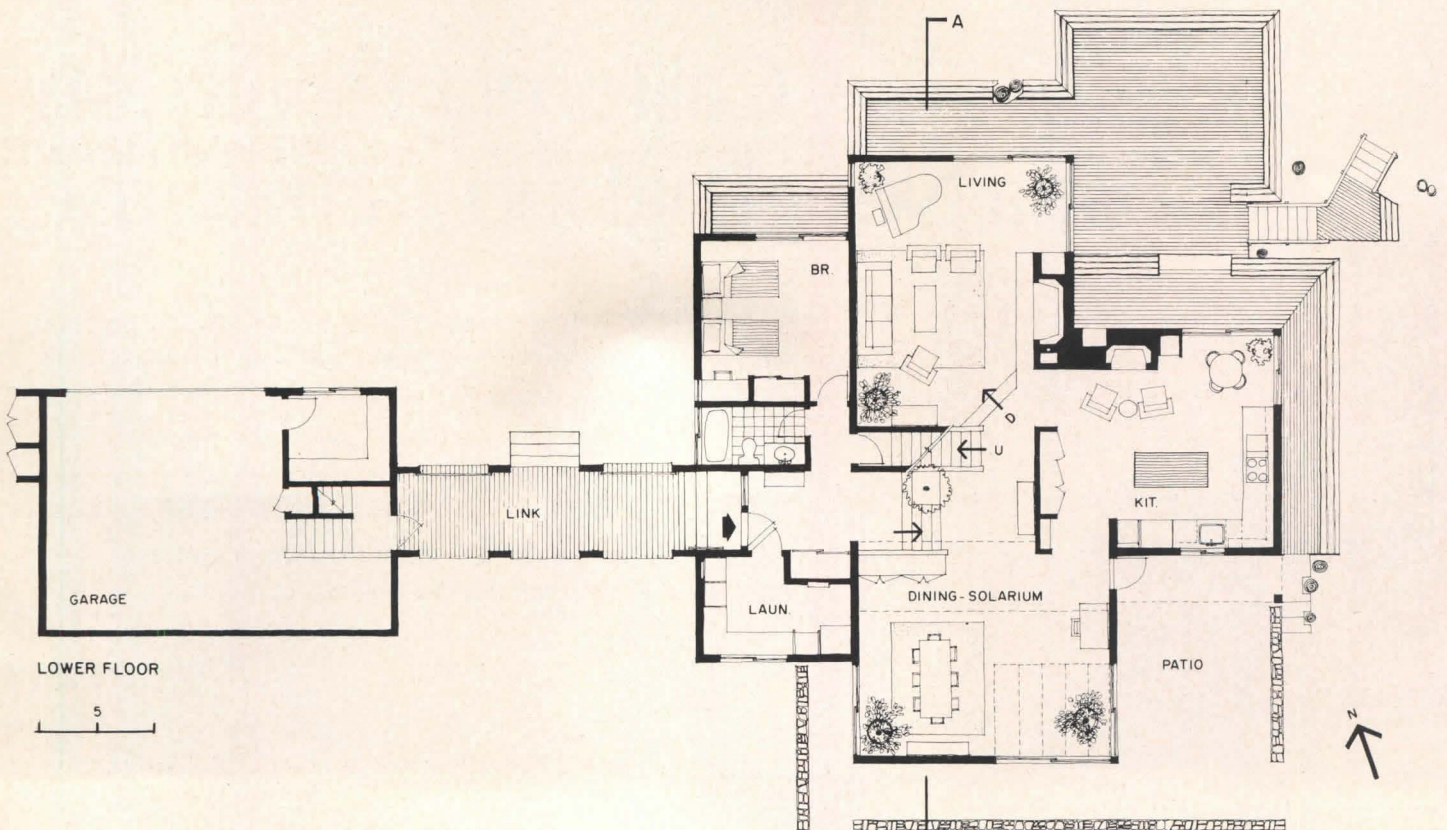
The plan and the interior photos (next pages) make it clear. The house is on many levels—spiraling around the central stairwell and the large fireplace mass. Each of the major rooms opens to an outdoor space. The guest room has its own little deck tucked into a corner of the house and the living room and farm kitchen open to the broad deck in the lead photo, which is set up for relaxation and outdoor dining. The dining room adjoins a

well-enclosed patio (photo right) which is tree-shaded from the summer sun but, since it faces south, is usable early in the spring and well into the fall.

The Californian in architect Marquis is most clearly expressed in his design for the interiors (again, see photos next pages). Around the anchor of the great stone fireplace are quarry tiles from Mexico in a warm orange-brown, traditional oak flooring used mainly on the ceilings of the central living/dining space but also (more traditionally) in the living room, in cabinets, in the stair rails. The height of the main living/dining space is emphasized by the bridge that connects the stairwell, the study off the stair landing, and the master bedroom. Light enters from unexpected places—a high clerestory not only invites winter solar heat but opens to create a

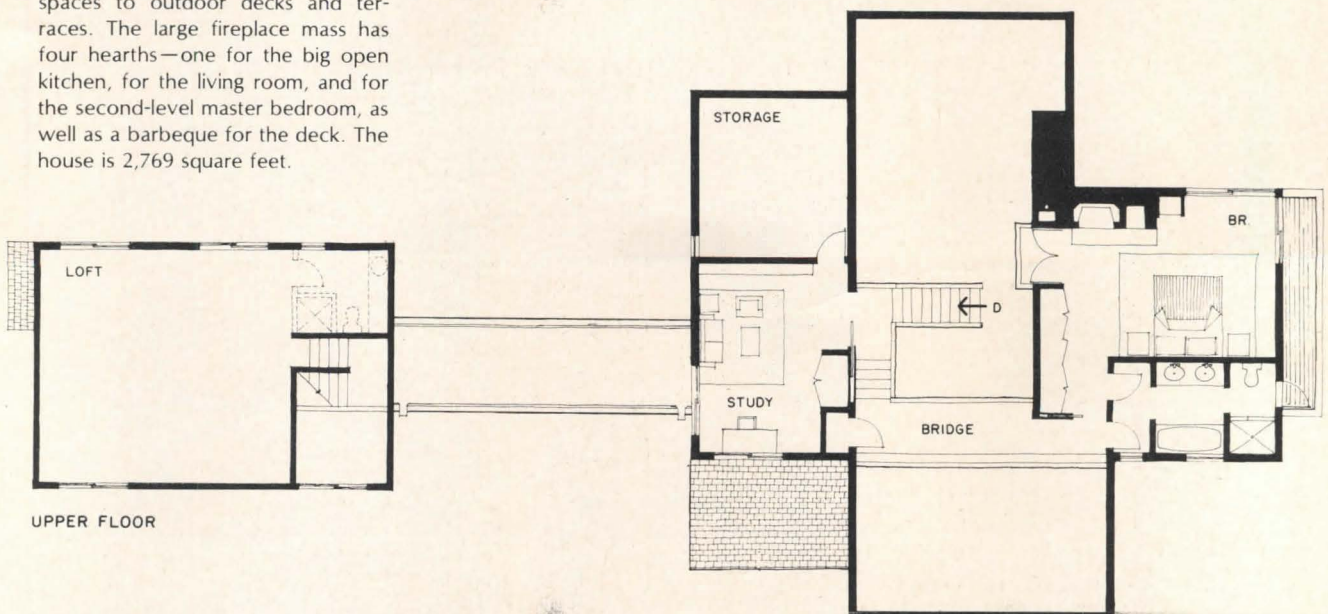
strong flow of ventilating air through the center of the house in summer. A solarium is created by a skylighted roof section in the dining room that warms the space all winter long. There is even an unexpected band of skylight in the master bath. And most contemporary and Californian of all within the New England form is the flow of space. The only truly private areas are the master bedroom and its study upstairs and the guest room—all appropriate enough. The main living areas all give light and interest and color and space to each other.

In sum: a house that offers within its calm and familiar framework some visual drama, rich use of materials, fresh and thoughtful use of space, pleasant surprises, and surely a very comfortable way of living. Which is, again, what a good house is all about.





Only hints of the thoughtful complexity of the design are given by the entry facade, top left. The plan shows the many changes in level and the careful relationship of indoor spaces to outdoor decks and terraces. The large fireplace mass has four hearths—one for the big open kitchen, for the living room, and for the second-level master bedroom, as well as a barbeque for the deck. The house is 2,769 square feet.

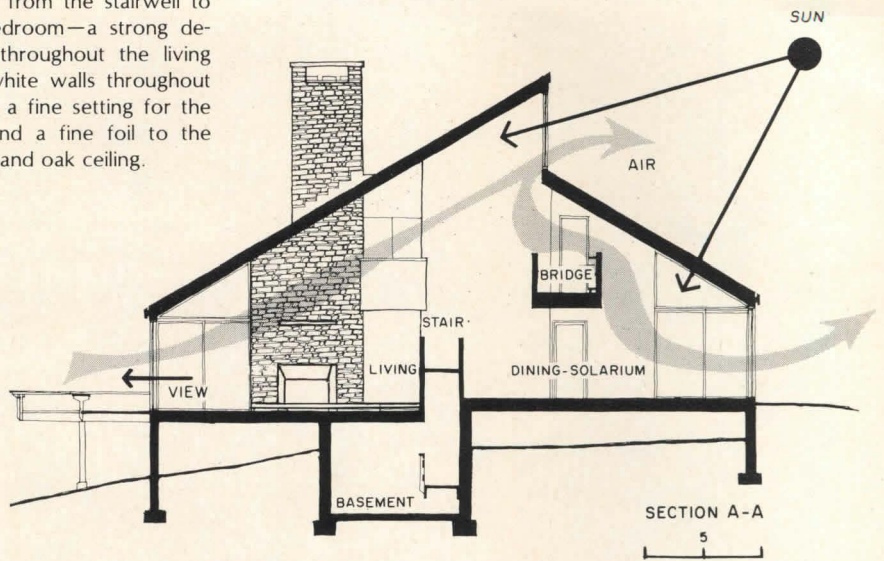


UPPER FLOOR



Inside the house, space and light and color flow from room to room. While the living room, dining room, and large kitchen are all well defined areas, the strong pattern of the quarry tile floor almost forces the eye to reach out, and the equally dominant oak ceilings draw the eye upwards to the bridge and spaces above. Photo left: the dining room and the kitchen with its huge stone fireplace. The deep-raked joints give the impression of the dry stone walls of the area.

Below left, the solarium in the dining room. Below right, the living room. The south-facing clerestory admits solar heat in winter, but opened in summer sets up a forceful flow of air through the house. Opposite left: the bridge leading from the stairwell to the master bedroom—a strong design element throughout the living spaces. The white walls throughout the house are a fine setting for the owners' art and a fine foil to the colorful floors and oak ceiling.





The kitchen is 20 feet square, and the stone fireplace, quarry-tile floors, oak work table and cabinets, and informal dining table create the "farm kitchen" atmosphere the clients wanted. The sliding door at the rear opens to the main outside deck. The master bath is unexpectedly brightened by the narrow skylight, and the door at the rear of photo leads to the well-screened master-bedroom deck.

SCHEER HOUSE, Millbrook, New York. Architects: *Marquis Associates*—principal-in-charge, Robert B. Marquis; project architect: *Lamberto Moris*. Associate architect: *Jeh V. Johnson, FAIA, of Gindele & Johnson*. Structural engineers: *Hirsch & Associates*. Landscape architect: *Maurice Wrangel*.

The well-being of design quality in the health-care world

By Michael Bobrow and Paula Van Gelder

A few years ago, architect Michael Bobrow, who also teaches at UCLA, and architect William Parker, who also teaches at Columbia, sat down with the editors of ARCHITECTURAL RECORD to discuss the improved climate for design quality that might well arise were there to be a more-or-less regular health facilities design awards program of highly visible rank. The first result was the Health Facilities Reuse Conference at Columbia in 1978 and an accompanying design awards program pegged on the appraisal of existing buildings that had been reused for health-care purposes (see RECORD, November 1978). This time around it was the turn of UCLA to host the awards deliberations—and the winners are described on the following pages. Nowhere is this blending of esthetic conviction with an understanding of psychological and emotional factors more crucial than in the design of hospitals or related facilities. This year's jury, more than amply attendant to the "science" of architecture, came away encouraged that the "art" of it all is beginning to count for more. The jury included Michael Bobrow, as chairman, a principal of Bobrow/Thomas Associates, Los Angeles; architect C. William Brubaker, executive vice president of Perkins & Will, Chicago; architect Jurg Lang, who is also an assistant professor of architecture and urban design at UCLA; William Parker, who besides his work at Columbia is currently designing the new Institute of Developmental Biology for the Chinese Academy of Sciences in Beijing; and architect Joseph Sprague, director of design and construction and manager of the codes and standards program for the division of health facilities and standards of the American Hospital Association. Also Paula Van Gelder of Bobrow/Thomas, with her exacting approach to health-care research, was indispensable in coordinating the jury's deliberations. The health-care community is moving to a consensus that there is in fact a "healing power of nature" — *vis medicatrix naturae*. The results of this program seem to suggest that the "healing power of architecture" — *vis medicatrix architecturae?* — is becoming an active consideration, sure to help people to establish a more positive (and needed) psychological partnership with the skills of their physicians. — W.M.

Following World War II, the major modifications in hospital design related primarily to the development of functionally efficient buildings and to strategies for handling anticipated growth and change. The second biennial health facility design competition—co-sponsored by the UCLA Graduate School of Architecture and Urban Planning, the Graduate School of Architecture and Planning at Columbia University, and by ARCHITECTURAL RECORD—uncovered no significant new techniques related to either of these primary issues. What was uncovered were two clear trends. One was the emergence of a new building type, the ambulatory care center, reflecting a greater orientation toward outpatient care. The second was a much greater sensitivity to the architectural issues, values,

and qualities that affect larger-scale health-care institutions. These include increased understanding of the need to establish clear patterns of circulation and, thus, of the orientation of the users of such complex facilities—and not least, these include more sensitivity to the nature, effects, and use of light, materials, and color to enliven the human qualities of the environment. Can such impulses of design excellence be given a leg up amidst all the grating, admittedly vital practicalities impinging upon them? The primary goal of this biennial contest, which is to be an on-going thing, is to reward buildings and projects that demonstrate that design excellence and innovative planning strategies can indeed enjoy a high "survival rate."

A jury of knowledgeable architects (see introduction) was assembled at UCLA last December to evaluate 102 submissions from throughout the United States and Canada. Fifty entries made it through the first round of judging, while three subsequent rounds were required to select the seven buildings given Awards, the four given Project Citations, plus an additional ten that have been chosen for special mention later on in this article. Each of

the works given Awards and Project Citations is described on the following pages.

The Awards were granted to completed buildings of varying types and sizes—two ambulatory-care clinics, a small research center, a general hospital, a large university-based research-and-educational facility, and two large university hospitals. Four unbuilt projects were granted Project Citations—a psychiatric facility, a small critical-care and surgery addition to an existing hospital, a new medium-size hospital, and a major addition to an urban hospital.

After much discussion, the jury decided that it would be unfair to grant an Award, as opposed to a Citation, to the unbuilt projects. This decision was based on the knowledge that many such projects achieve outstanding qualities during the phases of design—then lose them, due to various compromises often beyond the architects' control, as the design is further developed and then built. It was felt that only the actual construction of projects can truly test whether the qualities of design ultimately come through, but it was also felt that creativity, innovation, and courage toward the front end of the design process

Michael Bobrow was the jury chairman of the health facility design competition covered in this section. He is on the faculty of UCLA where he coordinates the Health Facilities Planning curriculum in the School of Architecture, and he is a principal in the architectural and planning firm of Bobrow/Thomas and Associates in Los Angeles. Paula Van Gelder is research librarian and senior associate at Bobrow/Thomas and played a major role in coordinating the deliberations of the jury.

(whatever might happen down the road to implementation) must also be given recognition. Finally, the ten additional projects selected for discussion later in this article—though not given Awards or Citations—all demonstrated various elements that were felt to be prototypical of certain points in planning and design.

Viewing such a plentiful, telling array of current design in this field brings into perspective the key issues and innovations of the last 30 years—a perspective we would do well to mull over at this point.

Back in the late 1940s, the acceptance of the "racetrack" nursing unit plan—developed in part by Neergard—had a significant effect. Subsequent to that, as demonstrated by the Yale University studies of John Thompson, compact nursing units, such as those at the Valley Presbyterian Hospital, improved upon the earlier precept. The last significant hospital design competition—prior to these being co-sponsored by RECORD—was sponsored by the Ruberoid Company in 1961. The winning entry at that time showed a strategy for growth and flexibility in terms of an isolated core of elevators, phased nursing units, and a separate structure for ancillary services. This design, done by the firm of Moore and Meza, was prototypical of many projects that have since risen, especially in the western part of the country. Parallel to this development was that of the indeterminate, open-ended planning of John Weeks. Northwick Park in England is a clear example of his concept. Other innovations affecting design generally included the nursing units for the Kaiser hospitals, separating patient and staff traffic. These were conceived by Sidney Garfield, M.D., founder of the Kaiser-Permanente Plan. Then there was the development of interstitial elements, meant to maximize the adaptability and re-use of building elements as they grew externally, underwent functional changes internally, or both. The concept of interstitial space as seen in such research facilities as the Salk Institute by Louis Kahn can take on sublime, even epochal architectonic character; it can also be seen in any number of projects for the Veterans Administration.

In the late 1960s and early 1970s, two further developments occurred, relating to both the programming and evaluation of hospitals. The firm of Caudill, Rowlett and Scott developed a programming strategy stemming from their extensive experience in educational facilities, applying it to their health-care projects. Herbert McLaughlin not only refined programming, but he also closed the loop of programming by setting up rigorous post-occupancy evaluation for his firm's projects. The highly coordinated supply techniques of Gordon Friesen were also influential in the design of hospitals in the 1950s and 1960s. All these innovations were again geared to functional efficiency and to strategies allowing for flexible change. The question remained—had to—of whether there were and are other issues toward which innovation can be geared. The celebrated scientist Jakob Bronowski put his finger on at least one such issue when he said: "We have to cure ourselves of

the itch for absolute knowledge and power. We have to close the distance between the push-button order and the human act. We have to touch people." For all the absolute knowledge and power that hospitals symbolize and shelter, for all the organizational, technological, and mechanical modes that have been developed these last 30 years to expedite the delivery of health-care services—for all of this, the average health-care environment has yet to "touch people" in this way. If the medical journals are alive with articles and essays about the subtle but serious role of the human emotions in assisting treatment, then architectural magazines can feel all the more comfortable and practical about calling for health-care environments that assist the emotions, stimulating resolve and hope, while lessening apprehension and the feeling that one is wholly dependent on the machinery of medicine. Architectural design can and must "... close the distance between the push-button order and the human act."

The recognition of this history of health facilities over the last 30 years was the basis of the charge to the jury; however, other issues, seen to be important in the 1980s, were also stressed. The considerations that were at work in the jury's evaluations included technological advances; changes in nursing care, as more inpatients are in need of acute care; more chronic care, reflecting a growing elderly population; increased sizes of hospitals, as smaller ones close; more additions to existing hospitals rather than entirely new structures; and increased out-patient opportunities, on the hospital campus, through emergency rooms, and by way of ambulatory-care centers. The winning buildings, the jury was encouraged, were not only to demonstrate responses to such considerations, but also were to be outstanding in their architectural interpretation.

Given these considerations, and going over these 102 entries, the jury had a general sense that though a large number of the projects showed a high level of technical competence, only a small number put this expertise on a comparable level of concern for the architectural and attendant human qualities that we have been discussing here. It must be said that this partly had to do with the scale of the projects, and there appeared to be three levels of scale—the small ambulatory-care center, the medium-scale general hospital, and major university facilities. It was very clear that the smaller the project, the higher the level of balance that was achieved between technical competence and design competence. As a project got larger, site constraints became significantly greater in most situations—and the problems of scale, clarity of organization, and the readability of the building all came into play. These large-scale jobs were the most controversial amongst the jury members, and they took up much of its deliberations. At the core of such deliberations about bigness versus smallness of course resides concerns that are being voiced at every level of our society's institutional life, and at the level of health care and

its relationship to architectural values, this has to be an especially serious point of reflection. At what point and scale do health care and the health-care environment become *just* technically competent and, settling for that as "scientific," also become dispassionate shells abounding with sophisticated mechanicals and medical equipment? Does the architect have the role, responsibility, even right to help his complex "client" deal with this issue so that, at whatever size, architecture can be an active assistant in caring for people?

The winners show the way into the 1980s

Three buildings of smaller scale were among the seven structures selected for Awards. The first of these is the Comprehensive Ambulatory Care Center in Dayton, Ohio (page 114). Containing something over 100,000 square feet, all of its space is handled on one main level. There is a very clear, inviting entrance, a pleasant central space providing good orientation, and a clear hierarchy of circulation from module to module. Expansion will follow clearly from this basic modular plan, and the handling of growth over a long period of time will not compromise the logic or character of the original. Siting is handled in a simple, straightforward way. The use of materials and elements lends a nice, light, comfortable air to the building.

The second Award given to a building of this scale is the Shoreline Clinic at Southwinds, Essex, Connecticut (page 110). This 12,000-square-foot structure also provides a clear central space for orientation, a common control point for emergency and out-patient visits, and a very gentle relationship to the terrain. The handling of light and materials is subtle and remarkable; so is the quality of the space and the building's physical scale.

The third Award winner of this type is the Jerry Lewis Neuromuscular Research Center at UCLA (page 118). This building was known to certain jury members beforehand, and consequently the evaluation of this facility as a structure within a context was somewhat more thorough, comparatively speaking. The jury appreciated the clear organizational diagram of this very simple 27,000-square-foot building, which is just adjacent to the UCLA Medical Center. Some criticism was heard regarding the contrast in scale between this building and the 10-story Medical Center. As it happens, this siting decision was not made by the architects but by the UCLA master plans before the design phase. Nevertheless, the research center steps up gently to the nearby larger buildings and creates a rooftop garden area that is nice to look at from the Medical Center. The detailing and use of materials reinforce the basic organization of the building.

These three smaller structures met with the jurors' general agreement. It is not so difficult to balance planning issues—such as organization and orientation—with architectural concerns about scale and context. Such is not the case in larger-scale projects—such as the four remaining Award winners.

One of these is a medium-scale hospital, the Eastern Maine Medical Center in Bangor

The huge **Wayne State University/Health Care Institute—Detroit Receiving Hospital** (see *RECORD*, April 1980) was given an Award for the success with which its basic repetitive cross elements reduce and humanize the over-all scale, while also providing a clear, efficient order and hierarchy of function (near right). It was designed by William Kessler and Associates, and the Zeidler Partnership, and Giffels and Associates. Said the jury, "The thing as a piece of architecture is super!" The **Academic Facility of Rush University** in Chicago (see *RECORD*, July 1977) is packed with laboratory and learning facilities, wrapped in a sleek, taut skin, and ties intricately into the fabric of its setting (below). "This is along and over the streetscape," the jury noted, "and the idea of including commercial space along the street makes it all the more agreeable in urban terms." This Award winner was designed by Metz Train & Youngren.



Balthazar Korab

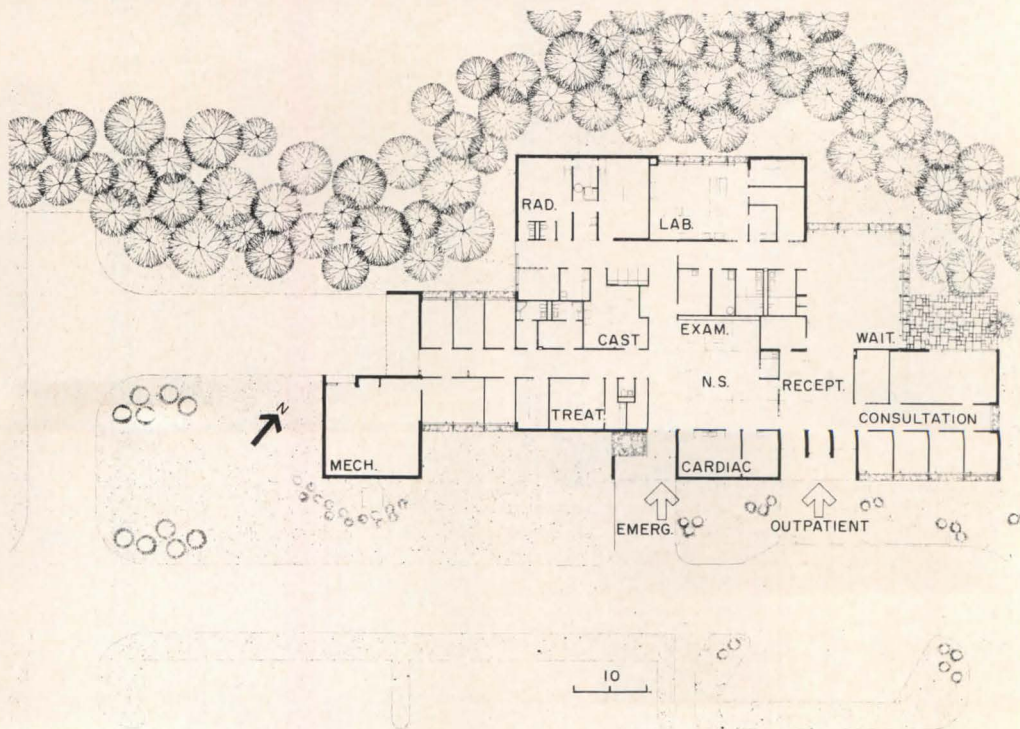


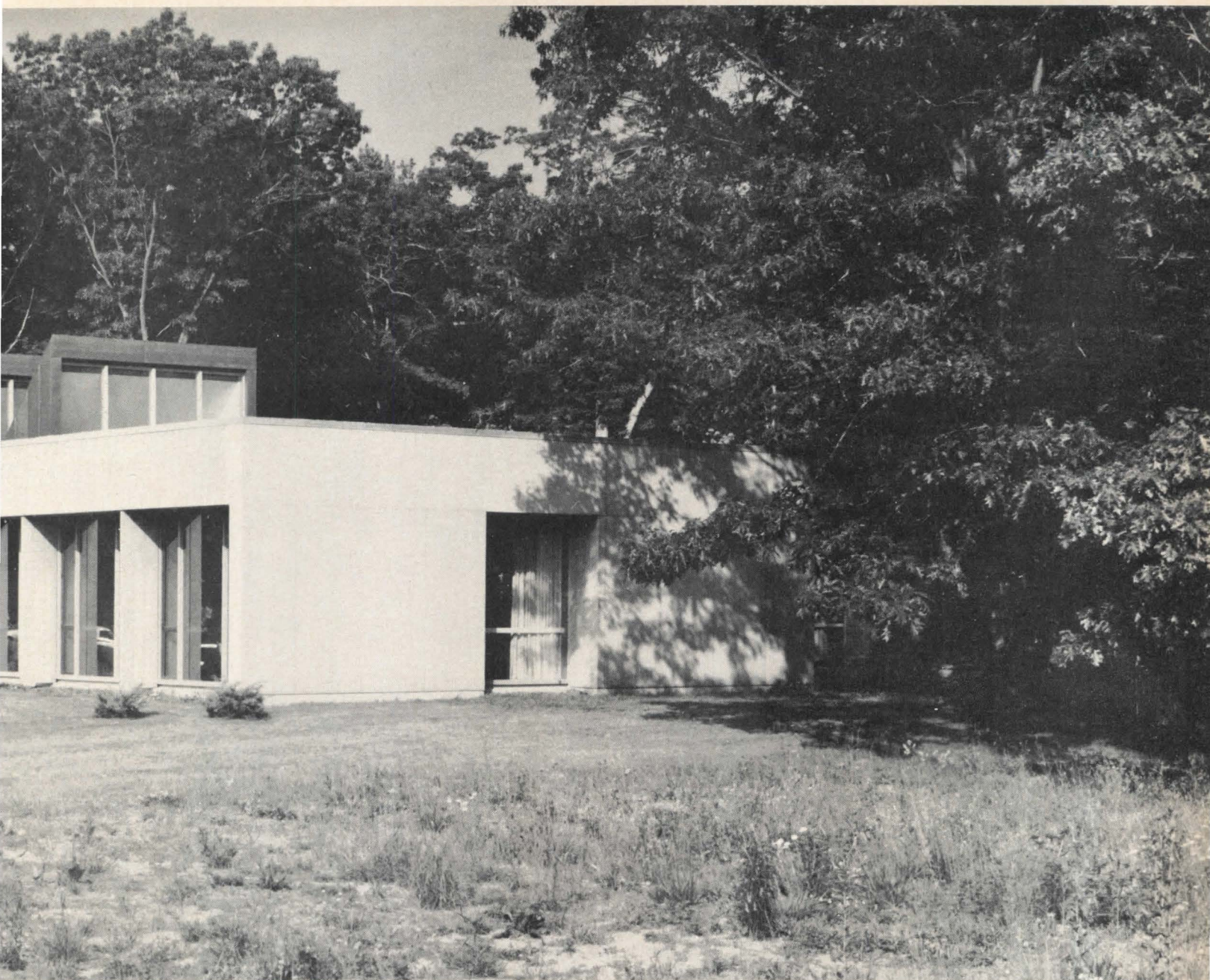
Philip Turner photos



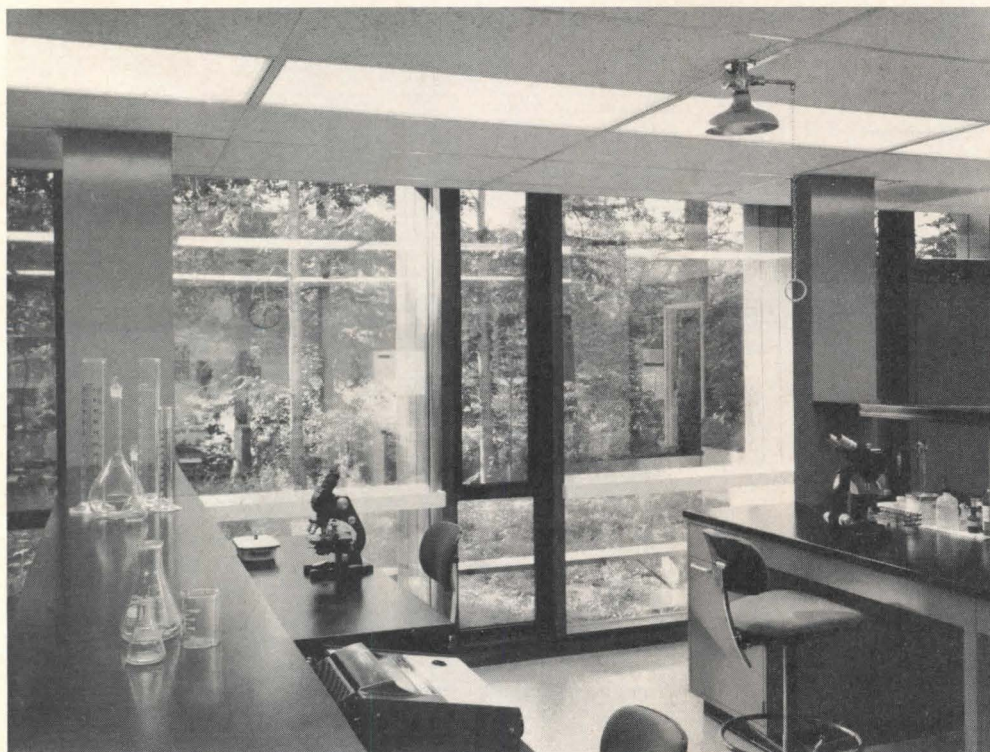
SHORELINE CLINIC, SOUTHWINDS
 ESSEX, CONNECTICUT
 BY PAYETTE ASSOCIATES

This low-slung facility with angular light scoops on the roof is the emergency and out-patient satellite of a local hospital. The ten-acre meadow it is set into has a wooded slope to the rear, so the building, with 12,000 square feet, was put near the trees. Both its scale and its siding, of textured plywood, reinforce the relationship with nature. Inside, the building is organized around a central nursing station and, just adjacent, a holding area for emergency patients. The circulation system is open-ended for horizontal expansion. Spaces were planned to be quickly adaptable. X-ray, laboratory, emergency cardiac treatment, orthopedic and gynecological treatment, and several standard treatment and exam rooms are provided. No overnight patient facilities are included; patients requiring hospitalization are stabilized here, then transported to the hospital. The building's structure is a steel frame, over a concrete slab on grade. The exterior walls are heavily insulated. The exterior glazing is insulating glass in either fixed or operable redwood sash. Interior partitions are painted gypsum board on metal studs. The ceiling throughout is of suspended acoustical tile, and the floors are covered with either vinyl asbestos tile or carpeting. Oak railings are provided throughout the circulation areas as a means of protecting the wall surfaces and to give patients a good, reassuring grip as they move about. Said the jury in granting this Award: "Localized health care is a trend. This is a very unpretentious, straightforward building with possibilities for expansion, and it has a very simple, clear organization, distributed in different branches. While it is a pretty simple thing—and you see a lot of these all over the country—it would be nice if more of them had the same quality. It has a good relationship to the outdoors, certainly, and its custom-like qualities of scale and space. While it definitely benefits from having such a nice site—the same building in a barren place would not be quite so appealing—this matter of making the most of a site, and putting some creativity into choosing a site in the first place, is also an important consideration in health-care planning. The building itself is a good alternative to some of the commercial-looking, prefab-style boxes that we're starting to see in this ambulatory genre. It is vital to encourage such quality as these localized facilities increase—rather than a hackneyed off-the-shelf style we associate with fast-food operations."





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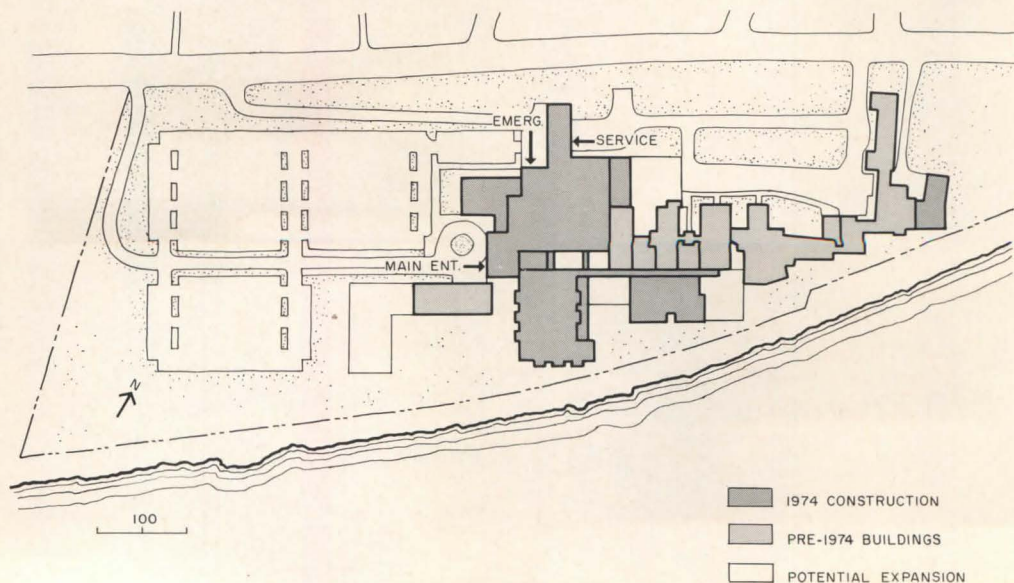


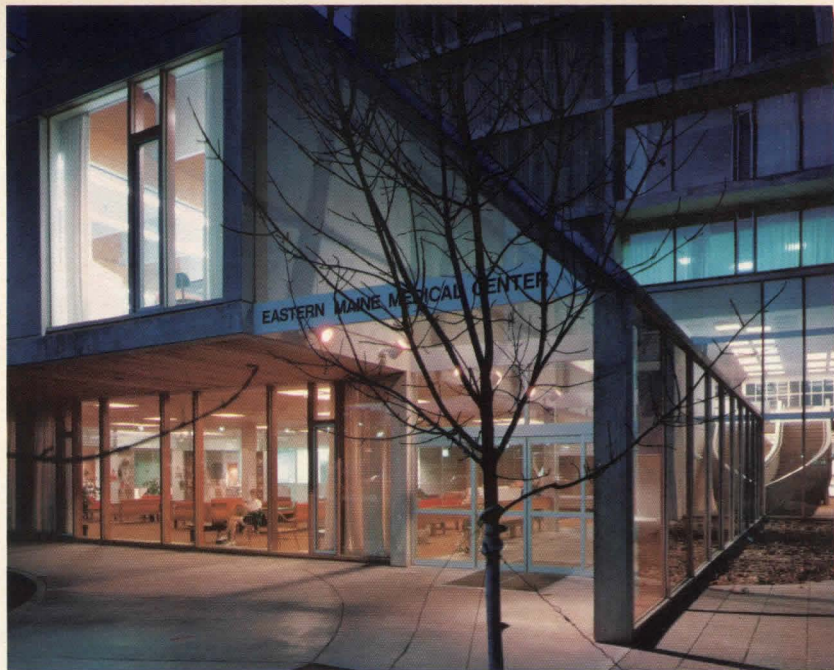
EASTERN MAINE MEDICAL
 CENTER, BANGOR
 BY PAYETTE ASSOCIATES

This is a medical center and regional health-care facility for both urban and rural populations—the second largest short-term, acute-care, voluntary non-profit hospital in Maine. By the late 1960s, the additions over the years had reached a point of density and disorientation that any more mere “additions” would be hopeless. Thus a master plan was begun, and from this, the center was reorganized and this latest phase constructed. The concept behind the master plan was to devise a new circulation spine through and connecting all the useable existing buildings, then threading it into this new phase and around its vertical circulation core.

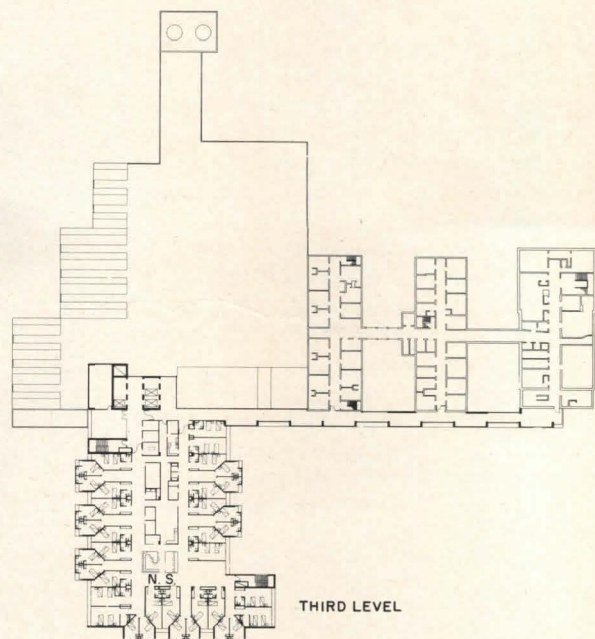
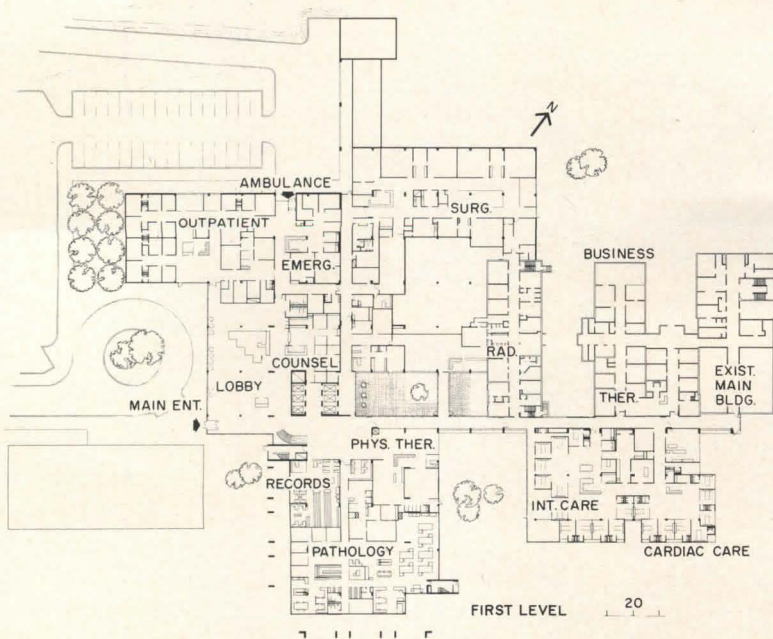
The building is vertically zoned. The first level has all ancillary facilities and a Special Care Unit (for intensive and coronary care) which is located here because of its need for extensive, quick backup by varied personnel. The second level is all public service with an educational center—consisting of library, lecture and conference rooms—wrapped around a lobby that is in turn directly connected to the main lobby by an open stairway. This second level further houses the receiving, storage, and distribution activities of the institution. The other upper levels, three through five, contain the patient-care units. These are grouped, with up to 58 beds per nursing station, to offer maximum flexibility for changing functions, modes or emphases of treatment, and bed capacity.

The reinforced-concrete structure, with exterior walls of double-insulated glass and vertical mahogany siding that is stained to weather to a natural barn-siding kind of gray, is organized to take full advantage of a spectacular river view. This orientation was southward, which allows the spaces on the exterior to benefit from natural solar heating while also turning the building’s “back” on the prevailing northerly winds. At the grade level, the landscaping was extended into interior courtyards and under the over-hanging upper floors, with the effect that the architecture appears to incorporate its setting in the fullest visual terms. The jury gave an Award noting, “The architect—given an unpromising bunch of existing shapes to add to—pleasingly unified a lot of elements, and pulled that same blockiness, that same sense of proportion, out into the new sections—coming up with a quality of massing that has some real lift and movement to it. The interiors are nice, as are the details, and those labs are good. The siting is more than nice; perhaps we should give awards to people who know how to pick and work with the best sites!”





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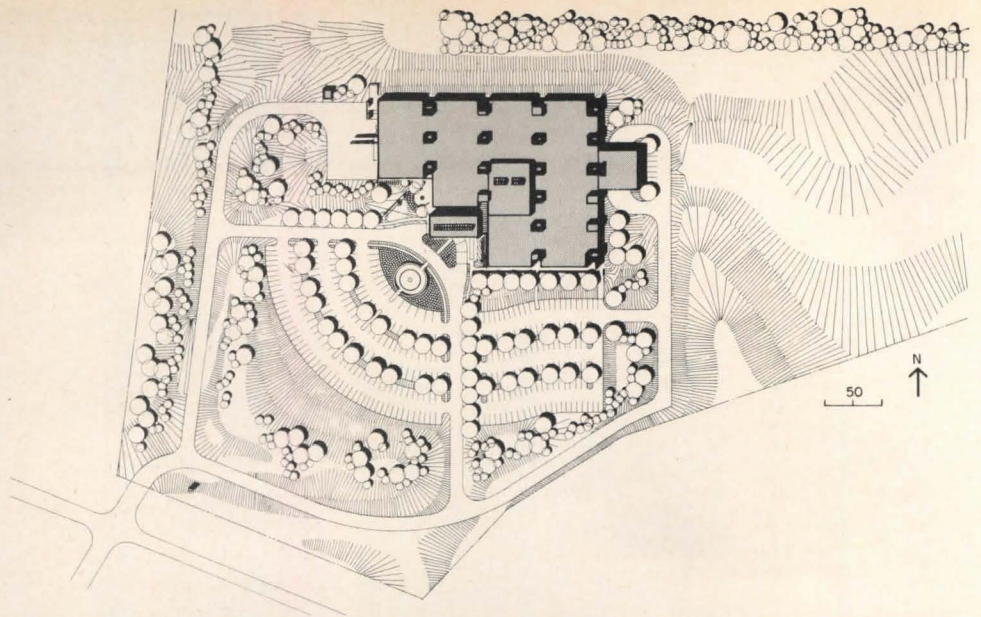
COMPREHENSIVE AMBULATORY
CARE CENTER, DAYTON, OHIO
BY EUGENE W. BETZ ARCHITECTS

The challenge here was to develop an ambulatory-care setting, offering comprehensive services, that would be in marked, humane contrast to the usual in-patient milieu. The services include surgery, emergency, radiology, nuclear medicine, clinical labs, cardiopulmonary facilities, physical therapy, and a pharmacy—plus physicians' offices. The architect had to come up with a very clear plan, obviously, to make sense out of such a mix—and to ensure easy patient traffic. He was also bent on providing an atmosphere inside, and an appearance outside, that would overcome the intimidatingly clinical, moody environment of too many institutions. So an atrium was conceived as a focal point for managing the traffic. Upon entering the atrium, patients are registered and, if need be, screened in adjacent exam rooms. From this point, they are then directed the relatively short distances to whichever services they require. The atrium in turn, while providing orientation, is light and airy—a good place to wait for the several hours it often takes between tests. The anxiety of groping around in labyrinthine corridors is eliminated.

To achieve the degree of flexibility and expandability required, a modular planning system has been used. Each module has a flexible planning field, with service cores containing fixed mechanical and electrical services, plus room for future vertical circulation. Expansion will occur in increments of these modules, thus maintaining a sense of ordered growth.

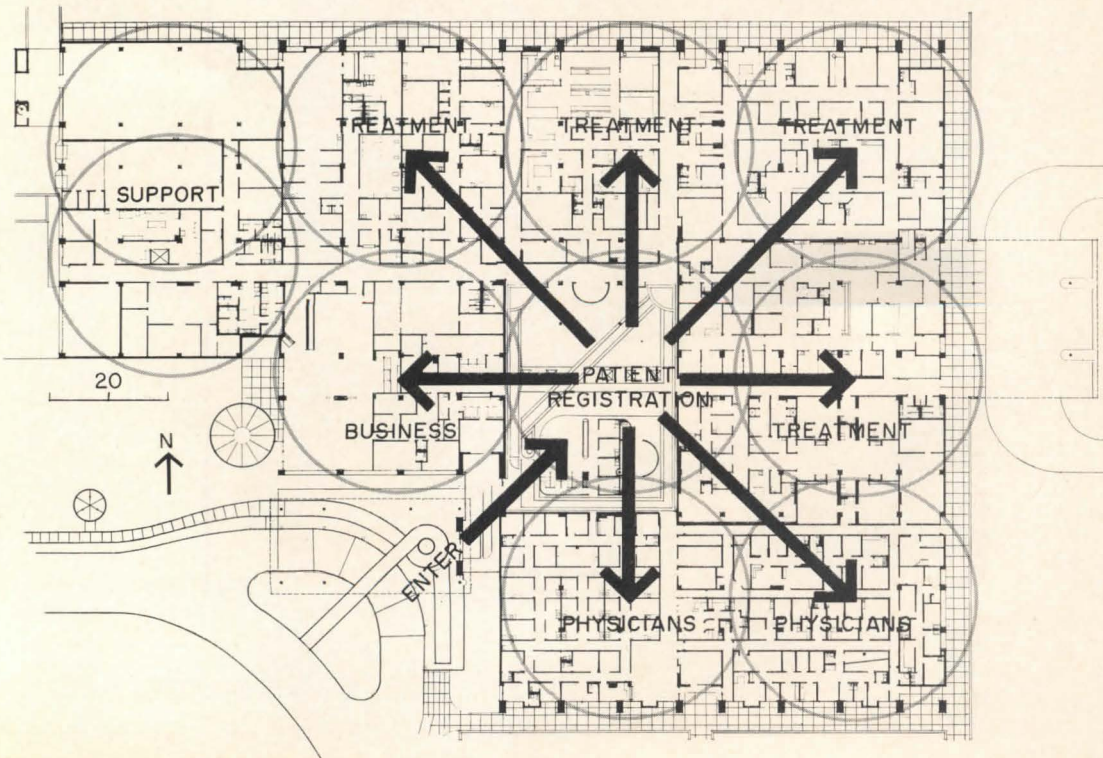
From the warm spaciousness of the atrium to the well-planned proximity of the ancillary services, this facility demonstrates that contemporary form and health-care functions can be united in a pleasing, efficient package. Because each corridor leading to a patient service begins in the atrium, with its reception, waiting, and screening facilities, patients and visitors do not have to snake their way, playing spatial hunches. Moreover, the close juxtaposition of the modules expedite the delivery of services, especially when the treatment requires the resources of more than one component. For example, radiology is just next to the emergency room; patients needing that form of evaluation are seconds away from the equipment and personnel needed. Also, the cardiopulmonary area—for respiratory therapy and cardiology—similarly ensures quick team action as both departments go to work.

For what the jury termed its "warm, interesting, and illuminating environment, especially in its more public spaces and outward demeanor," this facility was recognized with an Award. "It is a very simple, straightforward organization with a central focus giving identity and amenity to the whole, and this singularity to things inside repeats itself outside in a visually stimulating manner," the jury further noted.





ARTEC photos



OLSON PAVILION/HEALTH
SCIENCES BUILDING, CHICAGO
BY HOLABIRD & ROOT

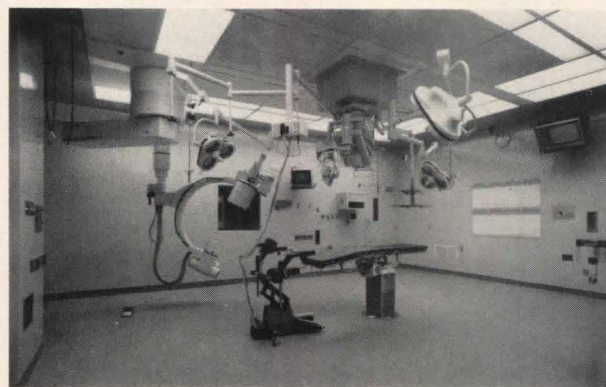
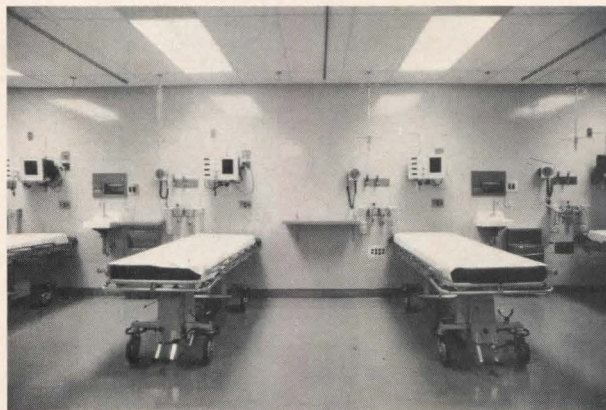
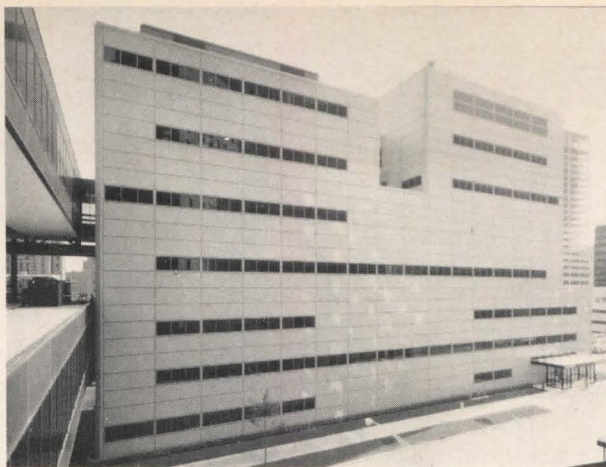
This immaculate Miesian composition is crammed with comprehensive health care *and emergency* services that centralize the critical-care units of the medical center of Northwestern University. There are three basic sections—a dental school, a medical hospital, and a cancer center. The architect was challenged to get all this inside the box: 22 emergency room stations, a diagnostic radiology department with 24 rooms, 24 operating rooms with a 16-bed pre-anesthesia area and a 30-bed post-anesthesia area, a heart station with two cardiac operating rooms, two cardiac catheterization labs, a six-bed cardiac surgical unit, a 52-bed intensive-care unit, patient operatories and labs and lecture rooms for the dental school, plus cancer research labs.

The solution is an eight-story structure, of 364,000 square feet, that is linked to an existing 900-bed patient pavilion by four bridges and two tunnels—a real urban animal, albeit of extremely high intelligence.

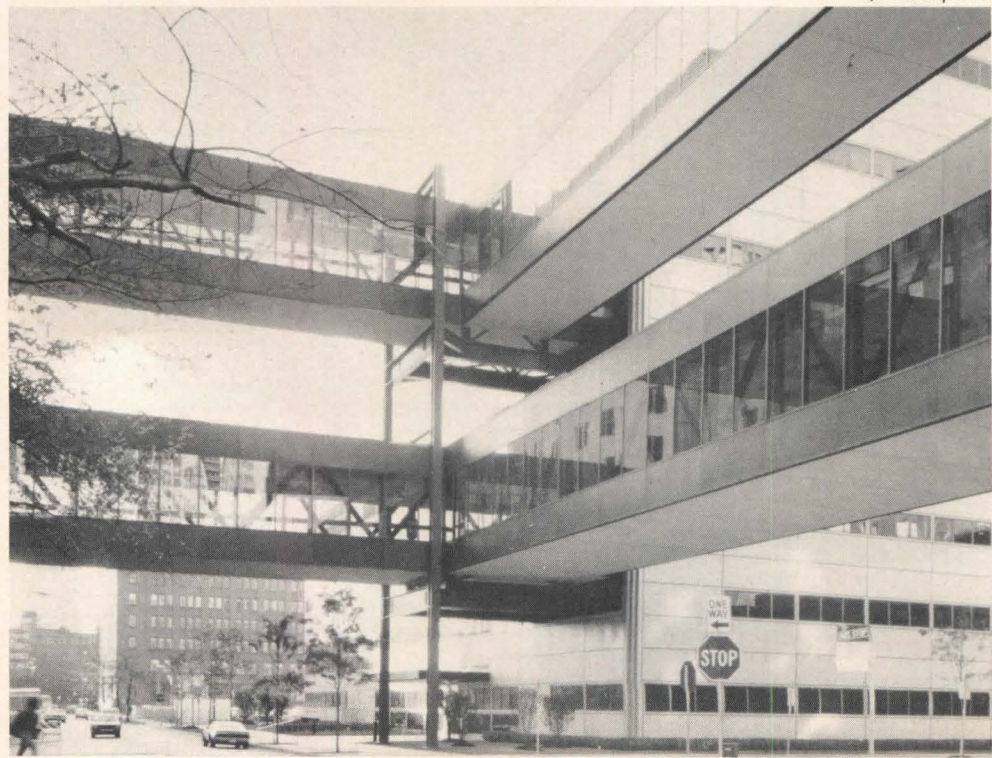
The exterior is simple—an energy-conscious curtain wall, made mostly of insulated steel panels, with one-inch insulated tinted glass comprising only 15 per cent of the wall area, makes for an honestly proportioned expression outside of the highly diverse requirements of the goings-on inside. The curtain wall is hung on a reinforced-concrete frame tied together with four bridges of structural steel. The mechanical system is of a variable-volume nature, with a dual duct system providing a nearly 100 per cent supply of fresh air throughout the relatively introverted-looking structure.

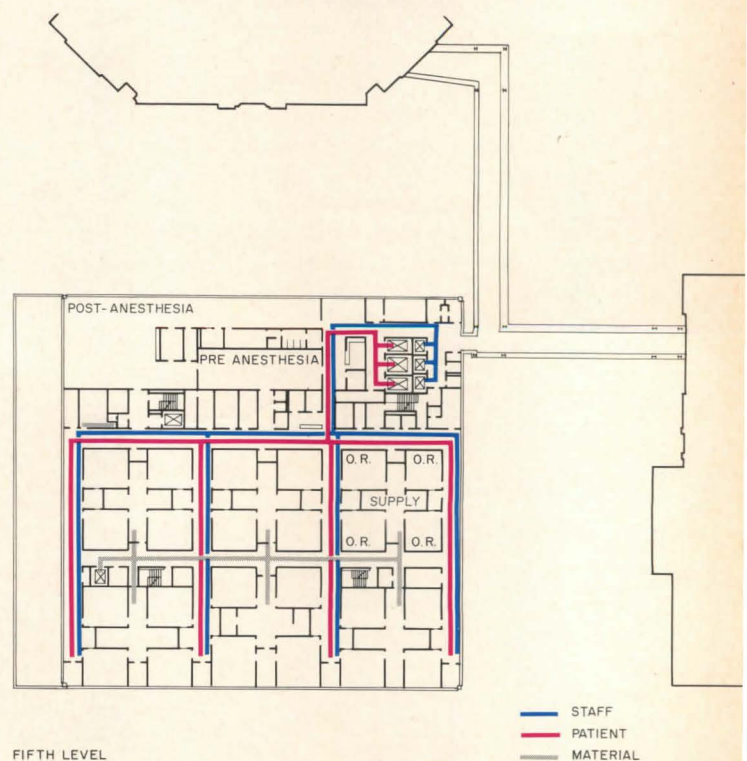
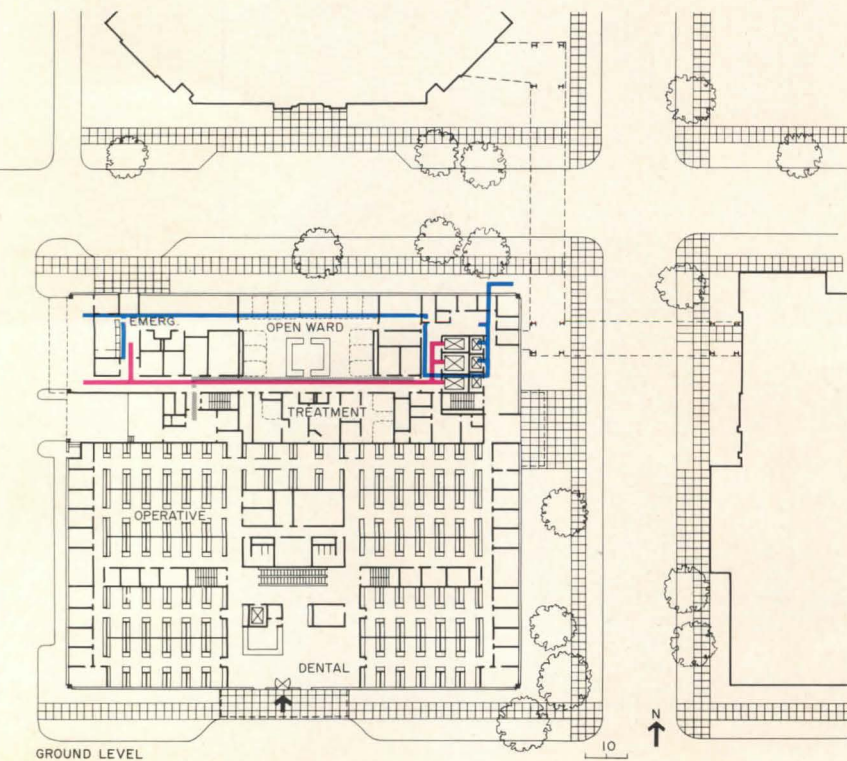
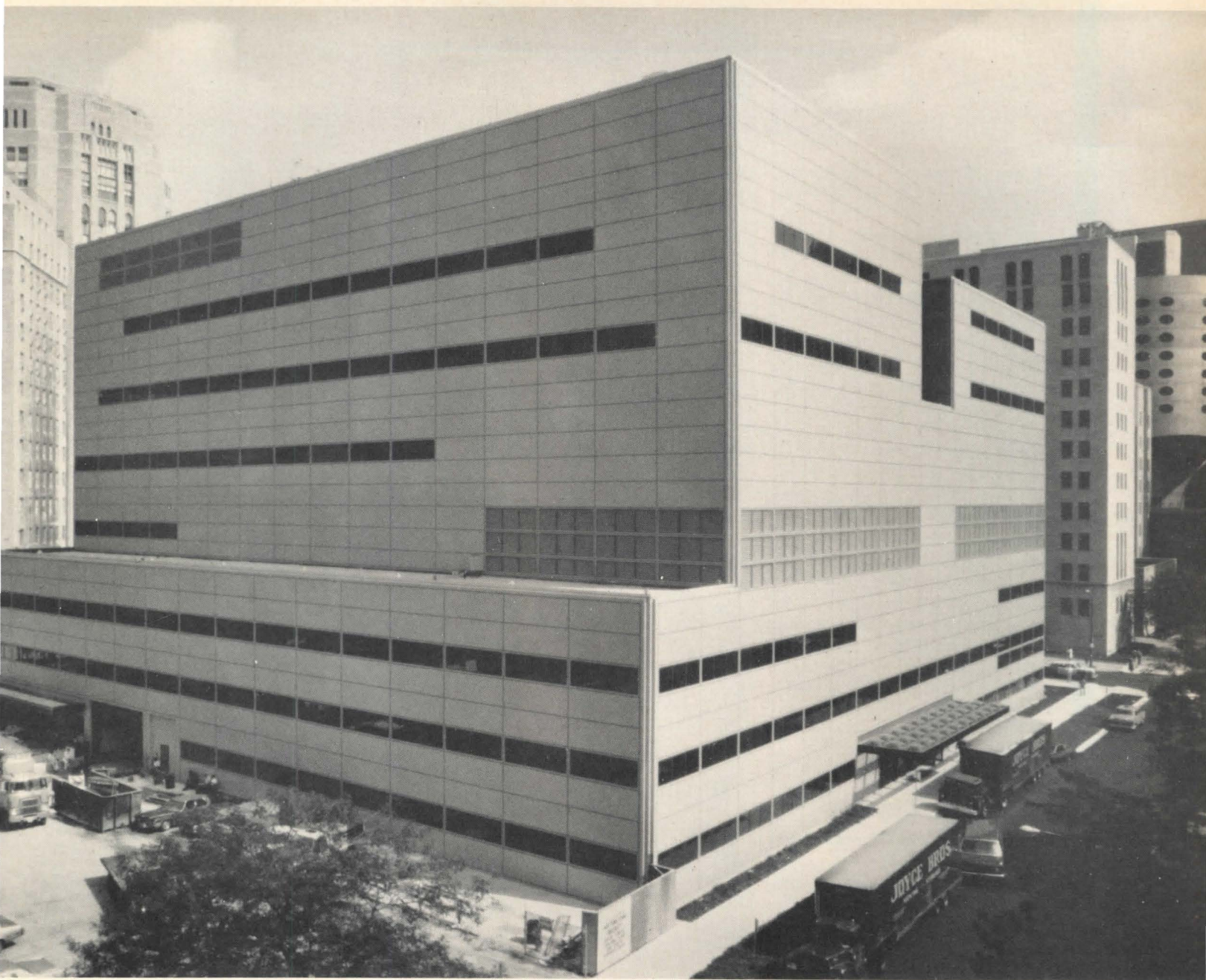
The cost restraints and the limited square footage were major design factors. The square floor plan—with a small exterior versus a large internal floor area—created an efficient enclosed volume. All internal spaces are designed for optimal use. In many respects, it is not one, but *eight* separate buildings stacked and interconnected with all the compact but capacious "give" of an ocean liner.

In granting the Olson Pavilion an Award, the jury, not without controversy, noted, "Essentially this is a trauma center, tremendously complex, on a restricted site. In the merging of hospitals and medical center complexes, such specialty-care treatment facilities are a *trend*, and this provides some points to think about as this trend is pursued. While it would be nice to see more life and interest on the street, by way of the building's ground-level behavior, the streets around there are pretty tough, and there is not much the architect could do, really. The tightness of the organization is good, confided externally by the discipline and simplicity of a skin system in which a variety of things could happen. Those openings are expressive of interior functional variations. They should be. They occur where you really want windows."



Jim Norris photos





JERRY LEWIS NEUROMUSCULAR
RESEARCH CENTER, LOS ANGELES
BY DANIEL L. DWORKSKY &
ASSOCIATES

The purpose in creating this 26,900-square-foot center was to enhance the potential for *significant advances* in this area of research, both by expanding and consolidating existing research activities as well as by adding new programs to the UCLA curriculum. It is located on a half-acre site next to the Health Sciences Center on the UCLA campus. This site was chosen for its proximity to the Reed Neurological Research Center, just south, and to the Brain Research Institute, to the southwest. These are eight and nine stories tall, respectively. Much of the program at the Center revolved around creating 16,500 square feet of laboratory facilities.

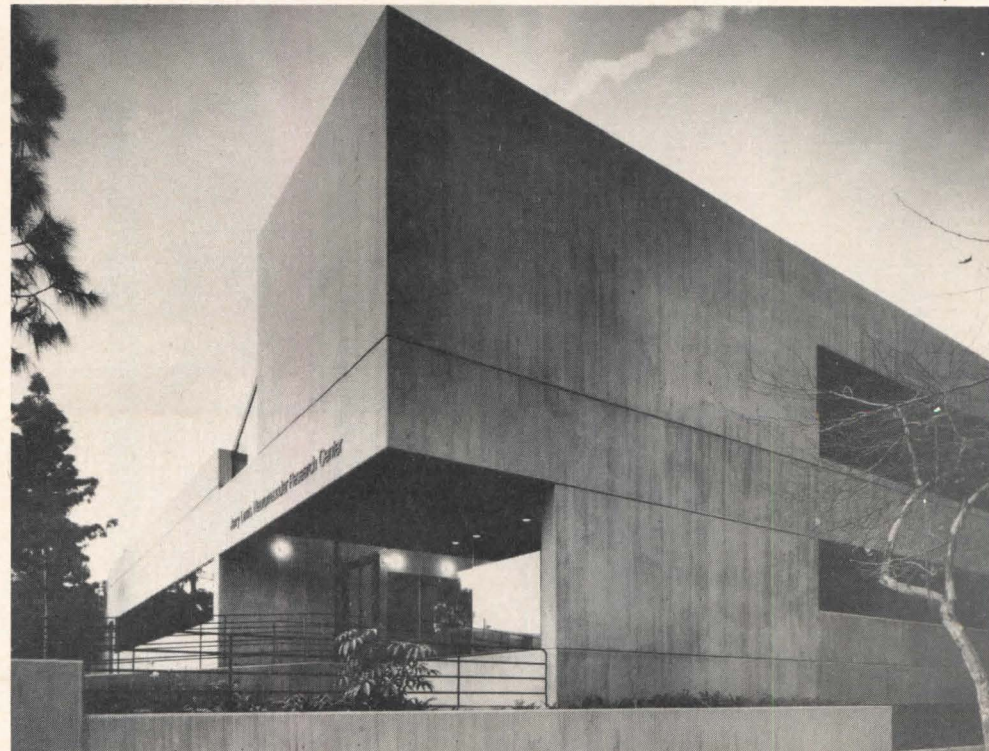
The question of the site, and thus of the esthetic and scalar qualities of the new building, is interesting. The original campus master plan designated this site as open space to be bounded by a planned expansion of the Brain Research Institute. It would seem that a two- or three-story tower here would not be the most effective way to relate to the existing or future towers. So rather than trying to compete as a separate building, the Jerry Lewis Center was designed to act as a *visual link* between these neighbors, and as important, to respond to the pedestrian.

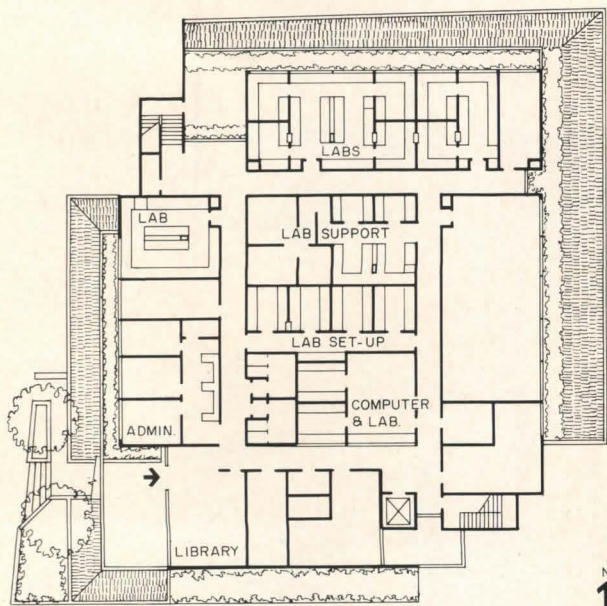
This yielded a low horizontal profile, assisted by lowering the building into the site. The roof is used as a partially shaded garden terrace, and this area is not only good to look at from the upper floors of the nearby towers, but it is also accessible by way of stairs from the sidewalk intersection outside. This landscaped area will serve as a forecourt to the future tower expansion and is designed to provide a number of pleasant recesses for relaxing or informal discussion, both by the users and the general public. Inside the Center itself, there is a sense of labs that want to be gardens, and the other way around. There are two levels in here. Laboratories and offices are placed along the perimeter, surrounding a common spine, full of supporting services. Landscaped light wells along the north and west provide lots of natural light, along with views down to the lower level of the building. The primary entrance is a two-story skylit galleria, which reveals the relationship between the two levels and the roof-deck while also serving as a symbol of the eventual linkage of the Center to the tower. It is a design that demonstrates, in a nice, nonchalant kind of way, the importance of dealing with little left-over lots.

The jury gave it an award (met right down the street from it, in fact), pointing out, "It is a first-class piece of architecture, not only in its skillful contrast with the tremendous massing around it, but also in its relationship to the smaller scale of things across the street. It is full of nice details, natural light is pressed into service, and that roof is a real celebration of the meaning of connection."

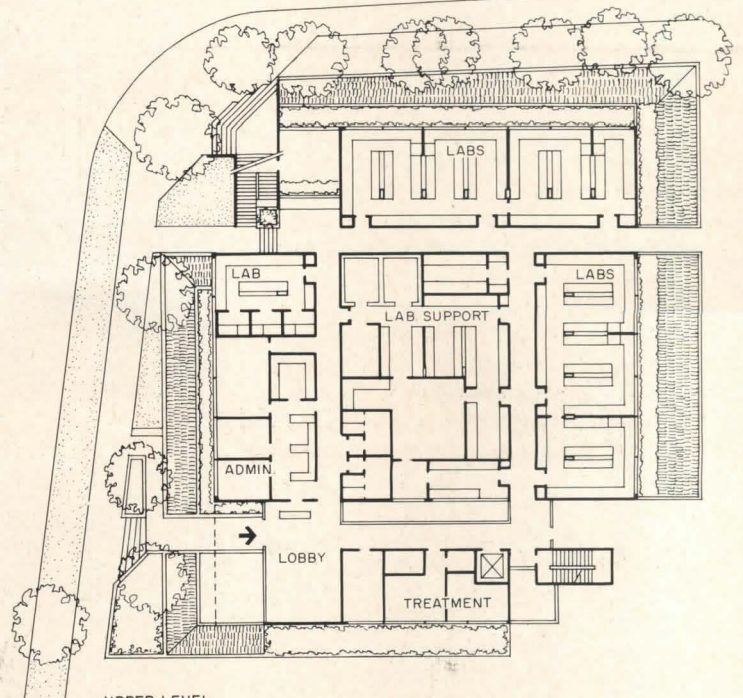


Marvin Rand photos





LOWER LEVEL



UPPER LEVEL

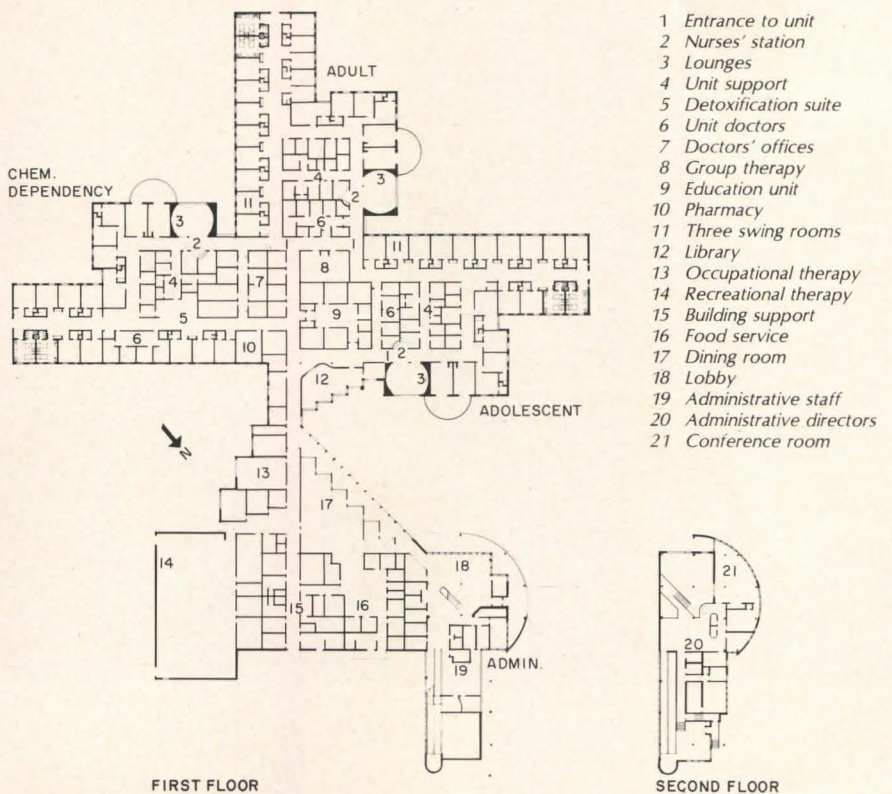
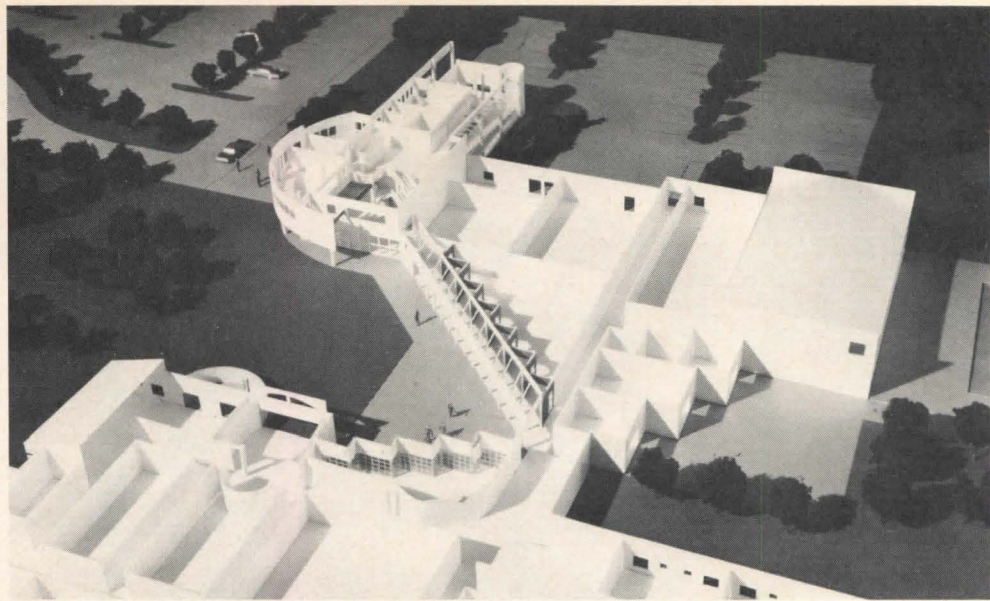
PETERSBURG
 PSYCHIATRIC INSTITUTE
 PETERSBURG, VIRGINIA BY
 SCHMIDT, GARDEN & ERIKSON

The program at Petersburg, developed in close contact with the Institute staff in the initial phases of design, was to develop a facility of three units—adult, adolescent, and drug dependency—with support areas and services. The changing demand for room within each unit had to be accommodated. Interaction between the individual residents and between them and the staff population had to be stimulated. And a general environment, simulating the exchanges and experiences of everyday life, was the aim in both esthetic and emotional terms.

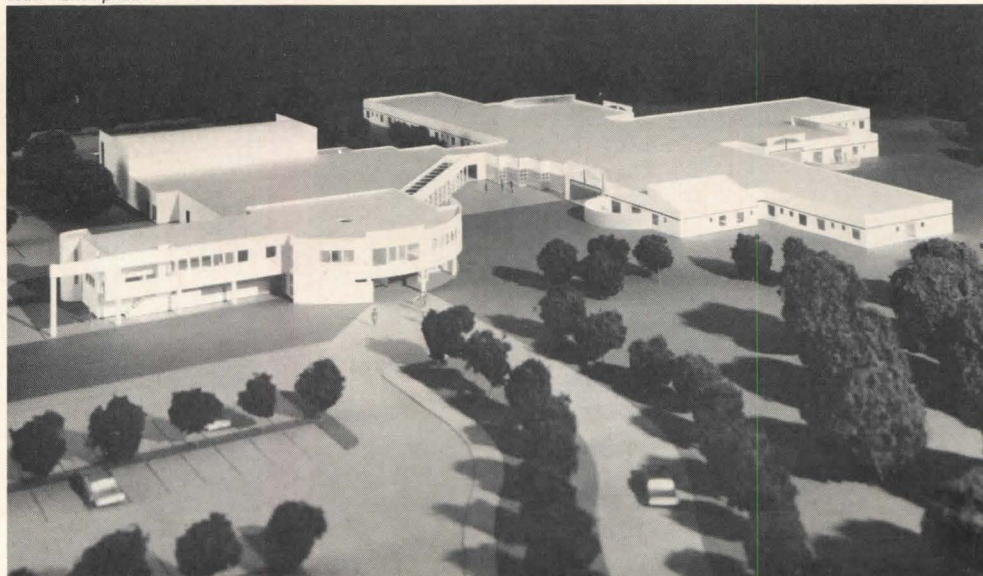
The three residential units are clustered around the central support and service areas. Each is a distinct section, presenting distinct design objectives, yet all are integrated into a flexible planning scheme. For example, through the strategic location of doorways, twelve beds can be “swung” between units to accommodate higher demands for space in any section. Further, the design makes possible varying levels of interaction within the units. Not only is each bedroom designed for two people, but every two rooms share an intimate, conversational alcove. There is a larger, communal lounge that will serve as the point of integration and shared activity between residents and staff. A unique feature is the replacement of the familiar freestanding nursing station with a small grouping of seats located off the administrative office and overlooking the lounge.

The plan expresses the public and private distinctions of space and ambiance that are inherent in every community situation and to our more normal daily activities in, and attachments to, a true community. The cluster of three units, in fact the “private residences” of the community, are separated from the public areas by a connecting corridor that functions as the community’s “main street.” These public areas include the dining room, a gym, library, and craft center. The spatial qualities of the building further delineate these distinctions. In the residential areas, spaces are smaller, semi-secluded; whereas the patient rooms themselves, along the perimeter, each have a window. In contrast, the public spaces are filled with windows; natural light and outdoor views leaven the life of the community. What is meant to happen is that the residents will routinely travel from their respective “homes” into “town” for socializing—and this quality of residentiality is formally expressed.

In granting the design for Petersburg a Project Citation, the jury said, “There are some ambiguities of an informal, rambling nature that come out of the plan and elevations. It breaks the scale up, gives a nice sense of community, and gives you a lot of little corners to grab onto. It is a very contextual kind of project, and for a psychiatric facility, that is all the more important.”



Sadin/Karant photos



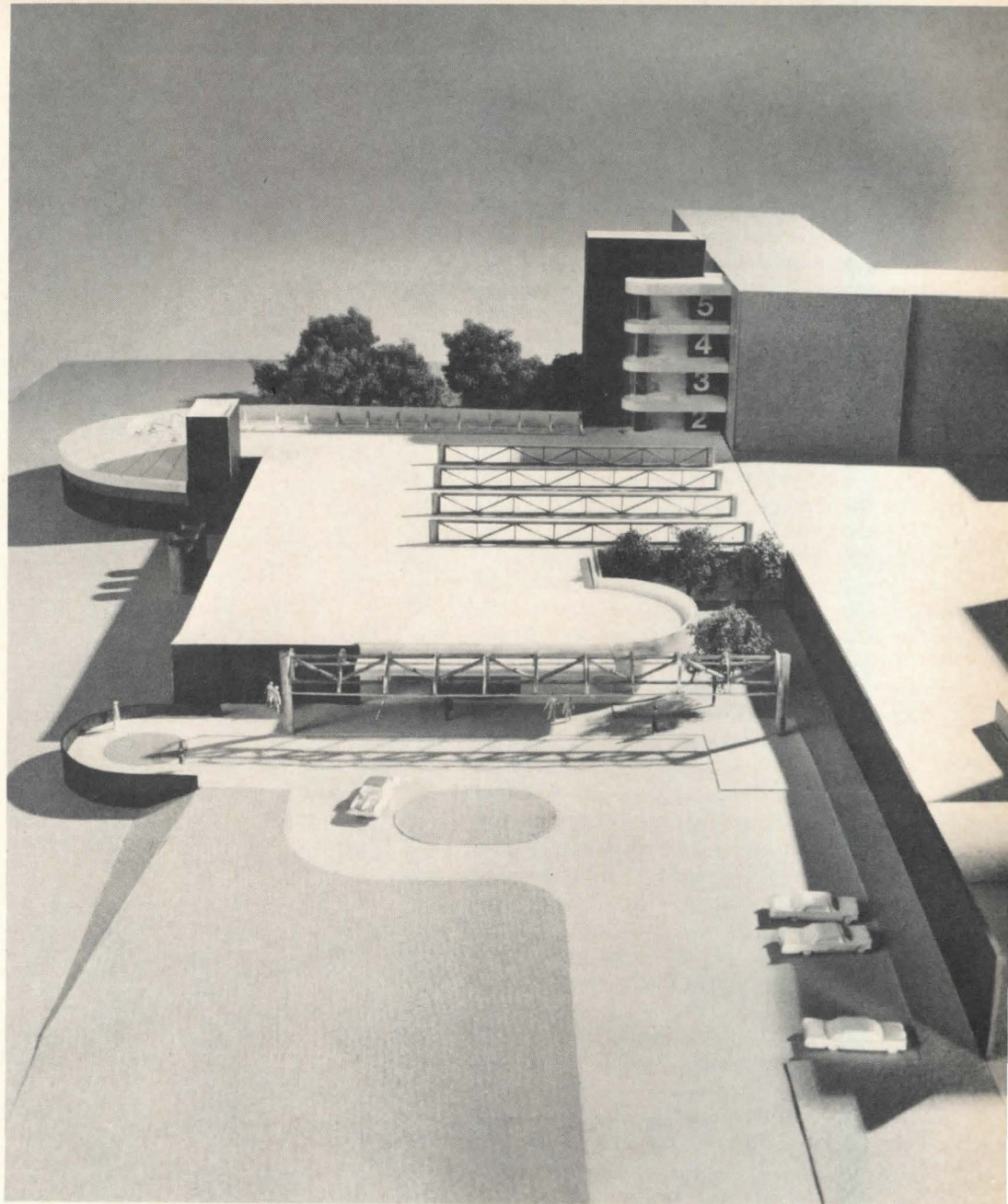
**METHODIST HOSPITAL
OF GARY, INDIANA
EMERGENCY/SURGERY/ICU
ADDITION BY
SCHMIDT, GARDEN & ERIKSON**

In accommodating three distinct departments in a new addition linked to an existing hospital, the challenge was to create an environment meeting strict functional and technical criteria for the specialized-care areas, while also responding to the needs, emotional and otherwise, of the patients and visitors. It was also seen as important that the addition be a spirited but sympathetically scaled extension of the existing building and that it fit into the neighborhood.

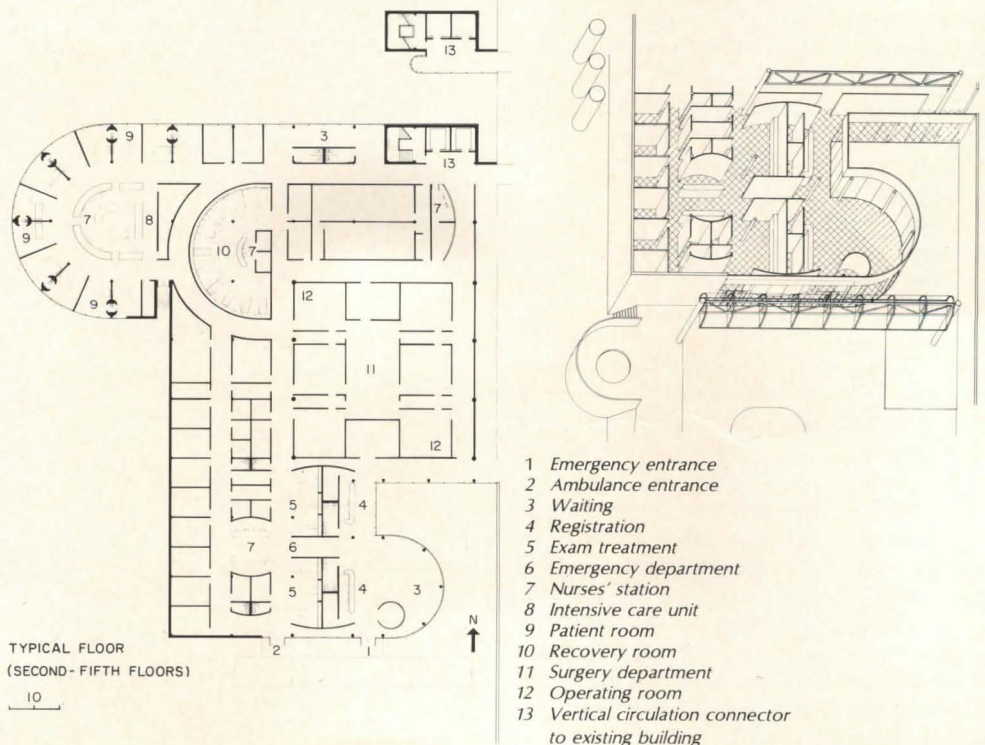
This single-story plan gives direct access and efficient communication between the three departments. The brightly painted structural elements, the interplay of curved and angular forms, and the boldly numbered elevator tower visually separate and define the departments within the over-all massing. The steel truss, painted orange, supports a canopy, pointing up the emergency department; the exposed roof trusses, similarly painted, define the surgical suite; the curved form of the glass skylight marks the intensive-care unit.

These visual identifiers correspond to the specialized design criteria of each department. For example, the clear plastic canopy clearly signals that this is the place for emergency. This entrance, sheltering vehicles as they pull up, also provides a sheltered walkway from the parking lot. The trussing over the surgery suite ensures vast, flexible interior spaces with high ceilings and clear spans—these being needed to accommodate the latest equipment and to facilitate movement. The curvilinear layout of the ICU allows for visual supervision of all rooms from a single nursing station, the glass skylight enlivening the corridor. A lounge for visitors overlooks a garden court, thus helping alleviate tension—this court to be located between the addition and the existing hospital. The court, plus the use of a harmonizing dark-tone brick on the addition's exterior, will ease the visual transition between new and old. The generous glass-walled entranceway, while directing visitors into the place clearly, will also serve to open the bright interior core walls to the view of the neighbors—in effect helping make the facility neighborly, which was one of the basic ideas to begin with.

Said the jury, giving this project a Citation, "This design is very much in the current idiom of esthetic play and expressiveness, yet it is not widely innovative or whimsical with its use of color and form. It is a handsome and clear, delightful and definite, entrance canopy—a basic idea with lots of potential, as is the idea of delineating the diversity of internal functions in a way that is directly related to the structural and formal expressions outside. Further, these qualities seem to lend life and a nice non-monolithic mood to the hospital."



Sadin/Karant



NEW ENGLAND MEDICAL CENTER
HOSPITAL, BOSTON BY
PERRY, DEAN, STAHL & ROGERS

This hospital for kids in the city, a pediatric replacement facility for Boston Floating Hospital (now part of New England Medical Center), will house 96 beds, pediatric X-ray facilities with eight procedure rooms, out-patient clinics and offices, a combined replacement section for 12 adult and pediatric operating rooms, and also a combined replacement section of labs serving both adult and pediatric units.

This design provides an acre of flexible floor space on every floor, minimizing the impact of departmental or tenant changes. In-patient facilities are in the upper levels, diagnostic facilities are in the middle zone, and the out-patient and public activities are on the levels closest to the streets—this streetscape having become one of the primary considerations in determining the building's massing and physical relationships to its close-grained environment.

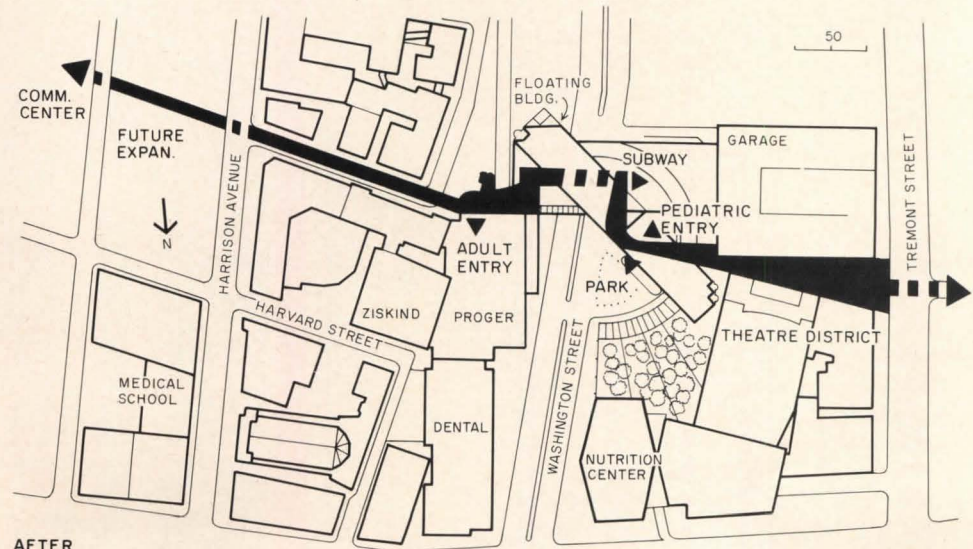
The building hovers above its site, carried on four truss arches across a major artery, two subway tunnels, and across a service road. Thus it literally partakes of, and takes off from, the movement patterns of the city. The facade is pulled back from the edge of the street at one point to create a major park for the institution as a whole. This park will be shared by a new Nutrition Research Center, by Tufts Medical and Dental School, and by the adult component of the New England Medical Center Hospital—as well as by the personnel and visitors at this new building.

The architectural intent was to design a health facility distinctly for children, to produce an economic building accommodating strict medical and energy-conservation criteria, to upgrade an urban-renewal district with a building that would help stitch a lot of disparate elements together, and to explore the dynamics of geometry (an exploration that children, consciously or unconsciously, pursue all the time). Yet the building does not come off at all as a charged-up urban chunk; it has, instead, a subtle levity defying the sense of detachment and mechanistic monumentality so often seen in big-city hospitals.

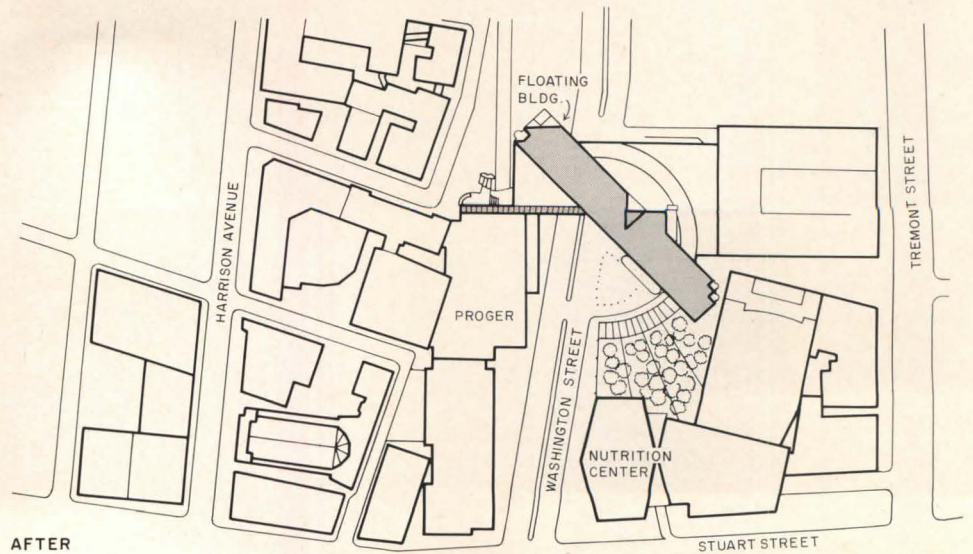
The jury gave a Citation, noting, "We had to look at this in terms of major medical centers, because this is not just a small, modest children's hospital. It is almost necessary to look at it as an urban-design problem, as well as a health-facilities problem. Certainly it is very well done from an urban-design standpoint. It even looks like a Boston building with that informal, non-gridiron character that seems to work well in Boston; it has that contextual spirit. Picking up on the quality of spin, or rotation, in the positioning of the building across the street and those subway tunnels, there is a nice, almost engaging sense of tension that the building sets up in the city. It will be right on top of things, pulling its surroundings together."



BEFORE



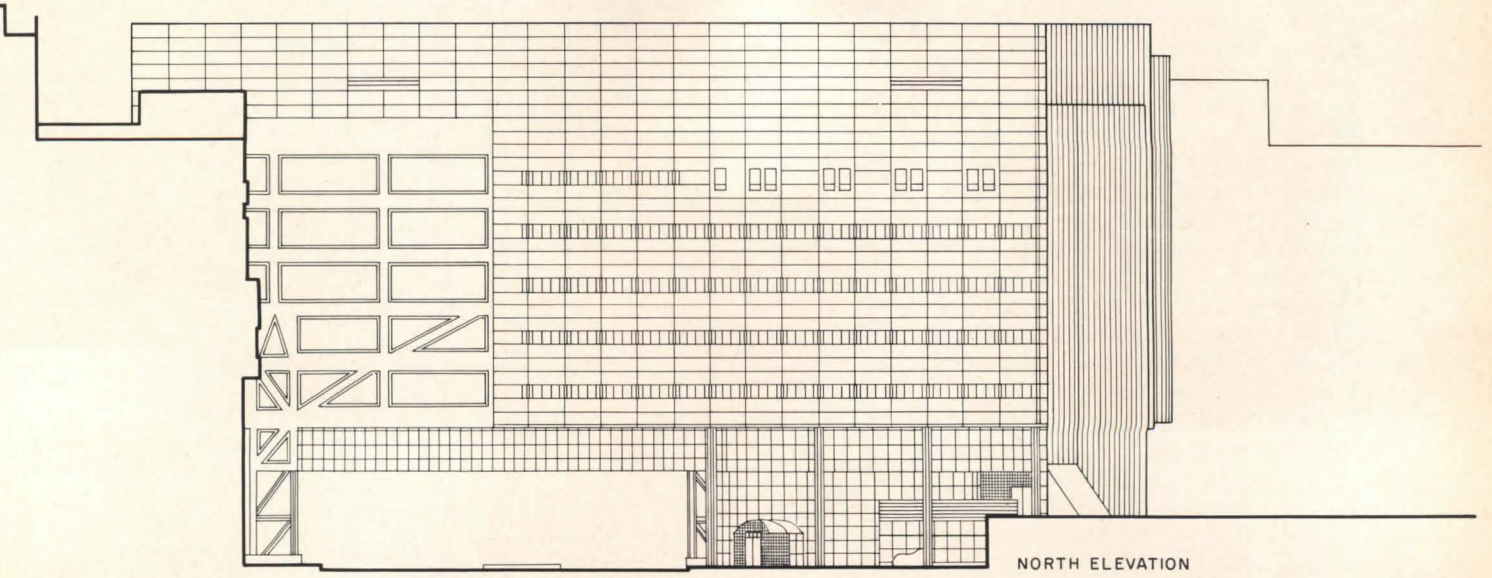
AFTER



AFTER



Edward Jacoby



NORTH ELEVATION

MONTGOMERY COUNTY
 MEDICAL CENTER,
 CONROE, TEXAS
 BY BROOKS COLLIER AND
 PIERCE GOODWIN ALEXANDER

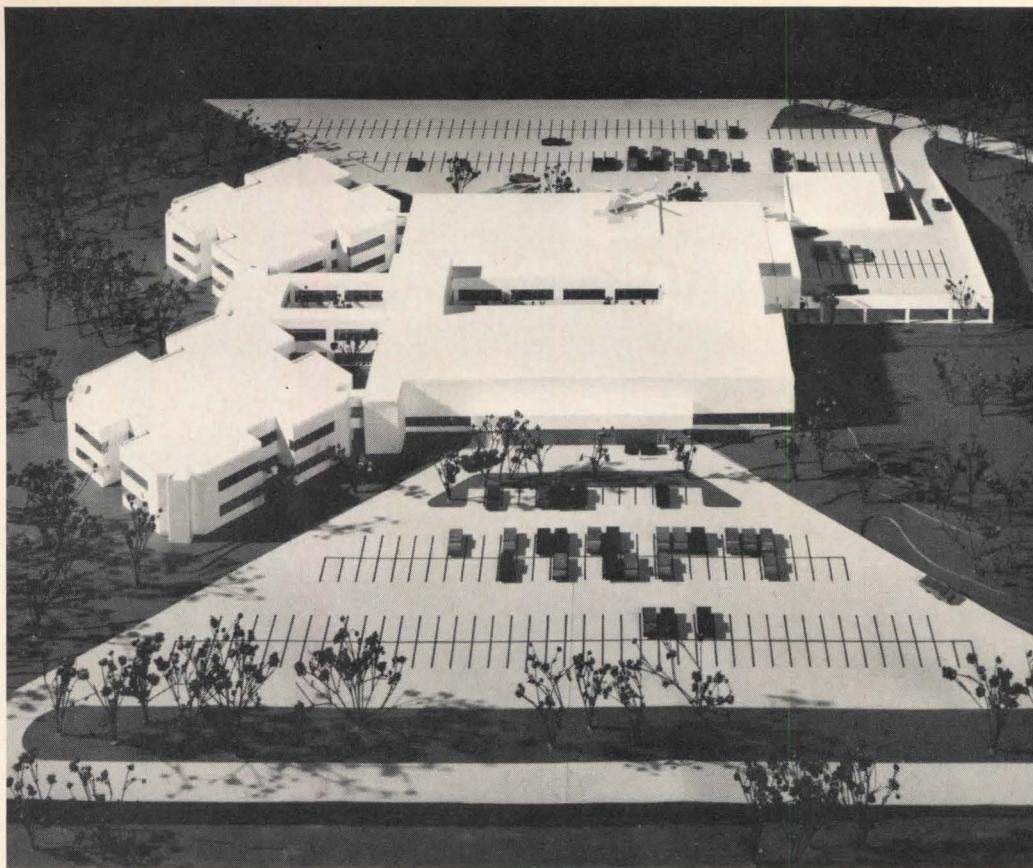
Located 45 miles north of the burgeoning city of Houston, and serving a population whose rate of growth has been more than ten per cent a year for some time, this complex building will occupy a heavily wooded 90-acre tract of land and will be the nucleus, with an initial 150 beds, of extensive future growth for a county-wide constituency. Programmatic considerations ranged from issues of cost containment, to all the intricately related hierarchies of health care, to the establishment of a framework for growth.

Essentially this hospital is two types of buildings connected by a circulation spine—a square box of ancillary service and nursing units overlooking the park-like setting. This arrangement lets nursing and ancillary elements each take on the optimum physical configuration for operational efficiency and construction economy. All hospital functions are attached to this spine and are designed to expand horizontally, perpendicular to it. The spine contains vertical circulation, courtyards for light and orientation, and it ensures the architectural integrity of the hospital amidst future expansion.

The building is internally zoned to separate traffic. At the first level, the public side has the main entrance, business, and administrative functions along an open corridor; the service side has the employee entrance, docks, and service departments. A pair of 17 all-private bed modules, each with a nursing station, double up to share support services and, in turn, form 34-bed units. Four such units make for 136 general-care beds, and these are within 35 feet of the nursing stations. The second level contains all the diagnostic and treatment departments.

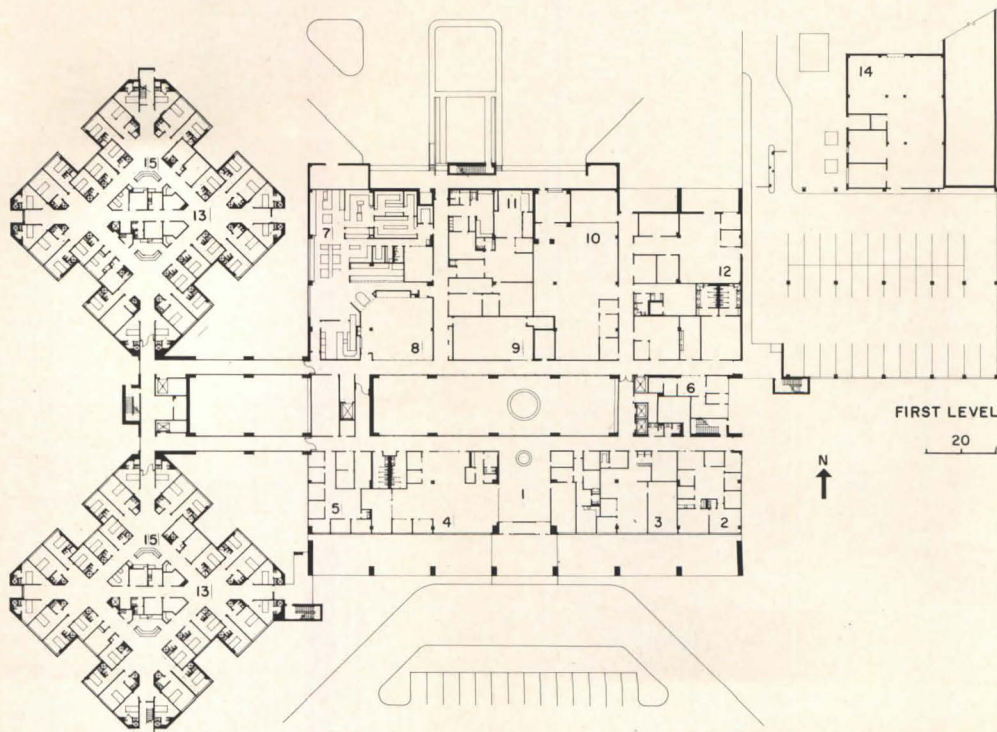
The building will have over 155,000 square feet of space on these two floors, its plan providing for continuous growth as its building systems provide for continuous construction. It is a handsome system with a highly repetitive and articulated steel structure, an exterior skin of light gray brick, and flush glazing. Furthermore, the handling of the natural site and the building's relationship to the terrain are both sensitive. The clash and trash of the suburban surrounds seem far removed, and greenbelts will serve as visual and acoustical foils to incoming traffic and the roadways beyond.

The jury observed, giving this design a Citation, "This is a total replacement hospital on a new site, and you do not see a whole lot of that these days. It is a humane arrangement. For instance, putting three of the inner rooms together, instead of two opens this up wonderfully. They have let natural light in, and it is a good example of the central organizing courtyard with individual departments being able to expand laterally."



Richard Payne, AIA, photos

- 1 Lobby
- 2 Administration
- 3 Records
- 4 Business/admitting
- 5 Nursing administration
- 6 Personnel
- 7 Dietary
- 8 Cafeteria
- 9 Auditorium
- 10 Central stores
- 11 Central sterile
- 12 Maintenance
- 13 34-bed nursing unit
- 14 Central plant
- 15 Nurses' station



(page 112). This design challenge involved adding 270,000 square feet onto an existing building. Noteworthy elements include the sensitive manner in which this "adding on" was conducted, the clarity of the patterns of circulation, and the siting of the building beside a beautiful river.

Another Award went to the Academic Facility of Rush University in Chicago (page 109). This building was felt to have achieved the most successful relationship to its context, creating ground-level spaces and facilities that truly reinforce the community and streetscape. The structure is a very tight package with an elegant skin, and its massing is molded to sleekly enfold and express the varying requirements of its zones. The detailing is handled extremely well. The circulation patterns are woven by perimeter corridors, providing light to all the common areas of the building. The use of interstitial space is appropriate to the great flexibility required for the structure, which is stuffed with labs.

The next two Award winners—the largest-scale projects—caused the most controversy amongst the jurors. Architects know of course that as buildings get larger, the maintenance of human scale and of a sense of orientation within becomes proportionately more difficult. But both of these winners succeeded in demonstrating that the various, complex, often over-lapping hierarchies of circulation can be handled efficiently and, in both visual and human terms, affably.

The first of these two is the Olson Pavilion/Health Services Building at Northwestern University in Chicago (page 116). It is the critical-care component of this major medical center, and it includes emergency, radiology, and surgery functions. On a tight urban site, it is packed with many conflicting program requirements, yet it manages a clarity of circulation that is absolutely first-rate. For example, the jury appreciated how the hierarchies of scale—from one corridor to another—"cue" people as to destinations and directions. The immaculate skin treatment outside allows for windows where they are necessary, or for opaque surfaces where internal functions make them necessary. Questions were raised about two aspects of this facility. There was some concern as to why, within certain areas of this highly technical environment, the flexibility was not total—at least not total in the eyes of some jurors. For instance, utilities are absorbed within partitions, not within changeable, comparatively accessible systems of panels. Also there was serious concern about what this building does to its surroundings. In contrast to the Rush University building, this one offers little sense of architectural "life" at ground level, along the bounding streets—and yet . . . while this question of context was argued by those jurors intimately familiar with the project, it might be pointed out here that its neighborhood is made up of an assortment of building styles that quite a few observers have characterized as chaotic. So in contextual terms it might also be argued that the comparative composure and unity and quiet of this building serve as a positive kind of foil to the

esthetic chatterboxes all around it.

The seventh and last Award winner is the Wayne State University/Health Care Institute—Detroit Receiving Hospital (see RECORD, April 1980, and page 109). This structure has nearly a million square feet and uses a series of large-scale modules out of which the individual building elements are fashioned. These modules are organized in an "X" shape, around a central courtyard, and adjacent courtyards provide a greater relationship to the outdoors than most projects of this enormity. Other noteworthy elements include the handsome, inviting handling of the structure as it reaches the ground, clearly designated and unconfusing points of entry, as well as of patterns of circulation, and the attractive, comfortable handling of the building's overall scale within its environment.

The Citations cite other trends

Four designs of varying scale were selected for Project Citations. The smallest is an addition to the Methodist Hospital of Gary, Indiana (page 121). With about 67,000 square feet, it includes well-planned emergency, surgery, and intensive-care functions, and a basement full of support spaces. Of note are the nice relationship between the projected and existing facilities, the interesting play of architectural elements, a clear entry, and a simple, easily read layout.

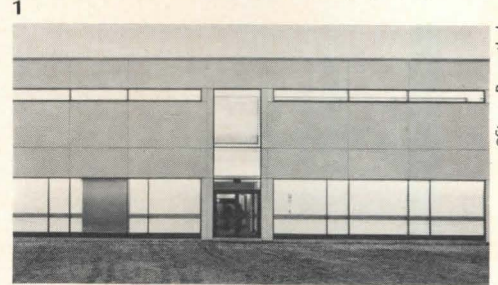
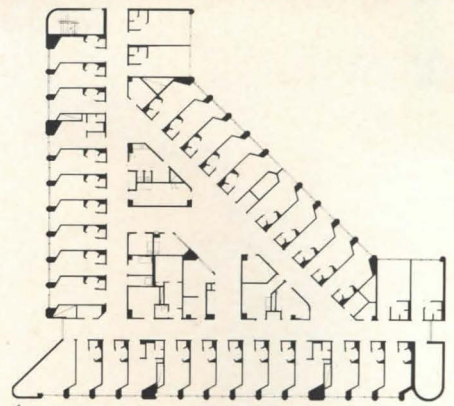
The second Citation went to the Petersburg Psychiatric Institute in Petersburg, Virginia (page 120). This facility, with 70,000 square feet, addresses questions of scale very well. The jurors liked the use of an undulating wall, creating interest at the entry and then moving people through the building in an imaginative and uplifting way.

The third Citation went to the Montgomery County Medical Center Hospital in Conroe, Texas (page 124). This 155,000-square-foot structure, now under construction, represents a perfectly clear example of organizational planning in medium-size hospitals. Circulation is neatly sewn around a central courtyard. The clarity and convenience of the relationships inside, the capacity of each department to expand laterally, the compact nursing units with 34 single-bed rooms on each floor—all were highly commended features, pointing up lessons for others.

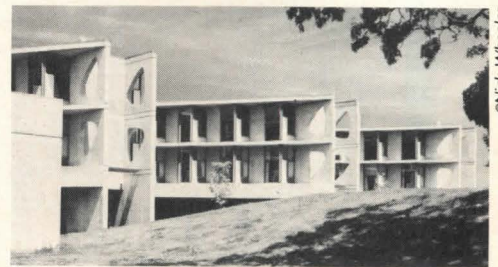
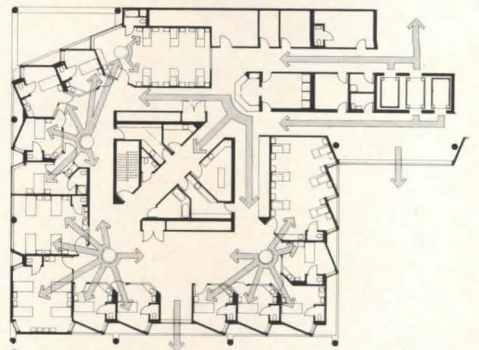
The final Citation was given to the New England Medical Center Hospital in Boston (page 122). The jury thought this pediatric facility was the most exciting project they saw, and as such it was also controversial. The programming analysis, highly documented planning options, and the thoughtful urban-design consciousness at work in this concept served to justify the striking siting of the architectural elements, which play upon one another in an energetic sequence of relationships—both between the elements themselves, and between the architecture and its close-grained city setting.

Other noteworthy design ideas

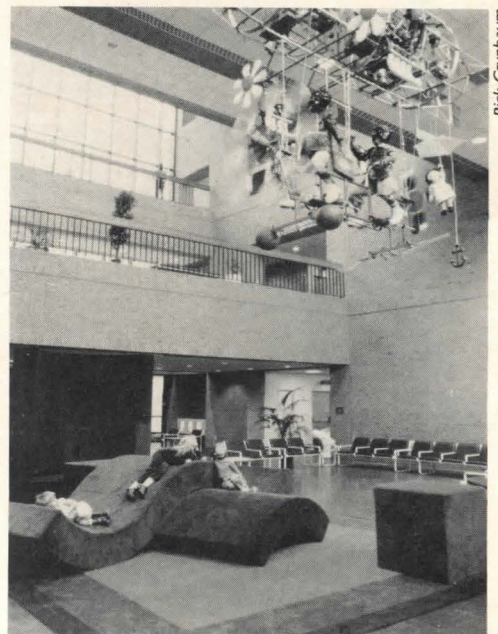
Though winning neither an Award nor a Citation, a number of entries were singled out by the jury, not only because of their individual



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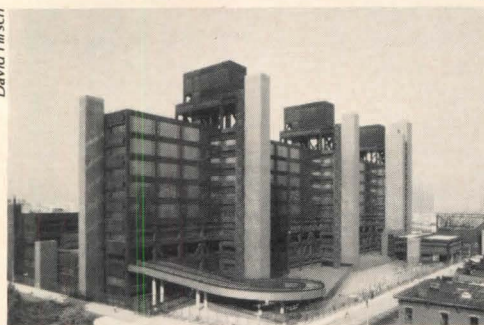
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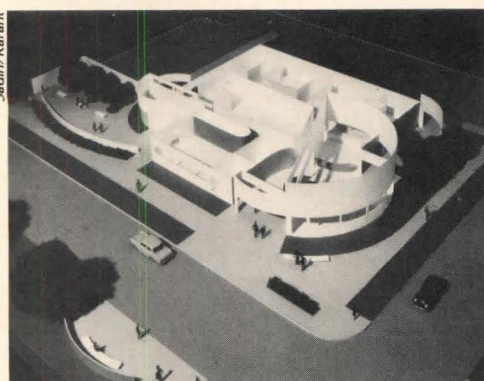
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David Hirsch



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Sadm/Karant



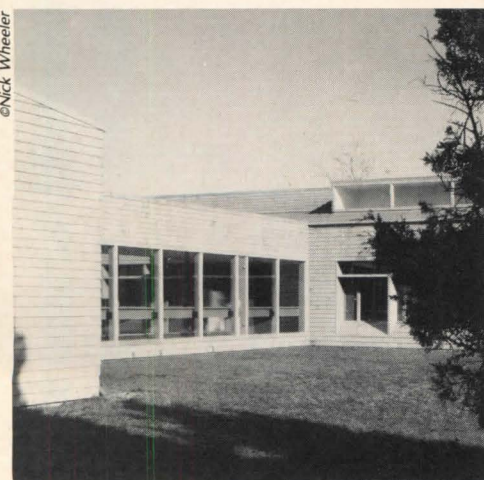
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Ballhazar Korab



9

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10

qualities, but also because these buildings exemplify important planning issues or their architect's consistently thoughtful, innovative approach to health-care facilities.

This was the case with the entries of Kaplan/McLaughlin/Diaz—a firm long noted for the quality of its programming and planning. Its Emanuel Hospital in Portland, Oregon (illustration 1) illustrates further development of the triangular nursing unit originally conceived by this firm and refinement of the single-bed room—and the hospital has an elegant connecting element between the new and old buildings.

The Penobscot Bay Medical Center in Rockport, Maine (2)—by Shepley, Bulfinch, Richardson and Abbott, associated with the Bangor firm of Webster/Ebbeson/Baldwin/Day—is a general hospital that was noted for its clear organization along a spine, the ease with which expansion can occur, and the simple, vivid rectilinearity of its skin treatment. Its nice siting was also praised. (Also see RECORD, August 1977.)

The Children's Orthopedic Hospital and Medical Center in Seattle, by Naramore Bain Brady & Johanson (3) was controversial in that its highly active facade was both appreciated and questioned. Of note is how the varying nursing clusters have good visibility to the patient rooms they serve. Variations in plan from floor to floor, albeit within a rigorous grid, demonstrates a responsible kind of freedom from modular "tyranny" that is too rarely achieved in hospital design.

The work of Payette Associates generally has shown a great sensitivity to the use of light, color, space, and form; two of its entries got Awards (pages 110-113). Of additional note however is its Jordon Hospital in Plymouth, Massachusetts (4), which has an unusual triangular nursing unit—the basic idea being to have small units arranged around a spine containing supporting services for the nurses. While the design was questioned by some jurors for what appeared to be some long distances from nursing stations to patient rooms, it was also appreciated for the relative flexibility with which these units can be used for coronary and intensive-care purposes.

The Texas Scottish Rite Hospital for Crippled Children in Dallas by Harwood K. Smith & Partners (5) was noteworthy because of its central atrium space, which became the organizing element of the whole building. Its materials and colors are warm, and its play of scale and light makes for a lively, encouraging atmosphere for children.

Then there are yet two other projects by Payette Associates—and one was one of the more controversial projects reviewed. The firm's Houlton Regional Hospital, in Houlton, Maine (6), got the jury stirred up as an example of esthetic adventuresomeness. The exterior is a foamed-plastic insulation system. Since this material cannot take on a "natural" color, a couple of "unnatural" ones were used—if, in fact, a nice mud color and a nice milk color cannot be called "natural." This coloration and its contrasting patterns became the basis for an esthetic which does have pertinence to those projects where

more expensive materials and surface treatment aren't possible and where the manipulation of color and texture is a comparatively cheap option for instilling an imaginative (in this case, zesty) quality. Also noted for its understated handling of materials and for the pleasant introduction of light along the patient corridors was Payette's Martha's Vineyard Hospital in Oak Bluffs (10).

Perhaps the most controversial project reviewed by the jury was the Woodhull Medical and Mental Health Center in New York by Kallmann & McKinnell, Russo & Sonder, Associated Architects (7). It is an example of the assorted weaknesses in the over-all planning process that have led, in this dramatic case, to a building that has yet to be used! What was appreciated by the jury is the building's very strong organization, vertically and horizontally, the skillful transitions between hierarchies of scale in the corridors, allowing for easy movement throughout the place, plus the high quality of architectural treatment of all the structural and spatial elements.

The Family Health Center of Methodist Hospital in Gary, Indiana, by the firm of Schmidt, Garden & Erikson (8) displays a friendliness rarely found in health-care facilities. The entry is clear, made all the more enticing by the circular massing it is part of, and the organization of space and circulation inside is very simple.

Finally, the Hennepin County Medical Center in Minneapolis (9) is a huge hospital addition, bridging streets and enlivening the grid of the city. By Medical Facilities Associates, a joint venture of Smiley Glotter Associates and Thorsen & Thorshov, Inc., the jury noted the clarity of its organization, the architectural as well as functional qualities of its structural and mechanical elements, and the success of the attempt to reduce the sense of its massive scale by articulating the various levels and points of access. (Also see RECORD, August 1977.)

Although only eleven projects were selected as winners, the jury was gratified by the general level of the submissions. The most important "symptom" to emerge from everything that was reviewed was that design is definitely becoming more, not less, "patient-centered." The concerns about the quality of space and about a building's relationship to its context and community have become stronger. The creative use of natural light is being seen increasingly to soften the effect of internal goings-on. And in both smaller and larger buildings, the development of central orienting spaces, with the attendant concerns about architectural treatment and a sense of amenity and reassurance, is a clear trend. If no basically new strategies similar to the breakthroughs just after World War II were revealed, basic new *sensitivities* were—about esthetics, form, function, and (never least) the emotions of people. These buildings can indeed stand as examples for the future, and as reminders that architects must equip themselves to push for architectural quality and environmental integrity as two of the more pragmatic aspects of helping hospitals do their jobs.



Horst Berger

TENT STRUCTURES: ARE THEY ARCHITECTURE?

In a word, tent structures have "arrived." They are now an accepted approach for major projects—as major as the Haj Terminal at the Jeddah airport in Saudi Arabia (above). This terminal, being built for Muslim pilgrims on their way to Mecca, is believed to be the largest (105 acres) covered area in the world.

In another sense, fabric tension structures have arrived because the range of building types where they are being used is expanding. Conceived originally as low-cost shelter for athletic events and exhibitions, fabric tension structures are beginning to be used for commercial buildings such as stores (RECORD, mid-August, 1979) and assembly buildings. The potentialities for the commercial sector are clearly evident in the enclosure for Florida Festival (pages 132-134)—a shopping/dining/entertainment complex at Sea World in Orlando, Florida, where the largest single piece of coated fiberglass fabric ever

assembled (187 by 187 ft) hangs from a 90-ft-high mast to form a cone that, along with three other 50-ft-high cones and an inverted cone that comes within 16 ft of the floor, covers 60,000 sq ft devoted to food, merchandise and arts and crafts facilities.

In still another sense, fabric tension structures have arrived because designers can now have confidence in the technology—materials engineering, structural engineering analysis, and field erection—for the reason that manufacturers, engineers and erectors have had an intensive learning experience in the last eight years since the first permanent fabric tension structure was erected at La Verne College in California.

The technology would not have developed, of course, had there not been a mounting interest from architects and owners in low-cost, long-span enclosures with features not possible with conventional structural systems. One of these is the possibility of

Twenty-one tent units, high in the sky, and shading 10½ acres, form the first module of a total of 10 that will provide an "oasis" for pilgrims on their way to Mecca. The terminal, which comprises two identical five-module sections, is designed for as many as 80,000 hajjis who may spend up to 36 hours at this terminal after they arrive at Jeddah.



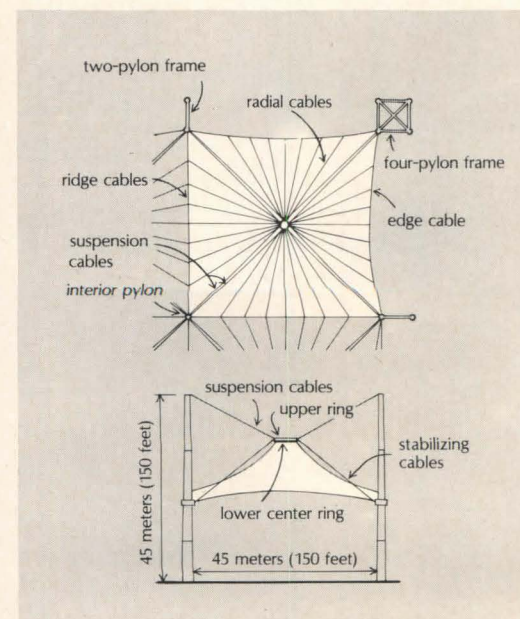
Horst Berger

visually stimulating shapes—shapes that can echo familiar forms (as in the case of the Haj Terminal that suggests a field of tents, but in the sky) or that attract attention and arouse interest (as in the case of Florida Festival).

Though the fabric has little thermal insulating value in the usual sense, the tradeoffs between thermal energy exchange and "free" light could make fabric-roof buildings more economical to operate than conventional ones, according to mechanical engineer Karl Beitin of Geiger Berger Associates. A bonus—not in the economic equation—is the visual and aural contact that occupants of these buildings have with the outdoors—movement of sun and clouds can be discerned; rain can be heard.

If architects are to take full advantage of the unique properties of fabric tension structures (defined as mast-, arch-, or frame-supported rather than air-supported), they need to realize that there are some very

Robert Brand



The "skyhooks" for the tents are steel rings hung from suspension cables which are draped from single pylons in the interior of the module, ladder-like double pylons at the module edges, and four-pylon towers at the corners. Marching along in 1000-ft rows, these pylons seem to echo the columned arcades of mosques that the hajjis may visit.



William Ling photos

special engineering disciplines that should be considered. Form and tensioning of fabric roofs have very significant effects on structural stability, avoidance of flutter and vibration, resistance to imposed loads, ease of fabrication and erection, and—when all these factors are taken into account—cost of the structure. (Cost of fabric tension roofs currently is on the order of \$16 to \$18 per sq ft of area covered, say engineers and manufacturers. Use of a double-fabric roof adds from \$3 to \$5 per sq ft to that cost.)

Nevertheless, as with any building tool, fabric tension structures are not suitable for all occasions. Feeling close to nature, with separation provided only by a tent-like skin, may not be a desirable attribute if what occupants want is the security of a "cave" or a "den." Further, the architect may want a more anonymous enclosure than is provided by fabric tension structures. But if the positive attributes of these spectacular enclosures do

fit the program, then there is a myriad of shapes possible through a repetition of and/or mixing of basic forms.

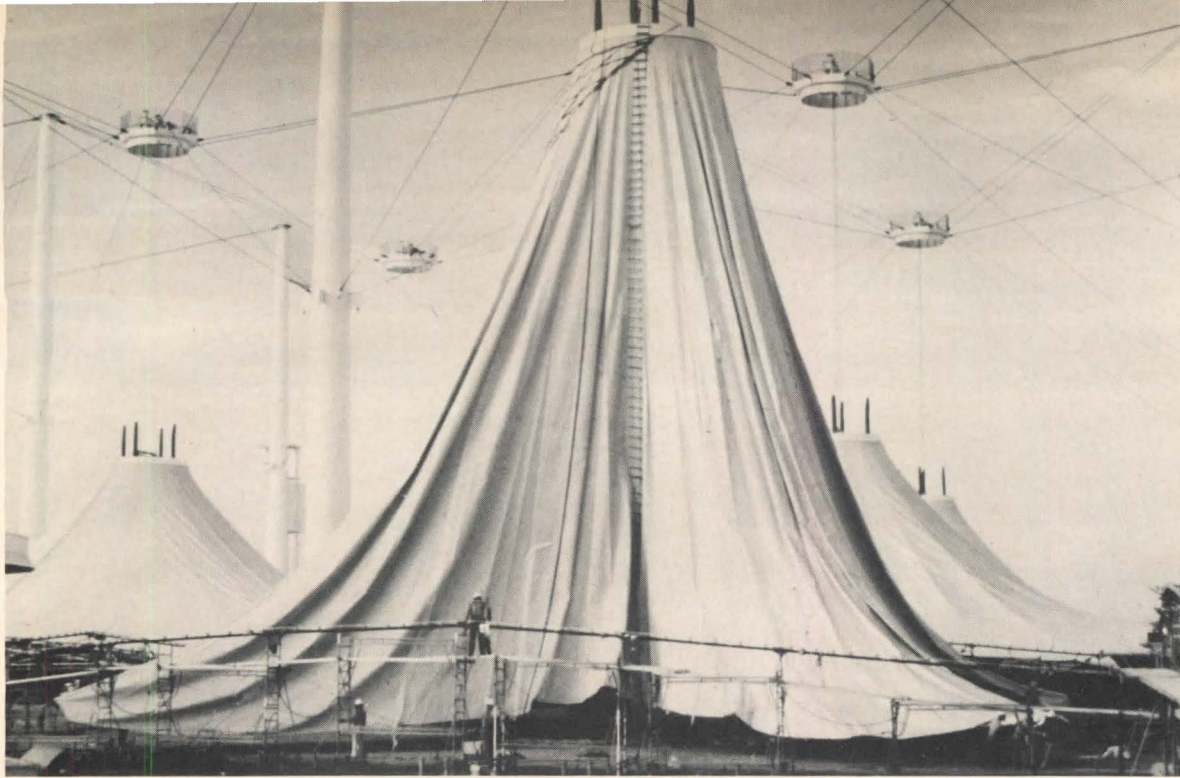
Sometimes, the architect may choose—as did Skidmore, Owings & Merrill in the case of the Haj Terminal—to make a very strong design element out of the support structure. Whether viewed by a hajji (pilgrim) as he arrives by plane, or when he walks down the archlike passages between modules (21 tent structures), the Vierendeel-type pylons on the long sides of each module may evoke some of the monumentality and dignity of the mosques the hajji may visit during the holy season.

The Haj Terminal and the Florida Festival pavilion are both bench marks—but with different "main ideas." The first illustrates the influence of program and architectural viewpoint on form and engineering design; the second, the contribution of engineering finesse and imagination to formgiving and

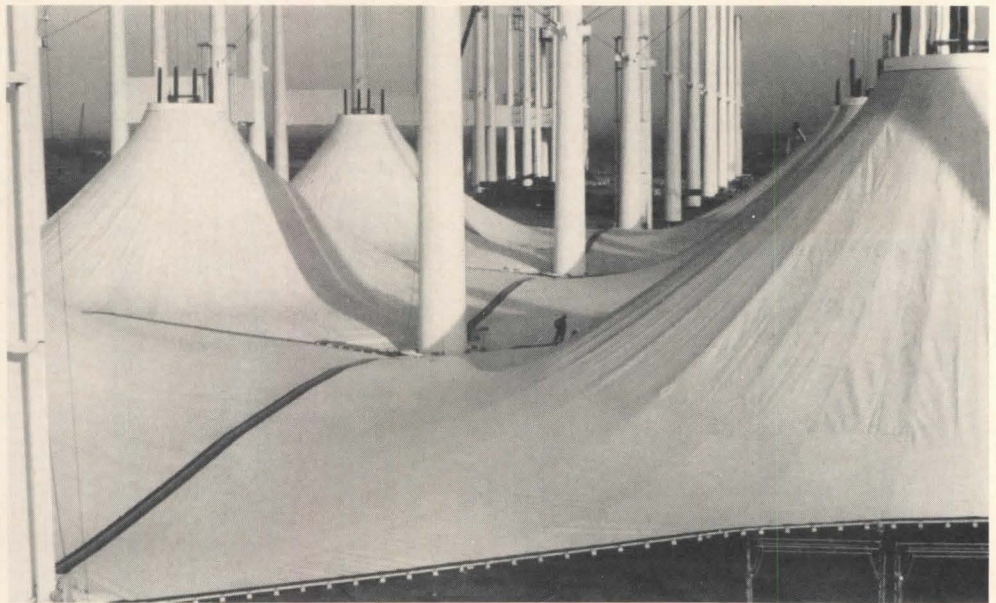
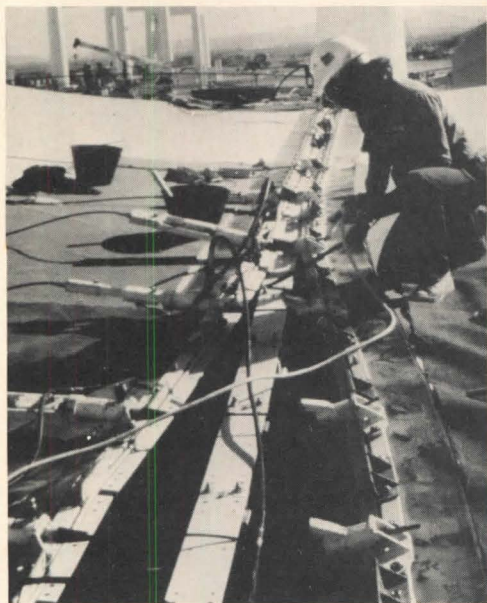
economical use of materials.

The Haj Terminal had to be huge because the number of pilgrims from Islamic nations coming to Saudi Arabia during the 70-day hajj season is expected to swell to two million, most of whom are expected to come through this airport to be taken by bus to Mecca and from there to the plains of Meena and Arafat. There will be two terminal units 1,050 by 2,250 ft, each comprising five modules of 21 tent units (three units by seven units). The two large terminal units will be separated by a landscaped mall and each will have arrival processing buildings (the only facilities to have air conditioning) along the long sides where aprons are provided for aircraft.

In a talk last year in Europe before a group of engineers specializing in lightweight structures, shell structures and long-span structures, Dr. Fazlur R. Khan, partner in Skidmore, Owings & Merrill, the firm that



The half-acre tents are hoisted by cables dropped from the upper suspension ring to a mate at the top of the tents. Nylon nets around the tents prevent damage to the fabric from wind during the time the tents are hung but not tensioned. Prestress is induced into the tent membranes for structural stability and strength by means of electric jacks. All 21 tents in a module are tensioned simultaneously. When the right tension has been attained, the two rings are bolted together. The open rings allow natural ventilation for air changes and create a breeze for comfort. Visitors say the shaded space is amazingly cool.

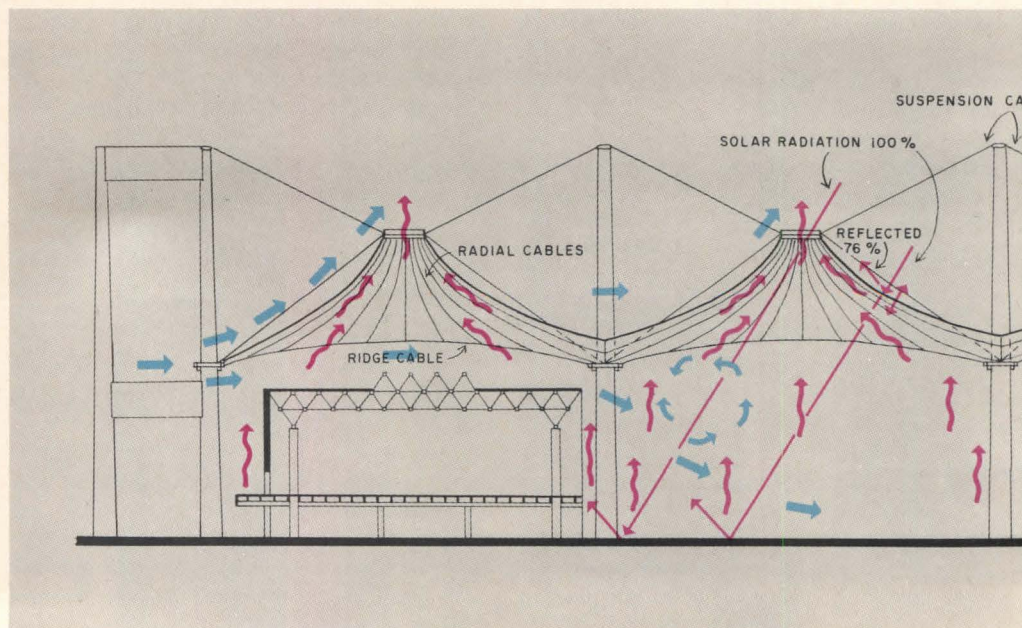


William Ling photos

designed the Haj Terminal, stated that while the fabric-roof terminal may not be architecture in the traditional sense of a building, it is indeed a grand space in the sense of a total environment. The first impression on the pilgrims from an architectural point of view, he said, probably will be this 20th-century expression of the ancient forms they are going to see most of their stay. Thus the structural/architectural form becomes more relevant than just another opaque large roof.

SOM decided that though traditional tents have center posts, these should be eliminated because, with 80,000 pilgrims milling about, they did not want a proliferation of columns to obstruct their flow. This made the support structural system somewhat more expensive, because central poles are a more direct approach. The total cost was still only \$17.50 per sq ft or a total of \$80 million.

The architects experimented with many





Robert Yarnall Richie

simple models and found that "fantastic variations in shape" could be achieved by simply changing the elevations of the peaks and the spans. But the architects, says Khan, wanted to keep the shape and form *absolutely simple*. Also they wanted to develop the form in a way that the entire hajj processing terminal into which the planes disembark people could be built underneath one of the tent rows. This was accomplished by starting the bottoms of the tents 65 ft above the ground, and letting them soar up to 115 ft, where they are attached to support rings, which in turn are held in the air by cables that rise to the top of the pylons at 148 ft. The over-all plan was developed in modules of three by seven bays, with open space between modules straddled by double-column frames to carry the lateral forces of the suspension cables. The steel rings at the top of the tents were left open because it rarely rains, and a wind tunnel test with smoke indicated that

continuous ventilation could be expected. Visitors report that being under the roof is like being in a forest: it is cool, breezy and pleasant, yet open and light—even on unpleasant days in the hot desert.

As is usually the case, simplicity of form was not achieved without some hard work along the way. SOM, whose client is the Ministry of Defense and Aviation of the Kingdom of Saudi Arabia, had its engineers developing the structural criteria for the project, performing an engineering analysis, planning for and evaluating the tests on an aero-elastic model that was tested at the University of Western Ontario by Alan G. Davenport, and checking out the two-tent prototype that was built at Owens-Corning Fiberglas' research grounds at Granville, Ohio.

Advice on patterning, fabricating and packing the tents for shipment was the role of Walter Bird's firm Birdair, now merged with Chemfab, a manufacturer of industrial

coated fabrics. Because the fabric, which is 1 mm thick, should not be creased, Birdair developed careful packing and handling procedures. Patterning itself is quite an engineering art, because compensations have to be made for stretch of the fabric in warp and fill directions when prestressing forces are applied, so that the forces remaining after final tensioning are what the engineer designs for to resist loads.

Owens-Corning Fiberglas, as roof contractor, engaged not only its own construction specialists, but also outside specialist engineering firms to develop the techniques and equipment for hoisting and tensioning the fabric structures—no small problem considering that the procedure is to tension all 21 tents in each module simultaneously. And, as tensioning is being completed in one module, work must proceed in the adjacent module. Chemfab wove all the fabric because they had the largest loom available. Owens-Corn-



Les Stone

ing coated and fabricated half (105) of the half-acre-size tents and Chemfab did the same for the remaining half.

Hochtief, the West German general contractor, has the monumental task of getting the first section done—including all services and structural elements under the tents—by this fall.

The visual simplicity, and hence the interconnectedness, of the tent structures made engineering analysis by computer more complex and time-consuming than if the tents had been center-pole supported and designed as independent units. Each terminal section is one very large roof, with all units being interconnected. Thus the structure is a very large indeterminate system with ripple effects from unit to unit and module to module. Tension or load applied to one tent is induced into surrounding tents and masts. This meant that Horst Berger and his associates at Geiger Berger had to develop a very large computer

model to simulate the behavior of this indeterminate system, and the largest computer storage system in the country had to be used to perform a comprehensive engineering analysis, which was part of Geiger Berger's contract as structural engineering consultants to Owens-Corning Fiberglas.

For the engineering analysis of the Florida Festival structure, essentially the same program was used, but computer calculations were simpler because the solution was for a finite fixed roof. The movement of the masts and the edges was finite. The perimeters of the tents were tied to fixed edge beams, and the masts, set on bearings, are allowed to rotate at the bottoms. This provided a finite system because the whole roof moves as a unit when loaded by wind.

The problem presented to design architect Basil H. M. Carter, who at the time was with the firm of Robert Lamb Hart in New York City, was to design a facility to house a

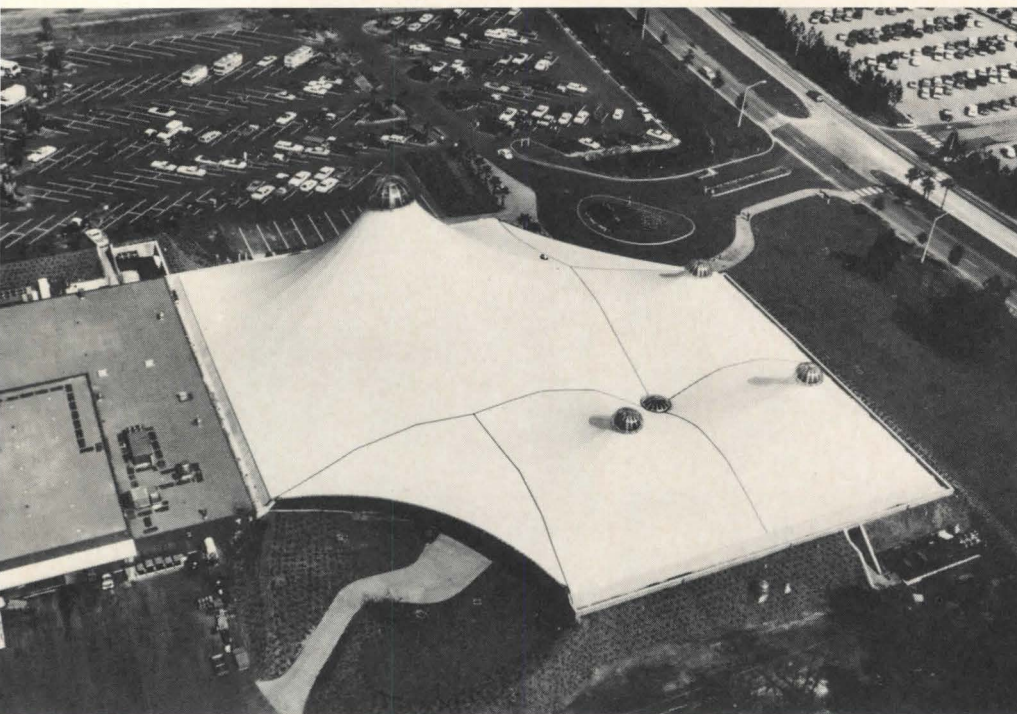
marketplace containing 45 different food and merchandising unit buildings in a semi-tropical setting. Because the owner wanted to grow a wide variety of native plants and trees, including a 40-ft palm tree, plant consultants advised the architect that a fabric with at least 18 per cent light transmission would be required (in contrast to the normally used 6 to 8 per cent). Getting 18 per cent light transmission was achieved by Chemfab through use of a more open weave, a different yarn and a new combination of resins for the coating. Measured light levels have come within a few per cent of what lighting consultant Howard Brandston predicted in his daylight studies for Basil Carter. Levels have been as high as 750 fc on a clear spring day and 150 on an overcast spring day. During the day the fabric has a very luminous appearance, and with 18 per cent light transmission it can be bright at times.

The design concept of the fabric tension

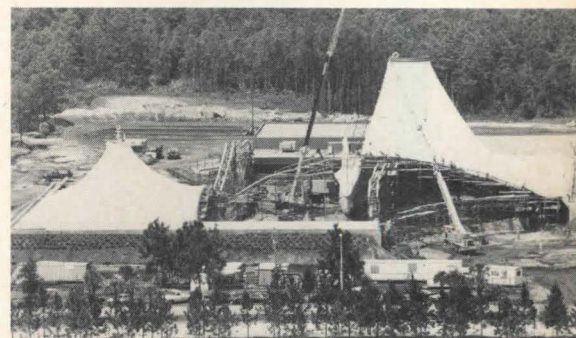
Les Stone



Britt Runion

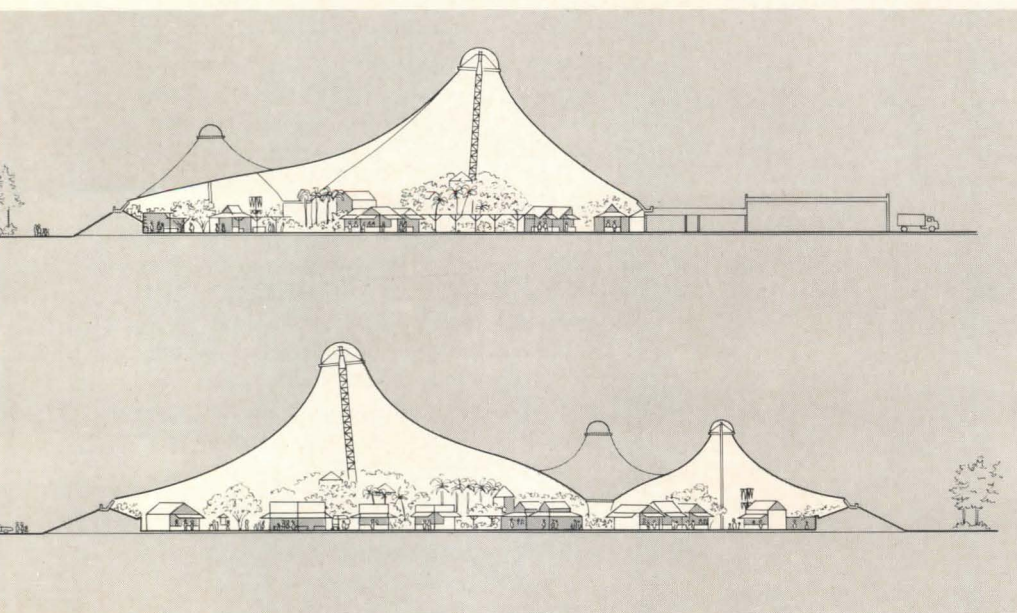


Britt Runion



Les Stone

Geometry of the Florida Festival structure is two large squares intersecting at the corners. Raising the edges of the large 90-ft-high cone made possible an inverted cone at the intersection of three 50-ft-high upright cones. The small cone with two edges held down by the edge beam was erected first. For the 90-ft cone (top), a crane outside hoisted the ring, while one inside lifted the mast.



structure developed from a plan layout by Basil Carter of two intersecting rectangles, which engineer Horst Berger modified to two intersecting squares, in turn divided into seven squares, each equal in area to one-fourth of the large intersecting squares. Berger's first suggestion was two large tents. Next he proposed one upright tent and one upside-down tent. But this required lifting the edges around the upside-down tent, and in turn resulted in the development of three small tents around the upside-down tent.

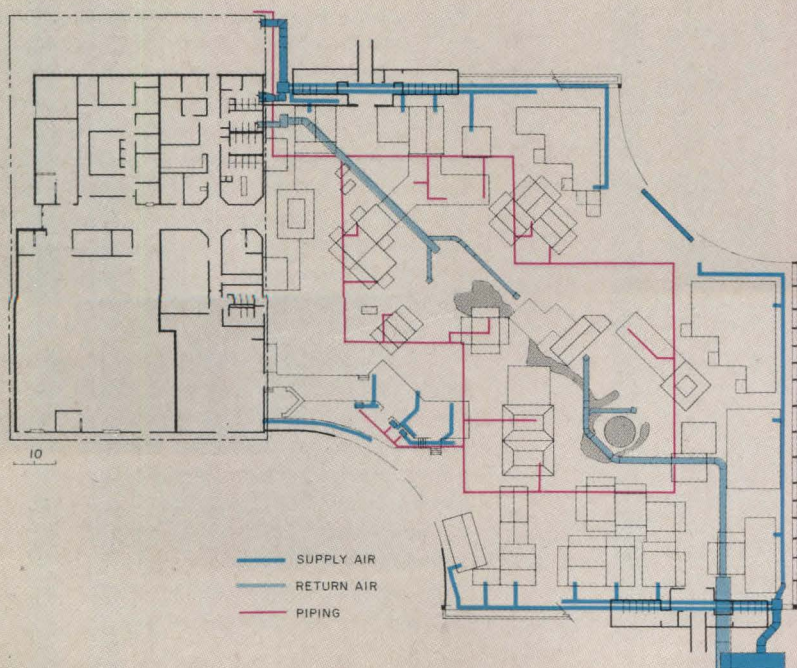
The structure is held up by one large and three small masts. It is held down in the center of the second main square (in plan) by the reversed tent module. The tent obtains stability from its anticlastic curvature and prestress. Wind load basically causes uplift, which is resisted by the edge support and the reversed cone. Loads in membrane structures are carried as much by deformation as by increase in stress, states Berger. In a good



Robert E. Fischer photos

The fabric has a light transmission of 18 per cent—the amount the landscaper felt necessary for the wide variety of tropical plants and trees. Visitors can sense movement of the sun and passing clouds, and they can see the sky through the skylights which admit shafts of sun for accent illumination. During a rainstorm, the rainwater drains through the tie-down ring of the inverted cone, creating an interior waterfall.

The air-distribution system was designed to stratify cool air so as not to waste it in the upper reaches of the cones. Air at the periphery comes from a central air conditioner. Return air is below grade. Booths are cooled with fan-coil units.



membrane structure, the absorption of load is mainly in deformation rather than stress rises. (For example, in Jeddah, where the hajj tents are under a prestress of 66 lbs/in., no stress rise is predicted under a 95 mph wind. At Orlando, the prestress is 45 lb per inch and a slight slackness is predicted in the big tent under maximum wind uplift.)

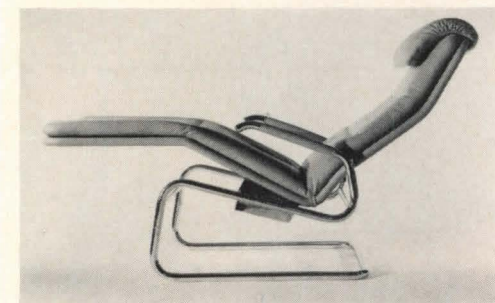
The significance of the new fabric tension structures in the world of architecture is clearly major. Horst Berger feels that the openness of space, the abundance of daylight, and the sculptural quality make for "a new architecture." Further, the space-enclosing function of structure takes on a new aspect. "Encapsulated space" was an expression of this, but is too limited; "megaspaces" comes closer. A "modified environment" is more like it—fabric tension structures take the edge off the harsher expression of nature and make the environment livable with minimum materials and at low cost.

For more information, circle item numbers on Reader Service Inquiry Card, pages 205-206

NEW AT NEOCON XII

Once again the newest interior products from leading manufacturers will be exhibited at the industry's major show, the National Exposition of Contract Interior Furnishings to be held at the Merchandise Mart in Chicago, June 11-13. In addition to the showrooms, there will be renewed emphasis on seminar and workshop programs exploring the nuts-and-bolts topics for the design professional (see editorial, page 13). Reservation-in-advance workshops will have 150 person limited attendance to enhance participants discussion. Seminars will be held on such relevant topics as Tomorrow's Office,

Energy and its Impact on Urban Planning, Use of the Computer in Space-Design Management, and Productivity and Behavioralism of the Modern Worker. The keynote speaker will be Edward Cornish, founder and president of the World Future Society and editor of its magazine "The Futurist." His speech, "The Future—A Trilogy: the optimistic, the pessimistic and the practical"—will aim at business methodology, architecture, design and energy use, with a forecast for the next 20 years. In conjunction with the show, NEOCON International exhibitors will hold an open-house adjacent to the Mart.



RECLINING CHAISE / Called the "Cicero," this handsome upholstered reclining chair is supported by a chrome frame. A multi-position motion is a result of a friction bracket; the chair is manufactured in Sweden with retail cost of \$1200 to \$2200 depending upon upholstery or leathers. ■ Dux Interiors, New York City.

circle 301 on inquiry card



CONTINUING WRIGHT'S VISION / After a fire that nearly destroyed the Biltmore Hotel in Phoenix, the restoration included a broadloom carpet with a geometric block shape resembling Indian creations, subtly colored yellow-orange and green. ■ Couristan, Inc., New York City.

circle 303 on inquiry card



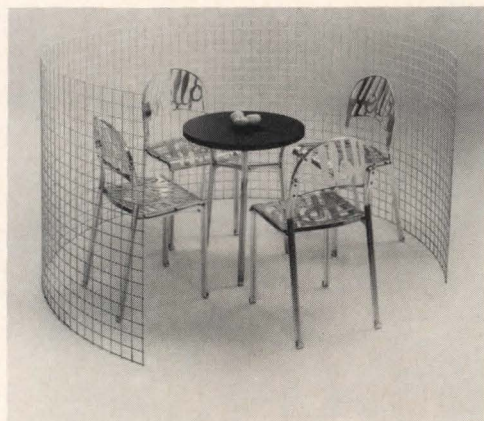
SIDE CHAIR / Natural tan seat and back covers of the "Dolly" chair slip off for cleaning. The steel frame is painted. Chair is available with arms, as shown, and in a stackable side chair version. ■ Beylerian, New York City.

circle 305 on inquiry card



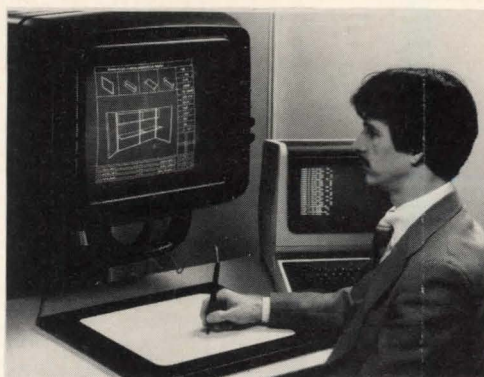
SUBTLE COLORED PATTERN / The "Tunisian Stripe Mulberry" combines shades of mulberry with lighter shades of sand on a cream background. It is woven, as with other "Tunisian Stripe" patterns, in England of 100 per cent cotton in a 48 in. width. ■ Groundworks, New York City.

circle 302 on inquiry card



BISTRO CHAIR ADAPTATION / Designed by Scotsman Jeremy Harvey, the chair has a new design twist of "Hello There" sculpted onto it. The "Hello There" chair is made of light high-pressure cast aluminum and is also available with polyurethane coatings of red, white or black. ■ Turner Ltd., New York City.

circle 304 on inquiry card



NEW 3-D COMPUTER-AIDED DESIGN / The Professional Services group of this company is developing unique hardware and software capabilities to design interior spaces with the aid of a three-dimensional perspective computer graphics system. ■ Herman Miller, Inc., Zeeland, Mich.

circle 306 on inquiry card
more products on page 143

TODAY'S GUARD.[®] THE ENDURING CLASSICS.

A classic never goes out of style, because it represents something so basically true that its appeal is timeless. Like the new Guard[®] vinyl wallcovering collection, perfectly at home in rooms generations old, or in the sleekest, most contemporary superstructures. Ask to see the Guard sample book, with 35 designs and 808 colors in Type I, II and III materials. There are 14 brand new designs and the broadest palette of today's colors in the industry. Designs of simplicity, classic style that will endure for years of care-free use. Columbus Coated Fabrics, Columbus, Ohio 43216.



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Circle 48 on inquiry card





CHAISE LOUNGE / Designed by Antonio Crittera and Paolo Nava, this is one of a series of lounge seating and low tables. The frame has a die cast seat and back available in three finishes, and covered in leathers of different colors. ■ B&B America, New York City.

circle 307 on inquiry card



FABRIC COLLECTION / The "Nylo Modulares 2" collection of 100 per cent nylon stripes is composed of three patterns ranging from small- to large-scale stripes, available in 44 coordinating colors with fire retardant finishes and backings. ■ DesignTex, New York City.

circle 311 on inquiry card



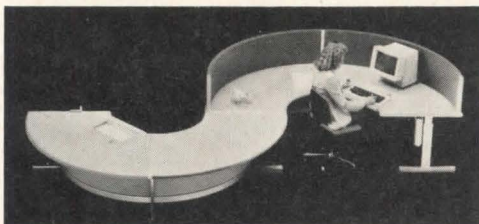
OPEN PLAN REFINEMENTS / The "RACE" open plan office system, viewed by its designer Douglas Ball as a "totally new concept," is shown here in the newest of the Michael Graves-designed showrooms in Houston. Designed as a "beam system," the Raceway units can be organized into work stations at any length, with special 380 degree connector points the key to any configuration. ■ Sunar, Ontario, Canada.

circle 315 on inquiry card



KITCHEN CABINETS / Their first at NEOCON, this company introduces a design for kitchen cabinets, "a natural outgrowth to previous company-developed wall systems." Called "Glacé," designed by Luigi Massoni, it is offered in several genuine wood veneers or in polished high-gloss colors. ■ ICF, Inc. New York City.

circle 308 on inquiry card



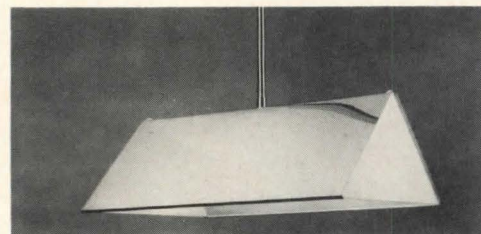
FLEXIBLE DESK SYSTEM / The "Round Office" is a patented series of office furnishings keyed to the circle, consisting of modular curved and straight desk elements that coordinate with cabinets, shelves, side-tables and acoustical screens to form an integrated working environment. Configurations are endless with full circles, semi-circles and undulating lines of desks. ■ Dux Interiors, New York City.

circle 312 on inquiry card



TASK SEATING / The "Bio Chair" was designed by Hugh Acton around human factors as they relate to task operation in either conventional or open offices. The chair back pivots and rotates simultaneously, providing support in all positions. The "Bio Chair" is available in three models, with a variety of fabric options. ■ American Seating, Grand Rapids, Mich.

circle 316 on inquiry card



HANGING LAMP / The "Game Room" lamp, in A-frame style, is available in either polished brass or chrome, suspended on a matching stem. Special white acrylic end panels complete the design. ■ Koch + Lowy, Inc., Long Island City, N.Y.

circle 309 on inquiry card



LINEN YARN WALLCOVERING / This warp-lay linen blend wallcovering from L. E. Carpenter can be installed vertically, horizontally, on the diagonal as shown, or in a chevron pattern. Linen is naturally resistant, with good color retention, strength, and dimensional stability. ■ Belgian Linen Association, New York City.

circle 313 on inquiry card



EXECUTIVE DESK / A stylish but impressive desk, the "Sigma" series includes a desk with flush back panel (as shown) or as a conference desk without the panel, and three types of pedestals. Available in grained woods of oak, walnut, teak, English brown oak, Pau ferro and Carpathian elm burl. ■ Stendig, Inc., New York City.

circle 310 on inquiry card



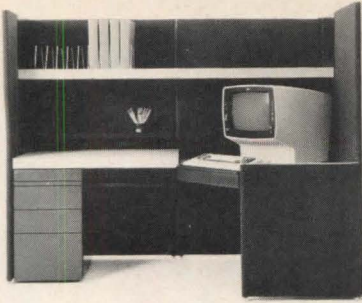
WOOD FRAME CHAIR SERIES / Characterized by rhomboid leg cross section and radiused arm-leg joint, the "Continuum" chair series has a sleek appearance; this design also eases stacking the chairs. They are available in either solid white oak or American black walnut. ■ Stow/Davis, Grand Rapids, Mich.

circle 314 on inquiry card



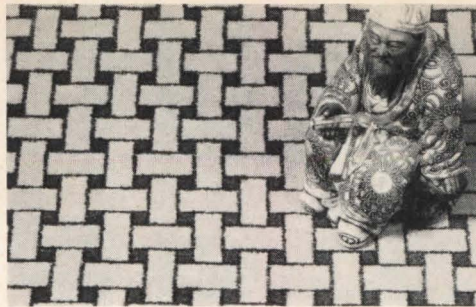
OPEN LANDSCAPE SEATING / Designed by Nel Vershuuren of Kho Liang le Associates, this new seating for public areas, both indoor and outdoor is decorative as well as functional. Perforated steel plate construction of the seats and the cast aluminum bases are extremely durable, and a special coating ensures resistance to climatic conditions. An upholstered version is also offered. ■ Turner Ltd., New York City.

circle 317 on inquiry card
more products on page 144



OFFICE INTRODUCTIONS / An array of new products for the general office will be previewed. Featured are new seating, desks, filing and storage, textile collections and additions to the Zapf Open Office System (shown). ■ Knoll International, New York City.

circle 318 on inquiry card



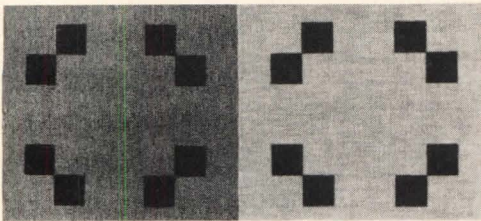
BASKETWEAVE PRINT / A lattice-work pattern is used in "Callisto" heavy-traffic commercial carpeting, tufted of ANSO Naturaluster nylon with a wool-like, subtle matte finish. Part of Milliken's "Interior Collection", Naturaluster carpets carry a full five-year commercial wear warranty. ■ Allied Chemical, New York City.

circle 320 on inquiry card



MOBILE PEDESTALS / For versatility and flexibility, a series of mobile pedestals are available with a variety of drawer space; covered with wood veneers or plastic laminated. ■ Howe Furniture Corp., New York City.

circle 322 on inquiry card



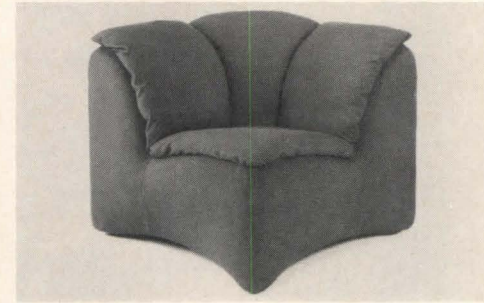
CARPET TILES / Cut and loop pile printed squares have been added to the Tex-Tiles line of commercial carpet. A variety of coordinated solid color and patterned 18-in. square tiles work together, as well as with Powerbond six-ft roll goods. Loop tiles are made of Zeflon nylon. ■ Collins & Aikman, New York City.

circle 319 on inquiry card



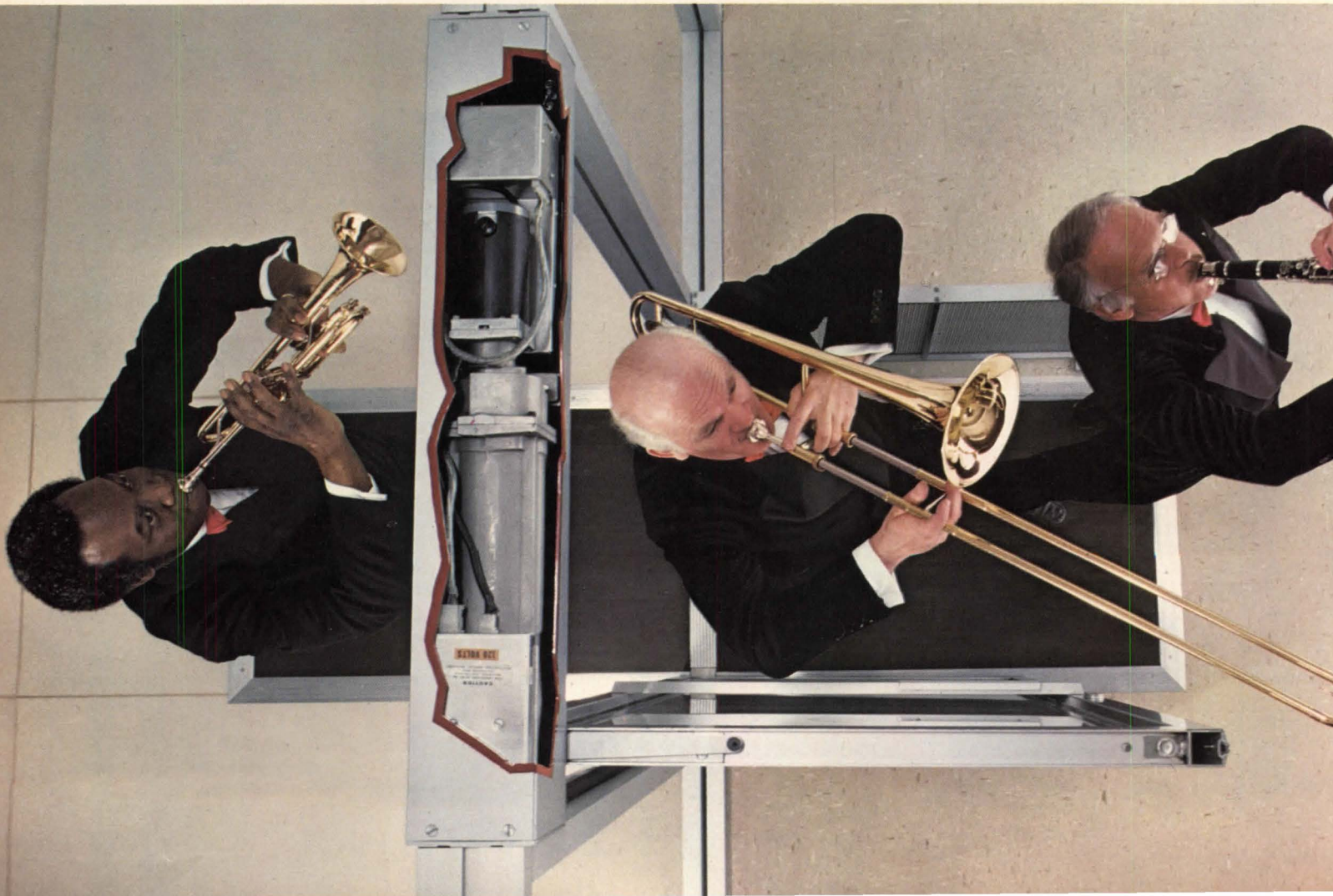
PAPER MANAGEMENT / A system of trays and supports designed to simply, efficiently organize office paperwork will be introduced. The Westinghouse Paper Management System consists of 6 trays of varying dimensions. ■ Westinghouse ASD, Pittsburgh.

circle 321 on inquiry card



LOUNGE SEATING / Constructed with resilient flame-retardant polyurethane foam over a tubular steel frame, this lounge seating line designed by Piazzi consists of an armchair, a two-seater, and a three-person sofa. ■ Castelli Furniture, New York City.

circle 323 on inquiry card

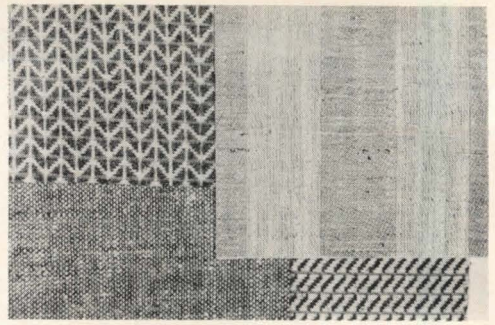




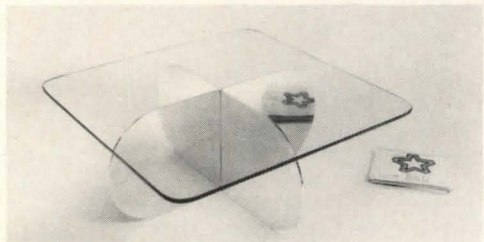
SCULPTED CHAIR / With sweeping, angular lines the "Arco" chair, designed by Paul Tuttle, has a framework formed by sweeping arcs of chrome steel from which the low-slung seat is suspended. ■ Atelier International, Ltd., New York City. *circle 324 on inquiry card*



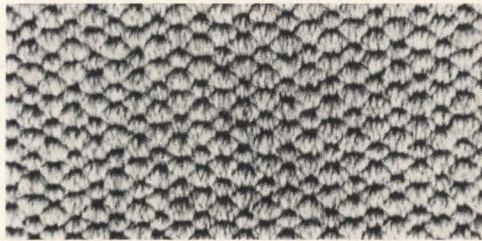
PUBLIC AREA SEATING / The "Series 10" was designed by Brian Kane to be an elegant solution for public areas. It consists of one table, two seating modules and one arm unit that fastens to a peripheral tubular steel frame. Each base component merges with the next frame creating a support leg that is totally integrated. ■ Metropolitan Furniture Co., South San Francisco, Calif. *circle 326 on inquiry card*



TEXTURE BOOK / The "Scala Texture Book—Vol. X" collection of Belgian linen and linen-blend textured weaves for use as wallcoverings, draperies or upholstery offers a variety of patterns and colors. ■ Scalamandre, New York City. *circle 328 on inquiry card*



COCKTAIL TABLE / The 1/2-in.-thick glass top of Paul Mayen's low table sits on a base of interlocking chrome finished plates; no visible attachments are used. ■ Architectural Supplements, Inc., New York City. *circle 325 on inquiry card*



COMMERCIAL CARPETING / "Stockton" carpeting made of Zeflon 500 nylon from Badische Corp. is performance certified for Class III, extra heavy commercial traffic. It carries a five-year carpet wear warranty. ■ Alexander Smith Carpet, Amsterdam, N.Y. *circle 327 on inquiry card*



CONFERENCE TABLE / Shown here in rosewood, the "954" table seats eight; tables may be used together for larger groups. Model "219" armchairs stand 36 1/2-ins. high. ■ Cado/Royal System, Inc., South Plainfield, N.J. *circle 329 on inquiry card*

more products on page 147

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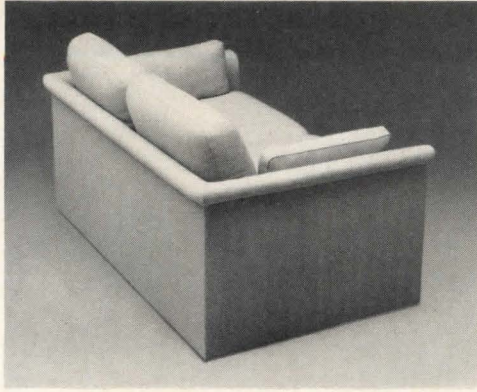
Sales / education facilities in Atlanta, Boston, Chicago, Dallas, Detroit, Houston, Los Angeles, New York, San Francisco, Washington D.C., Amsterdam, Basel (Herman Miller AG), Brussels, London, Paris, Toronto and other key cities internationally.





GRAPHIC PANELS / A complete line of panel-mounted geometric graphics will be available. Shown here is an alternate repeat design on acoustical fabric-covered *TriCircuit ERA-1* panels. ■ **Ha-worth, Inc.**, Holland, Mich.

circle 330 on inquiry card



LOUNGE SEATING / The "Lounge Seating Series," called the *UDL540-543 Series*, is designed by **Udstad/Dandridge Associates**. Squared at the corners but with a padded "lip" at arm- and back-rests it is available in coverings of wool, vinyl, and leather. ■ **Helikon Furniture, Co., Inc.**, Taftville, Conn.

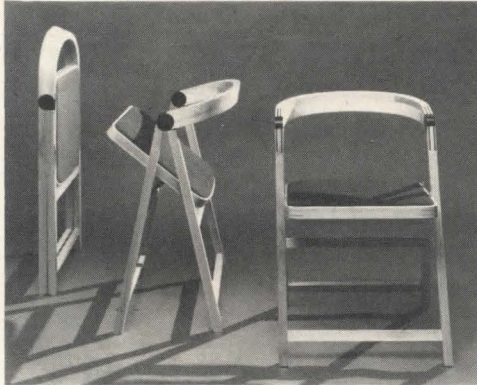
circle 333 on inquiry card



OPEN OFFICE / "System 2" includes work surfaces and cabinetry, task/ambient lighting, acoustical screens and ceiling systems to form a total approach for the open plan environment. ■ **Conwed Corp.**, St. Paul, Minn.

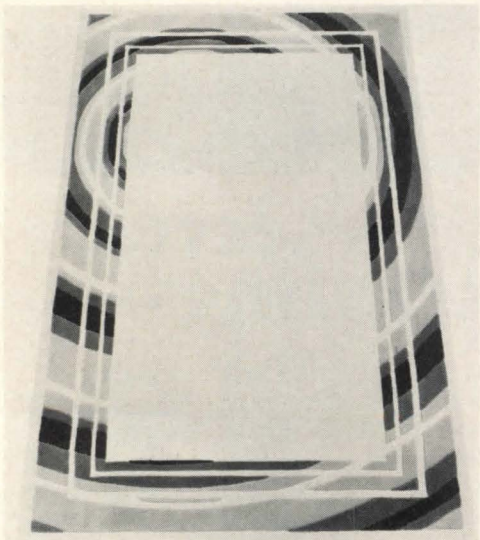
circle 331 on inquiry card

Peter Aaron



FOLDING CHAIR / Available in both upholstered and cane seat versions, Michael Kirkpatrick's ash-framed chair folds on a self-lubricating black aluminum hinge. When the seat is lowered, the back moves down and automatically locks in place. Chair folds flat for storage. Homespun wool upholstery fabric is offered in six colors; frame has a clear finish. ■ **C.I. Designs**, Medford, Mass.

circle 334 on inquiry card



UNUSUAL RUG DESIGN / "Circle on the Square" combines the sparseness of a border with the broad sweeping scale of a larger comprehensive design. It is custom-made of 100 per cent virgin wool and manufactured in New York City. ■ **Edward Fields, Inc.**, New York City.

circle 332 on inquiry card

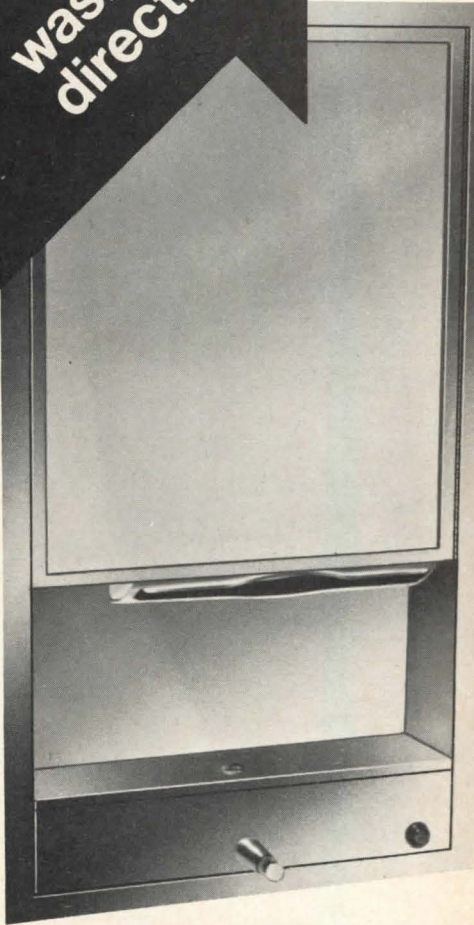


MODULAR LOUNGE / "Miko," a modular lounge seating group, consists of 5 basic units. Bases are integral with each unit; ganging can be accomplished without the use of tools. ■ **Vecta Contract**, subsidiary of **Steelcase, Inc.**, Dallas.

circle 335 on inquiry card
more products on page 149

Designing a washroom was never easier.

washroom directions



WASHROOM DIRECTIONS are reference manuals designed to guide specifiers in the right direction when selecting Parker washroom equipment. First in this series is the **WASHROOM DIRECTIONS for Public Buildings**, which recommends essential and optional Parker units for use in the various types of washrooms and service areas found in these buildings. For each location given, it provides checklists in each of five design categories — recessed, surface mounted, space-saving, barrier-free and concealall. With a **WASHROOM DIRECTIONS**, you'll find it's easy to provide Parker convenience for whatever type of washroom you design. Send for yours now.



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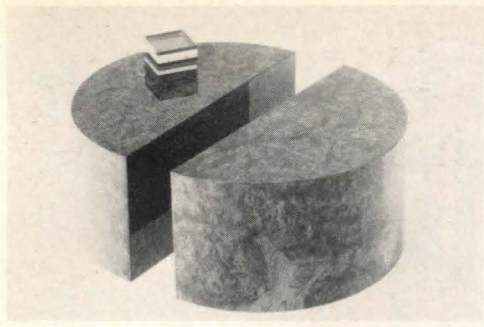
Alcan PLANAR is the only complete ceiling system that offers utmost versatility in lighting and ventilation, to architects and designers seeking to stretch their creative muscles. It solves problems in 16 low-gloss colors — also in custom colors and three bright finishes.

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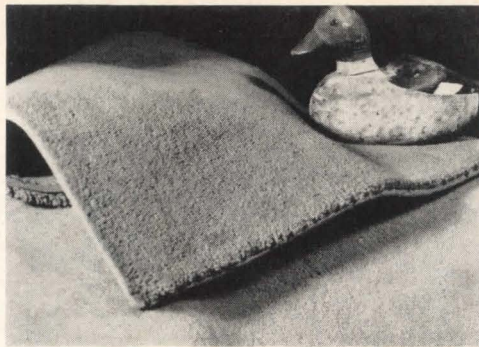
Division of Alcan Aluminum Corporation





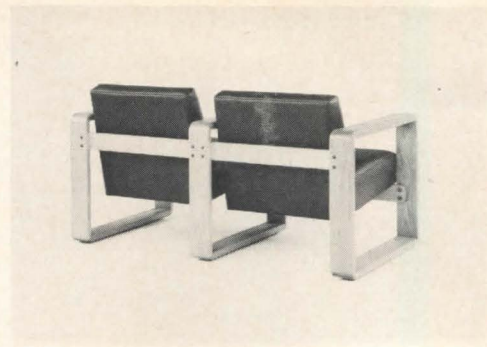
SPLIT TABLE / The "Split-Drum" table, designed by Paul Mayen, is circular but split in half for a variety of uses. Available in 13 lacquer colors, 4 woods and 4 burls, its diameter is 30 in. and its height is 15 in. ■ Intrex Inc., New York City.

circle 336 on inquiry card



WOOL CARPET / "Primitive" with tight loop tufted construction, is made of natural textured yarns. It has 4 neutral "wildlife" colors—thatch, hemp, honey and pewter; comes in 12-ft widths. Available at Arthur Nestler Carpet Co. in New York City. ■ The Wool Bureau, Inc., New York City.

circle 339 on inquiry card



CONTRACT SEATING / The "K/D" series is available as chair, two-seater, sofa or multiple-seating units, plus bench and tables, each highlighted by a forceful wood structural system. ■ Marden Manufacturing Inc., Chicago.

circle 340 on inquiry card
more products on page 151



INSTITUTIONAL FLOORING / "Thru-Onyx" non-astbestos vinyl composition floor tile has a dense, nonporous surface offering superior cleaning and maintenance characteristics. Made by combining translucent vinyl chips with fine particles of actual marble throughout, "Thru-Onyx" is available in colorations of white, beige, tan, olive and lemon. ■ Azrock Floor Products, San Antonio, Texas.

circle 337 on inquiry card



HIGH BACK SWIVEL CHAIR / One of the new series of "Tectonic" seating designed by Jonathan Ginat, it is subtly contoured with curvilinear details. Also available in low-back swivel and secretarial chair, all can be ordered with upholstery or leather, with choice of wood or steel bases. ■ The Gunlocke Co., Wayland, N.Y.

circle 338 on inquiry card

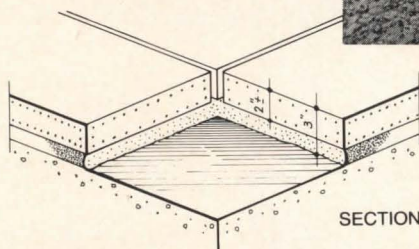
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Architect: Philip Johnson & John Burgee, New York, N.Y.



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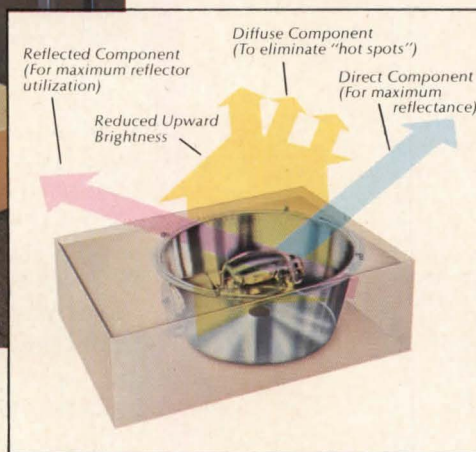
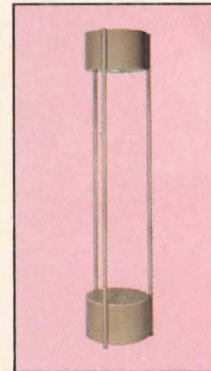
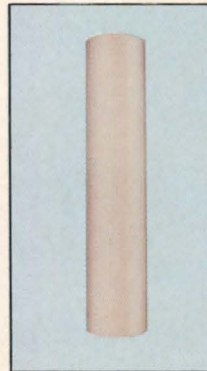
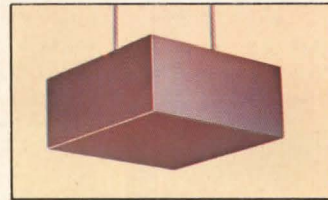
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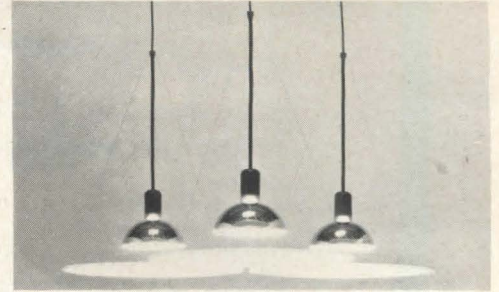


STEEL FRAME CHAIR / Designed by G. Faleschini, the "Tucroma Chair" uses heavy leather straps to support the seat hung from a steel frame, allowing the chair back to adjust. ■ The Pace Collection Inc., Long Island City, N.Y.

circle 341 on inquiry card

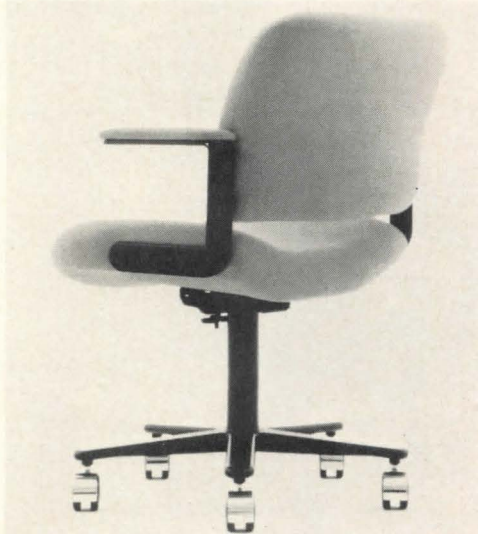


NEW CHAIR/ TABLE COMBINATION / Under an agreement with Wilkhahn of West Germany, the "Program 400" series of chairs and tables will be manufactured and distributed in the U.S. and Canada by this company. The series features molded hardwood ply frame construction for light weight and strength, and will be shown in the company's expanded showroom. ■ Krueger, Green Bay, Wisc. circle 344 on inquiry card



PENDANT LAMP / Designed by Italian architect Achille Castiglioni, the "Frisbi" lamp has an opal metacrilate diffusor disc hung below a chrome light fixture by three thin steel wires. The diffusor generally softens glare except for a central hole that allows a beam of direct light through. ■ Atelier International, Ltd., New York City.

circle 345 on inquiry card
more products on page 153



NEW MOVABLE CHAIR / THE PERSONAL CHAIR seating line with 9 models features measurements, proportions, angles and back support, researched and designed by Robert Whalen of Toronto, to provide comfort, resiliency and back support. ■ Lehigh-Leopold, Div. of Litton Industries, Burlington, Ia.

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WOOD VENEER PANELS / The "Series 9000 Structural Panels" are now available with an exterior treatment of genuine wood veneer. Finish options include light oak, dark oak and walnut, matching other company desks, credenzas, panel-mounted components, etc. ■ Steelcase, Grand Rapids, Mich.

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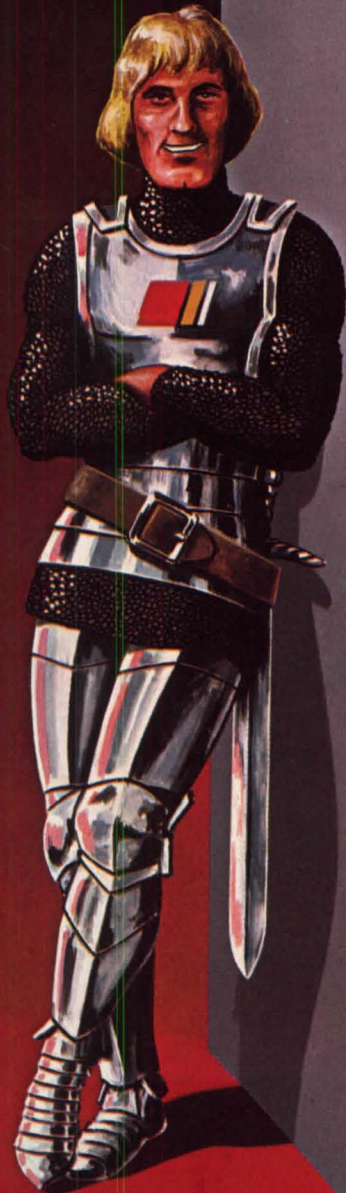
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GUEST CHAIR / Designed by Norman Cherner to complement this company's wood business furniture, this guest chair is available in American black walnut or white oak. A natural oil finish on all exposed wood surfaces enhances the grain pattern. ■ Modern Mode, Oakland, Calif.

circle 346 on inquiry card



HEAVY-DUTY BROADLOOM / Colors such as burgundy, hunter green, navy and mahogany provide a dramatic background for a geometric dot design; the dots are varied tones of white and yellow gold. "Karapoint" is woven in dense ribbed texture formed by cut and loop pile yarns of Antron III nylon. ■ Karastan Rug Mills, New York City.

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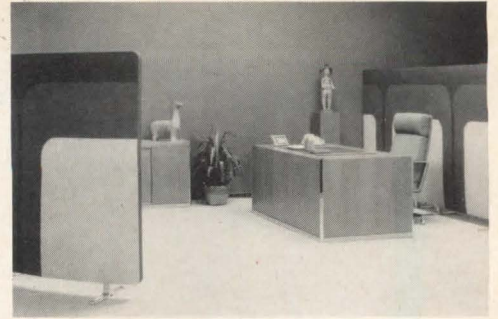
FLOOR LAMP / A 72-in long arm is cantilevered from a 72-in. high polished chrome stand. A clear linear prismatic acrylic diffuser runs the length of the illuminated opening; a 40 Watt fluorescent tube is recommended. ■ Habitat, New York City.

circle 348 on inquiry card



CRT WORK AREAS / A trapezoidal surface for this company's open-plan office system work station will accommodate a CRT at different heights and angles. Also to be introduced are other electronic support furniture. ■ GF Business Equipment, Inc., Youngstown, Ohio.

circle 349 on inquiry card



GRAPHIC PATTERNS / Hand-sewn graphic patterns combine with rigid, office panels. Called "ScreenOne" it is available in 13 sizes, 40 color and 6 trim options. Available in 2 fabrics—a fire-retardant woven polyester and a fire-rated nylon velvet. ■ Vogel Peterson, Elmhurst, Ill.

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more products on page 155



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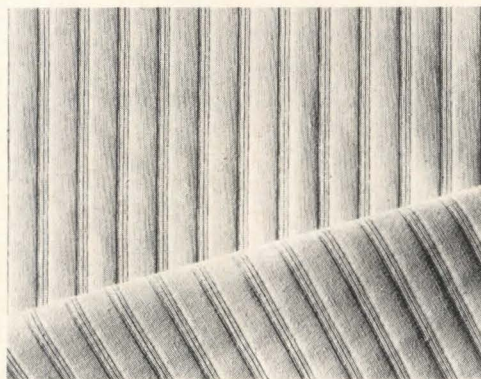
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STACKING CHAIR / A highly unusual design, the *Sof-Tech Stack Chair*, designed by David Rowland, uses patented *Soflex* materials (supportive coated sinuous springs) spread between a polished chrome frame. The openweb pattern eliminates build-up of body heat, and is flexible to move as the body shifts. ■ Thonet, York, Pa.

circle 351 on inquiry card



QUILTED FABRICS / "Petrouchka", woven of 100 per cent natural fibers, is 51-in. wide metalasse with an all cotton face supported by a resilient wood stuffer. Highly durable, it has a "15,000 double-rub abrasion rating"; available in 7 shades. ■ Gretchen Bellinger Inc., New York City.

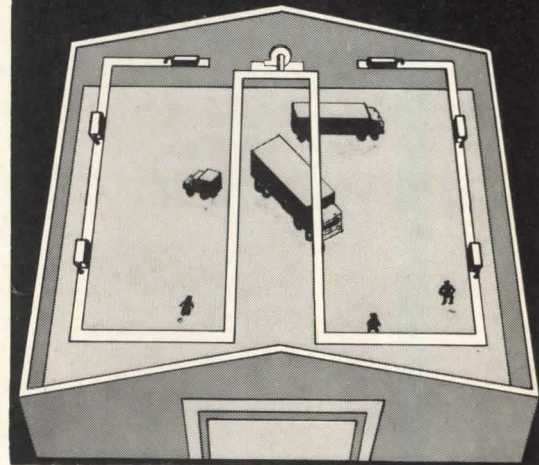
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OFFICE SEATING / Fifteen different chairs for management, administrative, word processing and drafting functions make up the *Litton Business Furniture* seating system. All chairs feature adjustable seat height, back height, and forward/backward seat depth sizing. Resilient seats, backs, and armrest edges are available in a choice of six colors. ■ Cole Business Furniture, York, Pa.

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The 17 year old vented radiant heating system that a lot of people don't know about.

Co-Ray-Vac is a gas fired, fully vented, low intensity, infrared heating system.

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AR-1

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Volclay Panels have kept B.A.R.T. subway stations dry for 10 years.

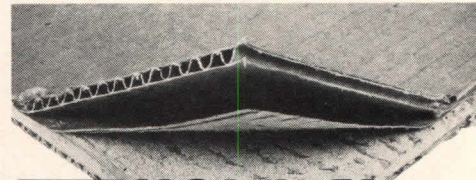
The builders of San Francisco's Bay Area Rapid Transit (B.A.R.T.) system first used Volclay Panels in 1967. That application was a test of the Panels' ability to waterproof a part of the B.A.R.T. system that passes under a channel connecting Lake Merritt with an estuary of San Francisco Bay.

Based on the successful results of that test application, Volclay Panels were specified for 12 of the system's underground passenger stations. They were an especially suitable choice because of their effectiveness in containing even severe groundwater—much of the system lies under that portion of San Francisco which is built on landfill.

Woodrow "Woody" Lagle, Superintendent of Tracks and Structures for the B.A.R.T. system, said the Volclay Panels have required little or no maintenance during the 10 or more years they have been in place. By contrast, some portions of the system were waterproofed with a membrane type of material and leakage problems have occurred in those areas.

Based on his "most satisfactory" experience with Volclay Panels, Lagle believes they are a more permanent solution to waterproofing problems than other types of available materials.

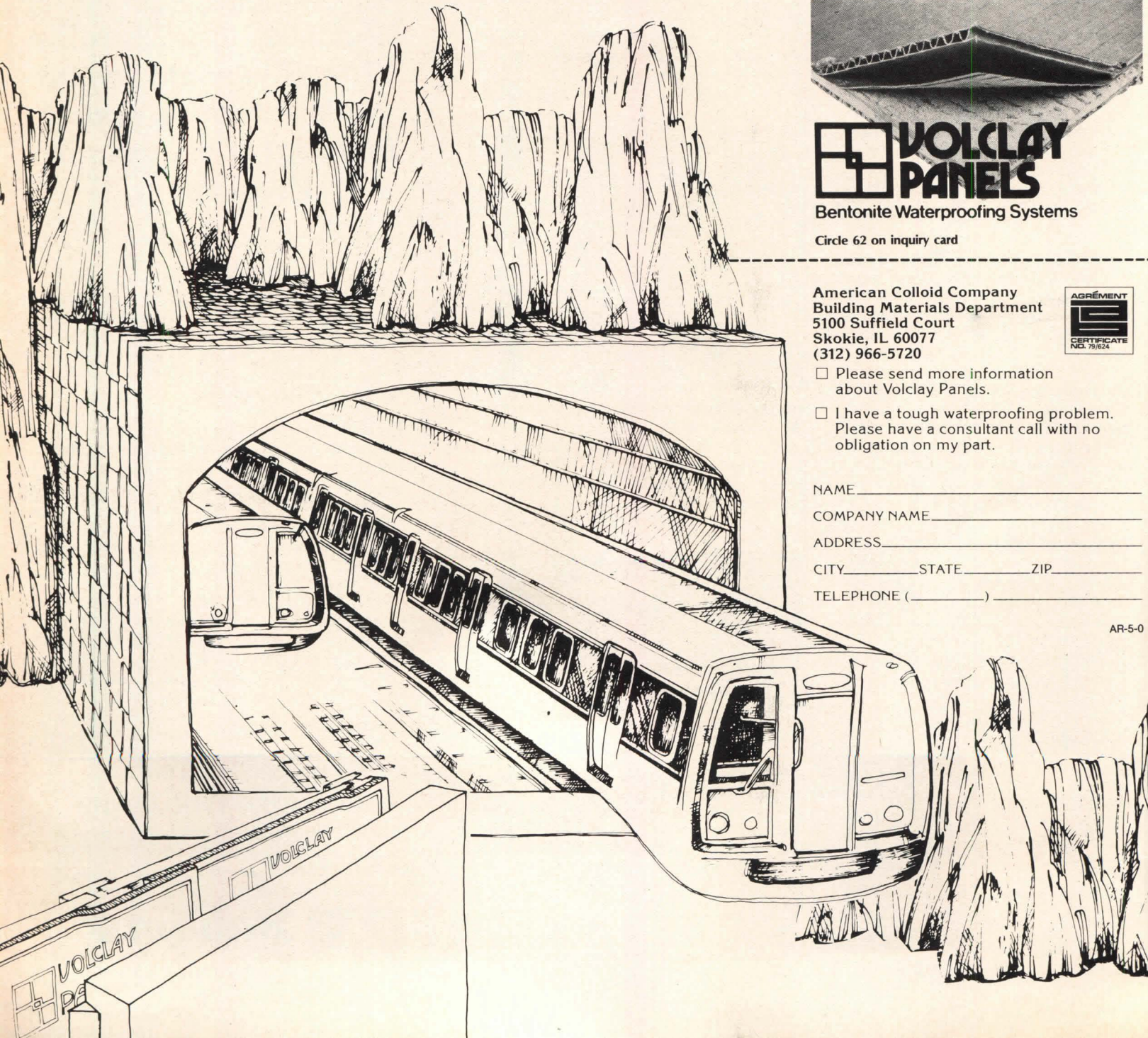
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STACKING CHAIR / A highly unusual design, the *Sof-Tech Stack Chair*, designed by David Rowland, uses patented *Soflex* materials (supportive coated sinuous springs) spread between a polished chrome frame. The openweb pattern eliminates build-up of body heat, and is flexible to move as the body shifts. ■ Thonet, York, Pa.

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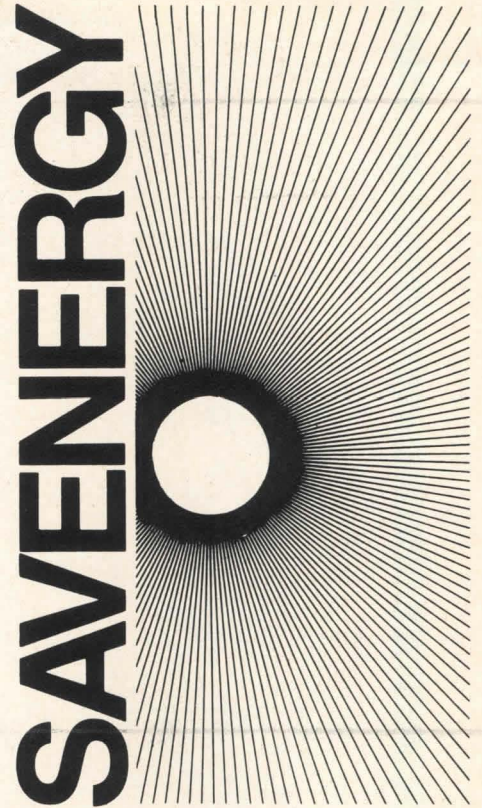
HANDPRINTED VINYL UPHOLSTERY / "Red Stripe" has staccato design pattern available in four different stock color groups. One of the designs in the Print/Weave group, it was created by D. Bruce Rabbino for this company's Handprinted Vinyl Upholstery Collection. ■ Durawall, Inc., New York City.

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GRAPHIC PANELS / A complete line of panel-mounted geometric graphics will be available. Shown here is an alternate repeat design on acoustical fabric-covered *TriCircuit ERA-1* panels. ■ Harworth, Inc., Holland, Mich.

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Fact: Metal lath/steel stud curtainwalls can offer dramatic reductions in heating-cooling energy consumption and operating costs.

The U-value for the lath/stud wall is .079 . . . As compared to .321 for a conventional masonry wall . . . Or .55 for double-plate glass . . . Or .741 for precast concrete.

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Gunnar Birkerts and Associates, Architects
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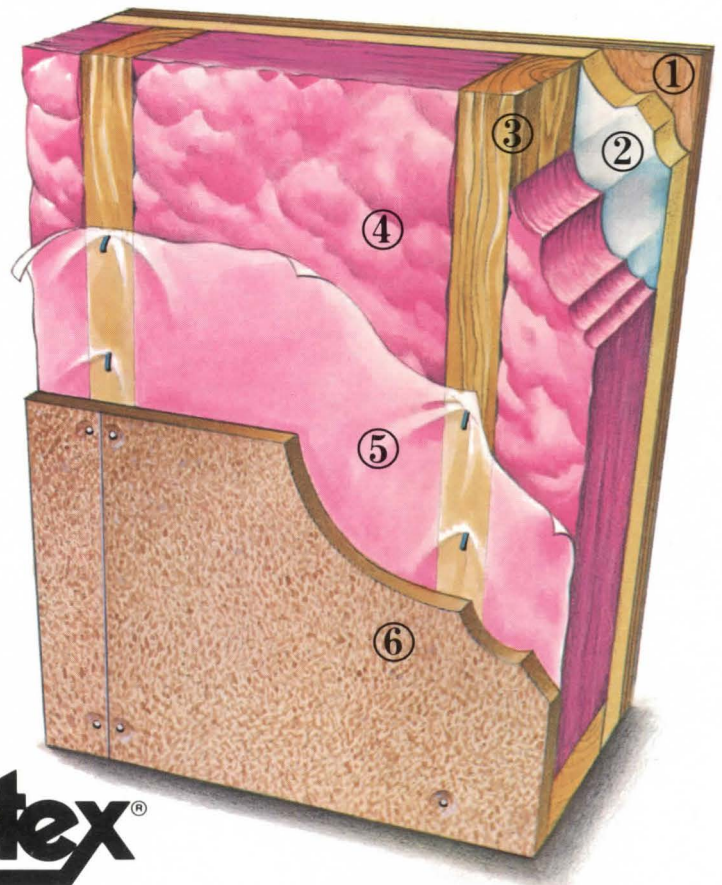
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Source for the above data are ASHRAE 1977 Fundamental Handbook and published literature. At 75° mean temperature.



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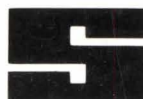
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